

A Global Guide to Strategic-Beta Exchange-Traded Products

Morningstar Manager Research

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Alex Bryan, CFA
Director of Manager Research
Passive Strategies—North America
alex.bryan@morningstar.com

Jackie Choy, CFA
Director of Manager Research
Passive Strategies—Asia
jackie.choy@morningstar.com

Kongkon Gogoi
Senior Manager Research Analyst
Passive Strategies—Australia
kongkon.gogoi@morningstar.com

Ben Johnson, CFA
Director of Global ETF Research
ben.johnson@morningstar.com

Kenneth Lamont, CAIA
Senior Manager Research Analyst
Passive Strategies—Europe
kenneth.lamont@morningstar.com

Executive Summary

In September 2014, Morningstar introduced its naming convention and taxonomy for the fast-growing universe of strategic-beta exchange-traded products, or ETPs. In this year's guide, we provide an update on the state of the global strategic-beta ETP landscape, framed using our updated strategic-beta and index attributes, which were launched in Morningstar's global database in the fourth quarter of 2018.¹

Over the past decade-plus, the strategic-beta space has grown more rapidly than the broader ETP market. Strategic-beta ETPs' growth has been driven by new cash flows, new launches, and the entrance of new players. However, more recently, these products' market-share gains have stalled. This market segment is showing signs of maturity. New product launches have dwindled, and fees have come under pressure.

The coronavirus crisis has roiled markets. This episode reinforced important lessons about strategic-beta approaches to portfolio construction and taught some new ones about how these products perform in stressed markets. Strategic beta is an active approach to portfolio construction. Strategic-beta ETPs' performance through recent market volatility underscores the fact that—like discretionary active portfolios—no two of these products are created equal. Our analysis of their performance during the first five months of 2020 reveals the differences between them and emphasizes the importance of thorough due diligence when selecting from the strategic-beta ETP menu.

Key Takeaways

- As of Dec. 31, 2019, there were 1,422 strategic-beta ETPs worldwide, with collective assets under management of approximately \$1.09 trillion.
- Assets in these products grew 36.1% in 2019. Top-line growth was buoyed by rallying equity markets, as the Morningstar Global Markets Index gained nearly 27%.
- Strategic-beta ETPs amassed \$93.2 billion in net new cash flows, translating into organic growth of 11.6%.

¹ See the Appendix for a full list of attributes and definitions.

- The slowing pace of new product launches and intensifying fee competition are signs that the space is maturing.
- The number of strategic-beta ETPs increased just 1.2% in 2019. In the United States, the number of new product launches was the lowest since 2010 and, for the first time ever, was eclipsed by the number of strategic-beta ETPs that were shuttered. This is clear evidence that the menu has been oversaturated.
- A crowded and competitive landscape will continue to put downward pressure on fees.
- Exchange-traded products belonging to Morningstar's Dividend strategic-beta group continue to rank at the top of the list of the most popular strategic-beta ETPs. This should come as little surprise when considered in the context of the prevailing low interest-rate environment and secular growth in the demand for income.
- Low-volatility ETPs continued to gain market share in the U.S., Europe, and Canada in 2019. Across these three geographies, funds belonging to Morningstar's Risk-Oriented strategic-beta group brought in nearly \$24.8 billion in net new cash flows—double the amount they raked in during 2018.
- The benchmarks underlying new strategic-beta ETPs keep getting more complex. As more traditional, broad-based market-cap-weighted exposures and single-factor ETPs have proliferated, ETP providers have introduced more multifactor ETPs, factor-timing products, and new variants of single-factor exposures.
- As these strategies become more complicated, the due-diligence burden on investors increases. To help investors in this process, Morningstar has assigned Analyst Ratings to 130 strategic-beta ETPs worldwide. These ETPs held more than \$775 billion in investors' money as of Dec. 31, 2019, representing 71% of the total amount invested in global strategic-beta ETPs.
- Strategic-beta ETPs' performance through the first five months of 2020 was generally lackluster. The bets many of them tend to make on smaller companies with lower valuations weren't rewarded during this period.
- Looking at the performance of some of the best- and worst-performing strategic-beta ETPs through the lens of the Morningstar Factor Profile reveals important differences in the makeup of funds that are often similarly labeled and underscores the importance of thorough due diligence.

The Global Strategic-Beta ETP Landscape

Global Summary

As of Dec. 31, 2019, there were 1,422 strategic-beta ETPs, with collective AUM of approximately \$1.09 trillion worldwide.² Strategic-beta ETPs have made inroads against their peers that are benchmarked to more-traditional indexes.

While regional markets are at varying stages of development, some common themes cut across geographies. First, ETPs belonging to Morningstar's Dividend strategic-beta group continue to be the most popular grouping of strategic-beta ETPs in most regions. This should come as little surprise when considered in the context of the prevailing interest-rate environment. Investors around the globe have piled into dividend-paying equities, shunning the low (or negative) real yields offered by issues from developed-markets sovereigns. Also, low-volatility ETPs gained market share in the U.S., Europe, and Canada in 2019. Across these three geographies, funds belonging to Morningstar's Risk-Oriented strategic-beta group brought in nearly \$24.8 billion in net new cash flows—double the amount they raked in during 2018.

There is a clear positive relationship between the adoption of strategic-beta ETPs and the age of each region's ETP market, and its asset-management and financial-services industries more generally. The U.S. is home to a very large and mature asset-management industry, and has the second-oldest (next to Canada's) ETP market in the world. Thus, the fact that U.S. strategic-beta ETPs account for 88% of total assets in this grouping is only natural.

As for fees, strategic-beta ETPs tend to charge expense ratios that are more competitive than their comparable actively managed peers (though in some cases only marginally so). That said, in many cases they take a toll many multiples of that levied by their more-ordinary passive peers. We expect fees charged by strategic-beta ETPs will come under increased pressure as providers seek to stand out in a crowded market where many investors are having a difficult time differentiating between seemingly similar strategies.

Another commonality among the markets we examined is the increasing complexity of the benchmarks that underlie newer ETPs. This is part of the natural evolution of the market and one that has already played out in the slicing and dicing of traditional market-capitalization-weighted exposures along the lines of region, country, sector, subsector, and so on. As these strategies become more complex, investors' due-diligence burden grows. This has been further complicated by a rise in the instance of changes to the methodologies of the indexes underpinning these funds.

² Note that all monetary figures in this report are shown in U.S. dollars, unless stated otherwise. All data is as of Dec. 31, 2019.

To assist investors in this process, Morningstar has assigned Analyst Ratings to 130 strategic-beta ETPs worldwide, which collectively held more than \$775 billion in investors' money as of Dec. 31, 2019—representing 71% of the total amount invested in global strategic-beta ETPs.

Exhibit 1 The Global Strategic-Beta ETP Landscape in 2019

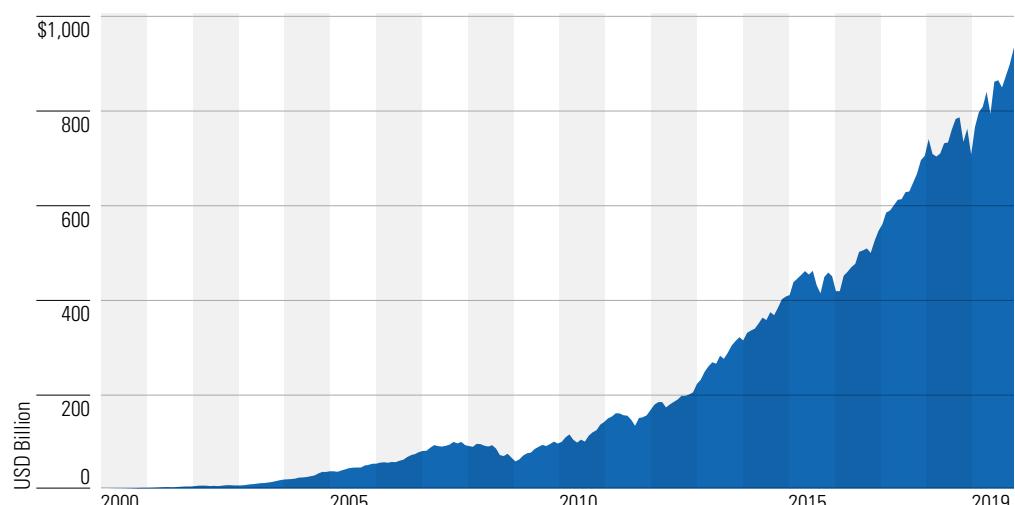
| | Assets 2019 (USD Bil) | Global Market Share (%) | Assets 2018 (USD Bil) | One-Year % Change | 2019 Flows (USD Bil) | Organic Growth % | # of ETPs 12/2019 | # of ETPs 12/2018 | One-Year % Change |
|--------------|--------------------------|----------------------------|--------------------------|----------------------|-------------------------|---------------------|----------------------|----------------------|----------------------|
| U.S. | 960.6 | 88.1 | 707.6 | 35.8 | 76.3 | 10.8 | 639 | 647 | -1.2 |
| Canada | 15.4 | 1.4 | 11.3 | 37.0 | 1.3 | 11.5 | 157 | 145 | 8.3 |
| Europe | 79.1 | 7.2 | 57.9 | 36.6 | 9.5 | 16.4 | 381 | 402 | -5.2 |
| Asia-Pacific | 34.5 | 3.2 | 24.1 | 43.2 | 5.9 | 24.6 | 218 | 190 | 14.7 |
| Other | 1.2 | 0.1 | 0.78 | 59.5 | 0.2 | 28.0 | 27 | 21 | 28.6 |
| Total | 1,090.9 | — | 801.5 | 36.1 | 93.2 | 11.6 | 1,422 | 1,405 | 1.2 |

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

United States

The U.S. is home to far and away the largest and most diverse stable of strategic-beta ETPs. The U.S. market accounts for 45% of the total number of strategic-beta ETPs, which together account for 88% of global assets. This should come as little surprise given the overall size and maturity of the U.S. asset-management and financial-services industries. The first generation of strategic-beta ETPs came to the U.S. market in May 2000. The iShares Russell 1000 Growth IWF and iShares Russell 1000 Value IWD ETFs were not only the first but also are presently two of the four largest strategic-beta ETPs. These funds represented “first-generation” strategic beta, introducing systematic style tilts to a market that was already well versed in a style-based approach to equity investing. Fast forward more than 19 years to Dec. 31, 2019, and strategic-beta ETPs numbered 639 and had collective assets of \$960.6 billion.

Exhibit 2 U.S. Strategic-Beta ETP Asset Growth

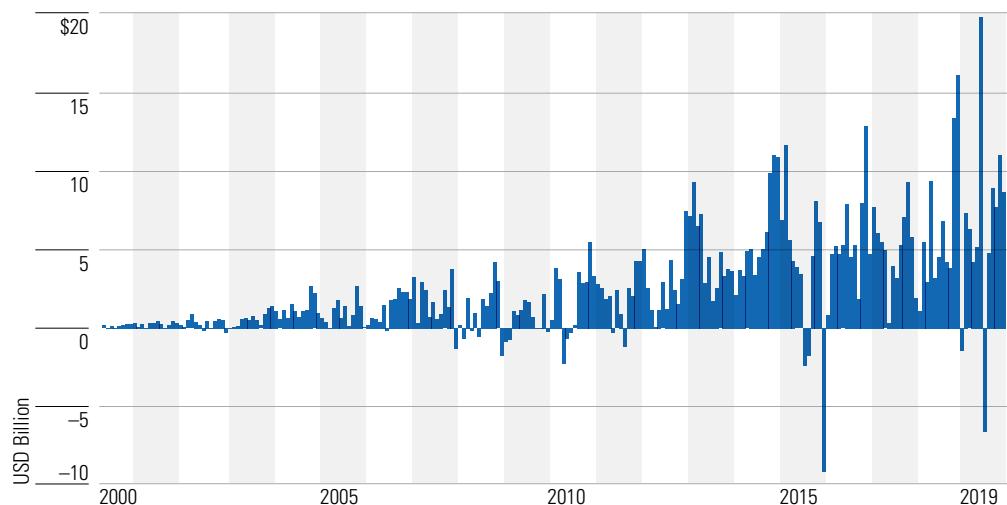


Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Grow With the Flow

Growth in strategic-beta ETPs has been driven primarily by new adopters across the investor spectrum, ranging from individuals to state pension funds. Approximately 65% of the aggregate growth in strategic-beta ETP assets dating back to May 2000 has come from net new inflows, while the remaining 22% reflects asset appreciation. In many ways, the U.S. market was well primed for strategic beta. The Morningstar Style Box had popularized the concept of style investing among U.S. investors by the time the first strategic-beta ETPs were launched in 2000. At that time, ETPs had been around for about seven years, though they were still novel to many investors and being used predominantly as trading vehicles. Also, within the advisor space, there were pockets of familiarity with the concept of factors owing in part to a rapidly growing and loyal army of Dimensional Fund Advisors³ converts who were well versed in size, value, and momentum.

Exhibit 3 U.S. Strategic-Beta ETP Monthly Asset Flows



Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

³ As Dimensional Fund Advisors' funds do not track indexes by mandate, we exclude them from our definition of strategic beta. That said, the factors the firm sets out to exploit, the systematic manner in which it sets out to exploit them, and the fact that most of its funds levy low fees relative to peers make them—and other similar strategies from their competition—close cousins.

Until recently, growth in assets in strategic-beta ETPs outpaced that experienced by the broader ETP industry. Strategic-beta ETPs' share of the overall ETP marketplace climbed to approximately 21.7% as of the end of 2019 from nil in 2000, but their market-share gains have stalled in the past five years. This owes largely to the fact that non-strategic-beta ETPs have more recently been earning their fair share of net new flows.

Exhibit 4 Strategic-Beta ETPs' Share of the Overall U.S. ETP Market (%)



Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Roll Out the Betas

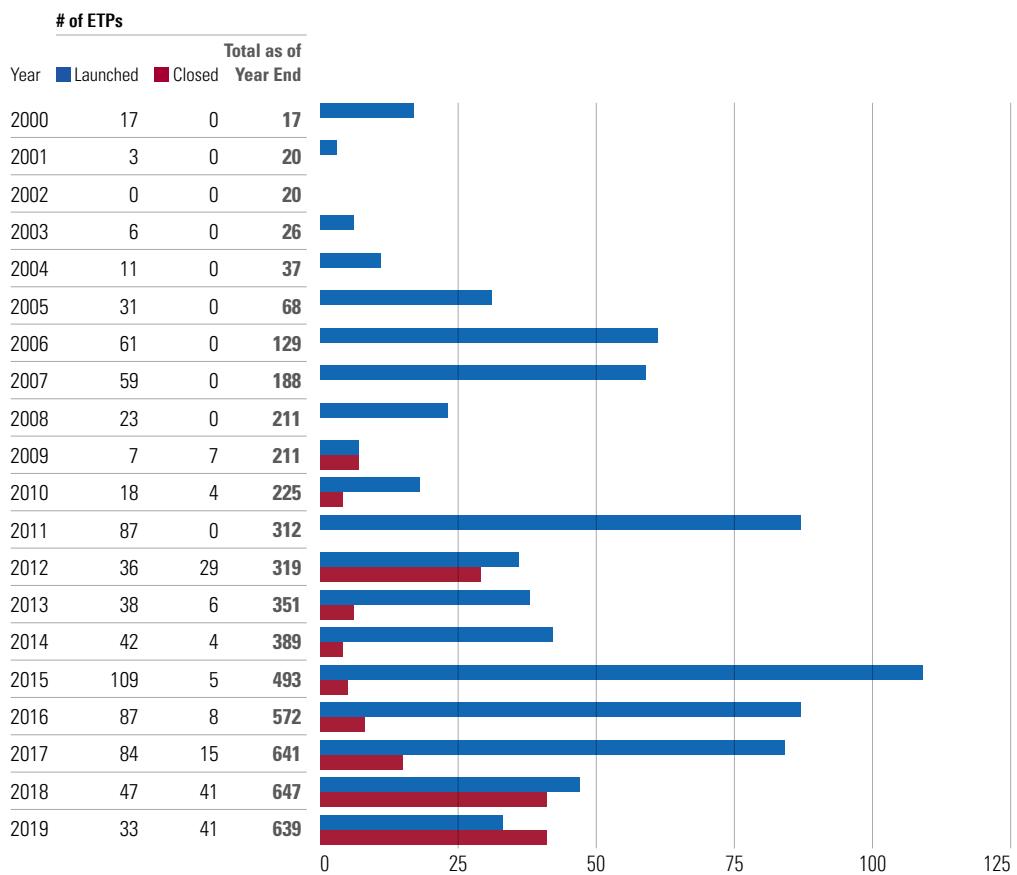
The first generation of strategic-beta ETPs delivered straightforward style tilts. Subsequently, there was a flurry of launch activity from 2005 to 2007, as strategic-beta-focused ETF providers rolled out full families of more-complex strategies. These included Invesco's (then known as PowerShares) roster of Dynamic and RAPI funds, WisdomTree's suite of dividend-screened/weighted funds, and First Trust's AlphaDex lineup. New launch activity hit a lull from 2008 to 2010 thanks to the global financial crisis but picked up once again in 2011 as providers moved to cover new bases (low-volatility strategies, for example).

