

Investnet | PMC Strategic Beta Series

The Impact of Factor-Based Investing on the Managed Product Landscape

A background image of a financial candlestick chart with blue bars and white dashed trend lines, overlaid on a dark blue grid.

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1 | INTRODUCTION

Born of a steady evolution of academic theory, factor-based investing has matured into full-blown investability with the advent of indexation and advances in technology and big data. Although the industry continues to grapple with the exact definition of factor-based investing, traditional actively managed portfolios have long provided access to many core tenets of the philosophy. Today, innovative new investment strategies that target these core tenets have placed factor-based investing squarely in the middle of the active-versus-passive debate, prompting a necessary reflection on the meaning of those terms. If what once were thought to be idiosyncratic alpha-generating activities can be conducted now with less costly systematic approaches, what defines active management? Passive management has long referred to intentionally tracking a market capitalization-weighted benchmark, but what about intentionally tracking a non-market capitalization weighted benchmark? These questions have no straightforward answers, but some context around how factor-based investing originated and where the budding space stands today offer some clues.

What's in a Name?

While the identification of style anomalies is decades old in the academic literature, the era of factor-based investing as an investment option for the retail investor is in its relative infancy. Thus, the industry has not yet adopted universal terminology to identify and characterize these new offerings. Investnet views factor-based investing as a subset of a broader universe of quantitative active strategies. As described below, many terms for describing the universe of strategies that fit between active and passive exist across the industry, but the most widely used definitions at least rhyme

Quantitative Active (aka Strategic Beta¹, Smart Beta, Alternative Beta, Enhanced Beta, Structural Beta, Active Beta²):

Quantitative active products rely on a theory of investing that refutes the literature defining the market portfolio as optimal. It refers to systematically managed strategies whose constituent holdings are non-market capitalization-weighted, or meaningfully tilted away from market capitalization weights, using predefined metrics to create a portfolio of securities that differs materially from passive, core market capitalization-weighted indices. These strategies are intended to perform better and/or with less risk than market capitalization-weighted benchmarks. Investnet considers all quantitative active products to be actively managed, although the degree of "activeness" follows a spectrum. Exchange traded products are predominant vehicles for delivery of these philosophies, but quantitative active is vehicle-agnostic, and can also be accessed through traditional and model-delivered separately managed accounts, and multi-asset model portfolios. Systematically managed products that are equally-weighted or yield-weighted are examples of quantitative active approaches.

Factor-based Investing (aka Factor Alpha):

Factor-based investing is a more narrowly defined subset of the quantitative active universe. The key distinction between factor-based investing and quantitative active lies in the chosen weighting scheme. While quantitative active refers to any systematically managed strategy that is not market capitalization-weighted, factor-based investing refers to a systematically managed strategy that weights holdings in large part based on academically vetted, rewarded risk factors. A rewarded risk factor refers to a

Components in a **market capitalization-weighted index** are held in amounts proportional to their market value. For stock indices, market value is calculated as the number of shares outstanding times current share price. For bonds, capitalization-weighting generally relies on the outstanding market value of an issuer's bonds.

Factor-based products allow investors to efficiently capture the premia associated with academically vetted risk factors.

characteristic that has been empirically shown to explain cross-sectional differences in assets' returns and displays statistical significance in a multiple testing framework that corrects for data mining. Factor-based products provide consistent, intentional, and significant exposure to rewarded risk factors. In essence, although factor-based strategies can be considered quantitative active, not all quantitative active strategies are factor-based. Systematically managed strategies that are weighted meaningfully and intentionally on value or quality metrics are examples of factor-based approaches.

