

Smart Beta Not New, Not Beta, Still Awesome



By Clifford S. Asness, Ph.D. and John M. Liew, Ph.D.

Let's be blunt. Smart Beta¹ is mostly re-packaged, re-branded quantitative management. That's not to say we don't like it or think it's not good for investors. We love quantitative management, having spent our careers pursuing these types of strategies. However, we work in a business where good ideas are constantly repackaged as something new. Smart Beta is the latest example. It takes well-established, quantitative investing styles, or factors, and implements them in a simple, transparent manner often, though not always, at lower fees than what we've seen in the past. That certainly sounds like a worthwhile repackaging, and it's not surprising that Smart Beta has received great attention.

Ironically, despite Smart Beta's aim for transparency and simplicity compared with traditional active (judgmental or quantitative) management, there remains much confusion about what Smart Beta means (sometimes the marketing can serve to obscure not enlighten²). This likely stems from the fact that there are so many related concepts and so much overlapping terminology. Furthermore, there are a wide range of styles, implementation methods and marketing techniques. For example, fundamental indexing, low-volatility investing, systematic value or momentum investing, each implemented as '40 Act Funds, separate accounts or ETFs, all could be classified as versions of Smart Beta.³ Moreover, some of these focus on single factors while others use multiple factors.

In this article, we try to put Smart Beta into perspective by categorizing the major approaches and describing how each might contribute to a broad portfolio. In doing so we extend the concept from the very basics, to what we believe are logical next steps. Exhibit 1 lays out our plan of attack. We will start out with Smart Beta as it is most commonly implemented (long-only using a single factor within a single asset class — usually equities). We will then broaden out to multiple factors. Finally, for a bigger jump (in both efficacy and risk/unconventionality), we'll go to multiple factors across multiple asset classes in a long/short framework.

Basic Smart Beta: Single Factor Within a Single Asset Class (Long-Only)

Most Smart Beta funds today are long-only equity strategies focused on one investment style or factor⁴ and these generally come from the academic and practitioner literature. This fact was underappreciated, even denied, by some of the creators of early versions of what came to be called Smart Beta products. However, today it's generally accepted that Smart Beta is a repackaging of these well-trodden ideas.

To be considered Smart Beta, we believe that these factors must also be simple and transparent. However, they don't have to be the same for all managers or products. One can, and many do, argue that their particular version of simple value, low risk or any other

tilt is better. These are the same arguments quant managers used to have with each other. However, in the case of Smart Beta, these factors are implemented in a somewhat simpler, more understandable framework (until we all start arguing and obscure it again).

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Furthermore, they are implemented either directly (e.g., tilting toward or restricting investments to value or low-risk stocks) or through portfolio construction choices that give exposure to these styles (e.g., equal-weight or weighting by non-price measures of size). Some argue a lot about which of these should actually be called Smart Beta. (While we like to argue, we're going to skip this one.⁵)

Let's be clear about a few things that are sometimes obscured:

- Rebranding old school "quantitative management" into Smart Beta doesn't change the fact that the factors must work. You want to avoid the perils of data-mined factors or strategies that were chosen to fit history, but have little hope of future returns. To help achieve these aims, an important criterion for any viable factor is that it have a good economic story behind it — there must be a reason it is expected to deliver positive excess returns. In addition, robust

Exhibit 1: The Big Picture on Smart Beta

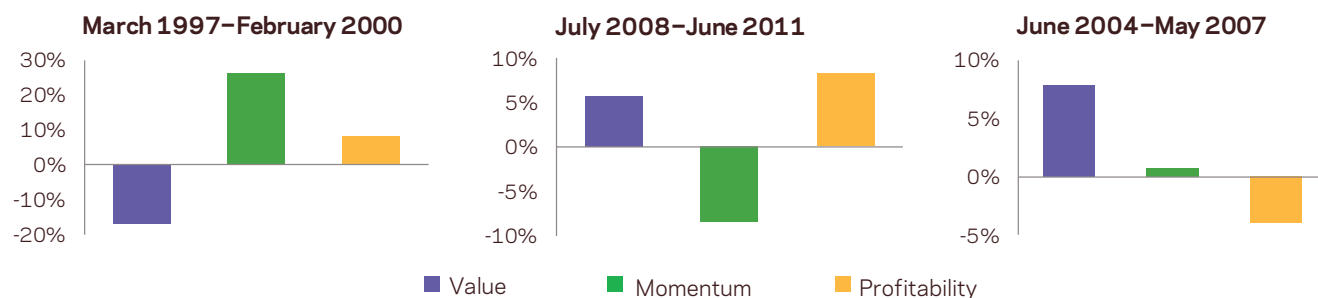
	Focus on Efficiently Harvesting Active Returns					
	Long-Only			Long/Short		
	Old Beta	Smart Beta		Style Premia		
	Passive Index	Single-Style	Multi-Style	Single-Style, Single Asset Class	Multi-Style, Single Asset Class	Multi-Style, Multiple Asset Classes
Exposure to Style Premia	None	Low	Moderate	High	Higher	Highest
Correlation to Traditional Portfolios	High	High	High	Low	Low	Low
Use of Leverage and Shorting	No	No	No	Yes	Yes	Yes

Source: AQR. For illustrative purposes only.