New launches accelerated in 2015, and from 2015 through 2017 a total of 280 new strategic-beta ETPs were launched, representing 44% of the 639 products that were on the menu as of the end of 2019.

New product launches slowed considerably in 2018 and 2019. There were 33 new strategic-beta ETPs rolled out in the U.S. last year, representing a 30% year-over-year decline in new launches and a 70% decline from the 2015 record. While launches have slowed, closures have accelerated. In

2018 and 2019, 41 strategic-beta ETPs were shuttered. In 2019, closures eclipsed launches for the first time ever. We view this as a clear sign that the menu has been oversaturated.

Exhibit 5 Number of Surviving U.S. Strategic-Beta ETPs by Vintage



Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Simple Tastes

While complexity has been on the rise, investors' preferences remain fairly plain-vanilla. Classifying the current roster of U.S. strategic-beta ETPs according to their strategic-beta groups shows that ETPs offering exposure to straightforward strategies (value, growth, dividend-screened/weighted) accounts for about 71% of strategic-beta ETP assets. Dividend strategies have proved particularly popular in the context of a yield-starved investment environment and investors who are placing a greater emphasis on investment income as they move from the consolidation stage of their investment lifecycle to the decumulation stage. Funds belonging to the Morningstar Dividend strategic-beta group reclaimed the top spot in the assets league table as of the end of 2019, as they accounted for nearly one third of net inflows into strategic-beta ETPs. The flows into ETPs belonging to the Risk-Oriented and Quality strategic-beta groups are also noteworthy. Investors have flocked to these funds as a means of maintaining equity exposure while reducing their portfolios' sensitivity to movements in the stock market.

Exhibit 6 United States Ranking of Strategic-Beta ETPs by Strategic-Beta Group

| Strategic-Beta Group | # of ETPs | Assets (USD Bil) | % of Assets | 2019 Flows (USD Bil) | % of 2019 Net Flows |
|----------------------|-----------|------------------|-------------|----------------------|---------------------|
| Dividend | 138 | 230.3 | 24.0 | 24.5 | 31.9 |
| Value | 47 | 224.6 | 23.4 | 7.2 | 9.4 |
| Growth | 39 | 224.3 | 23.4 | 2.7 | 3.5 |
| Risk-Oriented | 49 | 88.2 | 9.2 | 22.3 | 29.1 |
| Multifactor | 171 | 65.6 | 6.8 | 7.4 | 9.7 |
| Fundamentals | 29 | 37.0 | 3.9 | 1.9 | 2.5 |
| Other | 48 | 31.4 | 3.3 | 1.9 | 2.4 |
| Quality | 17 | 26.6 | 2.8 | 10.4 | 13.5 |
| Momentum | 38 | 18.7 | 1.9 | -0.8 | -1.1 |
| Fixed Income | 37 | 10.3 | 1.1 | 0.3 | 0.4 |
| Commodity | 26 | 2.9 | 0.3 | -1.0 | -1.3 |

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

By Provider

The duo of iShares and Vanguard accounts for just 13% of the total number of strategic-beta ETFs but has amassed 65% of the assets in this universe. Their suites of strategic-beta ETFs align closely with the rankings of the most popular secondary attributes. Specifically, their dividend-screened/weighted, value, and growth funds are among the largest in this universe.

Occupying the third spot among the top five is an ETF provider that has made strategic beta its calling card: Invesco. The firm bolstered its roster of strategic-beta ETFs in recent years with its acquisitions of Guggenheim's and Oppenheimer's ETF ranges. The fourth spot has been claimed by Schwab's ascendant ETF lineup, which features fundamentally weighted funds that have a prominent place in the firm's Schwab Intelligent Portfolios. State Street Global Advisors and First Trust follow close behind Schwab.

Exhibit 7 United States Largest Strategic-Beta ETP Providers

| Provider | Assets (USD Bil) | # of ETPs | Market Share (%) |
|----------------|------------------|-----------|------------------|
| iShares | 382.4 | 64 | 39.8 |
| Vanguard | 240.5 | 22 | 25.1 |
| Invesco | 90.1 | 141 | 9.4 |
| Charles Schwab | 48.3 | 9 | 5.0 |
| State Street | 46.3 | 25 | 4.8 |
| First Trust | 43.1 | 77 | 4.5 |
| WisdomTree | 36.4 | 46 | 3.8 |
| Goldman Sachs | 12.2 | 10 | 1.3 |
| ProShares | 9.2 | 10 | 1.0 |
| Flexshares | 8.7 | 20 | 0.9 |
| Others | 42.7 | 215 | 4.4 |

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

By Fund

The top 10 strategic-beta ETPs by assets account for about 38% of assets in this corner of the ETP market. Again, cut-and-dried value, growth, and dividend-screened/weighted approaches dominate their ranks. There is, however, a notable exception: iShares Edge MSCI Minimum Volatility USA ETF **USMV**. The fact that **USMV** has quickly ascended to the top of the pile is indicative of the trendiness that can drive short-term flows in this corner of the market—making it, of course, no different from the market at large. **USMV** gathered \$27.8 billion in net new cash flows from its October 2011 inception through the end of 2019. In 2019, **USMV** had net inflows of \$12.5 billion.

Exhibit 8 United States Largest Strategic-Beta ETFs

| Name | Ticker | Inception Date | Strategic-Beta Group | Expense Ratio (%) | Assets (USD Bil) | 2019 Flows (USD Bil) |
|--|--------|----------------|----------------------|-------------------|------------------|----------------------|
| Vanguard Value ETF | VTY | 1/26/04 | Value | 0.04 | 55.8 | 4.6 |
| iShares Russell 1000 Growth ETF | IWF | 5/22/00 | Growth | 0.19 | 49.4 | -2.1 |
| Vanguard Growth ETF | VUG | 1/26/04 | Growth | 0.04 | 46.5 | 2.1 |
| iShares Russell 1000 Value ETF | IWD | 5/22/00 | Value | 0.19 | 42.6 | -3.2 |
| Vanguard Dividend Appreciation ETF | VIG | 4/21/06 | Dividend | 0.06 | 42.1 | 4.6 |
| iShares Edge MSCI Minimum Volatility USA ETF | USMV | 10/18/11 | Risk-Oriented | 0.15 | 37.2 | 12.5 |
| Vanguard High Dividend Yield ETF | VYM | 11/10/06 | Dividend | 0.06 | 30.2 | 4.1 |
| iShares S&P 500 Growth ETF | IVW | 5/22/00 | Growth | 0.18 | 24.8 | -1.0 |
| SPDR S&P Dividend ETF | SDY | 11/8/05 | Dividend | 0.35 | 20.0 | 0.4 |
| iShares Select Dividend ETF | DVY | 11/3/03 | Dividend | 0.39 | 18.7 | -0.9 |

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Keeping an Eye on Expenses

The fees levied by strategic-beta ETPs are, on average, competitive with those charged by the ETP field at large as well as the universe of ETPs excluding strategic beta. Of course, fees should be considered on a case-by-case basis. For example, BNY Mellon US Large Cap Core Equity ETF BKLC, which tracks the market-capitalization-weighted Dow Jones U.S. Broad Stock Market Index, charges an annual fee of just 0.03%. Schwab Fundamental US Broad Market ETF FNDB, which tracks the Russell Fundamental U.S. Index, levies a fee of 0.25%—a much higher hurdle relative to its more-ordinary sibling. In aggregate, it is clear that across all three groupings—all else equal—investors prefer less pricey fare, as indicated by the fact that the asset-weighted average expense ratios tend to be lower than the simple averages. With that said, there are clearly some outlying ETPs that charge fees comparable to those of active managers. Investors should take extra care to assess whether such tolls are justifiable for an index-tracking product.

Among the 563 strategic-beta ETPs that have reported annual report net expense ratios to Morningstar's database, 120 (21%) saw their fees decrease during their 2019 fiscal year. The median decline in fees among this group was 0.02%. Meanwhile, 44 (8%) strategic-beta ETPs saw their fees inch higher, by a median level of 0.02%. The toll taken by the remaining 398 (71%) products remained unchanged.

We expect that fees for strategic-beta ETPs will trend lower with time. We've already seen instances of proactive fee cuts. Notable among 2019 price-cutters were stalwarts like Vanguard, which reduced fees for its S&P and Russell value and growth ETFs, and upstarts like Alpha Architect, which pared fees for its focused single-factor funds. These most recent volleys are unlikely the last to be launched in a fee fight that's been going on for years.

Exhibit 9 United States Fees Under the Microscope

| | Average | Combined (%) | Equity (%) | Fixed Income (%) | Commodities (%) | Alternative (%) | Allocation (%) |
|-------------------------------|----------------|--------------|------------|------------------|-----------------|-----------------|----------------|
| All ETPs | Asset-Weighted | 0.19 | 0.18 | 0.17 | 0.38 | 1.02 | 0.70 |
| | Equal-Weighted | 0.54 | 0.47 | 0.32 | 0.62 | 0.97 | 0.87 |
| ETPs ex-Strategic-Beta | Asset-Weighted | 0.19 | 0.16 | 0.17 | 0.40 | 1.02 | 0.71 |
| | Equal-Weighted | 0.59 | 0.50 | 0.32 | 0.58 | 0.95 | 0.88 |
| Strategic-Beta | Asset-Weighted | 0.22 | 0.22 | 0.34 | 0.82 | 1.94 | 0.61 |
| | Equal-Weighted | 0.44 | 0.42 | 0.27 | 0.78 | 2.21 | 0.65 |

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Canada

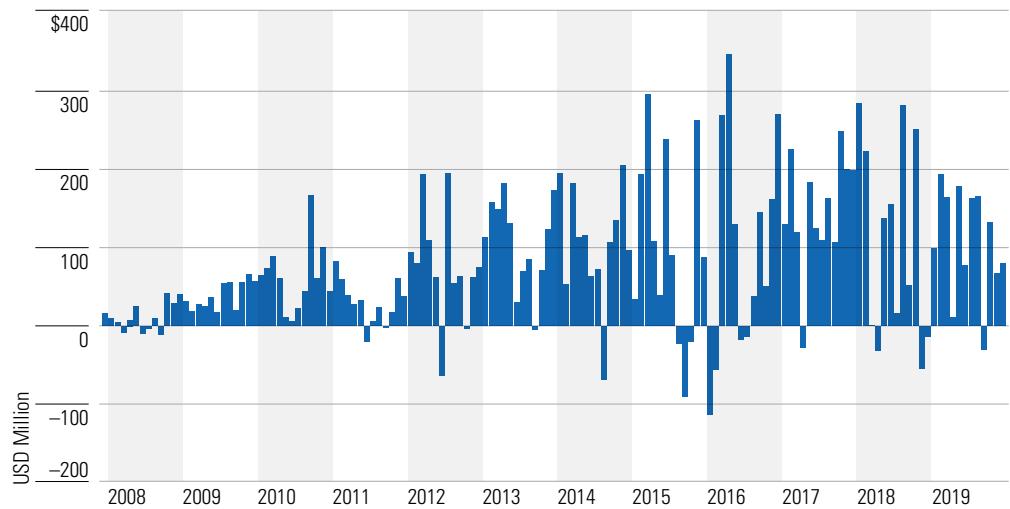
In absolute terms, Canadian strategic-beta ETPs have grown considerably over the past 12 years. However, these funds still represent a small part of the market and their market share hasn't grown in years. Broad, market-cap-weighted index, and actively managed ETPs dominate this market.

Assets invested in Canadian strategic-beta ETPs grew from \$518 million to \$15.4 billion between the end of December 2007 and December 2019. During that time, the number of strategic-beta funds on the market ballooned from 13 to 157. So, it's not surprising that most of the growth in assets came from inflows, which totaled nearly \$12 billion, representing about 9.7% of all flows into Canadian ETPs. Inflow-driven growth has been consistent. Aggregate flows into these funds were positive in 122 out of the 144 months over the 12 years through December 2019.

Exhibit 10 Canada Strategic-Beta ETP Asset Growth



Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Exhibit 11 Canada Strategic-Beta ETP Monthly Asset Flows

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Despite their growth, strategic-beta ETPs still claim a small share of the Canadian market. At the end of 2019, they represented about 9.8% of the total Canadian ETP market by assets, up from 2.8% at the end of 2007. However, their market share has held steady at around 10% since April 2014. On average, strategic-beta funds are smaller than other ETPs. So, they represent a larger share of the market by count (20.7%) than by assets.

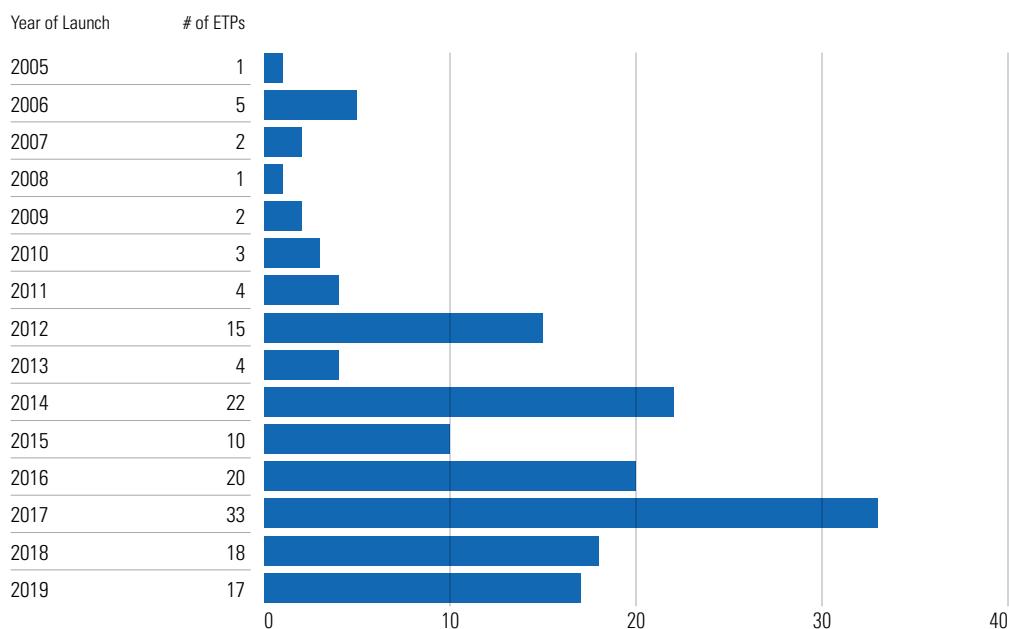
Exhibit 12 Strategic-Beta ETPs' Share of the Overall Canadian ETP Market (%)

Source: Morningstar Direct. Data as of 12/31/19.