Breaking Down Core Index Holdings

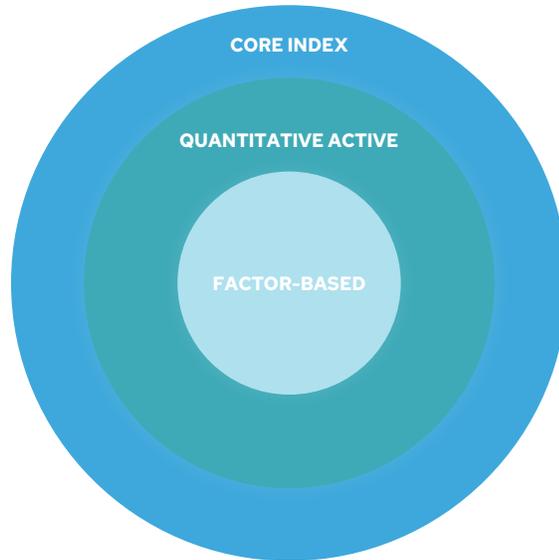


Figure 1

Factor-based investing is a subset of quantitative active, which is itself a subset of core market-capitalization investing.

Various other terms are commonly used when discussing this new landscape. Below are some of the more popular ones.

Bulk Beta:

Bulk beta refers to exposure to market capitalization-weighted benchmarks. Some use the phrase to counter the perception implied by "smart beta", another popular term for strategic beta or quantitative active, that market capitalization weighting is "dumb beta." Although quantitative active strategies may offer improvements over market capitalization benchmarks, in general, they lag their market capitalization counterparts in terms of capacity, investability, turnover, and cost. Both approaches have a place at the table.

Semi-active/Enhanced Index:

These terms have been used to refer to products that attempt to add value over passive market capitalization indices through automated alpha-generating processes, but retain their low-cost advantage over full traditional active management. As the industry has evolved, the terms have become somewhat antiquated, but in many cases may be thought of as precursors to existing quantitative active indexed products.

Refinement of Tradition

Since market capitalization-weighted indices hold every asset at its percentage weight in the overall market, they reflect the market-clearing equilibrium. Any strategy other than passive market capitalization-weighted is therefore arguably an active strategy. Although quantitative active and the important subset of factor-based investing is an active approach, they blur the line between traditional definitions of active and passive. While the underlying theory is active in nature, its implementation contains important elements of traditionally passive management. In light of these nuances, Envestnet has refined its definition of traditional passive, traditional active, and this gray area in between.



Figure 2

Quantitative active and factor-based strategies are considered active management constructs, but they share characteristics with both traditional passive and traditional active strategies.

Traditional Passive Management:

These are indexed investments that are managed in a systematic, objective manner to match the return of a given market capitalization-weighted index on a gross-of-fees basis. To match the benchmark return, these products are created using either full replication, in which all securities in the benchmark are purchased in exactly the same proportion as in the benchmark, or sampling, which uses optimization techniques to identify a subset of holdings in the benchmark that are held in presumably ideal weights to replicate the benchmark's characteristics. These strategies are highly transparent and methodical, and have high capacity and low costs. Relative to active strategies, they tend to be much more diversified. Importantly, not all indexed products are passive, as described below. In 2019, the asset-weighted average fee for traditional index funds was 0.12%, according to Morningstar.³

Not all indexed strategies are passive.

Quantitative Active Management:

As noted above, quantitative active management is a systematic active management approach that seeks to enhance return or minimize risk relative to market capitalization-weighted indices through alternative weighting⁴ schemes, and Envestnet views factor-based investing as an important, distinct subset of this universe. Like their traditional passive counterparts, these strategies tend to be more diversified, more

transparently managed, and less expensive than traditional active strategies. What lands quantitative active in the middle of the traditional active-to-passive spectrum is its attempt to extract successful components of active management and systematically package them at a fee well below traditional active management. In 2019, the asset-weighted average fee for the universe of quantitative active funds defined by Morningstar⁵ was 0.20%. Products managed under a quantitative active framework can be further categorized as indexed or non-indexed in order to better define how they should be analyzed from a due diligence perspective.

