



THE DEFINITIVE

SMART BETA

ETF GUIDE

SMART BETA ETF GUIDE

Smart beta has emerged as one of the most exciting and hotly debated investment trends of the past 10 years.

Going by many different names—strategic beta, Fundamental Indexing, factor investing and others—smart beta is a catchall term for rules-based, quantitative strategies that aim to deliver better risk-adjusted returns than traditional market indexes.

Today there are hundreds of ETFs—and, if you count institutional assets, hundreds of billions of dollars—benchmarked against smart-beta indexes. This guide is designed to help you understand these strategies, how they work and how they might help you in managing your portfolio.

WHAT IS ‘SMART BETA’?

The best place to start understanding smart beta is to understand what it’s not: traditional, market-cap-weighted indexing.

Traditional, market-cap-weighted indexes like the S&P 500, Russell 2000 or MSCI EAFE Index are the brainchildren of modern portfolio theory. They are unanimously considered the best tool for measuring the performance of the overall market. For those who believe it’s difficult or impossible to do better than the market, they’re also a sound basis for building passively managed portfolios.

These indexes work by assigning weights to companies based on their market value (or capitalization). If you have an index composed of only two companies, for example, one of which is worth \$9 billion and the other \$1 billion, a market-cap-weighted index would assign 90% of the weight to the first company and 10% to the second.

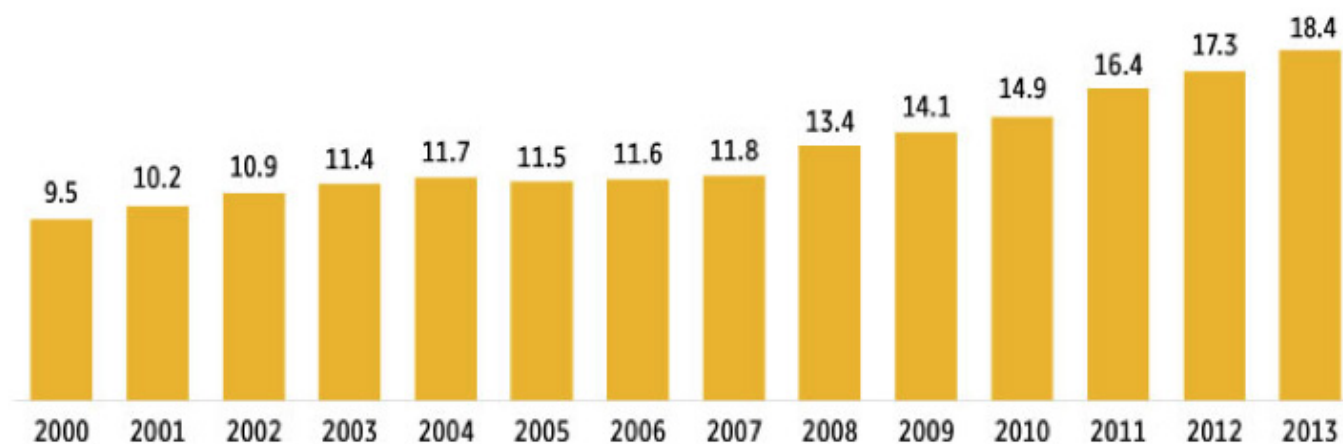
There are market-cap indexes for almost any corner of the market. There are market-cap-weighted indexes covering all publicly traded securities in the globe, and others that focus on narrow niches like Brazilian small-caps. They can cover individual sectors like financial stocks, industries like biotech or thematic investment areas like “water” or “infrastructure.” Even most fixed-income indexes are based on the same principles.

Why Invest in a Market-Cap-Weighted Index?

Mutual funds and exchange-traded funds that track market-cap-weighted indexes have emerged as some of the most powerful investment products ... ever. The percentage of overall mutual fund assets linked to index-based products has increased from 9.5% in 2000 to 18.4% in 2013, according to the Investment Company Institute. The pace of growth shows no signs of slowing down.

Index Equity Mutual Funds' Share Continued to Rise

Percentage of equity mutual funds' total net assets, 2000–2013



Source: Investment Company Institute

The core reason for this rise is simple: Buying an index fund guarantees that you will outperform the majority of other investors.

How can that be true? Because by definition, a total market index fund captures the average return of all investors, before costs. And because the costs of running (or owning) an index fund are lower than any other strategy, after costs, an index fund will outperform the majority of investors.

