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To Be(ta) or not to Be(ta)

A White Paper

"Alas, poor Yariv....."

May 2016

Background

On March 25th an article was published on the Financial Times website titled "Smart beta not quite as clever as marketed". The full article can be found at: http://on.ft.com/1pLRBle. A copy is at Appendix 1.

The author, John Authers, raises a few good questions in the article concerning the sustainability and future potential performance of what is referred to as 'Smart Beta' specifically, and possibly even 'passive investment' in the broader sense.

I take this as a good opportunity to express broadly my views on the matters covered in the article itself, and trying to differentiate between different marketing terms that are commonly used interchangeably in the industry and the professional literature.

The Terminology

1. Passive vs Active

This is one of the most fundamental definitions in investment space, and surprisingly it is often misunderstood. Defining what falls into a passive strategy and what falls into an active one is crucial in attributing performance to '*beta*' and '*alpha*' contributions.

The term '*alpha'* describes those much coveted returns which are not explained by systematic risk exposure but which can be attributed to skill[1]. Alpha extraction requires expertise and comes with a significant management cost (typically above 1% of assets per annum). There is strong empirical evidence that such skills are highly elusive, and that the majority of active managers fail to produce alpha when their fees and costs are taken into account.

'*Beta'*, on the other hand, refers to those returns that can be explained by systematic risk exposure, and can be expressed as the product of a transparent set of rules. The beta of a defined market is the theoretical return produced by investing passively into that market. Today investors can efficiently harvest beta by investing in specialised liquid and cost effective rule-based instruments, mainly ETFs and Index Funds. Costs are low because there is no requirement for skill or research.

Originally, when formulating the Efficient Market Hypothesis, the researchers referred to a 'market portfolio' (i.e. a basket of securities that includes all liquid securities, weighted according to their market capitalization) as the broadest possible benchmark; however, as the research has developed, several persistently rewarded risk factors, as further explained below, have been identified by those same researchers (i.e. Fama and French) and others. Systematically harvesting the enhanced long term beta performance associated with these factors is now as feasible as harvesting the performance associated with a traditional 'market' portfolio.

[1] EDHEC Research Insights, Spring 2016

One development over recent decades is that passive investment is no longer associated solely with tracking the performance of a broad market cap weighted market or index. Passive investment principles (indexation, cost effectiveness and transparency) can be used today to capture the performance of **any** defined 'market' (e.g. small-cap companies, companies in developed markets etc.) without recourse to skill. Harnessing the performance of any basket of securities following a predefined screening mechanism (be that size, sector, geographical or other) would now be considered as extracting *beta* from a refined and focused universe.

This puts pressure on active managers. Historically, a manager benchmarked against a broad index (say, S&P500) could argue that he was delivering sustainable *alpha*, whereas in fact he was merely investing with a factor tilt, perhaps toward smaller cap stocks in order to capture the size premium. Nowadays a knowledgeable investor would benchmark this performance against a small-cap index (say, Russell 2000) to assess whether the manager is genuinely adding value through skill – in the form of stock picking or market timing (or both) - categorized as '*alpha*', or simply overcharged for what is essentially enhanced *beta*.

2. Risk factors / Factor Investing

As mentioned above, identifying risk factors is not new to the investment industry. The research goes back decades and the conclusions are robust.

The most significant risk factor premium is the "market" premium. In the investment space one can invest in different markets, and the risk associated to each varies. It was quickly recognized that the equity market is riskier than the fixed income market. In the long term, the equity market has delivered higher returns than fixed income, to compensate the investors for the increased risks borne by exposing their assets to the equity market.

One of the best known illustrations of market premium, commonly referred to in many books, is the chart taken from a research done by Roger Ibbotson, a former professor at the University of Chicago (see below)[2].

[2] Source: Morningstar - Stocks, Bonds, Bills, and Inflation® (SBBI®), *US data*

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Ibbotson®SBBI®Stocks, Bonds, Bills, and Inflation 1926–2014

The research continues to develop. One of the most comprehensive databases in existence today is the Credit Suisse Global Investment Returns Sourcebook, compiled and analyzed by Professors Elroy Dimson and Paul Marsh and Dr. Mike Staunton of London Business School. This database, and others like it, have enabled researchers to identify and isolate additional long term risk factors.

In the equity space, persistently rewarded risk factors including size, value and momentum have been identified and documented (see charts below). In the fixed income space, factors including duration and credit have also been demonstrated.

