

# Is Smart Beta State of the Art?

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The smart beta bandwagon reminds me of another investment fad from back in the 1980s: a strategy known as portfolio insurance. Portfolio insurance was a trend-following trading strategy meant to protect portfolio value. As it grew in popularity, it inflated market prices, but when market volatility increased, a wave of portfolio-insurance selling caused the market to crash by more than 20% on October 19, 1987.

At conferences on portfolio insurance in the 1980s, and later in my book *Capital Ideas and Market Realities* [1999], I played the role of devil's advocate, warning of portfolio insurance's potential effect on market stability. Of course, smart beta strategies, other than those based on momentum, are not trend-following. But there are still parallels between smart beta and portfolio insurance. Buying pressure on a few well-known smart beta factors can bid up their prices. At some point, this can lead to weak performance and maybe even factor crashes.

There are others who share my skepticism about smart beta.<sup>1</sup> Furthermore, recent evidence suggests that the touted benefits of smart beta are not borne out by actual performance. For instance, Glushkov [2015] finds that smart beta exchange-traded funds (ETFs) do not significantly outperform on a risk-adjusted basis. However, this doesn't mean that factors are not useful in investment management.

In 1988, Ken Levy and I published a 25-factor model (Jacobs and Levy [1988]). We were the first to examine all the then-known factors jointly, in a unified analysis.<sup>2</sup> Four years later, Fama and French [1992] published their three-factor model, the basis of many smart beta portfolios. Since then, they have written more papers, introducing additional factors. Recently, Green et al. [2014] considered more than 100 factors jointly and found 24 that

were significant. Popular smart beta factors such as size, book-to-price, and momentum were not among the most significant factors.

It's obvious that we live in a factor world. Ken and I established that in 1988. The question is this: How should we use factors to benefit portfolios?

In our opinion, and based on three decades of money management experience, factors are best exploited in a dynamic, multifactor portfolio that employs numerous, proprietary factors simultaneously (see Jacobs and Levy [2014c]).<sup>3</sup> With more factors, one can take advantage of more return opportunities. And a diversity of factors can provide for more consistent performance, as investments are distributed across a range of factors.

Smart beta portfolios, focusing on only one or a few factors, are likely to underperform, sometimes over protracted periods, when the factors on which they focus underperform. As we have all seen with the performance of growth relative to value stocks, or small-cap relative to large-cap stocks, underperformance at some point is inevitable.

Furthermore, ignoring factors that may be related to the targeted factor can lead to unintended risk exposures. For example, smart beta value portfolios may be overexposed to distressed firms. Unintended exposures can increase risks and erode returns. Glushkov's analysis of numerous smart beta ETFs indicates that the negative effects of unintended exposures partially or fully offset any return advantages provided by desired factor exposures.

A dynamic portfolio can respond to changes in stock fundamentals and underlying market and economic conditions and can also take advantage of shorter-term market events, earnings announcements, and other com-

pany news. In contrast, a smart beta portfolio follows static rules, tends to maintain constant factor exposures, and rebalances infrequently. This lack of flexibility may translate into higher risk and lower return as underlying conditions affect factor returns. For example, the 2009 market reversal hurt momentum portfolios. Low-volatility portfolios sold out of financials by 2009, as the market bottomed and financial stocks began to recover.

The known factor definitions and rebalancing intervals of most smart beta portfolios also leave them vulnerable to front-running and factor crowding, which can increase transaction costs and reduce returns. Smart beta's reliance on largely generic, public factors increases the likelihood of front-running. Research by Madhavan [2003] documented the front-running of the annual rebalancing of the most prominent small-cap stock index.

Opportunities for hedge funds and other active managers to front-run smart beta strategies are likely to increase as assets in the strategies increase. According to Yost-Bremm [2014], for example, price pressure is already adversely affecting smart beta strategies that rebalance on the basis of the Fama–French book-to-price and size factors.