Indexed Quantitative Active: Indexed quantitative active strategies are similar to traditional passive strategies in that they are set up to systematically and objectively track an index. The difference lies in the index construction, as indexed quantitative active products seek to track alternatively-weighted indices that are often proprietary to the sponsor. Although constructed in a manner that traditionally has been associated with passive management, indexed quantitative active products are an implementation of active management because of their choice to move away from tracking pure market capitalization-weighted core market indices. Indexed products remain the predominant quantitative active vehicle, although the landscape is evolving as more managers take advantage of nonindexed quantitative active constructs.

Non-Indexed Quantitative Active: Like indexed quantitative active, non-indexed quantitative active strategies are non-market capitalization-weighted and systematically managed. They are untethered to a specific published index, though most track internal quantitative models that may function like an index, and they may be closer to traditional active strategies in terms of number of holdings. They tend to be less transparent than their indexed quantitative active counterparts. Many non-indexed quantitative active products are factor based. These strategies may seek to add some value subjectively over and above factor premia, through either implementation decisions or timing factor exposures, for example.

Traditional Active Management:

This is an idiosyncratic, subjective approach of reviewing assets on an individual, time series basis and selecting and weighting those assets in a manner that seeks to enhance return or minimize risk relative to market capitalization and/or quantitative active indices. Active strategies by nature intentionally introduce greater security specific risk and tend to be more concentrated than passive or quantitative active strategies. As the intent of these strategies is to exploit a skill set specific to the management team, they are usually more expensive than passive or quantitative active options. In 2019, the asset-weighted average fee for active funds was 0.66%, according to Morningstar.⁵

2 | WHERE WE WERE

Investment theory has been continually refined over the last century. The heuristics that once underpinned much of the investment management profession have increasingly given way to more informed and systematic methods, creating an ideal environment for quantitative active methods, and particularly factor-based approaches, to take root.

Indexed Quantitative Active:

- Track non-market cap, typically proprietary indices
- Systematic
- Objective

Non-Indexed Quantitative Active:

- Systematic
 - May introduce some subjectivity
 - Tend to be factor-based
-

The Progression of Modern Investment Management Theories

Ever since Graham and Dodd first laid out a framework in the 1930s that distinguished investing from gambling, the academic study of investment management has flourished. Particularly in the mid-to-late 20th century, groundbreaking academic theories were proposed that laid the foundation for the modern wealth management industry.

In 1952, Harry Markowitz proposed the first clearly specified framework for investment management. He presented a mathematical risk-reward optimization approach to developing optimal portfolios on an efficient frontier. In the 1960s, William Sharpe introduced the concept of the market capitalization-weighted portfolio that represented the weighted combination of all investable securities in the world. His ideas culminated in the capital asset pricing model (“CAPM”). This theory held that if the market is efficient, meaning it has the highest expected-return-to-risk ratio, then investors should want to own it. In the 1970s, Eugene Fama expanded on the idea of the market portfolio by introducing the efficient-market hypothesis, suggesting that because prices reflect all available information, the market portfolio can be beaten only by assuming more risk.

These theories put into motion the indelible dominance of the market capitalization-weighted portfolio, which by extension, implied that active management should not work. Nevertheless, practitioners continued to practice active stock selection unabated, based on a long history of securities analysis, and new research emerged that attempted to reconcile these two views. Later, strategic beta indices were launched that sought to counter the drawbacks of capitalization-weighted benchmarks, such as concentration risk and performance drag from systematically overweighting overvalued stocks and underweighting undervalued stocks. Many authors recognized that in fact the outperformance of these newer indices was due to consistent biases within them, such as a smaller capitalization or value bias, relative to the market capitalization index. A separate branch of literature on style factors was also evolving that demonstrated that stocks with certain characteristics had higher returns than their counterparts. Size and value were prevalent among these findings.