September 2014

Exhibit 2: Combining Styles May Lead to More Consistent Returns

Worst 3-Year Rolling Excess Returns for Hypothetical Smart Beta Portfolios, U.S. Equities, 1980–2013



Source: AQR. Based on long-only hypothetical returns for the U.S. Large Cap universe from “A New Core Equity Paradigm,” Frazzini, Israel, Moskowitz, Novy-Marx (2013). The U.S. Large Cap universe approximately corresponds to the largest 1,000 U.S. stocks by market capitalization. Returns are gross of fees and net of transaction costs. Performance is hypothetical and is not based on an actual portfolio or account. Hypothetical performance results have certain inherent limitations, some of which are disclosed at the end of this article.

out-of-sample evidence — over time, in other markets and even in other asset classes — can help assuage data-mining concerns.

- One difference between Smart Beta and traditional quantitative management is that the former is usually built from the bottom up with “tracking error” against a benchmark falling out (though outperforming a benchmark is still the goal). Another is that while traditional quantitative investing generally bets on many of the same factors, it tends to be more about the particular manager’s improvements (real or data-mined) to these factors, new factors (real or data-mined) that the manager has found, and the manager’s particular portfolio construction and implementation methodology, among other things.

“We’re here to praise...Smart Beta — but only after an honest understanding of it.”

- Even though we call this “Smart Beta,” it’s not really beta in the traditional sense (we considered “Clever Beta,” “Ingenious Beta,” “Pensive Beta,” “Perky Beta” and, of course, “Ennui-Stricken Beta,” but they didn’t make it past the drawing board). Smart Beta is an exposure to market-capitalization-weighted indices (traditional beta) plus an attempt to outperform these indices (remember when we used to call this alpha?). Perhaps the simplest equation in the world is:

$$\text{Smart Beta} = \text{Cap Weight Index} + [\text{Smart Beta} - \text{Cap Weight Index}]$$

- The second part, [Smart Beta – Cap Weight Index], is usually a very well-defined simple tilt in the direction

of known factors. For instance, take the case of an index where you weight stocks not by their market cap, but instead by their sales. In this Smart Beta index (this of course follows for any such measure), the ultimate weight of a stock will be its weight in the Cap Weight Index multiplied by the price-to-sales ratio of the market (P/S_M) divided by the price-to-sales ratio of the stock (P/S_i). It’s that simple. In other words, it’s not “kind of like a price-to-sales tilt.” In this case it is, and always is, only a specific price-to-sales tilt.⁶ This index owns precisely the below amount of stock i ⁷:

$$\begin{aligned} \text{Weight in Smart Beta Portfolio} = & \\ & [\text{Weight in Cap Weight Index}] \\ & * (P/S_M) / (P/S_i) \end{aligned}$$

The value-add in Smart Beta is that we, and many others including a legion of researchers looking in a legion of places, believe certain factor tilts work reliably over time, and that simple versions such as a one-factor Smart Beta strategy can be understandable, transparent and available at a reasonable fee. We believe there can be tremendous value add to this undertaking and we’re here to praise, not bury Smart Beta — but only after an honest understanding of it.

Why Stop at One Factor? Multiple Factors Within a Single Asset Class (Long-Only)

Among the various investment styles, let’s consider the efficacy of three that are well known (and admittedly chosen as near and dear to our hearts): Value, Momentum and Profitability.⁸ Based on our analysis and a large body of academic and practitioner literature, each has produced long-run, hypothetical excess returns with low correlation to traditional markets over multiple decades, in multiple geographies and asset classes, and

each is well-supported by economic theory and research. We believe that each of these, at the proper fee, would be an attractive proposition in a single factor, simple Smart Beta format and should add value to most traditional portfolios.

Furthermore these styles’ excess returns tend to be lowly correlated with one another, with performance often coming at different times. This can be really important. Consider Exhibit 2, which separately shows the worst three-year hypothetical excess returns for each style along with the hypothetical performance for the other two styles during that same period. In each case, the worst performance for any one style is mitigated by the other two. Diversifying across various Smart Betas can and has provided a more consistent way of beating a traditional benchmark.