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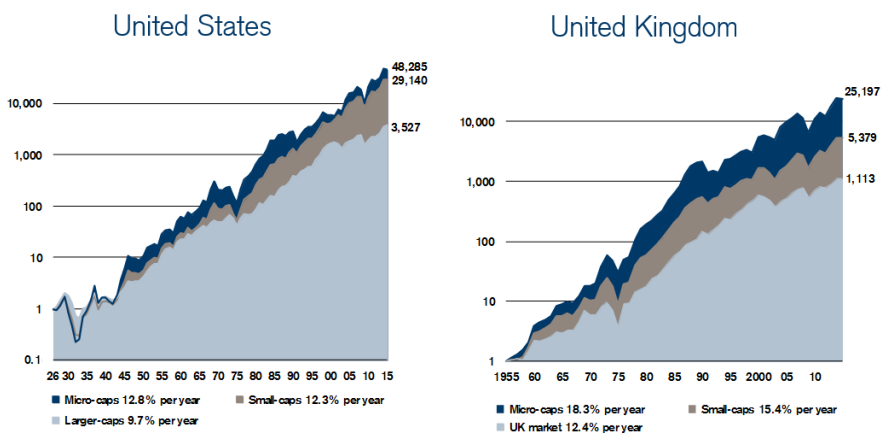
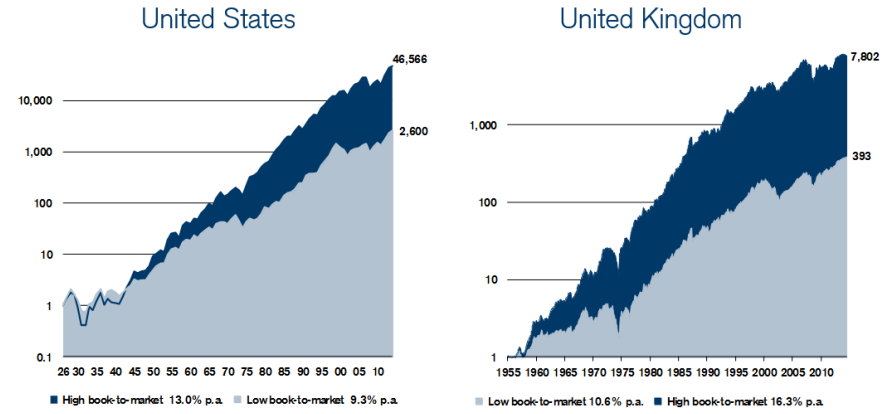
Graph 1: The Size Premium (1926* - 2014)



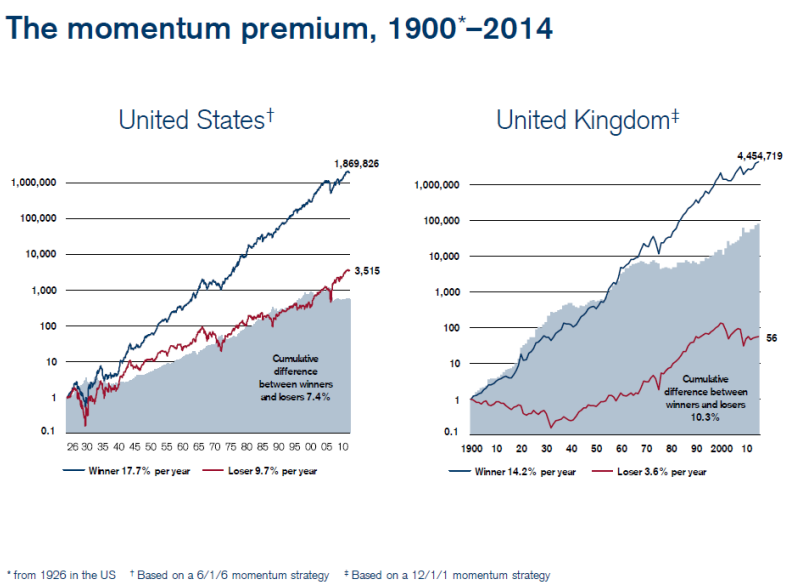
(*) from 1955 in the UK
Sources: US CRSP capitalization deciles are from Morningstar (Ibbotson); UK Small-caps are the Numis Smaller Companies index
Graphs reproduced from Dimson, Marsh and Staunton (2015) by permission of the authors.

Graph 2: The Value Premium (1926* - 2014)



(*) from 1955 in the UK
Sources: US data is from Professor Kenneth French, Tuck School of Business, Dartmouth (website)
Graphs reproduced from Dimson, Marsh and Staunton (2015) by permission of the authors.

Graph 3: The Momentum Premium (1900* - 2014)



(*) from 1926 in the US

Sources: US: Griffin, Ji, and Martin (2003); UK: Dimson, Marsh, and Staunton (2015)
Graphs reproduced from Dimson, Marsh and Staunton (2015) by permission of the authors.

