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So-called smart beta strategies are swiftly gaining market share, with some estimating they will reach $6 trillion in assets within the next five years.[1] Smart beta aims to outperform the capitalization-weighted market through alternative weighting methods that emphasize factors such as size, value, momentum, or low volatility.[2,3] Many smart beta providers claim their strategies beat the market with some consistency, based on historical back-tests.

But how smart are these strategies? There is much support in the literature that factors, other than the Capital Asset Pricing Model's beta factor, matter. There is less support, however, for the notion that excess returns can be captured easily and consistently through a simple factor-based approach, or that they are truly "excess" in light of the risk they may entail.[4]

Below we compare the characteristics of smart beta with those of proprietary active multifactor investment strategies, which in the spirit of "smart beta" could be called "smart alpha."

SUPPORTED BY THEORY?

Smart beta has a mixed theoretical foundation. It is not clear whether excess returns are due to bearing systematic factor risk or stem from market inefficiencies.[5] There are also questions about the sources of excess returns: Are they due to the factors targeted, to biases introduced by a departure from capitalization weighting, or to rebalancing? Some studies show that the excess returns to a number of smart beta strategies are fully explained by size and value factors.[6] There is also disagreement as to whether the rebalancing process contributes to excess returns, independent of factor weightings.[7]

Smart alpha rests on the proposition that the equity market is not entirely efficient; that security prices are subject to a large number of interrelated inefficiencies; and that it is possible, although not easy, to detect and exploit these inefficiencies with proprietary factors. Smart alpha includes, but is not limited to, the handful of factors considered by smart beta. It seeks to exploit the remarkably large number of fundamental and behavioral factors that are pervasive in the equity market.[8]

ACTIVE OR PASSIVE?

Smart beta is often characterized as passive investing because it uses rules-based selection and weighting, with rebalancing at predetermined intervals, and does not attempt to make explicit forecasts of returns and risks for individual securities. Yet the decision *not* to hold the capitalization-weighted market portfolio is an active decision in itself. Smart beta strategies require additional active decisions to identify the specific factor(s) to target, and to define the factor(s), the selection universe, the weighting method, and the rebalancing rules. These decisions are made at the outset of the investment process, rather than throughout the process.

Smart alpha is active in several ways. It actively researches stock price behavior to identify numerous potentially profitable relationships between factors and prices. It makes forecasts of returns to factors and individual securities, with estimates of associated risks, and revises forecasts based on the changing market environment.[9] It trades in response to potential profit opportunities as they arise.

FORWARD-LOOKING AND DYNAMIC?

Smart beta strategies are neither forward-looking nor dynamic. Factor(s) and security weightings are chosen at the outset of the strategy, based on historical data. It follows that an investor's choice of a strategy represents the investor's implicit if not explicit expectation that the factor(s) targeted will

continue to earn excess returns over the investment horizon. If underlying economic or market conditions change, the returns can vary significantly.

Smart alpha strategies are forward-looking and dynamic. Expected security returns are generated based on numerous factors, and exposures to those factors are achieved in portfolio construction. Factor performance is monitored over time as conditions change. Feedback from the monitoring process and ongoing research lead to adjustments in existing exposures or the addition of new factors. Dynamism is built into smart alpha strategies while, for better or worse, smart beta strategies are static by design.

CONCENTRATED RISK EXPOSURES?

Smart beta is not well diversified. Although smart beta portfolios may hold a large number of securities, all smart beta portfolios are concentrated in terms of the source(s) of excess return they seek to exploit, such as size, value, momentum, low volatility, or some combination of a few factors. This concentration leaves them susceptible to periods of poor returns to the chosen factor(s), which can lead to inconsistent performance. Momentum, for example, has had dramatic changes in performance over time, with occasional pronounced crashes.[10]

Smart alpha is diversified across numerous factors as well as securities. Research has detected regularities in price responses to a wide range of independent fundamental and behavioral factors, not just the few attributes exploited by smart beta strategies.[11] Smart alpha portfolios can thus be diversified across exposures to numerous opportunities, which can improve consistency of performance.

UNINTENDED RISK EXPOSURES?

Smart beta generally controls risk exposures through factor definition and portfolio construction rules. But a simplistic factor-based approach may fail to effectively capture targeted sources of excess return and can lead to

unintended exposures. Simple measures of value, for example, may lead to an undesirable exposure to distressed firms.[12]

Smart alpha can analyze return-predictor relationships simultaneously, in a multivariate framework. This allows for the extraction of "pure returns," that is, the expected return to each single factor, uncontaminated by the possible influences of other factors.[13] For example, in considering "value," smart alpha would separate the valuation effects of earnings, cash flow, sales, and dividend yield, while also taking into account other related factors, such as size, growth, and industry exposures. The smart alpha portfolio can thus intentionally target a number of desirable factors and avoid overexposure to correlated but less desirable ones.

FACTOR INTEGRATION AND RISK CONTROL?

Some smart beta strategies may not combine efficiently with other smart beta strategies. Different strategies target different factors, yet security holdings of different strategies (low volatility and value, for example) may overlap. The tracking error of smart beta strategies relative to the capitalization-weighted market may also be large (especially for low-volatility strategies).

A smart alpha strategy combines numerous factors in an integrated framework that allows for optimal tradeoffs between expected return, risk, and transaction costs.[14] Factor exposures, as well as exposures to other sources of tracking error, are typically controlled by portfolio optimization, including the use of constraints.

TURNOVER LEVELS?