Many of these funds have not been around long, which may help explain why they tend to be on the smaller side. Of the 157 strategic-beta ETPs listed in Canada at the end of 2019, 98 were launched after 2014. Since these funds express active bets relative to the market, many investors wait until these funds have established a multiyear record of success before investing, much as they tend to treat actively managed funds.

In 2019, there were 17 new strategic-beta funds launched, which was close to the previous year's figure. This was an eclectic group of funds that included risk-oriented, quality, and multifactor strategies, among others.

Exhibit 13 Canada Number of Surviving Strategic-Beta ETPs by Vintage



Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19. Data based on oldest share class inception date.

Investors Prefer Outcome-Oriented Funds

It can be hard for investors to wrap their hands around factors. However, funds designed to achieve specific outcomes like dividend income and low volatility have resonated with Canadian investors.

Dividend strategies are far away the most popular type of strategic-beta ETP by assets. These funds represented about 40% of assets invested in all Canadian-listed strategic-beta ETPs at the end of 2019. That's not surprising. Many investors, particularly retirees, love income and funds that can deliver it. Investors poured an estimated \$4.4 billion into these funds over the trailing 10 years through 2019, including \$494 million in 2019, which was the highest of any strategic-beta group.

Risk-oriented funds represent the second-largest strategic-beta group in Canada. They received the third-highest inflows of any group in 2019. This group primarily consists of minimum-volatility and volatility-weighted funds, which favor less-volatile stocks. These funds attempt to provide a smoother ride and better downside protection than the market.

The other groups have a much smaller share of assets. Unlike the U.S. market, broad, market-cap-weighted value, and growth funds don't attract much money here.

Exhibit 14 Canada Ranking of Strategic-Beta ETPs by Strategic-Beta Group

| Strategic-Beta Group | # of ETPs | Assets (USD Mil) | % of Assets | 2019 Flows (USD Mil) | % of 2019 Net Flows |
|----------------------|-----------|------------------|-------------|----------------------|---------------------|
| Dividend | 44 | 6,170.1 | 40.0 | 494.4 | 38.0 |
| Risk-Oriented | 28 | 3,279.3 | 21.2 | 396.1 | 30.4 |
| Multifactor | 36 | 1,224.3 | 7.9 | -15.7 | -1.2 |
| Other | 10 | 1,203.0 | 7.8 | -506.1 | -38.9 |
| Quality | 9 | 1,064.2 | 6.9 | 464.4 | 35.7 |
| Fundamentals | 11 | 801.8 | 5.2 | -134.7 | -10.4 |
| Momentum | 6 | 784.5 | 5.1 | 310.8 | 23.9 |
| Value | 7 | 539.6 | 3.5 | 217.5 | 16.7 |
| Fixed Income | 5 | 335.5 | 2.2 | 66.2 | 5.1 |
| Growth | 1 | 36.6 | 0.2 | 8.1 | 0.6 |

Source: Morningstar Direct. Data as of 12/31/19.

By Provider

While many asset managers offer strategic-beta ETPs in Canada, assets are concentrated among the largest providers. BlackRock is by far the largest player here, capturing about 34% of the market, as of December 2019, down from 41% a year earlier. First Asset, the second-largest strategic-beta ETP provider, has only 15.5% of the market. There are 17 asset managers that offer strategic-beta ETPs in Canada. The smallest 14 have a combined market share of nearly 40%.

Exhibit 15 Canada Largest Strategic-Beta ETP Providers

| Provider | Assets (USD Mil) | # of ETPs | Market Share (%) |
|-------------|------------------|-----------|------------------|
| BlackRock | 5,245.0 | 36 | 34.0 |
| First Asset | 2,389.7 | 17 | 15.5 |
| BMO | 1,668.3 | 11 | 10.8 |
| Invesco | 1,657.7 | 13 | 10.7 |
| Vanguard | 1,131.1 | 4 | 7.3 |
| Mackenzie | 726.9 | 6 | 4.7 |
| WisdomTree | 668.6 | 12 | 4.3 |
| Fidelity | 555.6 | 15 | 3.6 |
| Manulife | 259.9 | 7 | 1.7 |
| DGAM | 246.7 | 7 | 1.6 |
| Others | 889.2 | 29 | 5.8 |

Source: Morningstar Direct. Data as of 12/31/19.

It's worth noting that these figures exclude rules-based strategies that don't track an index, like BMO's low-volatility and dividend strategies, and RBC's quantitative dividend ETFs. Morningstar considers these actively managed strategies.

Several of these asset managers compete in both the U.S. and Canadian markets, including BlackRock, Invesco, and Fidelity, and offer many of the same strategies in both markets. For example, versions of Fidelity's US High Dividend ETF FCUD and iShares' Edge MSCI Minimum Volatility Global ETF XMW are available in both the U.S. and Canada.

Biggest Funds

The largest 10 strategic-beta ETPs jointly represent 37.2% of all assets invested in such funds in Canada. The largest fund still only has a little over \$1 billion in assets. Dividend funds are well represented here. CI First Asset MSCI Canada Quality ETF FQC received the largest inflows of any strategic-beta ETP in 2019, totaling an estimated \$401 million.

Exhibit 16 Canada Largest Strategic-Beta ETFs

| Name | Ticker | Inception Date | Strategic-Beta Group | Expense Ratio (%) | Assets (USD Mil) |
|---|--------|----------------|----------------------|-------------------|------------------|
| iShares Canadian Select Dividend ETF | XDV | 12/19/05 | Dividend | 0.55 | 1,056.2 |
| iShares S&P/TSX Canadian Dividend Aristocrats ETF | CDZ | 9/8/06 | Dividend | 0.66 | 712.3 |
| CI First Asset Morningstar Canada Momentum ETF | WXM | 2/15/12 | Momentum | 0.66 | 692.4 |
| Invesco Canadian Dividend ETF | PDC | 6/16/11 | Dividend | 0.55 | 534.4 |
| iShares S&P/TSX Composite High Dividend ETF | XEI | 4/12/11 | Dividend | 0.22 | 516.2 |
| BMO Equal Weight US Banks ETF | ZBK | 2/10/14 | Other | 0.62 | 506.4 |
| Vanguard US Dividend Appreciation ETF | VGG | 8/2/13 | Dividend | 0.30 | 481.6 |
| CI First Asset MSCI Canada Quality ETF | FQC | 5/3/16 | Quality | 0.77 | 449.4 |
| Vanguard FTSE Canadian High Dividend Yield ETF | VDY | 11/2/12 | Dividend | 0.22 | 425.7 |
| iShares US Dividend Growers ETF (CAD-Hedged) | CUD | 9/13/11 | Dividend | 0.66 | 375.0 |

Source: Morningstar Direct. Data as of 12/31/19.

Fees

Strategic-beta funds appear to charge similar fees to other types of ETPs, based on simple averages. However, strategic-beta funds appear more expensive than non-strategic-beta ETPs based on the asset-weighted average fees. That's because cheap broad, market-cap-weighted funds soak up a disproportionate share of the assets invested in non-strategic-beta funds. Cheaper funds tend to attract more assets across the board, which is why the asset-weighted average fees are lower than the simple averages for every group that included more than one fund.

The fee comparisons are most meaningful for the equity funds, since the other groups of strategic-beta funds are small. All but 10 of the 157 Canadian-listed strategic-beta ETPs are focused exclusively on equities.

Exhibit 17 Canada Fees Under the Microscope

| | Average | Combined (%) | Equity (%) | Fixed Income (%) | Commodities (%) | Alternative (%) | Allocation (%) |
|-------------------------------|----------------|--------------|------------|------------------|-----------------|-----------------|----------------|
| All ETPs | Asset-Weighted | 0.24 | 0.21 | 0.23 | 0.55 | 1.22 | 0.41 |
| | Equal-Weighted | 0.59 | 0.57 | 0.45 | 0.89 | 1.34 | 0.57 |
| ETPs ex-Strategic-Beta | Asset-Weighted | 0.22 | 0.11 | 0.23 | 0.55 | 1.22 | 0.41 |
| | Equal-Weighted | 0.61 | 0.59 | 0.45 | 0.89 | 1.35 | 0.57 |
| Strategic-Beta | Asset-Weighted | 0.41 | 0.42 | 0.24 | — | 0.92 | — |
| | Equal-Weighted | 0.54 | 0.54 | 0.34 | — | 0.92 | — |

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Europe

Following a year of contraction, the European strategic-beta ETP market returned to growth in 2019.

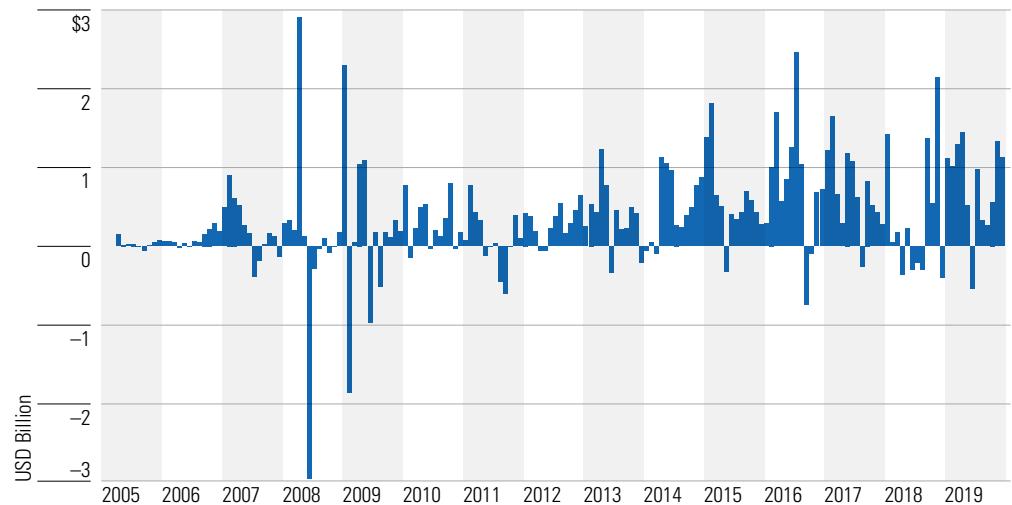
Assets grew by more than one third to a record high of \$79 billion over the year. A combination of rising markets and \$9.5 billion in net new money has supported this impressive growth.

Strategic-beta ETPs' share of the total European ETP market held steady over the course of the year, finishing at 7.7%.

Exhibit 18 European Strategic-Beta ETP Asset Growth



Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Exhibit 19 Europe Strategic-Beta ETP Monthly Asset Flows

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Exhibit 20 Strategic-Beta ETPs' Share of the Overall European ETP Market (%)

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Launches Tail Off as Market Reaches Saturation Point

For all the growth in assets, just six new strategic-beta ETFs hit the shelves in 2019, the lowest annual figure since 2006. The dwindling number of launches is the natural consequence of the strategic-beta ETP market in Europe reaching maturity.

With the market for more plain-vanilla strategic-beta ETPs all but saturated, providers have moved to develop increasingly complex products in order to stand out from the competition. Most new entrants now employ multifactor equity strategies, which wrap several factor exposures into one strategy. Multifactor strategies are routinely marketed as a way of improving a market-cap index's prospective risk/return profile by diversifying across factors, each of which can suffer long periods of underperformance. The increased number of variables in these products allows providers more scope to differentiate themselves and often charge a premium for their intellectual property. It is fair to expect that products of this type will continue to come to market. After all, multifactor ETFs can be churned in many different combinations and cover a number of geographies.

The most high-profile multifactor launch of 2019 came as part of Goldman Sachs' entrance into the European ETF market. The ActiveBeta US Large Cap Equity ETF **GSLC** shares its approach with a U.S.-listed sister fund, which listed in 2015 and is currently the largest multifactor strategic-beta ETF in the world. With an ongoing charge of just 0.14%, the European variant is the cheapest multifactor ETF in Europe.

This launch was followed by a second fund, Goldman Sachs ActiveBeta Emerging Markets Equity ETF **GSEM**, which applies the same multifactor approach to emerging-markets equities. This ActiveBeta strategy offers broad equity exposure, but tilts toward those with low valuations, strong momentum, high profitability, and low volatility. The simple equal-weighted factor approach employed is transparent but results in relatively light style tilts.

J.P. Morgan has pursued a similar strategy. As part of its push into the European ETF market, the firm also borrowed two existing multifactor equity strategies from the U.S.

The JPM Global Equity Multi-Factor **JGPL** and the US Equity Multi-Factor **JPUS** ETFs select stocks based on momentum, quality, and value factors while controlling for sector and regional biases.

The short live track records for many multifactor strategies can make due diligence tricky. By "porting" strategies which have already cut their teeth stateside, both providers have given investors the luxury of a longer live track record to examine.

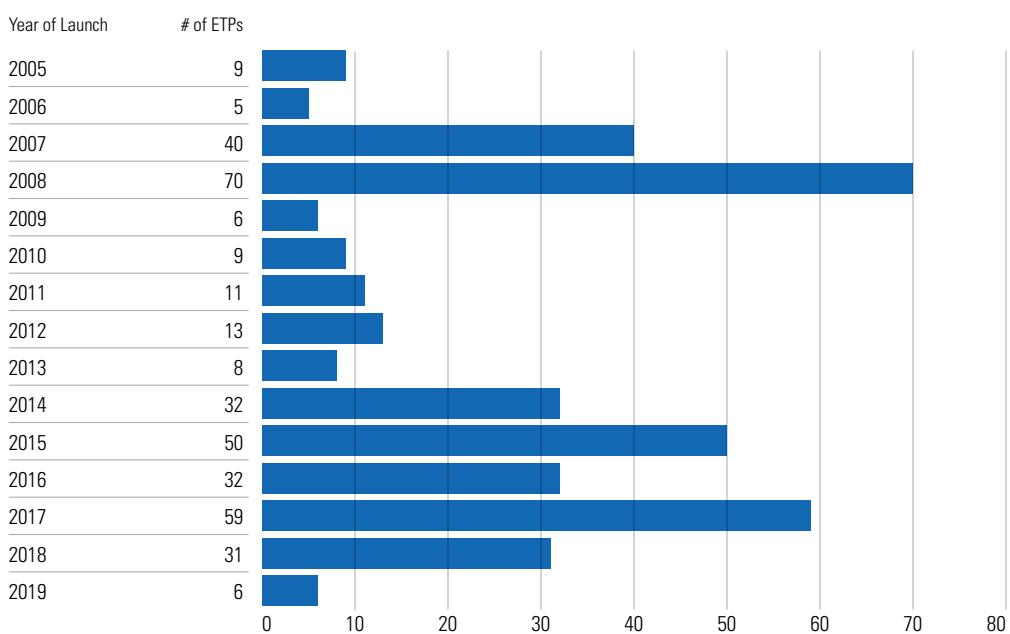
The final multifactor strategy ETF launched in 2019 was the UniCredit EURO iSTOXX ESG-X Multi Factor ETF **ECBF**. It selects eurozone stocks based on profitability, earnings yield, leverage, value, and

low volatility before weighting them using a multifactor optimization process. It also applies exclusionary screens based on environmental, social, and governance, or ESG, criteria.