If multiple styles are better than just one, how should investors combine them? There are two broad choices (ignoring the many narrow choices like how best to get a value tilt) while staying with traditional long-only investing: (1) invest in single-style funds *a la carte* (e.g., a separate value fund, a momentum fund, etc.), or (2) invest in a single fund that integrates multiple styles simultaneously. Assuming fair fees for the risk taken, both approaches can be useful. However, we believe that the second choice — multi-style — is naturally more efficient for at least three reasons:

- Lower transactions costs:** The multi-style approach can net different style signals *before* trading, avoiding needless turnover and its associated costs — and for taxable investors, potentially lowering their tax burden.
- Interaction benefits:** A stock that might barely fall below the threshold for being included in separate, single-style funds may be among the most attractive when

viewed across multiple styles. Furthermore, if deemed warranted, more weight can be given to stocks that are attractive on multiple style dimensions.

- **Maintaining active risk:** Combining separate single-style funds into an investor's portfolio lowers "active risk" (versus the relevant benchmark) because the style tilts will tend to partly offset each other. This can be a good thing, except if the expected excess return comes out too low (because the active risk gets too low). In an integrated, multi-style fund, the amount of active risk can be chosen so this does not occur.⁹

We'd be remiss in not pointing out that the advantages to integrating multiple styles in one fund are not free. They generally involve less diversification across managers¹⁰ and less explicit end-investor control of factor exposures. Perhaps most importantly, while fixable with transparency, the multi-style tilt does lose some of the beautiful simplicity that perhaps first attracted investors to Smart Beta. We think it's a natural evolution and believe the hard quantifiable advantages outweigh the soft disadvantages, but we mention them and leave them for the reader to decide.

The Next Step: Multiple Factors Within Multiple Asset Classes (Long/Short)

Now we take it to its logical, though admittedly more-provocative and less-conventional conclusion. Remember our simplest equation in the world?

$$\text{Smart Beta} = \text{Cap Weight Index} + [\text{Smart Beta} - \text{Cap Weight Index}]$$

This equation tells us that long-only Smart Beta is a tie-in sale. When you buy it, you actually get two things. One is a traditional index fund (Cap Weight Index) and the other is a long/short portfolio that bets on the style underlying the particular Smart Beta product (Smart Beta – Cap Weight Index).¹¹ In a long-only Smart Beta product you don't get to choose how much of the long/short stuff you get. It just falls out of the particular way the product was constructed. There might be some legitimate reasons to buy these together, but why not consider breaking this tie-in sale? Isn't that the next logical step? By the way, if you're laughing a bit as we extend the "Smart Beta" concept by removing the actual "Beta" part, you are paying attention!

We call this long/short portfolio *style premia* but it is really just Smart Beta where you're going long the smart part and short (and we apologize for this...) the dumb part!¹² Not only can a long/short strategy allow investors to explicitly pursue "both sides" of an investment style¹³, it also creates a portfolio that is naturally hedged to the underlying market. That is, while long-only Smart Beta will strongly tend to rise and fall with equity markets, long/short style premia may offer a more diversifying, truly alternative return source.

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Other Asset Classes Besides Equities

Since we're going unconventional, why stop at equities? Style premia, such as value, momentum, low risk and others, can be harvested in other asset classes, including bonds, currencies and commodities.¹⁴ Importantly, these are not new, original styles tailored to these other asset classes, but the same ones being used in long-only equity Smart Beta. If you believe cheap stocks have higher expected returns than expensive stocks, why would you believe that it ends at stocks? Is valuation a phenomenon that is unique to stocks? Shouldn't cheap bond markets outperform expensive bond markets? Shouldn't cheap currencies outperform expensive currencies? The data suggest that the answer to each of these questions is yes. It turns out that many of the styles that work for predicting stock returns also work in other asset classes. And why shouldn't they? Given the economic intuition and the empirical evidence, it's hard not to make the small logical jump to implementing these styles in these other asset classes, too. However, the long-only smart beta construct makes benefiting from ALL the places Smart Beta works quite difficult.

Using simulations from 1990–2013, we find a significant benefit from combining style premia and implementing them across multiple asset classes. While simulations no doubt paint a rosier picture than what the future may bring, we believe that the results are directionally accurate. Namely, with style premia, diversification across both styles and asset classes can make a meaning-

ful difference (this applies to both single and multi-factor versions). Again, we challenge someone to believe in a Smart Beta factor for a long-only equity tilt, and not believe in that same factor, with similar evidence, in other places.

Conclusion: Smart Beta in Perspective

Smart Beta and style premia investing bring decades of academic research to investors, and can help investors better understand — and potentially more reliably capture — sources of value-added returns. They may be "less new" than sometimes advertised, but still often bring important innovation in the areas of transparency and clarity (though the clarity sometimes comes only after fighting through the marketing).

However, confusion exists on how best to compare and decide among different products. While there's still plenty of room to argue about which are the best factors and best ways to implement and combine them, our effort here is to help clarify the true variety and objectives of these strategies, and the true range of possibilities.