A word of caution: although these risk factors have been extensively analysed and shown to be persistently rewarded across many decades, there can be no guarantee that they will continue to outperform in the future. It may be rational to expect these premia to persist (for one should expect to be compensated for the additional risk that one is taking), there is no way to accurately predict the future performance either of markets or factor premia.

Furthermore, since factors focus on selected risks (vis-à-vis the broader market), they do not necessarily outperform over short periods of time. In fact, the opposite is often true, and individual factors exhibit a range of performance at different points in the economic cycle. Diversifying across factors is key to smoothing portfolio volatility.

Factor-based investing approach should be treated carefully and with the understanding that a highly disciplined long term approach (specifically through periods of underperformance) is critical.

3. Smart beta

In my opinion smart beta is little more than an empty marketing shell used by product providers to push merchandise. Whilst it can be argued that smart beta stems from factor investing, the motivation to sell rule-based products that go way beyond the scope of a limited number of factors has expanded and evolved into the concept of 'smart beta'.

The marketing term is indeed brilliant. It suggests the ability to capture the best of two worlds - the brain power of management on one hand and the proven effectiveness of beta on the other. Unfortunately, smart beta often delivers very little of both.

As an example, one product provider has identified IPOs as a commodity in high demand, and has designed and marketed smart beta ETF that systematically invests in the stocks of recent IPOs. The portfolio is packaged into a tradable instrument, wrapped a catchy name and - lo and behold –an ETF called IPO[3]. The fact that academic research indicates that the stock price of newly placed IPOs is commonly inflated, fueled by short term over optimism, and that over the longer term these stocks tend to **underperform** as that optimism fades away, has not been allowed to stand in the way of skillful marketing people in promote such products under the 'smart beta' banner.

Smart beta also encompasses hybrid active / passive strategies, where passive and / or factor based instruments are used tactically to express views on market and cycle timing. These strategies again rely on manager skill to produce alpha, and as previously stated, academic studies suggest that such skill is rare.

I distinguish in this paper between factor-based investing and smart beta. In my view a persistently rewarded risk factor can only be regarded as such where the contention is both supported by multiple decades of empirical evidence and confirmed by serious academic studies. Any purported reward or risk / reward which does not conform to these requirements I categorise as smart beta. However, it should be noted that many writers use the term smart beta to cover the entire spectrum of factor, smart beta and hybrid active / passive strategies.

[3] Further information can be found here: http://www.renaissancecapital.com/ipoinvesting/ipoetf/ipoetf.aspx

4. Performance vs Return

Most investors have been taught to seek and measure returns. There are many reasons for that and I will therefore not cover them in this paper. However, to paraphrase Uncle Ben (and Winston Churchill before him!) - "*with greater returns come greater risks*". The fundamental measure of portfolio performance is not absolute return, but is the return produced relative to the risk taken. Improvement in risk / reward performance can be achieved by increasing returns, by reducing risk, or both. I therefore commonly refer to the term 'performance' as the risk-adjusted returns, typically measured by the Sharpe Ratio.

Thoughts regarding the FT article

It should come as no surprise that I can probably agree and echo the sentiment that the author wanted to send to the reading audience: "Smart beta not quite as clever as marketed".

I disagree with Auther's description of 'smart beta' (to quote the article "Smart beta comes up with a strategy to beat the index", while I argue that Smart beta simply comes up with a strategy to track a **different** index). I am concerned by the way this term is loosely used and by the misconceptions that many investors (and sometimes even investment professionals) have in this field.

The article presents, as examples of 'smart beta', the core strategies which I have listed above under Factor Investing (size, value, momentum and even low volatility). The writer ignores the fact that the smart beta concept is much wider today than the actual risk factors from which it has gown. And herein lies my concern: smart beta is no longer about identifying persistently rewarded risk factors and market anomalies and systematically exploiting them, but has become more about identifying the 'flavour of the month' and providing the masses with a product that satisfies popular demand.

The article also raises concerns as to whether factors can persist once they have been identified. My view on this is that factor premia can reasonably be expected to persist going forward. As with the equity market premium itself, factor premia fluctuate over time but do not disappear; there is no “free lunch” here, and these strategies are only suitable for those investors who can understand and accept the specialist risks that factors represent. This view is supported by the sheer weight of historical evidence (which addresses Auther’s data mining concerns), and by the depth of the related market segments (which effectively prevents the premia from being arbitraged away).

Auther implicitly recommends tactical use of risk factors: identifying when they are rich and when they are cheap, and managing exposures accordingly. Here we are back to the issues of market timing; the research available to us today strongly suggests that the investment community lacks the skills to time markets. My position is that factor investing sits firmly in the strategic investment arena, and that the only nod to market price movements is systematic rebalancing. We recommend rebalancing across risk factor exposures, just as we recommend rebalancing across the broader asset allocation.