The only single-factor strategic-beta ETP launch of the year was the UniCredit EURO STOXX ESG-X Minimum Variance ETF [ECBV](#). The fund attempts to differentiate itself from several cheaper rivals offering similar factor exposures by applying the same ESG screens as its stablemate.

Product development in the fixed-income space remains eerily quiet. The long-predicted flurry of innovation has failed to materialize, and asset levels remain subdued. One reason for this is that there is currently no consensus view on whether the factors recognized in equity investing can be applied to fixed income.

Exhibit 21 Europe Number of Surviving Strategic-Beta ETPs by Vintage



Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Dividend Strategies Hog Inflows, Value Rebounds

Exchange-traded products belonging to the Dividend strategic-beta group received 39% of net inflows into strategic-beta ETPs in 2019 and retain the lion's share of overall assets. This reflects the demand for sources of income among yield-starved investors.

Exchange-traded products in the Risk-Oriented and Value strategic-beta groups also saw meaningful inflows. Exchange-traded products in each group raked in close to \$2 billion in net new money over the course of the year. This represents a strong reversal of fortunes for value ETFs, which suffered

the largest outflows of any strategic-beta group in 2018. Commodity ETPs were the biggest losers, leaking \$662 million in assets.

Exhibit 22 Europe Ranking of Strategic-Beta ETPs by Strategic-Beta Group

| | # of ETPs | Assets (USD Mil) | % of Assets | 2019 Flows (USD Mil) | % of 2019 Net Inflows |
|---------------|-----------|------------------|-------------|----------------------|-----------------------|
| Dividend | 73 | 30,121.3 | 38.1 | 3,730.8 | 39.4 |
| Risk-Oriented | 29 | 13,468.4 | 17.0 | 2,121.3 | 22.4 |
| Multifactor | 51 | 8,969.7 | 11.3 | 511.6 | 5.4 |
| Value | 21 | 8,373.2 | 10.6 | 1,957.5 | 20.7 |
| Quality | 19 | 5,793.5 | 7.3 | 1,145.4 | 12.1 |
| Other | 18 | 3,516.4 | 4.4 | 584.2 | 6.2 |
| Commodity | 74 | 2,814.3 | 3.6 | -661.8 | -7.0 |
| Momentum | 6 | 2,589.9 | 3.3 | -97.2 | -1.0 |
| Fixed Income | 15 | 2,458.8 | 3.1 | 138.3 | 1.5 |
| Growth | 5 | 488.5 | 0.6 | 71.5 | 0.8 |
| Fundamentals | 6 | 466.3 | 0.6 | -32.6 | -0.3 |

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

iShares Maintains Dominant Market Position

Exchange-traded fund behemoth iShares retained the number-one spot in the European strategic-beta ETP space with a market share of 45% at the end of 2019. Its "Edge"-branded suite of ETFs that track factor indexes focused on global, U.S., and European exposures has played a key role in cementing iShares' standing in recent years. The firm's Minimum Volatility and Value funds were the main recipients of flows in 2019.

The iShares Edge MSCI World Minimum Volatility ETF **MVOL** was the largest strategic-beta fund in Europe with \$4.3 billion in assets at the close of 2019. It attempts to construct the least-volatile portfolio possible with stocks from the flagship MSCI World Index, under a set of constraints. These include limiting turnover, exposure to individual names, and sector tilts relative to the index, which improves diversification but also reduces style purity. While pure low-volatility portfolios hold only low-volatility stocks, this minimum-volatility portfolio may include average- to high-volatility stocks because of the risk-diversification benefits they bring to the overall portfolio.

State Street Global Advisors' SPDR ETF franchise remained in second place. However, this position belies a dependency on the fortunes of two products from the same stable: SPDR S&P U.S. Dividend Aristocrats ETF **UDVD** and SPDR S&P Euro Dividend Aristocrats ETF **SPYW**. These two funds account for three fourths of SSGA's assets in strategic-beta ETPs in Europe. UBS, whose MSCI equity factor suite forms the backbone of its offering, is the third-largest provider in Europe. The UBS ETF **MSCI USA Select Factor Mix ETF USFMD** was the most popular multifactor ETF in Europe in 2019, amassing nearly \$523 million in net inflows.

Exhibit 23 Europe Largest Strategic-Beta ETP Providers

| Provider | Assets (USD Bil) | # of ETPs | Market Share (%) |
|--------------|------------------|-----------|------------------|
| iShares | 35.9 | 43 | 45.4 |
| State Street | 7.7 | 12 | 9.7 |
| Lyxor | 5.5 | 26 | 6.9 |
| UBS | 5.4 | 58 | 6.8 |
| Xtrackers | 4.3 | 21 | 5.4 |
| Amundi | 4.0 | 15 | 5.1 |
| Natixis | 3.5 | 11 | 4.4 |
| Invesco | 2.6 | 20 | 3.3 |
| Fidelity | 1.3 | 4 | 1.7 |
| BNP Paribas | 1.3 | 29 | 1.6 |
| Others | 7.6 | 78 | 9.6 |

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Exhibit 24 Largest European Strategic-Beta ETFs

| Name | Ticker | Inception Date | Strategic-Beta Group | Expense Ratio (%) | Assets (USD Bil) |
|--|--------|----------------|----------------------|-------------------|------------------|
| iShares Edge MSCI World Min Volatility ETF \$ Acc | MVOL | 11/30/12 | Risk-Oriented | 0.30 | 4.3 |
| SPDR S&P US Dividend Aristocrats ETF Dist | UDVD | 10/14/11 | Dividend | 0.35 | 3.6 |
| iShares Developed Mrkts Property Yield ETF USD Dist | IWDP | 10/20/06 | Dividend | 0.59 | 3.1 |
| iShares Edge MSCI World Value Factor ETF \$Acc | IWVL | 10/3/14 | Value | 0.30 | 2.4 |
| iShares Edge S&P 500 Min Volatility ETF USD Acc | SPMV | 11/30/12 | Risk-Oriented | 0.20 | 2.3 |
| Ossiam Shiller Barclays CAPE US Sector Value TR 1C\$ | UCAP | 6/22/15 | Multifactor | 0.65 | 2.2 |
| SPDR S&P Euro Dividend Aristocrats ETF | SPYW | 2/28/12 | Dividend | 0.30 | 2.1 |
| iShares European Property Yield ETF EUR Dist | IPRP | 11/4/05 | Dividend | 0.40 | 2.1 |
| iShares Edge MSCI World Quality Factor ETF \$Acc | IWQU | 10/3/14 | Quality | 0.30 | 1.8 |
| Lyxor SG Global Quality Income NTR ETF D EUR | SGQI | 9/25/12 | Dividend | 0.45 | 1.8 |

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Fees Aren't Budging

Fees remain stubbornly high. Most strategic-beta ETPs still demand a sizable premium above their market-cap-weighted equity peers.

Two of the largest equity funds, Ossiam Shiller Barclays Cape US Sector Value ETF UCAP and iShares Developed Markets Property Yield ETF IWDP, have managed to gather and maintain assets despite sporting relatively high ongoing charges of 0.65% and 0.59%, respectively.

Fixed-income investors are also paying a premium. In this case, the asset-weighted annual fee exceeds the simple average fee, showing that investors favor more-expensive bond offerings such as PIMCO EM Advantage Local Bond Index Source UCITS ETF EMLB, which charges a fee of 0.60% per year.

A glance at the U.S. market suggests that there is still plenty of fee fat to be trimmed should competition between providers heat up again.

Exhibit 25 Europe Fees Under the Microscope

| | Average | Combined (%) | Equity (%) | Fixed Income (%) | Commodities (%) | Allocation (%) |
|-------------------------------|----------------|--------------|------------|------------------|-----------------|----------------|
| All ETPs | Asset-Weighted | 0.25 | 0.25 | 0.24 | 0.30 | 0.25 |
| | Equal-Weighted | 0.37 | 0.37 | 0.21 | 0.53 | 0.45 |
| ETPs ex-Strategic-Beta | Asset-Weighted | 0.24 | 0.23 | 0.24 | 0.30 | 0.23 |
| | Equal-Weighted | 0.36 | 0.37 | 0.20 | 0.62 | 0.44 |
| Strategic-Beta | Asset-Weighted | 0.36 | 0.35 | 0.34 | 0.39 | 0.54 |
| | Equal-Weighted | 0.43 | 0.38 | 0.29 | 0.56 | 0.55 |

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Asia-Pacific

In 2019, strategic-beta ETPs in the Asia-Pacific region recorded another year of strong growth in collective AUM. Assets in strategic-beta ETPs grew 43% to \$34.5 billion. This was driven by a combination of double-digit market gains and net flows into new and existing products. Many markets within the region recorded growth in strategic-beta ETP assets in excess of 50%. These include Australia, China, India, New Zealand, and Taiwan. The number of strategic-beta ETPs grew to 218 from 190 a year earlier. Most new launches came from China and South Korea.

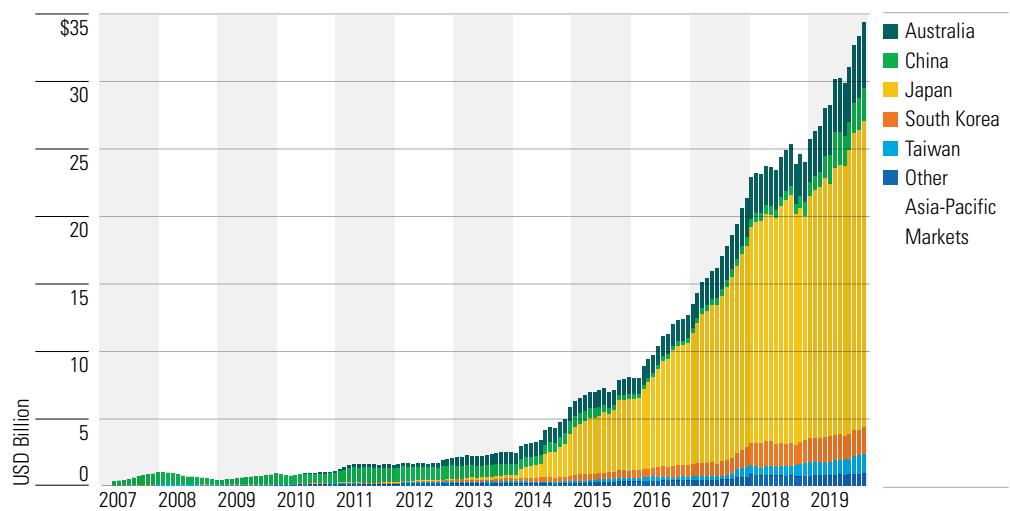
The Asia-Pacific strategic-beta ETP league table didn't change much in 2019, aside from the fact that assets ballooned. Though their pace has slowed, The Bank of Japan's ongoing ETF purchases served to cement Japan's leading position, with \$22.8 billion in strategic-beta ETP assets as of the end of 2019. Australia was a distant second with \$4.9 billion in assets. China overtook South Korea to finish 2019 in third place with \$2.5 billion invested in strategic-beta ETPs. China's strategic-beta ETP lineup almost doubled in number and more than doubled in assets.

Strategic-beta ETPs' penetration varies widely across the region. Market shares range from 0.1% to 11.4%. Australia has seen the greatest adoption, where strategic-beta ETPs account for 11.4% of local ETP assets. Singapore has the next-highest level of strategic-beta ETP market share in the region at 8.6%.

Exhibit 26 Asia-Pacific Snapshot of Strategic-Beta ETP Markets

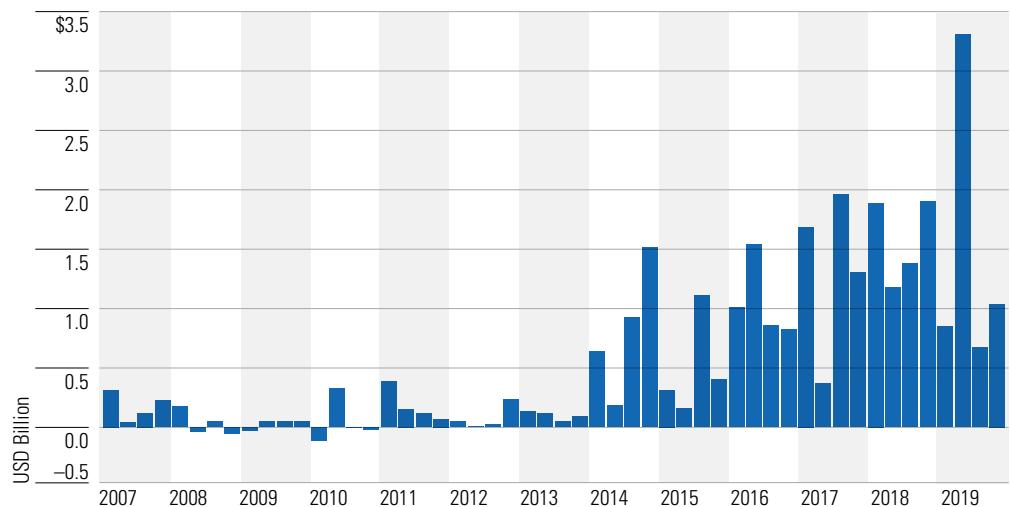
| # of ETPs | Assets (USD Mil) | % of Assets of Strategic-Beta ETPs in Asia-Pacific | Largest ETP (USD Mil) | Average ETP Assets (USD Mil) | % of Total Local ETP Market * | 2018-19 Growth (%) | | | | |
|----------------------|------------------|--|-----------------------|------------------------------|-------------------------------|----------------------|------------------|---------------------|------------------|-------------|
| | | | | | | 2019 Flows (USD Mil) | Organic Growth % | Strategic-Beta ETPs | Total ETP Market | |
| Australia | 33 | 4,896.3 | 14.2 | 971.2 | 148.4 | 11.4 | 1,307.7 | 43.8 | 64.0 | 51.6 |
| China | 25 | 2,475.7 | 7.2 | 544.9 | 99.0 | 3.2 | 1,074.3 | 104.7 | 141.4 | 40.0 |
| Hong Kong | 14 | 505.3 | 1.5 | 110.4 | 36.1 | 1.3 | -8.6 | -2.0 | 18.9 | 9.0 |
| India | 7 | 25.8 | 0.1 | 12.3 | 3.7 | 0.1 | 17.1 | 202.0 | 205.2 | 46.7 |
| Japan | 30 | 22,780.9 | 66.1 | 7,887.4 | 759.4 | 5.7 | 3,099.4 | 18.6 | 36.7 | 30.1 |
| Malaysia | 2 | 28.5 | 0.1 | 17.8 | 14.2 | 5.8 | -2.0 | -6.7 | -5.1 | 7.0 |
| New Zealand | 4 | 144.8 | 0.4 | 52.2 | 36.2 | 6.4 | 31.1 | 34.2 | 59.1 | 39.2 |
| Singapore | 5 | 188.5 | 0.5 | 115.7 | 37.7 | 8.6 | -7.3 | -4.3 | 10.8 | 6.5 |
| South Korea | 87 | 1,956.2 | 5.7 | 269.4 | 22.5 | 4.4 | 136.0 | 7.8 | 12.1 | 21.7 |
| Taiwan | 10 | 1,462.3 | 4.2 | 1,052.7 | 146.2 | 2.6 | 282.8 | 30.8 | 59.4 | 132.7 |
| Thailand | 1 | 3.8 | 0.0 | 3.8 | 3.8 | 0.7 | 0.3 | 10.4 | 15.6 | 15.9 |
| Total/Average | 218 | 34,468.0 | 100.0 | 7,887.4 | 158.1 | 5.0 | 5,930.8 | 24.6 | 43.2 | 35.5 |

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19. *Note: Excludes cross-listed ETPs.