This logical truism is supported by empirical data. As the Standard & Poor's SPIVA study shows year after year, [the vast majority of active managers underperforms the market](#). If you can guarantee you'll beat most investors and earn the overall market return, how could you say no?

The Case For Smart Beta

The answer, of course, is that you think you can do better.

A huge portion of modern financial academia has been dedicated to trying to beat the market. You can find core research looking for factors, techniques and technologies to beat the market going back decades.

From that core of research, the packaged idea of "smart beta" was first widely publicized by Rob Arnott, Jason Hsu and Philip Moore in their seminal 2005 paper "Fundamental Indexation." The paper compared the returns of market-cap-weighted indexes with indexes that weighted securities based on a number of different "fundamental characteristics": book value, cash flow, revenues, sales, dividends and even the total number of employees at each company.

The authors wanted to test whether indexes weighted by these "Main Street" characteristics would outperform indexes weighted by the "Wall Street" characteristic of market capitalization.

They noted that market-cap-weighted indexes have a systemic flaw: They systematically overweight the most overvalued securities and underweight the most undervalued securities.

This argument is axiomatic. Market-cap-weighted indexes link the weight of a stock in the index with its market value. So as the market comes to “overvalue” any given security, it will achieve a higher and higher weight in the index.

The study found that portfolios constructed along fundamental lines outperformed the S&P 500 by an average of 1.97% per year over a 43-year time frame. The strategies did so with improved Sharpe ratios, the leading measure of risk-adjusted returns. In other words, they were able to deliver returns that more than offset the accompanying risk over the time frame studied.

Return Characteristics of Alternative Indexing Metrics, 1962–2004

Portfolio/Index	Ending Value of \$1	Geometric Return	Volatility	Sharpe Ratio	Excess Return vs. Reference	Tracking Error vs. Reference	Information Ratio	t-Statistic for Excess Return
S&P 500	\$ 73.98	10.53%	15.1%	0.315	0.18 pps	1.52%	0.12	0.76
Reference	68.95	10.35	15.2	0.301	—	—	—	—
Book	136.22	12.11	14.9	0.426	1.76	3.54	0.50	3.22
Income	165.21	12.61	14.9	0.459	2.26	3.94	0.57	3.72
Revenue	182.05	12.87	15.9	0.448	2.52	5.03	0.50	3.25
Sales	184.95	12.91	15.8	0.452	2.56	4.93	0.52	3.36
Dividends	131.37	12.01	13.6	0.458	1.66	5.33	0.31	2.02
Employment	156.83	12.48	15.9	0.423	2.13	4.64	0.46	2.98
Composite	156.54	12.47	14.7	0.455	2.12	4.21	0.50	3.26
Average (ex Composite)	\$159.44	12.50%	15.2%	0.444	2.15 pps	4.57%	0.47	3.09

Source: Research Affiliates, ‘Fundamental Indexation’

... But Can You Capture That Return?

The Fundamental Indexation data is fine in theory, but one question investors asked about this and other smart-beta assertions is whether you can actually capture those returns in real-world portfolios.

As mentioned earlier, the core advantage of market-cap-weighted index funds over actively managed strategies comes down to costs. Index funds are low cost for a variety of reasons:

- **Management Fees:** Because index funds are index based, they do not need as many high-priced analysts and portfolio managers to run them.
- **Low Turnover:** Index funds have very low turnover, only rebalancing when companies move into or out of the index or merge with other companies. This means they don’t have to trade a lot, which helps lower costs.
- **Low Trading Spreads:** Index funds put the highest weights into the largest stocks, which also tend to be the most liquid. As a result, even when they do have to trade, that trading should be relatively cheap to execute.
- **High Investment Capacity:** Index funds have very high “investment capacity,” which is a fancy way of saying that people can put a lot of money into index funds without impacting the market. If you had an index that assigned a high weight to very small companies, trying to buy the stocks in that index would drive the price of those companies up quickly, with negative consequences for investors.

The authors of the Fundamental Indexation paper—and other supporters of smart-beta concepts—argue that well-designed fundamental indexing strategies should be able to capture these core features of traditional indexes, and thus deliver on their promises.

Nonetheless, keeping the efficiency of each strategy in mind is a critical factor when evaluating smart-beta products. More recent research suggests that [efficiency may be the single most critical factor](#) when comparing and contrasting competing strategies.

WHAT KIND OF SMART-BETA STRATEGIES EXIST?