Following Fama’s work, Jack Treynor and Fischer Black suggested that investors should own the market portfolio plus a long/short portfolio consisting of overweights and underweights relative to the market, reflecting active management decisions. Also in the 70s, Black and Scholes called out the low beta anomaly, a precursor to the low volatility risk premia in use today. These theories largely made the case that although most assets are likely priced efficiently in accordance with prior academic works, some securities are mispriced and can be exploited to improve performance.

Factor-based research as we know it today finds its roots in the 1970s as well, as academics sought to fill in the many gaps being identified with the single factor models of their predecessors. A less well-known body of research was produced at the time by Barr Rosenberg, eponymous founder of Barra. Like other authors, Rosenberg hypothesized that rather than Sharpe’s one factor of the market influencing an asset’s return, many factors exuded influence, such as sector specification and style. This approach proved more accurate in forecasting risk than the one factor market model, providing a framework for risk decomposition into categories such as sector, region, and idiosyncratic.

Perhaps the most well-known study on factor research came from work done in the 1990s by Eugene Fama and Kenneth French in developing a three-factor model. They added the size and value factors to the market

Graham and Dodd’s seminal work on value investing published in the early 1930s set the stage for future study of the drivers of realized investment returns.

factor of the CAPM model (and later expanded the model to include profitability and investment). The Fama and French model remains highly regarded, and it is widely used today by practitioners of factor investing.

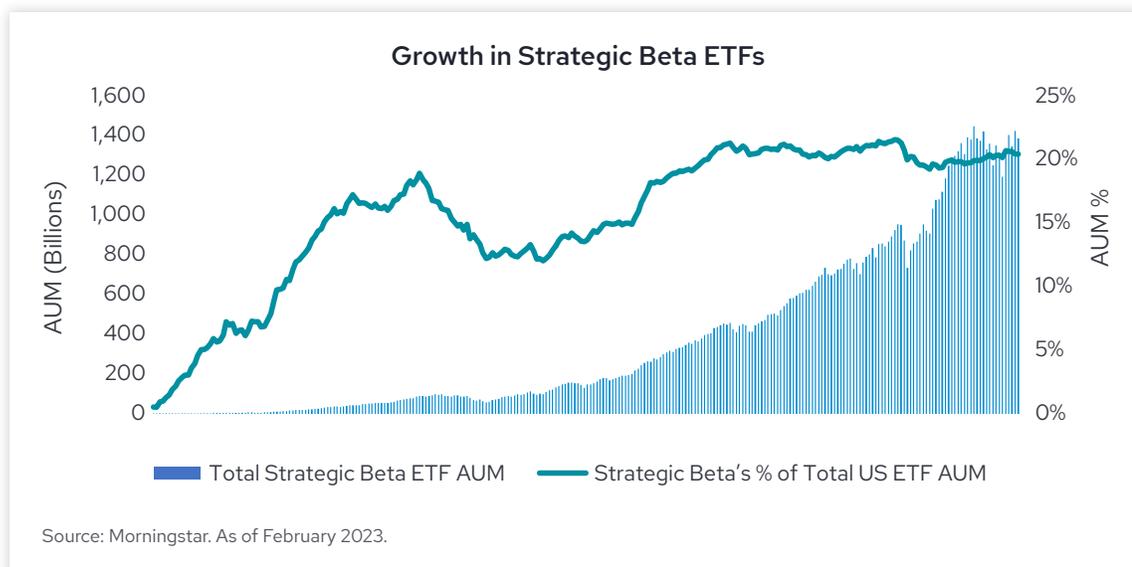
Since the initial introduction of multifactor theories, many authors have worked to expand the list of rewarded risk factors. For example, momentum and profitability/quality have largely been accepted as rewarded factor premia. But the research has not stopped there. Researchers Campbell Harvey and Yan Liu analyzed the literature published over the past four decades by a host of authors in top tier journals. They identified that more than 400 factors have been written about and studied, though many of these fail a test of statistical significance on closer inspection.