Exhibit 27 Asia-Pacific Strategic-Beta ETP Asset Growth

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.
(Asset data for Chinese ETPs is available only on a quarterly basis, interquarter data was interpolated.)

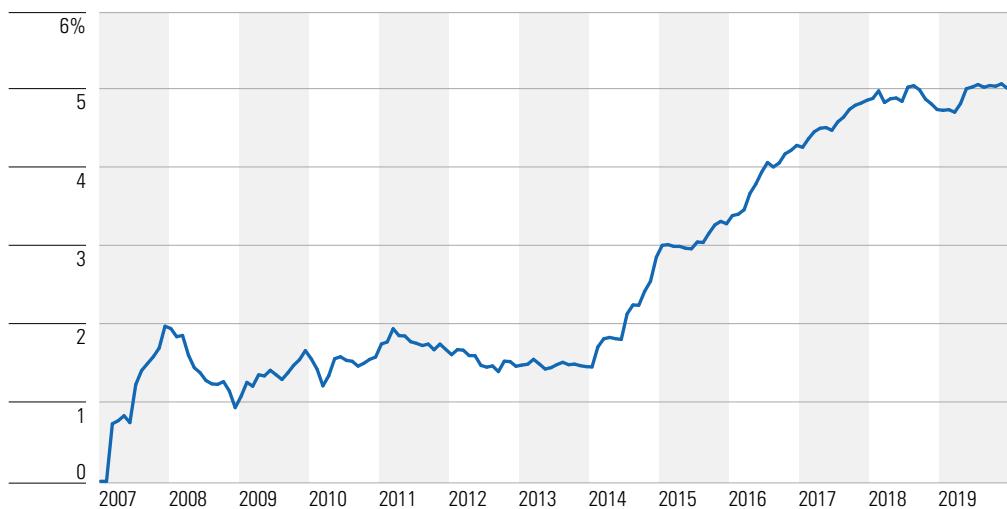
Strategic-beta ETPs in the Asia-Pacific region experienced net inflows of \$5.9 billion in 2019. This was slightly lower than the \$6.4 billion in net new money they amassed in 2018. Japan, Australia, and China were the key contributors to 2019's inflows, seeing inflows of \$3.1 billion, \$1.3 billion, and \$1.1 billion, respectively. Once again, Japan-domiciled ETPs tracking the JPX-Nikkei Index 400 contributed a large portion of these flows. Flows into quality-oriented strategies accounted for 68% of the overall flows in the region. Most of this money went to ETFs tracking the JPX-Nikkei Index 400.

Exhibit 28 Asia-Pacific Strategic-Beta ETP Quarterly Asset Flows

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

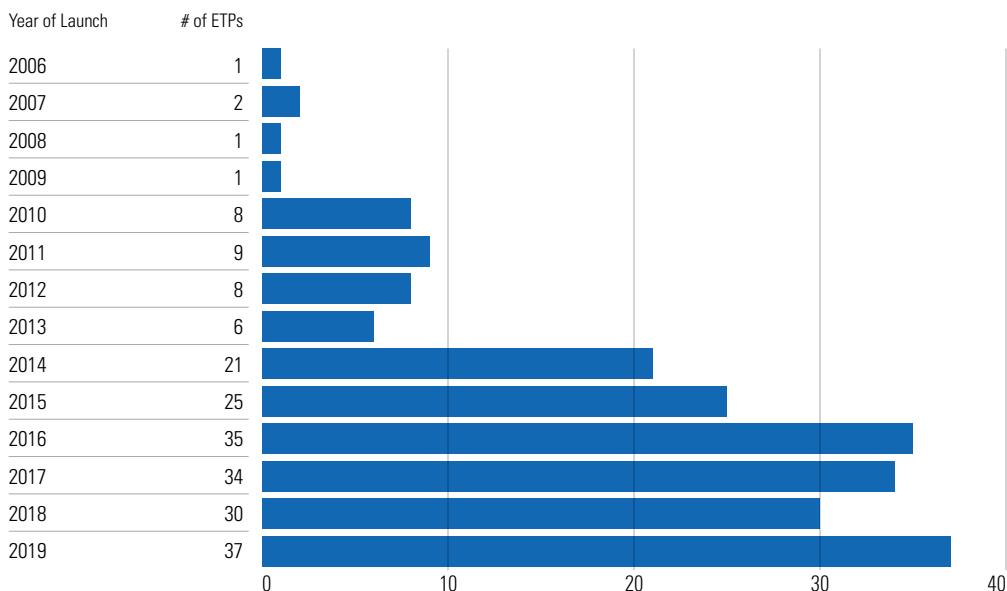
In 2019, strategic-beta ETPs grew faster than the overall ETP market in the region. As a result, strategic-beta ETPs' market share rose to 5.0% from 4.7% a year earlier.

Exhibit 29 Strategic-Beta ETPs' Share of the Overall Asia-Pacific ETP Market (%)



Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Exhibit 30 Asia-Pacific Number of Surviving Strategic-Beta ETPs by Vintage



Source: Morningstar Direct, Morningstar Research, Data as of 12/31/19.

Quality Stays on Top

Exchange-traded products belonging to the Quality strategic-beta group retained the top position in the asset rankings in 2019. These ETPs had a 62% share of the Asia-Pacific strategic-beta ETP market. The 31 ETPs that belong to this group hold \$21.5 billion, up 49% from a year earlier. The lion's share of these assets (91%) are held in the seven ETPs tracking the JPX-Nikkei Index 400. Six of these seven ETPs rank as the six largest strategic-beta ETPs in the region and together account for 57% of the region's total strategic-beta ETP assets.

The Dividend strategic-beta group was again the second-largest in the region, with a market share of 23%. The 75 ETPs from the Dividend strategic-beta group collectively held \$8.1 billion at the end of 2019, up 36% from 2018. Most of the new additions to the strategic-beta ETP menu in 2019 belonged to the Dividend group.

Exhibit 31 Ranking of Asia-Pacific Strategic-Beta ETPs by Strategic-Beta Group

| Strategic-Beta Group | # of ETPs | Assets (USD Mil) | % of Attribute Assets | | | | | | | | | | | | 2019 Flows (USD Mil) | % of 2019 Net Flows |
|----------------------|------------|------------------|-----------------------|------------|------------|------------|-------------|------------|-------------|------------|-------------|------------|------------|----------------|----------------------|---------------------|
| | | | Australia | China | Hong Kong | India | Japan | Malaysia | New Zealand | Singapore | South Korea | Taiwan | Thailand | Total Asia-Pac | | |
| Quality | 31 | 21,488.3 | 2.5 | 1.8 | 0.0 | 0.0 | 57.8 | — | — | — | 0.2 | — | — | 62.3 | 4,052.9 | 68.3 |
| Dividend | 75 | 8,050.1 | 5.7 | 3.0 | 0.7 | 0.0 | 6.1 | 0.1 | 0.2 | 0.5 | 3.0 | 4.0 | 0.0 | 23.4 | 990.2 | 16.7 |
| Other | 13 | 1,709.6 | 2.8 | 0.0 | — | — | 1.7 | — | — | — | 0.5 | — | — | 5.0 | 174.2 | 2.9 |
| Multifactor | 27 | 981.3 | 0.8 | 0.8 | 0.6 | — | — | — | — | — | 0.6 | 0.0 | — | 2.8 | 235.0 | 4.0 |
| Fundamentals | 8 | 635.1 | 0.7 | 0.9 | 0.1 | — | 0.1 | — | — | — | 0.1 | — | — | 1.8 | 260.7 | 4.4 |
| Risk-Oriented | 22 | 542.9 | 0.4 | 0.2 | — | 0.0 | 0.4 | — | — | — | 0.4 | 0.0 | — | 1.6 | 103.3 | 1.7 |
| Fixed Income | 4 | 517.9 | 1.3 | — | — | — | — | — | — | — | 0.0 | 0.1 | — | 1.5 | 237.0 | 4.0 |
| Value | 20 | 285.2 | — | 0.3 | — | 0.0 | — | — | 0.2 | — | 0.3 | — | — | 0.8 | -150.8 | -2.5 |
| Growth | 7 | 133.6 | — | 0.1 | — | — | — | — | 0.1 | — | 0.2 | — | — | 0.4 | 9.1 | 0.2 |
| Momentum | 8 | 83.9 | — | — | — | — | — | — | — | — | 0.2 | 0.0 | — | 0.2 | 21.5 | 0.4 |
| Commodity | 3 | 40.0 | 0.0 | — | 0.0 | — | — | — | — | — | 0.1 | — | — | 0.1 | -2.3 | 0.0 |
| Total | 218 | 34,468.0 | 14.2 | 7.2 | 1.5 | 0.1 | 66.1 | 0.1 | 0.4 | 0.5 | 5.7 | 4.2 | 0.0 | 100 | 5,930.8 | |

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

The same 10 ETPs from our previous study held the title of top 10 largest strategic-beta, albeit with some reshuffling of positions. The list of top 10 largest strategic-beta ETP providers had a new challenger while the others saw their AUM balloon. Nomura once again was the largest strategic-beta ETP manager and also managed the largest strategic-beta ETP in the region. Nomura had strategic-beta ETP AUM of \$9.1 billion as of end-2019, up 33% from a year earlier.

The six ETPs tracking the JPX-Nikkei Index 400 continued to top the league table, putting their respective Japanese managers within the top 10. iShares maintained its third position, while managing an ETF tracking the JPX-Nikkei Index 400 and eight other strategic-beta ETPs available in Japan and

Australia. In 10th position, China's ChinaAMC, which managed three strategic-beta ETPs, made it to the list of top 10 largest strategic-beta ETP providers, replacing Mirae Asset from a year earlier.

Exhibit 32 Largest Asia-Pacific Strategic-Beta ETFs

| Name | Ticker | Exchange Country | Strategic-Beta Group | Assets (USD Mil) |
|---|--------|------------------|----------------------|------------------|
| NEXT FUNDS JPX-Nikkei Index 400 ETF | 1591 | Japan | Quality | 7,887.4 |
| MAXIS JPX-Nikkei Index 400 ETF | 1593 | Japan | Quality | 3,983.9 |
| Daiwa ETF JPX-Nikkei 400 | 1599 | Japan | Quality | 2,389.1 |
| Listed Index Fund JPX-Nikkei Index 400 | 1592 | Japan | Quality | 2,093.9 |
| iShares JPX-Nikkei 400 ETF | 1364 | Japan | Quality | 1,774.2 |
| One ETF JPX-Nikkei 400 | 1474 | Japan | Quality | 1,391.6 |
| Yuanta/P-shares Taiwan Dividend Plus ETF | 0056 | Taiwan | Dividend | 1,052.7 |
| Vanguard Australian Shares High Yield ETF | VHY | Australia | Dividend | 971.2 |
| VanEck Vectors Australian Equal Weight ETF | MVW | Australia | Other | 773.6 |
| NEXT FUNDS Nomura Japan Equity High Dividend 70 ETF | 1577 | Japan | Dividend | 755.6 |

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

The region's strategic-beta ETP market remained fragmented. Beyond the 10 largest ETP providers, there were a total of 168 ETPs managed by 53 different ETP providers occupying a collective market share of only 19%.

Exhibit 33 Asia-Pacific Largest Strategic-Beta ETP Providers

| Provider | Assets (USD Mil) | # of ETPs | Market Share (%) |
|------------------|------------------|-----------|------------------|
| Nomura | 9,096.2 | 6 | 26.4 |
| MUFG | 4,256.3 | 8 | 12.3 |
| iShares | 2,845.2 | 9 | 8.3 |
| Daiwa | 2,488.6 | 2 | 7.2 |
| Nikko AM | 2,410.6 | 5 | 7.0 |
| AM One | 2,065.2 | 4 | 6.0 |
| VanEck | 1,805.3 | 8 | 5.2 |
| Yuanta Financial | 1,212.4 | 3 | 3.5 |
| Vanguard | 1,012.5 | 2 | 2.9 |
| China AMC | 642.5 | 3 | 1.9 |
| Others | 6,633.0 | 168 | 19.2 |

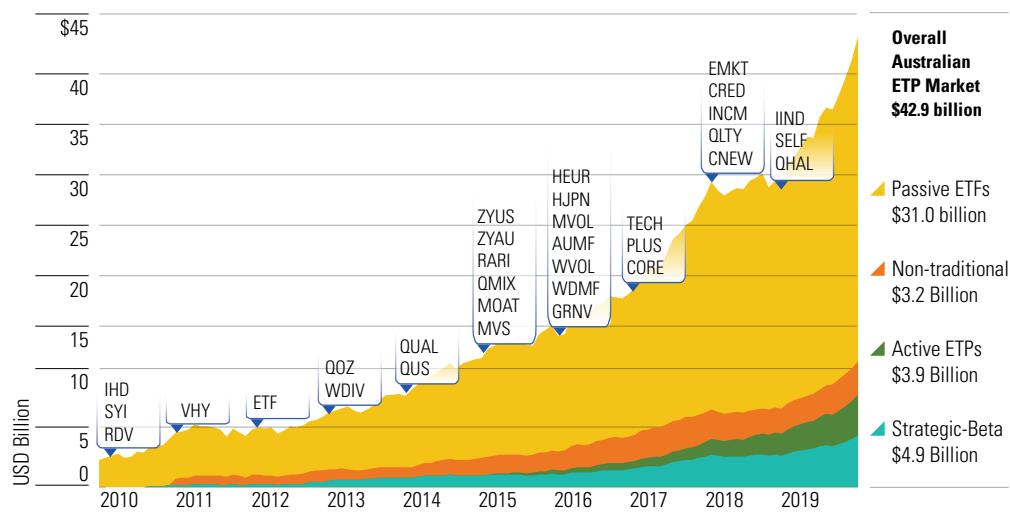
Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Australia

Australian strategic-beta ETPs recorded spectacular growth in 2019. Assets increased 64% to \$4.9 billion. This growth rate was higher than that of the overall ETP market (52%) and pushed strategic-beta ETPs' market share to a new high of 11.4%. The strong growth among strategic-beta ETPs was driven mainly by net new inflows, which amounted to \$1.3 billion. Market performance also provided a lift, as the S&P ASX 200 climbed 23.4% in Australian dollar terms. Three new strategic-beta ETPs were launched in Australia during the year.

Exhibit 34 decomposes the growth of the Australian ETP market into four distinct camps: active, passive, nontraditional, and strategic-beta ETPs. About 28% of Australia's ETP assets are invested in either strategic-beta, active, or other nontraditional ETPs. Assets in active ETPs more than doubled in 2019, landing at \$3.9 billion. There were also eight new actively managed ETFs launched in Australia last year. Meanwhile assets invested in nontraditional ETPs, such as derivative income, dividend stripping, and leveraged/inverse equity funds, grew 64%, and totaled \$3.2 billion as of end-2019.

Exhibit 34 Australian ETP Assets and Product Launches



Source: Morningstar Direct, Morningstar Research. Data as of 12/31/2019.

Exchange-traded products belonging to the Dividend strategic-beta group continued to claim the most assets. At nearly \$2 billion, these ETPs represented 40% of aggregate assets in strategic-beta ETPs. The largest strategic beta ETP, Vanguard Australian Shares High Yield ETF VHY, also belongs to this segment. With almost \$1 billion in assets, the fund represents one fifth of all assets invested in Australian strategic-beta ETPs.