Smart beta strategies generally rebalance at regular intervals, often quarterly or annually. Turnover is generally higher for risk-based smart beta strategies (minimum-variance, for example) than for fundamental-based smart beta strategies. The rebalancing rules and associated transaction costs may affect smart beta returns.[15]

Smart alpha turnover is generally higher than smart beta turnover. However, trading occurs on a continuous basis as market conditions change. Furthermore, turnover and transaction costs can be integrated into the optimization process. Thus, trades will not be undertaken unless there is a net gain in terms of expected return and risk.

LIQUIDITY AND OVERCROWDING?

Smart beta strategies generally have increased exposure to smaller-cap stocks compared to the capitalization-weighted market, and this may introduce liquidity issues. Limiting the investment universe to larger-cap stocks can increase liquidity, but at the cost of reducing the opportunity set. Given the increasing popularity of smart beta strategies and the large number of providers, growing investment in smart beta factors could result in the disappearance of excess returns to those factors as the market's capacity is exhausted. Furthermore, overcrowding can lead to overvaluation and factor crashes.

Smart alpha strategies are more diversified across factors than smart beta strategies, resulting in less extreme exposures to individual factors. Also, smart alpha strategies use proprietary factor definitions and, as a result, holdings can differ across managers, while holdings of smart beta strategies targeting the same factor may be more similar. Additionally, as the smart alpha strategies are proprietary, they are harder to replicate than smart beta strategies. Capacity is thus more controllable.[16] And, as mentioned previously, trading is continuous, rather than periodic, thereby reducing demands for liquidity at any point in time.

TRANSPARENT OR PROPRIETARY?

Smart beta is relatively transparent. Many smart beta strategies are dependent on generic, publicly available factors, relatively simple weighting methods, and pre-specified rebalancing periods. This simplicity and transparency can result in lower management costs, and in greater

accessibility for less sophisticated investors. However, simplicity and transparency also leave the strategies vulnerable to being replicated (possibly resulting in overcrowding) as well as to front-running, which can erode returns to these strategies. Some smart beta providers use their own proprietary factors and weighting schemes to mitigate these problems and to increase performance, but at the expense of increased opacity and management cost.

Smart alpha, in order to preserve its excess return advantage, is intentionally not very transparent. It relies on proprietary research, proprietary factors, and proprietary portfolio construction and trading methods. Smart alpha requires greater effort, which results in higher management costs relative to smart beta strategies. The manager assessment process for smart alpha may also be more demanding.

CONCLUSION

Smart beta strategies, because of their simplicity, bear a resemblance to passive investments. However, smart beta strategies are to a large degree the product of active choices. It is incumbent upon investors to be aware of those choices.

When considering any active strategy, whether smart beta or smart alpha, investors should have a clear understanding of the sources of expected returns, the stability and sustainability of those returns, the risk exposures and risk controls, the liquidity demands of the strategy, and whether the management costs are commensurate with expected results. Only then can investors determine which strategies are deserving of the “smart” label.

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ENDNOTES

[1] Marriage [2013].

[2] Throughout the text we make reference to factors. Factors can mean different things to different people. For example, some may use the term to refer to common risk factors, as in Fama and French [1993]. When we use the term "factors" we are referring to firm characteristics such as market capitalization, book-to-market equity, or earnings surprise.

[3] Fama and French [1993] is arguably the genesis for many factor-based smart beta strategies. They showed that a simple approach of sorting stocks based on market capitalization and book-to-market equity and investing in small value stocks could earn higher returns than predicted by the Capital Asset Pricing Model.

[4] Some may consider the stock market to be an ordered system, and believe that simple factors will provide consistent performance. For a contrasting position that the market is a complex system and that "the optimal investment strategy is not as simple as tilting toward yesterday's anomalies," see Jacobs and Levy [1989b].

[5] Fama and French [1993] argue that if assets are priced rationally, then size and value are risk factors. De Bondt and Thaler [1985] suggest that investor overreaction--a behavioral inefficiency--can explain the size and value effects. Arnott et al. [2005] claim that the capitalization-weighted market index gives too much weight to stocks priced above their fair value, and vice versa. See Perold [2007] for a rebuttal. Baker et al. [2011] argue that the low volatility inefficiency stems from behavioral biases and impediments to arbitrage, such as barriers to leverage and shorting.

[6] Arnott et al. [2005, 2013].

[7] For a variety of views on the "confusing debate between smart beta providers," see Steward [2014].

[8] Jacobs and Levy [1988] pioneered the "disentangling" of stock returns to identify the effect of each particular firm characteristic (factor) on the cross-section of stock returns, while simultaneously controlling for many other factors. Fama and French [2008, p. 1666] use a similar approach to "disentangle the return effects of multiple anomalies." For recent evidence on the market's remarkable multidimensionality, and the insufficiency of considering just a handful of factors, see Green et al. [2014].

[9] See, for example, Jacobs and Levy [1989a].

[10] Daniel and Moskowitz [2013].

[11] See, for example, Jacobs and Levy [1988], and Green et al. [2014].

[12] Avramov et al. [2013].

[13] For the original exposition of "pure returns," see Jacobs and Levy [1988].

[14] Such an integrated framework adheres to the Law of One Alpha; see Jacobs and Levy [1995].

[15] Some smart beta managers claim that rebalancing is an important part of their strategy's performance; see Steward [2014].

[16] Smart alpha managers will typically close their strategies when they reach capacity limits for assets under management. On the importance of setting capacity limits, see Perold and Salomon [1991].