The article has stimulated an interesting question at Sparrows Capital: how do factor-based investments sit on the classical efficient frontier graph and, more specifically, does factor investing result in a beneficial shift in the efficient frontier to the north-west? I have not seen specific studies oriented around this aspect of the discipline. We will explore this thought process further in a forthcoming Bird’s Eye View.

Yariv Haim,
Founder and CEO

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Appendix 1

Smart beta not quite as clever as marketed

John Authers

Cheap stocks that outperform attract buyers and then the moment is gone

Has the investment industry's marketing push outsmarted itself? For several years, huge effort has gone in to selling "smart beta" funds. It has worked, creating great excitement. Now, not at all surprisingly, the backlash has begun.

Investment theory may be a tad crunchy for Easter weekend, so let us keep this simple. Beta is the academic term for the return you get from passively investing in an index. Smart beta comes up with a strategy to beat the index, which can itself be made into an index with simple rules.

The advantage of doing this is that funds that track an index can be run far more cheaply than active funds, which face a far higher bill for research and managers' salaries. So if a winning strategy can be reduced to an index, it should be possible to cut costs, and offer a superior return to investors.

Passive investing is popular at present because investors have worked out that low fees matter. So smart beta offers a future for active managers.

Smart beta strategies are now proliferating but most commonly stem from anomalies identified in the academic literature. Perhaps most importantly, there are Value (cheap stocks do better than expensive), Momentum (winners keep winning, and losers keep losing), and Low volatility (relatively stable stocks perform better). All will have periods when they do badly. All perform well in the long run (even if, as the chart shows, value has had a tough time recently). Other popular strategies involve weighting portfolios by companies' sales, or revenues, or dividends.

From these building blocks, investment managers have now built multifactor funds in different proportions, and come up with a dizzying array of new factors. And they have sold a lot of funds on the back of it.

But there is a problem. In theory, and in practice, once a market anomaly has been observed, it cannot continue. There are two reasons why future performance may be worse than the historical backtest suggests, outlined by Pete Hecht, chief market strategist for Evanston Capital Management, in a recent paper. First, the back-test may have been "data-mined". In other words, the researchers fiddled to find a formula that delivered the very best result for the period they were looking at. This may be due to dishonesty, or may happen unconsciously.

A second problem is arbitrage, and the very existence of smart beta funds feeds this problem. Once you know that cheap stocks outperform, the logical response is to buy cheap stocks. If many do this, cheap stocks' price will rise until they no longer outperform.

Mr Hecht tested this theory using the formulas used in 1991 in a seminal paper by Gene Fama, the University of Chicago economist who won a Nobel Prize for his work on markets. This identified the value effect using three different measures of valuation.

Mr Hecht took Mr Fama's formulas for determining which stocks were cheap, and saw how the strategy would have performed starting in 1992 and carrying on to the present. In all cases, whether measured by straight performance or adjusted for risk, they did much worse after the paper's publication than they had before it. The reduction in performance ranged from 30 to 71 per cent. The value effect had diminished.

That leads to another problem, identified by Rob Arnott in a paper for Research Affiliates, a pioneer of smart beta. A strong backtest at any point in time, he reasons, may be because the factor tested has become expensive.

Very perversely therefore, a strong backtest almost becomes a reason not to buy into a strategy. And if a strategy looks good now simply because it is expensive, that may be an active reason to fear that it will now perform badly. Conversely, it might imply that factors that have done poorly of late — and as the chart shows, value has badly lagged behind the market ever since the financial crisis — are now cheap and worth buying, for those with the intestinal fortitude to do so. Meanwhile it is worth checking whether low-volatility and high-momentum stocks, both still performing well, look over-expensive and due to revert to the mean.

A final issue: risk. Piling into one particular factor is inherently more risky. For Andrew Lo of Massachusetts Institute of Technology, one of the world's most respected financial theorists, the problem with "smart beta" is that it can easily morph into "dumb sigma" — the Greek letter used for volatility.

Each factor involves taking a different risk — returns are rewards for taking risks. Investors should not take them without trying to balance those risks — which implies that these products are not "better mousetraps" that can be bought and left to fend for themselves, but rather that it will be necessary to watch them closely and manage them.

None of this means that smart beta is a bad idea. If you spot an anomaly, you should exploit it while it is there, as cheaply as possible — and that is what smart beta can do. But smart beta is still not quite as smart as it appears.

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For more information

+44 (0)20 3714 4624 | www.sparrowscapital.com | info@sparrowscapital.com