Exhibit 35 Australia Ranking of Strategic-Beta ETPs by Strategic-Beta Group

| Strategic-Beta Group | 12/2018 | | 12/2019 | |
|----------------------|------------------|-------------|------------------|-------------|
| | Assets (USD Mil) | % of Assets | Assets (USD Mil) | % of Assets |
| Dividend | 1,483.5 | 49.7 | 1,958.1 | 40.0 |
| Other | 483.4 | 16.2 | 955.6 | 19.5 |
| Quality | 412.1 | 13.8 | 854.1 | 17.4 |
| Fixed Income | 249.3 | 8.4 | 464.6 | 9.5 |
| Multifactor | 151.2 | 5.1 | 269.5 | 5.5 |
| Fundamentals | 175.7 | 5.9 | 243.1 | 5.0 |
| Risk-Oriented | 28.0 | 0.9 | 149.0 | 3.0 |
| Commodity | 2.2 | 0.1 | 2.3 | 0.0 |

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

VanEck continues to sit atop the Australian strategic-beta ETP issuer league table. The firm had \$1.8 billion invested in its strategic-beta ETPs at the end of 2019, which represented a 37% market share. Vanguard came in second place thanks to the \$1 billion invested in its sole strategic-beta offering in the local market—VHY.

Fees levied by strategic-beta ETPs in Australia are very competitive with those levied by active funds, but remain significantly higher than those charged by plain-vanilla index-trackers. For example, strategic-beta ETPs within the Australia large blend equity Morningstar Category charge an asset-weighted average expense ratio of 0.31%. The fee taken by non-strategic-beta ETPs in the same category averaged 0.16%.

China

Assets in strategic-beta ETPs in China mushroomed 141% to \$2.5 billion in 2019. This outpaced the 40% growth in the overall ETP market. Growth was driven mainly by new product launches. The number of strategic-beta ETPs almost doubled to 25, from 13 a year earlier. The 12 new additions to the local menu explained 85% of the asset growth. Strategic-beta ETPs' relatively higher growth pushed their market share to 3.2%, up from 1.9% a year earlier.

The 12 new strategic-beta ETP launches spanned a variety of strategic-beta groups, including dividend, growth, quality, fundamentals, and multifactor. Some also had a thematic element. For example, the largest new product by assets, the ChinaAMC CSI Sichuan SOEs Reform ETF 159962, uses a quality filter when selecting state-owned enterprises in Sichuan.

Exchange-traded products in the Dividend strategic-beta group remained the most popular, claiming 42% of all assets invested in strategic-beta ETPs in China. In addition, four of the 12 new strategic-beta ETPs launched in 2019 belong to this group. Dividend ETPs were followed by those in the quality (25% market share) and fundamentals (13% market share) strategic-beta groups.

The strategic-beta ETP market remained very fragmented in China, with 17 ETP providers managing 25 products. ChinaAMC shook up the provider league table in 2019. The firm launched three products last year and quickly claimed the top spot with a 26% market share. ChinaAMC is followed by Harvest, who stood at the top of the table in 2018. Harvest claims a 20% market share.

Exhibit 36 China Ranking of Strategic-Beta ETPs by Strategic-Beta Group

| Strategic-Beta Group | 12/2018 | | 12/2019 | |
|----------------------|------------------|-------------|------------------|-------------|
| | Assets (USD Mil) | % of Assets | Assets (USD Mil) | % of Assets |
| Dividend | 538.1 | 52.5 | 1,030.0 | 41.6 |
| Quality | 82.9 | 8.1 | 624.6 | 25.2 |
| Fundamentals | 86.8 | 8.5 | 325.9 | 13.2 |
| Multifactor | 71.3 | 7.0 | 264.8 | 10.7 |
| Value | 141.0 | 13.7 | 116.4 | 4.7 |
| Risk-Oriented | 81.5 | 7.9 | 78.8 | 3.2 |
| Growth | 12.8 | 1.2 | 21.9 | 0.9 |
| Other | 11.3 | 1.1 | 13.3 | 0.5 |

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Hong Kong

Assets in Hong Kong-domiciled strategic-beta ETPs grew 19% in 2019, to \$0.5 billion, with most of the growth attributable to market gains. The local menu of strategic-beta ETPs shrank last year as there were no new launches and Value Partner shut three of its value-oriented ETPs. At year's end the total number of strategic-beta ETPs had fallen to 14. The strategic-beta ETPs market remains small, at just 1.3% of the overall ETP market.

The ongoing charges levied by locally domiciled strategic-beta ETPs ranged from 0.35% to 1.15%. Taking the ETFs in the Hong Kong equity category as an example, strategic-beta ETPs' asset-weighted ongoing charge was 0.76%. This is materially higher than the 0.11% charged by non-strategic-beta Hong Kong equity ETPs.

India

The Indian strategic-beta ETP market recorded significant growth in 2019 (205%), but it came off a very small base. Assets in local strategic-beta ETPs totaled just \$26 million at year's end. This was spread across seven strategic-beta ETPs and represented a 0.1% share of the local ETP market. The ICICI Prudential Nifty Low Vol 30 ETF ICICIOLOVOL experienced the largest inflows among these seven and became the largest strategic-beta ETP in the market with \$12 million in assets.

ICICI Prudential Asset Management claimed the top spot in the Indian strategic-beta ETP market with 54% market share. It was followed by Nippon Life India Asset Management (formerly Reliance Nippon Life Asset Management), which had 18% market share.

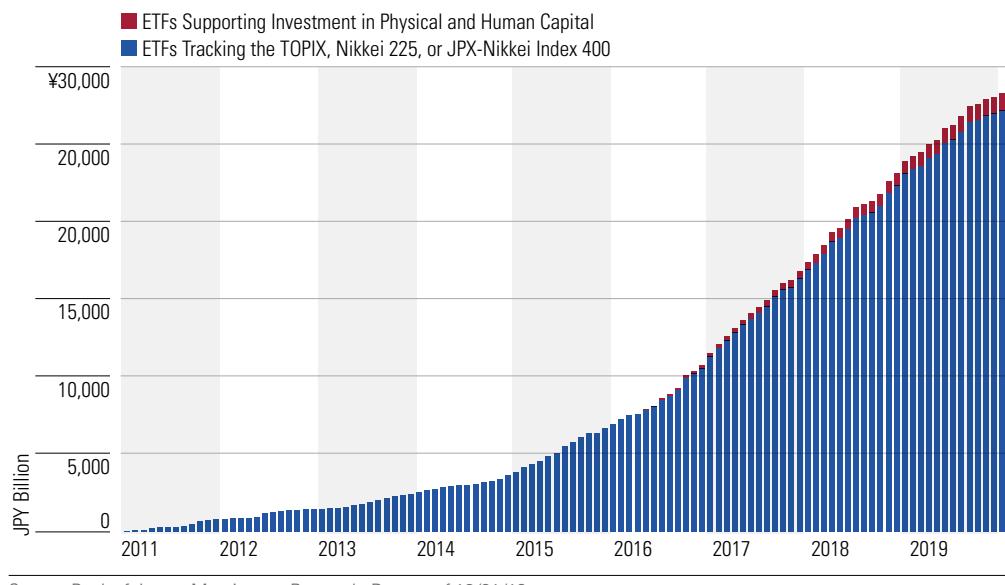
Japan

The Bank of Japan continues to be the driving force behind the Japanese ETP market. While the bank did not announce any changes to its ETP purchase plan in 2019, the pace of its ETF buying slowed. The bank made JPY 4.4 trillion (or \$40 billion) worth of ETF purchases in 2019, compared with JPY 6.5 trillion (or \$59 billion) in 2018. As of Dec. 31, 2019, it held JPY 28.2 trillion worth of ETF shares (stated at cost, according to the Bank of Japan; or \$260 billion). This accounted for 65% of the total AUM in Japan-domiciled ETPs.

In March 2020, in light of the impact of the outbreak of COVID-19, the Bank of Japan announced it would expand its monetary easing program. This included doubling its ETF annual purchase limit to JPY 12 trillion. The bank's holdings in ETF shares as a percentage of the total ETP market will likely increase further as a result.

The bank's ETF purchase plan includes a JPY 300 billion purchase target for ETFs, designed specially to home in on firms that are proactively making investments in physical and human capital. The bank has purchased JPY 1.1 trillion (stated at cost; or \$10 billion) worth of these ETFs since April 2016. Some of these ETFs would fall under our definition of strategic beta and generally belong to either the Quality or Other strategic-beta groups. The bank's records showed it acquired a total of JPY 289 billion (\$2.7 billion) of these ETPs in 2019, comparable to the amount it purchased in 2018 (JPY 294 billion, or \$2.7 billion).

Exhibit 37 Aggregate ETF Purchases by the Bank of Japan



Source: Bank of Japan, Morningstar Research. Data as of 12/31/19.

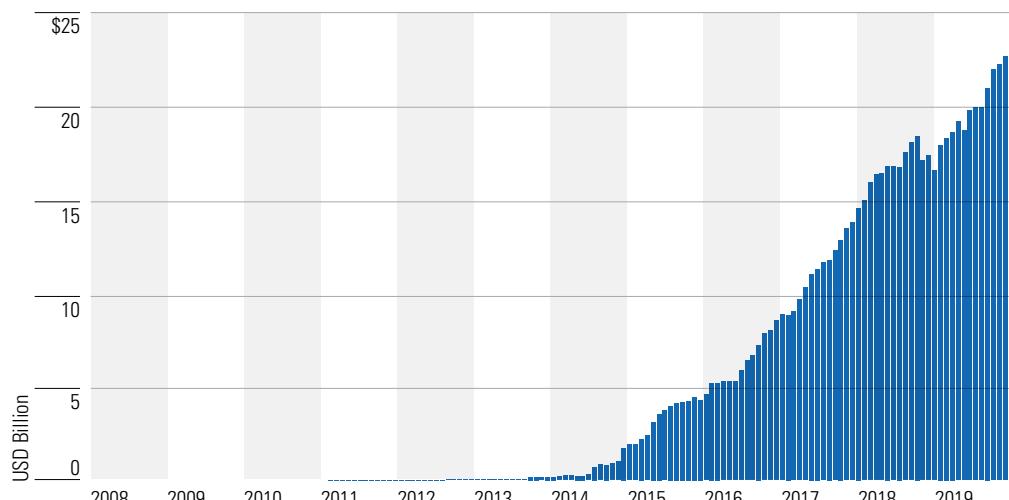
In 2019, the Japanese strategic-beta ETP market grew 37% to \$22.8 billion, roughly in line with the growth in the overall ETP market (30%). Inflows and market appreciation each accounted for roughly half this growth. Two new strategic-beta ETPs were launched in Japan in 2019, putting the total number of strategic-beta ETPs in the local market at 30. The seven ETFs (one of which launched in 2019) tracking the JPX-Nikkei 400 together accounted for 86% of strategic-beta ETP assets, meaning that quality was by far the largest strategic-beta group in the Japanese market.

Exhibit 38 Japan Ranking of Strategic-Beta ETPs by Strategic-Beta Group

| | 12/2018 | | 12/2019 | |
|---------------|------------------|-------------|------------------|-------------|
| | Assets (USD Mil) | % of Assets | Assets (USD Mil) | % of Assets |
| Quality | 13,937.8 | 83.6 | 19,920.1 | 87.4 |
| Dividend | 2,075.9 | 12.5 | 2,110.5 | 9.3 |
| Other | 500.2 | 3.0 | 582.1 | 2.6 |
| Risk-Oriented | 131.0 | 0.8 | 142.1 | 0.6 |
| Fundamentals | 23.3 | 0.1 | 26.1 | 0.1 |

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Exhibit 39 Japan Strategic-Beta ETP Asset Growth



Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Malaysia

Just two strategic-beta ETPs remain in Malaysia. Both fall in the Dividend strategic-beta group. Total assets in these two ETPs declined 5% to \$28 million in 2019, mainly driven by outflows. Assets in the broader Malaysian ETP market increased 7%. As a result, strategic-beta ETPs' share of the local market declined to 5.8%.

New Zealand

Assets in New Zealand's ETP market grew 39% to \$2.3 billion in 2019. The uptick was largely attributable to a rallying market. The S&P/NZX 50 Index rose 31% in local-currency terms. Inflows also helped, as investors added \$326 million to local ETPs. Smartshares remains the sole ETP provider in the New Zealand market. The firm launched eight new ETPs in 2019, covering ESG, bonds, healthcare, and robotics. These were the first new ETPs to debut in the local market since 2015. The launch of these eight funds puts the total number of ETPs in New Zealand at 31.

In 2018, assets in strategic-beta ETPs in New Zealand shrank 36%. The trend reversed in 2019 as assets grew 59% to \$145 million—about even with their levels in late 2017/early 2018. Strategic-beta ETPs make up 6.4% of the overall ETP market. In 2019, growth was driven by both market movements and inflows into the four strategic-beta ETPs. Two ETPs belonging to the Dividend strategic-beta group represented 44% of all assets invested in strategic-beta ETPs. The remainder of the assets were split among the two value and growth ETPs that invest in U.S. stocks.

Singapore

At the end of 2019, Singapore was home to four strategic-beta ETPs, and one that is domiciled in Thailand and listed in Singapore. These five ETPs had combined assets of \$188 million. This marks 11% growth from a year earlier, most of which is attributable to market movements. All five belong to the Dividend strategic-beta group. Together, they accounted for 8.6% of the overall ETP assets in Singapore. There were no new ETP launches in Singapore in 2019.

South Korea

South Korea further expanded its lead among Asia-Pacific markets, as measured by the number of strategic-beta ETPs available to local investors. The country saw 17 new launches in 2019, putting the total number of strategic-beta ETPs at 87. Asset growth was, however, relatively lukewarm. Strategic-beta ETPs' assets increased by 12%, lagging the 22% growth experienced by the broader South Korean ETP market. At the end of 2019, there were 87 locally domiciled strategic-beta ETPs spread across all 11 strategic-beta groups with total assets of \$2.0 billion.

Fragmentation is a defining characteristic of the South Korean market. The average size of strategic-beta ETPs stood at \$22 million, and 40 out of 87 of them had less than \$10 million of AUM.

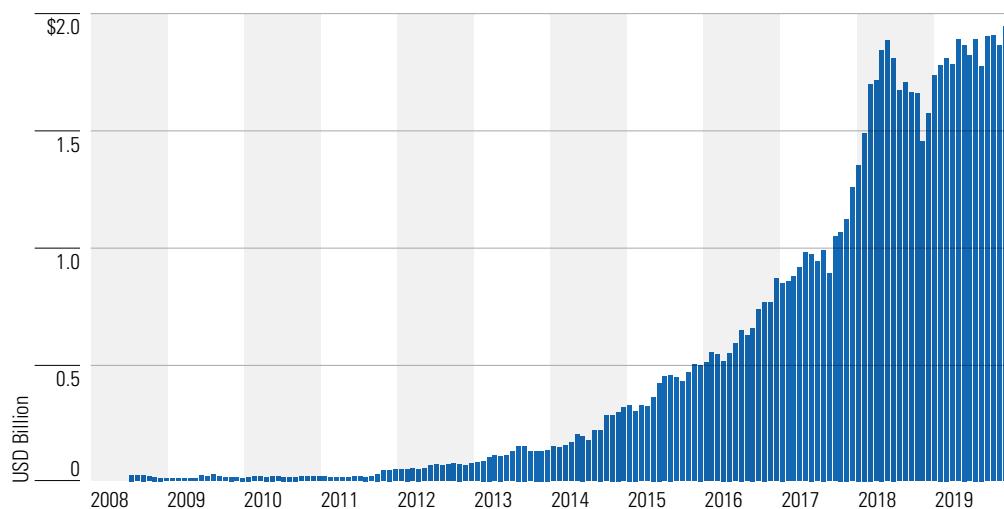
Within the strategic-beta groups, dividend strategies remain the most popular type of strategic-beta ETP. Products belonging to this group increased their market share to 52% by the end of 2019, up from 44% in 2018. In fact, six of the 17 new launches in 2019 were dividend strategies.