Price pressure on factors may be exacerbated by the fact that assets under management in generic factors cannot be controlled; this is especially true if, as argued by Arnott et al. [2013], most smart beta factors boil down to small size and value. The commodification of smart beta turns the asset management paradigm on its head. As investment officers and consultants know, and Perold and Salomon [1991] have shown, successful investing requires maintaining liquidity by closing strategies to new assets when they reach capacity. But smart beta managers know no limits to assets under management. There's no way to control the amount of investment when many smart beta strategies are targeting similar generic factors. Overcrowding can reduce and even eliminate excess returns to a given factor.

As with portfolio insurance, the inability to limit investments can lead to overvaluation, fragility, and even factor crashes as investors withdraw en masse from once-popular but now underperforming factors. This can have potential repercussions similar to that of portfolio insurance in 1987; we've already seen an example in the collapse of momentum stocks with the tech wreck in 2000.

Smart beta offers significant outperformance, according to strategy providers' backtests. Evidence on actual performance has been mixed, however. Glushkov finds little evidence for significant risk-adjusted outper-

formance in either the Sharpe ratios or information ratios of smart beta funds, as compared with their benchmarks.<sup>4</sup> Malkiel [2014] found that, through early 2014, smart beta portfolios had mostly underperformed; for the one strategy that did outperform, outperformance was due entirely to its returns in one year.

Plan sponsors who add smart beta strategies to their portfolios should be prepared to take on responsibilities that, with active management, are typically assumed by the manager. With smart beta, sponsors will be the ones ultimately responsible for choosing which smart beta factors to target, weighting those factors, and making any timing decisions. Sponsors will incur increased fiduciary responsibilities and costs, which are not reflected in smart beta fees.

In short, smart beta is not a good alternative to active, dynamic, multifactor portfolio management. Active managers can take multiple factors into account in a unified approach that controls for unintended exposures and provides for diversification; can respond to changes in stock fundamentals and underlying market and economic conditions; can employ proprietary factors that are not as susceptible as generic factors to front-running and overcrowding; and can take responsibility for factor selection, specification, weighting, and timing. As smart beta assets continue to grow, dynamic, multifactor strategies can take advantage of the factor overvaluation resulting from smart beta strategies and exploit their predictable rebalancing trades.

## ENDNOTES

This is based on the author's panel presentation at Wharton's Jacobs Levy Equity Management Center for Quantitative Financial Research Spring Forum, "The Alpha and Beta of Factor Investing," New York City, May 1, 2015. A video is available at: <http://jacobslevycenter.wharton.upenn.edu/events/spring-2015-forum/>.

<sup>1</sup>Sharpe [2014] says that smart beta definitionally makes him sick and doubts that many of these strategies will be winners in the future. Lo [2015] says smart beta goes hand in hand with dumb sigma, or unexpected risk. Malkiel [2014] says smart beta is a testament to smart marketing, rather than smart investing. Bogle [2015] says that smart beta is a ploy by active managers to recapture assets lost to indexers.

<sup>2</sup>Harvey et al. [2014] have argued that the seeming significance of many factors reflects mere chance, given the large number of tested factors. They suggest that the standard level of significance be raised to a *t*-statistic of 3. Based on this stricter test, nine of the factors we considered were significant.

<sup>3</sup>For a comparison of smart beta strategies and multidimensional strategies (which, in the spirit of smart beta, could

be called “smart alpha”), see Jacobs and Levy [2014a]. For more on multidimensional strategies and their implementation, see Jacobs and Levy [2014b].

<sup>4</sup>Glushkov found the Sharpe ratios of smart beta funds and their benchmarks to be nearly identical, at 0.46 versus 0.48, respectively, while the average information ratio was 0.08, inconsistent with the idea that smart beta ETFs offer a distinct advantage over traditional cap-weighted indexes. Furthermore, according to an analysis performed for Reuters by ETF.com, and reported in Barlyn [2015], recent smart beta performance results have been disappointing. Another analysis, reported in Evans [2015], shows that seven of the ten biggest smart beta ETFs tracking the U.S. market underperformed over three years, and five underperformed over five years.

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