Two decades into the century, the relevance of these authors' work on factor-based investing can be seen by the explosion of investable quantitative active and factor-based vehicles.

3 | WHERE WE ARE

Clearly, factor-based investing is not a new concept. Like many of the academic theories of the last century, factor theory was in large part ahead of the necessary computational resources needed to implement it nimbly at scale to the investing public. However, advances in technology and computing resources have paved the way for gathering and analyzing the vast amount of data needed to efficiently implement these more academically robust factor theories.

As importantly, the advent of indexation that began in the latter part of the 20th century created a perfect vehicle for delivering factor exposure at a low cost. Index funds initially were intended to track the performance of market capitalization-weighted indices.⁶ To do this, the fund manager would purchase all the securities in an index (or a representative sample of them) in a systematic manner in the same proportion as the index so that the fund's performance tracked the benchmark. Quantitative active managers took advantage of this cost-effective structure by simply replacing the market capitalization indices with alternatively weighted, typically proprietary, ones. The availability of this ideal product structure proved to be the needed incubator to turn factor-based theory into practice, and the space has continue to grow as a serious contender for the assets of a broad swath of investor types.



Exchange traded products have become the predominant vehicle for implementing indexation methodologies to deliver factor-based philosophies to retail investors. As such, the growth in quantitative active ETFs provides a barometer for interest in this approach in general. As defined by Morningstar⁷, which refers to this universe as “strategic beta” and has a description slightly different but nevertheless very close to Envestnet’s, quantitative active ETFs have grown from obscurity 20 years ago to make up roughly 20% of the total AUM of the ETF market in the US today. As of February, 2023, total AUM of strategic beta ETFs in the US stood at roughly \$1.4 trillion. Morningstar reports that although this universe has grown more rapidly than the broader exchange traded product space over the last decade, the pace of growth has slowed more recently which may be a sign of maturation.⁸

Consistent with the academic focus on equity common factors thus far, most strategic beta offerings are in equity asset classes. Almost 75% of US-listed strategic beta ETFs are found in the five asset classes shown in Figure 5, all of which are equity categories. However, strategic beta vehicles can be found across asset classes, including increasingly within fixed income and alternative categories.