Exhibit 40 South Korea Ranking of Strategic-Beta ETPs by Top-Five Strategic-Beta Groups

| | 12/2018 | | 12/2019 | |
|---------------|------------------|-------------|------------------|-------------|
| | Assets (USD Mil) | % of Assets | Assets (USD Mil) | % of Assets |
| Dividend | 764.8 | 43.8 | 1,020.2 | 52.2 |
| Multifactor | 105.1 | 6.0 | 223.5 | 11.4 |
| Other | 301.9 | 17.3 | 158.7 | 8.1 |
| Risk-Oriented | 132.0 | 7.6 | 151.2 | 7.7 |
| Value | 207.3 | 11.9 | 108.5 | 5.5 |

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Exhibit 41 South Korea: Strategic-Beta ETP Assets



Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Taiwan

In 2019, the Taiwan ETP market was the fastest-growing ETP market in the Asia-Pacific region. Assets under management in Taiwan-domiciled ETPs grew 133% to \$55.7 billion. Taiwan saw 73 new ETP launches in 2019, 59 of which were fixed-income ETPs. Meanwhile, there were two new strategic-beta ETP launches, putting the local total at 10. These products had combined assets of \$1.4 billion at year's end. This represented 60% growth versus 2018.

The growth in the strategic-beta space was driven partly by market movements and partly by inflows. However, the flows were very one-sided, coming solely from the two launches and the largest strategic-beta ETP in the market, the Yuanta/P-shares Taiwan Dividend Plus ETF 0056. The ETF had assets of \$1.1 billion as of end-2019, or 72% market share, growing 77% from a year earlier.

Thailand

ThaiDex SET High Dividend ETF 1DIV remained the one and only strategic-beta ETP in the Thailand ETP market. The fund had AUM of \$4 million as of the end of 2019, marking a 16% increase from a year earlier. The increase can be mainly attributed to market performance. The fund's assets represent a very small portion (0.7%) of the overall Thai ETP market.

Emerging (Strategic-Beta) Markets

There are fledgling markets for strategic-beta ETPs in places like Mexico and South Africa. Given the nature of these markets, information about these products is often lacking, local investors are generally unfamiliar with ETPs, and they are more unfamiliar yet with the concept of strategic beta. As these markets continue to develop, both from a fundamental and asset-management/investment perspective, we expect them to ultimately look to mimic the developments witnessed among more-mature markets. Specifically, we would expect to see a gradual adoption of the ETP vehicle and more-complex strategic-beta-type exposures.

Exhibit 42 ETFs From Emerging (Strategic-Beta) Markets

| Name | Domicile | Ticker | Inception Date | Assets (USD Mil) | Strategic-Beta Group |
|--|--------------|----------|----------------|------------------|----------------------|
| MEXTRAC | Mexico | MEXTRAC | 8/27/09 | 489.8 | Dividend |
| 1nvest SWIX 40 ETF | South Africa | ETFSWX | 10/5/10 | 132.1 | Other |
| It Now IMA-B5+ FUNDÓ DE ÍNDICE | Brazil | IB5M11 | 9/23/19 | 128.1 | Fixed Income |
| Satrix Divi Plus ETF | South Africa | STXDIV | 8/30/07 | 114.2 | Dividend |
| It Now IDIV Index Fund ETF | Brazil | DIVO11 | 1/3/12 | 68.9 | Dividend |
| Satrix RAFI 40 ETF | South Africa | STXRAF | 10/16/08 | 68.9 | Fundamentals |
| ETF Bradesco IMAB-5+ Fundo de Índice | Brazil | B5MB11 | 12/11/19 | 37.5 | Fixed Income |
| CoreShares S&P Global Divtrax ETF | South Africa | GLODIV | 2/22/18 | 35.4 | Dividend |
| Satrix Swix Top 40 ETF | South Africa | STXSWX | 4/10/06 | 26.5 | Other |
| CoreShares S&P SA Dividend Arst ETF | South Africa | DIVTRX | 4/14/14 | 22.7 | Dividend |
| QVGMEX 18 | Mexico | QVGMEX | 5/2/18 | 20.8 | Multifactor |
| NewFunds Equity Momentum ETF | South Africa | NFEMOM | 1/26/12 | 15.7 | Multifactor |
| Sygnia Itrix SWIX 40 ETF | South Africa | SYGSW4 | 10/30/17 | 14.9 | Other |
| ETF It Now S&P/CLX Chile Dividend UNICA | Chile | CFMDIVO | 1/11/19 | 13.3 | Dividend |
| CoreShares SciBeta M-FI ETF | South Africa | SMART | 7/10/19 | 9.1 | Multifactor |
| NewFunds Low Volatility ETF | South Africa | NFEVOL | 3/26/18 | 8.9 | Risk-Oriented |
| Satrix Quality South Africa ETF | South Africa | STXQUA | 9/26/17 | 8.5 | Quality |
| NewFunds Value Equity ETF | South Africa | NFEVAL | 3/26/18 | 8.0 | Value |
| NewFunds S&P GIVI SA Top 50 ETF | South Africa | GIVISA | 6/23/08 | 5.9 | Multifactor |
| NewFunds Volatility Mgd Hi Growth Eq ETF | South Africa | NFEHGE | 2/25/19 | 4.3 | Risk-Oriented |
| iShares MSCI Mexico Risk TRAC | Mexico | MEXRISK | 9/24/14 | 4.2 | Risk-Oriented |
| NewFunds Volatility Mgd Moderate Eq ETF | South Africa | NFEMOD | 2/25/19 | 4.0 | Risk-Oriented |
| NewFunds Volatility Mgd Defensive Eq ETF | South Africa | NFEDEF | 2/25/19 | 3.5 | Risk-Oriented |
| Satrix Momentum ETF | South Africa | STXMMT | 11/16/18 | 2.2 | Momentum |
| iShares MSCI Mexico Momentum TRAC | Mexico | MEXMTUM | 9/24/14 | 1.3 | Momentum |
| Smartshares SMARTRC 14 ETF | Mexico | SMARTRC | 4/1/14 | 0.1 | Fundamentals |
| iShares COLRISK | Colombia | ICOLRISK | 10/27/16 | — | Risk-Oriented |

Source: Morningstar Direct, Morningstar Research. Data as of 12/31/19.

Lessons From Strategic-Beta ETPs' Performance During the COVID-19 Crisis

The COVID-19 crisis has roiled markets. This episode reinforced important lessons about strategic-beta approaches to portfolio construction and taught some new ones about how these products perform in stressed markets.

A Generally Lackluster Showing

Most U.S.-listed strategic-beta ETPs underperformed their respective category indexes during the first five months of 2020. Exhibit 43 shows the average return for ETPs in each strategic-beta group, as well as the corresponding average return for their category indexes. In the U.S., in every strategic-beta group but commodities, strategic-beta ETPs performed worse, on average, than their category index. The results among European strategic-beta ETPs were mixed. Strategic-beta ETPs' average returns were lower relative to the relevant category indexes for six of 11 strategic-beta groups.

Exhibit 43 Average Returns for Strategic-Beta ETPs and Morningstar Category Indexes

| | U.S.-Domiciled Returns (%) | | Europe-Domiciled Returns (%) | |
|---------------|----------------------------|----------------|------------------------------|----------------|
| | Strategic-Beta ETP | Category Index | Strategic-Beta ETP | Category Index |
| Commodity* | -15.5 | -28.4 | -27.1 | -28.4 |
| Dividend | -18.3 | -15.6 | -20.6 | -16.3 |
| Fixed Income | -0.1 | 0.7 | -2.6 | -2.2 |
| Fundamentals | -18.3 | -15.7 | -21.8 | -20.0 |
| Growth | -0.6 | 1.1 | -3.8 | -8.7 |
| Momentum | -6.8 | -6.0 | -3.4 | -10.4 |
| Multifactor | -14.5 | -12.0 | -14.0 | -12.0 |
| Other | -11.4 | -9.3 | -16.2 | -14.2 |
| Quality | -6.3 | -6.1 | -7.8 | -10.6 |
| Risk-Oriented | -11.8 | -10.9 | -11.3 | -12.2 |
| Value | -20.8 | -18.1 | -21.8 | -19.2 |

Source: Morningstar Direct, Morningstar Research. Data from Jan. 1, 2020, through May 31, 2020. (*The categories in which these ETPs belong do not have category indexes. Morningstar Long-Only Commodity Index was used as proxy.)

The success rates for each group, shown in Exhibit 44, tell a similar story. These are calculated as the percentage of strategic-beta ETPs in each group that outperformed their respective category indexes during the first five months of 2020. The success rate exceeded 50% in just two groups in the U.S. In Europe, strategic-beta ETPs' success rates were greater than 50% in six strategic-beta groups. The higher success rates in the commodity group represent strategic-beta ETPs' lower exposure to front-month oil futures contracts during this span. Meanwhile, ETPs belonging to the Quality strategic-beta group benefitted from their relatively defensive postures.

Exhibit 44 Strategic-Beta ETPs' Success Rates (%)

| | U.S.-Domiciled ETPs | Europe-Domiciled ETPs |
|---------------|---------------------|-----------------------|
| Commodity | 83 | 58 |
| Dividend | 36 | 25 |
| Fixed Income | 45 | 20 |
| Fundamentals | 39 | 60 |
| Growth | 39 | 60 |
| Momentum | 47 | 83 |
| Multifactor | 29 | 26 |
| Other | 29 | 25 |
| Quality | 71 | 87 |
| Risk-Oriented | 41 | 54 |
| Value | 39 | 19 |

Source: Morningstar Direct, Morningstar Research. Data from Jan. 1, 2020, through May 31, 2020.

What explains strategic-beta ETPs' generally lackluster showing during this period? Fees are partly to blame. The category indexes don't charge fees, while strategic-beta funds do. But there's more to the story. In many cases, these funds' factor tilts also contributed to their underperformance. Many strategic-beta equity funds, particularly those in the Dividend, Fundamentals, Multifactor, and Value groups, tend to tilt toward stocks with smaller market capitalizations and lower valuations. Those two factors (small size and value) underperformed considerably during the first five months the year among U.S. equities, as Exhibit 45 shows. Many U.S. strategic-beta ETPs focus on the U.S. market, where their factor bets weren't well rewarded. In fact, they were punished.

Exhibit 45 U.S. Factor Returns

| Factor | Return (%) | Factor Measure |
|----------------|------------|---|
| Small Size | -13.3 | Morningstar U.S. Small - Morningstar U.S. Large |
| Value | -28.4 | Morningstar U.S. Value - Morningstar U.S. Growth |
| Momentum | 5.1 | MSCI USA Momentum - MSCI USA |
| Quality | 4.9 | MSCI USA Quality - MSCI USA |
| Low Volatility | -1.1 | MSCI USA Min Vol - MSCI USA |
| Dividend Yield | -6.3 | Morningstar US Dividend Composite - Morningstar US Market |

Source: Morningstar Direct, Morningstar Research. Data from Jan. 1, 2020, through May 31, 2020.

Performance across all factors was better among global and European equities than among U.S. stocks, as Exhibits 46 and 47 show. This helps explain why European-listed strategic-beta ETFs tended to perform better than their U.S. counterparts in the first five months of the year.

Exhibit 46 Global Factor Returns

| Factor | Global Return (%) | Factor Measure |
|----------------|-------------------|---|
| Size | -7.1 | MSCI ACWI Small - MSCI ACWI Large |
| Value | -19.0 | MSCI ACWI Value - MSCI ACWI Growth |
| Momentum | 7.8 | MSCI ACWI Momentum - MSCI ACWI |
| Quality | 8.1 | MSCI ACWI Quality - MSCI ACWI |
| Low Volatility | 1.5 | MSCI ACWI Min Vol - MSCI ACWI |
| Dividend Yield | -5.5 | MSCI ACWI High Dividend Yield - MSCI ACWI |

Source: Morningstar Direct, Morningstar Research. Data from Jan. 1, 2020, through May 31, 2020.

Exhibit 47 European Factor Returns

| Factor | Europe Return (%) | Factor Measure |
|----------------|-------------------|---|
| Size | -1.1 | MSCI Europe Small - MSCI Europe Large |
| Value | -18.3 | MSCI Europe Value - MSCI Europe Growth |
| Momentum | 12.6 | MSCI Europe Momentum - MSCI Europe |
| Quality | 8.5 | MSCI Europe Quality - MSCI Europe |
| Low Volatility | 5.8 | MSCI Europe Min Vol - MSCI Europe |
| Dividend Yield | -4.4 | MSCI Europe High Dividend Yield - MSCI Europe |

Source: Morningstar Direct, Morningstar Research. Data from Jan. 1, 2020, through May 31, 2020.

On the fixed-income side, strategic-beta funds tend to take greater credit risk than their respective category benchmarks. This hurt performance between January and May 2020.

Zooming In

Within most strategic-beta groups, there was considerable dispersion in returns, as Exhibit 48 summarizes.

Exhibit 48 Dispersion of Strategic-Beta ETPs' Returns

| | Interquartile Range (%) | U.S. ETPs | European ETPs |
|---------------|-------------------------|-----------|---------------|
| Commodity | 9.8 | 28.2 | |
| Dividend | 10.4 | 8.0 | |
| Fixed Income | 6.4 | 3.0 | |
| Fundamentals | 8.7 | 7.3 | |
| Growth | 12.0 | 15.9 | |
| Momentum | 13.0 | 3.3 | |
| Multifactor | 9.9 | 7.2 | |
| Other | 14.8 | 5.1 | |
| Quality | 3.4 | 4.7 | |
| Risk-Oriented | 7.8 | 6.1 | |
| Value | 11.7 | 6.3 | |

Source: Morningstar Direct, Morningstar Research. Data from Jan. 1, 2020, through May 31, 2020.

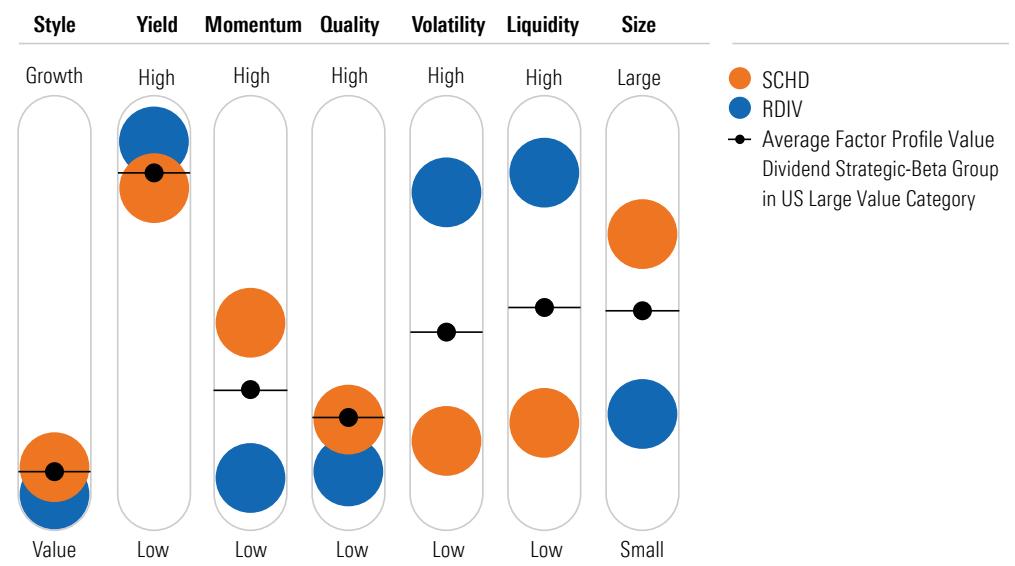
This dispersion partially reflects the diversity of the range of the Morningstar Categories each strategic-beta group spans. However, there was still significant dispersion within some of the larger categories. For example, Schwab US Dividend Equity ETF **SCHD**, with a Morningstar Analyst Rating of Silver, was one of the better-performing dividend funds in the large value Morningstar Category in the first five months of 2020, losing a modest 8.24%. On the other end of the spectrum, Invesco S&P Ultra Dividend Revenue ETF **RDIV** lost 29.64%, more than any other dividend fund in the category.