One challenge when talking about “smart beta” is that no one exactly agrees what it means. While Arnott et al.’s “Main Street” metrics represent one angle of attack, other researchers have convincingly stretched the definition to include virtually any index that varies from the traditional weighting and selection schemes.

Does an index that captures only low-volatility stocks count as a smart-beta index? Most people would say yes.

What about one that focuses on momentum? How about one that weights stocks equally? Or that only includes companies whose names start with the letter “A”?

The broadest, most practical definition is probably this: *any index-based strategy that either chooses securities or weights securities for an intentional reason other than their market capitalization, geography or sector classification.*

That is a big tent, but then again, smart beta is a broad term. It broadly breaks down into five major categories.

Capped Weighting Strategies

One of the earliest incarnations of smart-beta strategies came in the late 1980s, when the Japanese equity market soared to absurd valuations. At its peak in 1989, the Japanese equity market represented 51% of the MSCI World Index; by way of reference, it now makes up a bit more than 7%.

Many institutional investors realized that this short-term bubble was unsustainable, and leading index firms launched indexes that capped exposure to the Japanese markets. The most creative of these weighted countries by their GDP rather than their market capitalization, using real-world measures of each country’s size instead of sky-high market valuations. By breaking the link between the price of a security and its weight in the index, these GDP-weighted strategies were an important step in the development of smart-beta indexes.

Today GDP-weighted indexes remain somewhat popular with government bond investors, which otherwise overweight countries with the highest levels of indebtedness against countries with better balance sheets.

Research Into GDP-Weighted Indexes

- [FTSE GDP-Weighted Indexes](#)
- [MSCI GDP-Weighted Indexes](#)
- [PIMCO GLADI Indexes](#)
- [The Case For GDP-Weighted Equities](#)

Equal-Weight Strategies

Equal-weighted strategies are among the most popular and certainly the simplest “smart beta” strategies.

As the name suggests, equal-weighted strategies assign an equal weight to every stock in an index. The S&P 500 Equal Weight Index, for instance, assigns each company in the S&P 500 a weight of 0.2%.

The effect of this is dramatic. While Apple Computer has nearly a 4% weight in the S&P 500, it merits just 0.2% in the equal-weighted version. Conversely, Diamond Offshore Drilling accounts for just 0.01% of the S&P 500, but gets the same weight as Apple in the S&P 500 Equal Weight Index.

Is this better? Worse? Or just different?

It depends on who you ask.

Proponents of equal-weighting strategies suggest that they have a number of advantages. First, by breaking the link between price and weight, they avoid the problem of overweighting overvalued securities by default. Second, because they rebalance (typically on a quarterly basis), they are continually buying low and selling high, creating a positive rebalancing benefit that can fuel returns. They also naturally skew the portfolio toward mid- and small-caps, which can bolster long-term performance if those segments rally.

Detractors make a number of points against equal-weighted strategies. Among them, they note that equal-weighted strategies create unintended and unconsidered factor bets: overweighting particular sectors, industries, countries and so on, simply because of the number of securities in an index.

As of April 15, for instance, the S&P 500 Equal-Weight ETF (RSP) has more than 17% of its portfolio in consumer cyclicals, about 3.3% more than the S&P 500 as a whole. Is that a good thing? A bad thing? Who knows? But it's a thing worth noting.

Beyond this, equal weighting breaks some of the core covenants of traditional indexing. Equal-weighted strategies are inherently high-turnover strategies, virtually requiring some portion of every name in the portfolio to be sold or bought on a quarterly basis. And because they put significant weights into the smallest components of an index, they can face trading challenges and capacity concerns if large amounts of money flood into any particular index.

Still, equal-weighted strategies have become quite popular. The data suggests that these strategies tend to outperform market-cap peers when markets are rising and lag behind when markets hit tough times; net-net, that means they tend to beat the market, since markets tend to rise over time.

Research Into GDP-Weighted Indexes

- [Ten Years Later: Where In The World Is Equal-Weight Indexing Now?](#)
- [Russell Equal-Weight Indexes](#)
- [The Problem With All Things Being Equal](#)

Single-Factor Strategies

The most recent iteration of smart-beta ETFs have focused on isolating one or more “market factors”—stock characteristics that research shows are long-term drivers of return.