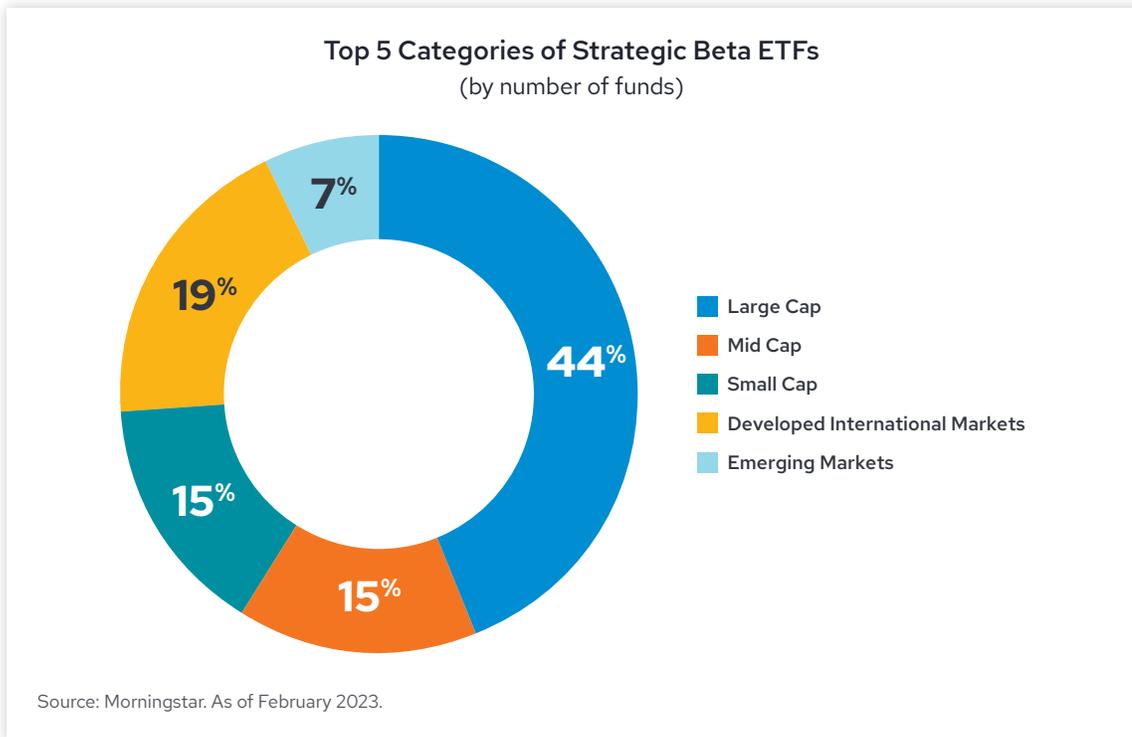


Figure 5

“Strategic beta” launches have to favor asset classes, homogeneity availability of data to implement the philosophies at scale tend to be markets outside

Many major fund companies have launched strategic beta products, but assets are highly concentrated in two behemoths, iShares and Vanguard. Every one of the top 10 strategic beta ETFs by assets under management as of December 31, 2020, were from one of these two firms. Together, these 10 strategies represented roughly 40% of total strategic beta ETF assets, despite representing less than 2% of all strategic beta ETF vehicles available in the universe. Further, over 65% of total strategic beta ETF assets in the US are in a Vanguard or iShares ETF.

Recognizing Rewarded Factors

Factor-based investing is its own unique and growing sub-universe of quantitative active products today. Investnet's QRG Capital Management, Inc. ("QRG") works extensively in this space, providing though leadership on how to approach the world of factor-based investing. They note that one of the most important tasks for practitioners is to define the list of rewarded factors. To avoid the ever-present danger of data mining, only relevant factors that fit the following criteria should be recognized as rewarded risk factors (see Ang (2013) and Hsu, Kalesnik, and Viswanathan (2015)):

- Factors should be justified by academic research. Deep and long-standing literature debating and vetting the factors should produce a compelling rational or behavioral story for why the risk premium should exist, which allows for ample out-of-sample performance.
- Factors should exhibit significant risk premia (otherwise, why do they matter?) that persist through time and across markets. Saying that risk premia should be persistent is somewhat redundant, because, by definition, risk factors are systematic by nature, due either to additional risk or behavioral tendencies, which will persist even if everyone is aware of them.
- Factors should not be susceptible to perturbations in definition. For example, changing the "value" stock characteristic from P/B to P/E, or changing the "momentum" definition from return on last 12 months to return on last nine months, should not significantly alter the resulting performance. If the performance of a risk factor is vulnerable to perturbations in definition, it is likely that we are encountering a data mining problem.
- The factor risk premium should be implementable in liquid traded instruments, because otherwise (i.e., if we are buying illiquid investments), we might be rewarded for taking on the additional risk of investing in illiquid investments (liquidity premium) rather than for our exposure to a particular risk factor.

After applying the above four criteria to the multitude of suggested factors, the list of relevant factors withers to a mere handful. QRG has resolved that the following factors are worthy of recognition: value, momentum, quality (which subsumes dividend payout, growth, profitability, and safety), low volatility/low beta, size, and of course, the market. Systematic products that seek to capture these rewarded risk premia will continue to increase the efficiency of portfolio construction for investors.

4 | WHERE WE ARE GOING

Propelled by academic vetting and increasing investor buy-in, the momentum behind factor-based investing shows no sign of reversal, and we expect the impact to be felt across the investment management landscape.