Finally, many investors liken Smart Beta to an index strategy, which often results in manager selection based on fees alone. We caution against this (though we are happy to compete on this basis). While they share some elements with index strategies, such as transparency and rules-based decisions, Smart Beta and style premia are active strategies in the sense of trying to outperform. Though the concepts underlying them may appear straightforward, as Exhibit 1 shows, the amount and quality of active sources of returns varies, and this can determine how well or poorly the portfolio performs. We don't eschew analysis based on fees. Rather, we encourage and advocate for it. Just keep in mind that, as with any strategy, we believe it should be done considering what is purchased, not just what is spent.



Clifford S. Asness, Ph.D.
Managing and Founding Principal



John M. Liew, Ph.D.
Founding Principal



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Footnotes:

1 Note that while we've been critical of the term "smart beta" in other articles (Peeve #6 in "My Top 10 Peeves," Financial Analysts Journal (2014)) here we just fully accept it. Even if it's not the term we'd have chosen, it is being so widely used, we concede. Language is, after all, a democratic process!

2 "The Value of Fundamental Indexing," Institutional Investor October 16, 2006, Cliff Asness.

3 The list does not end here. Some people extend the term Smart Beta to encompass investment strategies like reinsurance or even short-volatility; the connection being their relative passivity and consistency in trading.

4 While most focus on equities, Smart Beta investing can also be applied in other asset classes, including bonds, currencies and commodities. In addition, while most are really focused on one style, some do blend the lines and look at more. We focus on the typical case here: one type of tilt in long-only equities.

5 Well, maybe just one small argument. In a recent essay by Arnott and Kose (2014) they want to, in effect, restrict the term to their method of implementing it. This is particularly bizarre given their version, fundamental indexing, is only a simple value tilt (though Rob originally claimed it was not) and is functionally quite similar to other value tilts as shown by the work of his colleague, Jason Hsu (Chow, Hsu, Kalesnik, Little, "A Survey of Alternative Equity Index Strategies," Financial Analysts Journal (2011)). Renaming the value strategy as "Smart Beta" involved serious chutzpah. Claiming that others already doing said value strategy can't then also call their strategies "Smart Beta," well that involves chutzpah that can only be called sublime.

6 Sometimes such an index will be shown, empirically, to have both a value and a small tilt, and can have positive or negative "alpha" in tests. That is only when it's not being compared with the precise value tilt being used to construct it. This includes not just different ways to define value but also different universes. It all gets more complicated when creators of Smart Beta portfolios broaden their universe to include more stocks than there are in the index they then compare themselves to, thus not an apples-to-apples comparison.

7 A firm more smart-alecky than ourselves might call this the "Fundamental Equation of Fundamental Indexing."

8 Another common Smart Beta factor is low risk (volatility, beta or some other measure or portfolio-construction method). We are also big fans of this tilt, but in a long-only implementation it serves mostly to deliver long-term returns similar to cap-weight indices with less risk, and only generally outperforms with some modest leverage applied. Thus, while we are advocates, we don't analyze it in the same framework as the three we look at here, which all have added return without any need for leverage.

9 Again, we encourage anyone who is analyzing these funds to pay specific attention to the fees paid for the amount of expected gain. Diversifying across many low or negatively correlated factors in separate single-style funds may produce a very attractive gross-of-fee risk-adjusted outperformance. However, it may not look quite as good net-of-fees (both because of fees and diversification being used to lower risk, not increase returns).

10 This is perhaps too strong as you could, of course, hire multiple multi-style managers.

11 In fact, it could be an oddly constrained, low volatility

long/short portfolio that might not be the one you would construct if you were going to build a long/short factor portfolio from scratch.

12 There can and have been other terms for this long/short construction, including "alternative risk premia." In contrast to Smart Beta, again a long-only construct, these long/short implementations generally use derivatives (usually quite "plain vanilla," not complex, derivatives used to apply these same long/short styles in other markets like countries and currencies at lowest cost) and leverage (when you leave out the market you must use some leverage to make diversified portfolios meaningful, and when you implement Smart Beta long/short across things from commodities to fixed income you must use and vary leverage to keep their contributions relatively balanced) to obtain meaningful style exposures. We call such use of leverage, short-selling and derivatives, LSD! We are advocates of it in moderation (the portfolio technique, not the Timothy Leary version) when it is used for the purpose of diversification, and we use this term for clarity (and a bit of cheek).

13 Strictly speaking as we have shown above, a long-only approach can also capture "both sides," but to only a limited extent, as it's naturally constrained in what it can underweight by the asset's weight in the benchmark, which may not correspond to the level of the asset's (un)attractiveness.

14 For multiple decades of evidence across multiple geographies and asset classes, see Asness, Ilmanen, Israel and Moskowitz (2014).

September 2014

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