These factors include things like:

- Size: Whether companies are large-caps or small-caps
- Style: Whether companies are growth or value stocks
- Momentum: Whether companies are rising in value or falling
- Minimum Volatility: Whether companies are volatile or not

Another approach that has been around for decades is to focus exclusively on stocks that pay dividends. There are dozens of dividend-focused methodologies available on the market today, and hot debates over which approach is best.

Regardless of which factor you choose, historical studies show that long-term exposure to small-cap stocks, value stocks, high-momentum stocks or stocks exhibiting minimum-volatility characteristics can lead to long-term risk-adjusted outperformance. Other studies suggest that these factors add additional risk to investor portfolios, and can create unintended bets and lead to long periods of underperformance.

Regardless of which side you stand on, smart-beta ETFs have put these strategies in the hands of investors at low costs for decades. In fact, many investors don't even think of something as straightforward as a “value” fund as being a factor-fund or smart beta, because they're so common.

Research Into Single-Factor Investing

- [Foundations Of Factor Investing](#)
- [What Is Factor-Based Investing?](#)
- [Factor Investing](#)
- [A Five-Factor Asset Pricing Model](#)
- [Smart-Beta ETF Strategies](#)

Multifactor Strategies

Beyond individual factor funds, other smart-beta strategies combine multiple factors together in an attempt to capture value from each.

A classic combination along these lines was the “Fundamental Index” series launched by the aforementioned Rob Arnott. Leveraging his initial research, Arnott's company, Research Affiliates, launched a series of indexes that combined four “fundamental” factors to reweight the market: book value, cash flow, sales and dividends.

A newer idea is that of “quality.” The MSCI Quality indexes, for instance, search out stocks with high returns on equity, stable earnings and low financial leverage. Stability, Defensive and Dynamic indexes from Russell take other approaches.

Newer multifactor strategies have emerged that mimic more tactical active management strategies. One recent concept combined exposure to low volatility with exposure to stocks that perform well in rising rate environments. Virtually any combination is possible ... and most of them have been tried.

Research Into Multifactor Indexes

- [Deploying Multifactor Index Allocations In Institutional Portfolios](#)
- [Multifactor Investing: A Comprehensive Tutorial](#)
- [Multifactor Investing: Eugene Fama](#)

Proprietary Or Idiosyncratic Strategies

Finally, there are a wide variety of proprietary and/or idiosyncratic quant strategies that fit into the smart-beta concept.

Perhaps the best known of these (and typical for the type) are the “AlphaDex” index strategies that form the basis of a series of ETFs from First Trust. The AlphaDex series follows a complex methodology:

- Take a broad-based universe of stocks
- Rank all stocks based on a series of growth metrics (momentum, sales growth, price/sales) and a series of value metrics (price/book, price/cash flow and return on assets)
- Eliminate the bottom 25% of stocks in each category
- Weight the remaining stocks by quintile, i.e., the top 20% of growth stocks and the top 20% of value stocks get the largest weight; the next 20% gets the next largest weight; and so on.

It sounds complex, but the approach has delivered strong returns in some markets and attracted billions of dollars of investment.

There are dozens of other proprietary or one-off methodologies that fit into this methodology as well, all of which should be investigated on their merits.

Research Into Proprietary Or Idiosyncratic Strategies

- [AlphaDex Methodology](#)

HOW DO YOU EVALUATE SMART-BETA STRATEGIES?

Every mutual fund advertisement or prospectus in the world contains the same message at the bottom: “Past performance is no guarantee of future returns.”

That goes for smart-beta strategies as well.

Nearly all smart-beta ETFs that have launched over the years have come to market with fantastic backtested results. No one launches a product that doesn’t look good in the rearview mirror.

But deciding whether those strategies will deliver in the future is something entirely different. Here are some questions to ask yourself:

A. Does the strategy make sense?

The most robust smart-beta strategies leverage behavioral biases in the market. Understand the conditions under which a particular smart-beta ETF will outperform and those under which it will underperform. Treat backtested results with caution, and understand that many smart-beta strategies will be regime dependent, i.e., they will outperform in one type of market and underperform in another.

B. Is the strategy itself efficient?

Even if you give a particular smart-beta strategy the benefit of the doubt and assume it can outperform the market over the long haul on paper, you have to ask yourself: Can you actually capture those returns?

As mentioned earlier, index investing is one of the lowest-cost forms of investing anywhere. It is therefore fair to ask whether the strategies embraced here are low-friction enough to succeed? How often do they trade? What are the costs of that trading? Is there enough investment capacity to withstand significant inflows without securities trading to a premium?