- The alpha thesis of many traditional active management products is undoubtedly being encroached upon by factor-based strategies. Although they may not have referred to their activities as factor-based investing, most traditional active strategies have long sought to exploit rewarded risk factors, such as high quality, value, and momentum, through idiosyncratic security selection. The advent of less expensive, more transparent

A rewarded risk factor is academically vetted, persistent across time and markets, insusceptible to logical differences in definition and readily implementable.

The most widely recognized and rewarded factors include Value, Quality, Momentum, Size and Low Volatility

systematic approaches to capture these premia has effectively transformed many of these “alpha-generating” activities into lower-cost beta. Successful active management in the traditional sense remains potentially viable for many reasons, including informational inefficiencies and behavioral anomalies. However, the bar to show true skill is higher, as investors no longer need to pay active fees for exposure to rewarded risk factors.

- Not only has factor-based investing led to a need for a better understanding of traditional active strategies, but it has also opened the door to a reevaluation of optimal portfolio construction methods. Investors today have more choices in building their portfolios. Given the costs and active risks associated with traditional passive, quantitative factor-based and traditional active management, they must consider the optimal allocation to each given their fee and risk budgets.
- As the number of quantitative active and factor-based products exploded, so has the complexity of the indices that factor-based strategies track. Factor-based investing is also being implemented more frequently outside the transparent index structure in non-indexed approaches. On top of that, many quantitative active strategies seek additional alpha above risk premia with subjective overlays such as factor tilts and implementation decisions. These trends point to a heavier due diligence burden in finding high conviction offerings.

Factor-based investing is here to stay. Having muscled its way onto the scene, the pervasive effects of this theory and the ability to implement it less expensively at scale will continue to have a direct impact on many engrained aspects of the investment industry.

5 | APPENDIX

Notes

1. “Beta” earned its place in the investment vernacular from academic literature that relied upon the term as a statistical description of an asset’s exposure to a market capitalization-weighted benchmark. Although the term retains that definition in academia and many other spheres, over time it has been used colloquially more and more to refer to a market or an index in general rather than a specific exposure.
2. Note the similar term “ActiveBeta®” is a registered trademark of the Goldman Sachs Corporation.
3. “Morningstar’s Annual Fund Fee Study Finds Investors Saved Nearly \$6 Billion in Fund Fees in 2019.” 2020, June 9. Morningstar. Retrieved November 15, 2020 from www.morningstar.com.
4. “Alternative weighting” in this context refers to a weighting scheme that is not simple market capitalization-weighting.
5. “Morningstar’s Annual Fund Fee Study Finds Investors Saved Nearly \$6 Billion in Fund Fees in 2019.” 2020, June 9. Morningstar. Retrieved November 15, 2020 from www.morningstar.com. Morningstar refers uses the term “strategic beta” to describe its universe of quantitatively active funds.
6. The first indexed approach was launched by Wells Fargo Investment Advisors for an institutional client in 1971 for. It followed a philosophy inspired by contemporary academia and created a portfolio of the roughly 1500 stocks that traded on the New York Stock Exchange, although interestingly, the holdings were equally weighted rather.
7. Johnson, Ben. “The Strategic Factor of Smart Beta.” 2014. www.morningstar.com
8. Bryan, Alex, Jackie Choy, Kongkon Gogoi, Ben Johnson, Kenneth Lamont, 2020. “A Global Guide to Strategic-Beta Exchange-Traded Products.” www.morningstar.com

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Disclosure:

Index Performance is presented for illustrative purposes only and does not represent the performance of any specific investment product or portfolio. An investment cannot be made directly into an index.

The Russell 1000 Index measures the performance of the largest 1000 US companies in the Russell 3000 Index representing approximately 92% of the investable US equity market.

The Russell 3000 Index measures the performance of the largest 3000 US companies representing approximately 98% of the investable US equity market.

The Barclays US Aggregate Bond Index is a market capitalization-weighted index of investment-grade, fixed-rate debt issues, including government, corporate, asset-backed, and mortgage-backed securities, with maturities of at least one year.

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