C. Is the product that contains that strategy efficient?

Even if the strategy is efficient, you have to ask if the product it's wrapped in is efficient. In the early days, many smart-beta ETFs charged exceptionally high fees. Newer products have brought those fees down substantially. Remember that every extra basis point of management fee or trading costs pushes the hurdle for delivering returns that much higher.

Beyond that, ask yourself: Does the fund track its index well? Is it liquid? Even the best strategy is a bad idea if it's wrapped up in a poorly functioning ETF or fund structure.

HOW DO SMART-BETA STRATEGIES FIT INTO A PORTFOLIO?

There are at least as many different ways for smart-beta ETFs to fit into a portfolio as there are smart-beta ETFs. Each comes with its own particular risks and rewards. Among the most popular approaches are:

A. Replacing Core Exposure

Smart-beta ETFs, particularly those fishing from very broad ponds—like the total market of equities—can be used in a buy-and-hold fashion to replace core market-cap-weighted ETFs or actively managed strategies.

B. Augmenting Core Exposure

Smart-beta ETFs can be used to augment existing positions. In some cases, investors will split exposure 50-50, gaining some exposure to market-cap-weighted indexes and some to smart-beta strategies.

C. Dialing Up/Down Risk

Smart-beta ETFs can be used to dial up or down your exposure to the market as a whole. Some advisors will use, say, equal-weighted ETFs when markets are rising, since they tend to have a higher beta than their market-cap weighted peers. They will then shift into traditional cap-weighted indexes or even mega-cap indexes when the markets turn sour.

D. Factor Rotation

Some of the most sophisticated institutional investors in the world use factor-rotation strategies in an attempt to outperform the market. Just as some investors rotate from, say consumer cyclicals to utilities during different parts of the market cycle, others rotate from quality to momentum stocks.

E. Income Orientation

Many investors use factor strategies for the simple purpose of deriving income, whether those strategies select and weight securities by their dividends or some other factor.

WHAT ARE THE RISKS WITH SMART-BETA STRATEGIES?

Any investment strategy has risks, and smart beta is far from the exception. The strategy you bought may have looked good in the rearview mirror, but failed to live up to the hype in the real world. You could take on specific risks against the market—overweighting financial stocks, for instance—and pay the price when that market implodes. You could pay too high a fee, trade that smart-beta strategy poorly or otherwise muck up the implementation.

But beyond these obvious potential flaws, there are two major issues that investors could consider.

A. Behavioral Risk

The biggest risk with smart-beta investments is the potential for behavioral error when investing. Even if you buy into the core argument for smart-beta strategies—that they will deliver long-term outperformance—the critical phrase in that statement is “long-term.” Even the promotional materials for strategies like “Fundamental Indexing” suggest that there are multiyear periods—two, three, four or more years—when those strategies underperform the cap-weighted equity market.

The biggest concern—and some flows suggest this is the case—is that investors will buy smart-beta portfolios when they are at their peak of relative outperformance and sell when they underperform. Buying high and selling low is nearly always a perfect way to lose money.

B. The Observation Effect

Another broadly surfaced concern is the so-called observation effect. This argument suggests that the primary drivers of long-term outperformance for certain factors are behavioral. For instance, the most popular argument for the long-term outperformance of low-volatility stocks is that their listless movements make them unattractive to professional portfolio managers searching for short-term outperformance; in essence, the argument goes, these managers simply overlook them.

But what happens when everyone starts looking? In the past few years, money has flooded into low-volatility ETFs, [leading some to suggest that the trade is “crowded.”](#)

There’s no widespread agreement on the strength or importance of the observation effect, but it is nonetheless worth keeping in mind.

CONCLUSION

Smart-beta ETFs are potentially powerful tools. Used correctly by the right kind of investors, they can provide exposure to factors and strategies that many believe can deliver long-term outperformance. They marry much of the efficiency of index-based investing with the potential for outperformance offered by active strategies, and do so in convenient, low-cost, tax-efficient wrappers.

As with anyone promising a free lunch, however, the old caution applies: Buyer beware. Backtested track records (and, indeed, real-life results) are not always to be trusted, and claims of persistent outperformance should be investigated with a big grain of salt.

The [ETF.com Smart Beta Channel](#) pulls together the best research, news and data on smart ETFs available anywhere on the Web. This guide is a small starting point that investors can use to push their research forward.



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