This wide performance gap owes to differences in these funds' construction methodology. **RDIV** chases yield more aggressively than **SCHD**. Although it filters out stocks with extremely high dividend yields and payout ratios, **RDIV** selects stocks solely on dividend yield, without any additional quality screens. This tends to give it a higher dividend yield than **SCHD**. Stocks that make the cut are weighted by revenue, which deepens the fund's value tilt, causing it to overweight stocks trading at low sales multiples.

In contrast, **SCHD** focuses on both yield and quality, screening for stocks with strong dividend growth, cash flow/debt, return on equity, and yield. This dual focus gives **SCHD** a lower yield than **RDIV**, but it also pulls it toward more-defensive names. Qualifying stocks are weighted by market capitalization, further skewing the portfolio toward mature and highly profitable firms.

These differences are apparent from the funds' Morningstar Factor Profiles, as Exhibit 49 shows. SCHD tends to favor larger, less-volatile stocks, while RDIV tends to favor higher-yielding and lower-quality stocks. RDIV also has greater exposure to stocks with poor momentum, which may reflect deteriorating fundamentals. It isn't surprising that the dual focus on quality and yield led to better performance in the weak market environment that characterized the first part of 2020.

Exhibit 49 Factor Profiles for RDIV and SCHD

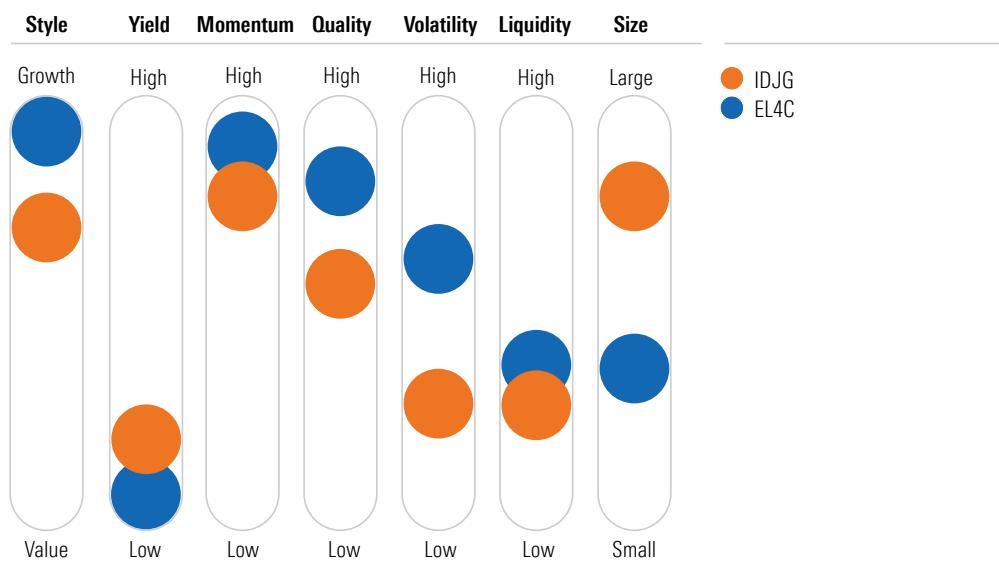


Source: Morningstar Direct, Morningstar Research. Factor Profile data as of 4/30/2020.

In Europe, the commodity group saw the widest dispersion among all the strategic-beta groups owing to the diversity of commodity-related ETPs available in the market, added together with the volatility experienced in the commodity space during the period. Strategic-beta ETPs in the growth group saw the second-highest level of performance dispersion in the first five months of this year, albeit from a small sample of five ETPs in this group. Within the small group's performance spectrum, the European-domiciled Deka STOXX Europe Strong Growth 20 ETF EL4C gained 5.71% while the iShares Euro Total Market Growth Large UCITS ETF IDJG lost 11.49%. The Deka ETF tracks an index with a concentrated portfolio of 20 stocks in Europe with the highest growth characteristics and doubles down on the growth factor by weighting constituents by their growth scores, giving it a small size tilt. The iShares ETF tracks an index with the eurozone as the starting point and captures the large-cap stocks with growth characteristics to form a portfolio weighted by market capitalization. The fund had around 70 holdings as of April 30, 2020.

These differences are apparent from the funds' Morningstar Factor Profiles, as Exhibit 50 shows. The Deka ETF captured stocks with stronger growth characteristics, which also exhibited higher momentum and quality, the factors that captured the highest returns during the first five months of this year.

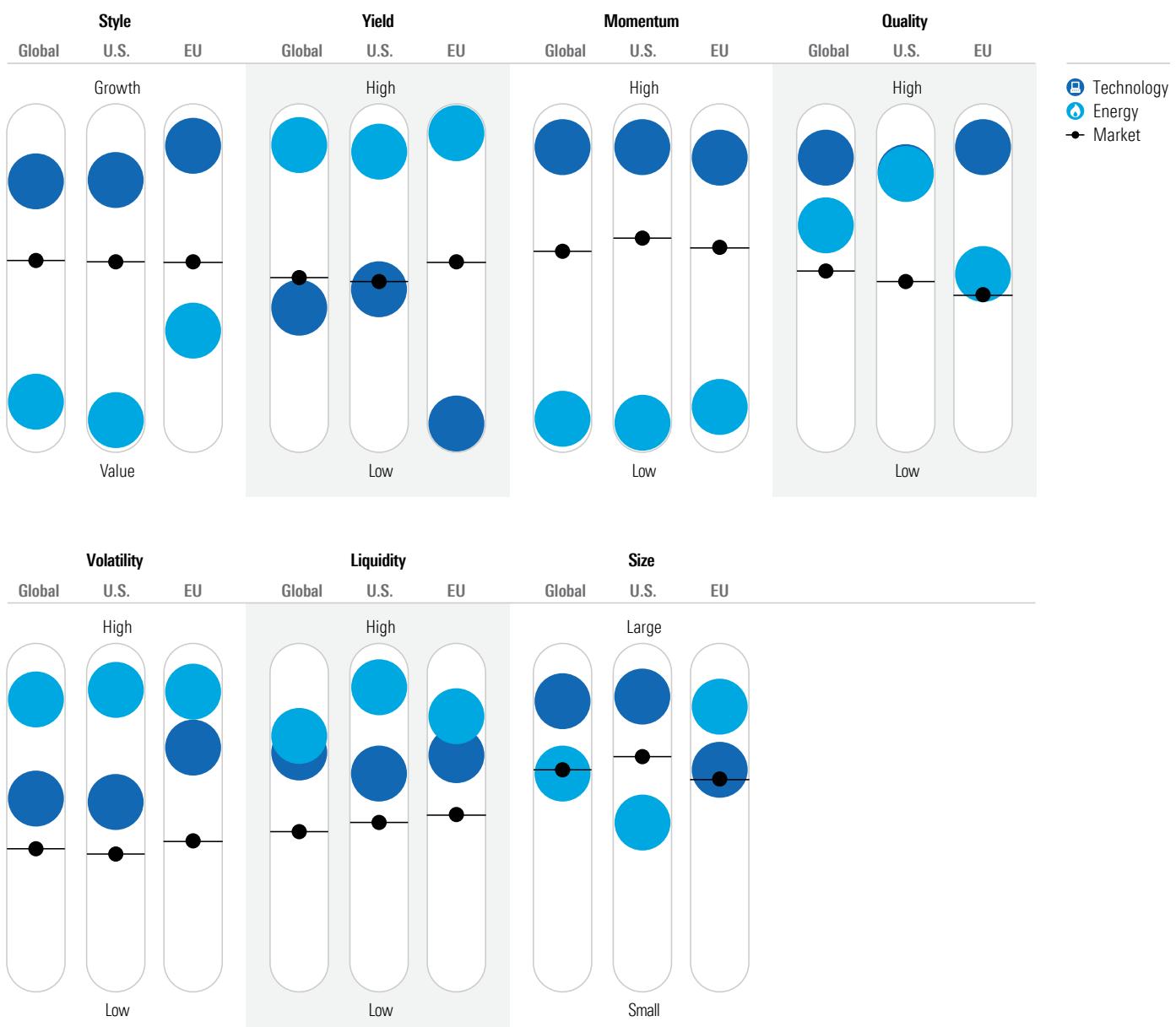
Exhibit 50 Factor Profiles for EL4C and IDJG



Source: Morningstar Direct, Morningstar Research. Factor Profile data as of 4/30/2020.

Looking at performance across strategic-beta groups and categories, growth, momentum, and technology-oriented strategic-beta funds were among the best performers, while funds focused on the energy sector tended to be among the worst-performing. The factor profiles of the sector indexes in the global, U.S., and European markets all showed that technology-oriented stocks tended to exhibit strong momentum and quality; the energy sector exhibited low momentum and high volatility, as Exhibit 51 shows.

AGFiQ US Market Neutral Momentum MOM was the best-performing strategic-beta fund listed in the U.S. and Europe during the first five months of the year. This market-neutral fund goes long stocks with strong positive momentum and short on stocks with negative momentum, using a sector-relative approach to stock selection. Stocks that make the cut are equally weighted, tilting the portfolio toward smaller names. 

Exhibit 51 Factor Profiles for Global, U.S., DM Europe for Markets, Energy Sector, and Technology Sector

Source: Morningstar Direct, Morningstar Research. Factor profile data as of 4/30/2020. (Based on Morningstar Global Markets, US Markets, and DM Europe Markets and their respective sectors indexes.)

Appendix— The Morningstar Analyst Rating

As the indexes underpinning strategic-beta ETPs become increasingly nuanced, looking to infuse elements of an active manager's thinking into an index, investors' collective due-diligence burden will continue to increase commensurately. To assist investors in this process, Morningstar has assigned Analyst Ratings to 130 strategic-beta ETPs worldwide. Exhibit 52 contains our ratings for those currently covered by our global manager research team. They collectively held more than \$775 billion in investors' money as of Dec. 31, 2019, representing 71% of the total amount invested in global strategic-beta ETPs.

Exhibit 52 Strategic-Beta ETPs With Morningstar Analyst Ratings

| Name | Domicile | Ticker | Strategic-Beta Group | Assets* (USD Mil) | Morningstar Analyst Rating | Pillars | | |
|--|-----------|--------|----------------------|-------------------|---|---|---|---|
| | | | | | | Process | People | Parent |
| BetaShares FTSE RAFI Australia 200 ETF | Australia | QOZ | Fundamentals | 206.7 |  Bronze |  |  |  |
| BetaShares FTSE RAFI US 1000 ETF | Australia | QUS | Fundamentals | 36.3 |  Bronze |  |  |  |
| iShares Edge MSCI World Multifactor ETF | Australia | WDMF | Multifactor | 178.9 |  Bronze |  |  |  |
| iShares S&P/ASX Dividend Opps ETF | Australia | IHD | Dividend | 209.1 |  Neutral |  |  |  |
| Russell Inv High Dividend Aus Shrs ETF | Australia | RDV | Dividend | 201.8 |  Bronze |  |  |  |
| SPDR® MSCI Australia Sel Hi Div Yld ETF | Australia | SYI | Dividend | 120.2 |  Bronze |  |  |  |
| SPDR® MSCI World Quality Mix ETF | Australia | QMIX | Multi-Factor | 15.9 |  Bronze |  |  |  |
| SPDR® S&P Global Dividend ETF | Australia | WDIV | Dividend | 204.3 |  Neutral |  |  |  |
| VanEck Vectors Australian Equal Wt ETF | Australia | MVW | Other | 773.6 |  Bronze |  |  |  |
| VanEck Vectors MSCI Wld ex Aus Qlty ETF | Australia | QUAL | Quality | 593.8 |  Bronze |  |  |  |
| Vanguard Australian Shares High Yld ETF | Australia | VHY | Dividend | 971.2 |  Bronze |  |  |  |
| Invesco FTSE RAFI Canadian ETF | Canada | PXC | Fundamentals | 214.2 |  Silver |  |  |  |
| Invesco FTSE RAFI US ETF | Canada | PXU.F | Fundamentals | 85.1 |  Bronze |  |  |  |
| iShares Canadian Fundamental ETF Comm | Canada | CRO | Fundamentals | 88.7 |  Neutral |  |  |  |
| iShares Canadian Select Dividend ETF | Canada | XDV | Dividend | 1,056.2 |  Neutral |  |  |  |
| iShares Edge MSCI Min Vol Canada ETF | Canada | XMV | Risk-Oriented | 92.1 |  Silver |  |  |  |
| iShares Edge MSCI Min Vol EAFE ETF | Canada | XMI | Risk-Oriented | 203.8 |  Silver |  |  |  |
| iShares Edge MSCI Min Vol Emerg Mkts ETF | Canada | XMM | Risk-Oriented | 74.0 |  Silver |  |  |  |
| iShares Edge MSCI Min Vol Global ETF | Canada | XMW | Risk-Oriented | 202.5 |  Silver |  |  |  |
| Vanguard FTSE Canadian High Div Yld ETF | Canada | VDY | Dividend | 425.7 |  Neutral |  |  |  |
| iShares DivDAX® (DE) | Germany | EXSB | Dividend | 629.9 |  Neutral |  |  |  |
| iShares STOXX Global Sel Div 100 (DE) | Germany | ISPA | Dividend | 1,532.0 |  Neutral |  |  |  |
| Fidelity Global Qual Inc ETF Inc | Ireland | FGQI | Dividend | 158.4 |  Silver |  |  |  |
| Invesco FTSE RAFI US 1000 ETF | Ireland | PRUS | Fundamentals | 337.8 |  Bronze |  |  |  |
| Invesco S&P 500 High Div LowVol ETF | Ireland | HDLV | Dividend | 203.9 |  Bronze |  |  |  |
| iShares Dev Mkts Prpty Yld ETF USD Acc | Ireland | DPYA | Dividend | 97.1 |  Silver |  |  |  |
| iShares Dev Mkts Prpty Yld ETF USD Dist | Ireland | IWDP | Dividend | 2,896.7 |  Silver |  |  |  |
| iShares Edge MSCI EM Mini Vol ETF \$ Acc | Ireland | EMMV | Risk-Oriented | 738.3 |  Silver |  |  |  |
| iShares Edge MSCI Eurp Mini Vol ETF €Acc | Ireland | MVEU | Risk-Oriented | 1,360.7 |  Silver |  |  |  |
| iShares Edge MSCI USA Mltfct ETF USD Acc | Ireland | IFSU | Multi-Factor | 102.5 |  Bronze |  |  |  |

Exhibit 52 Strategic-Beta ETPs With Morningstar Analyst Ratings (Continued)

| Name | Domicile | Ticker | Strategic-Beta Group | Assets* (USD Mil) | Morningstar Analyst Rating | Pillars | | |
|---|---------------|--------|----------------------|-------------------|---|---------------------------------------|---------------------------------------|---------------------------------------|
| | | | | | | Process | People | Parent |
| iShares Edge MSCI USA Val Fac ETF \$ Acc | Ireland | IUVL | Value | 1,463.3 |  Bronze | + | + | + |
| iShares Edge MSCI Wld Min Vol ETF \$ Acc | Ireland | MVOL | Risk-Oriented | 4,096.4 |  Silver | + | + | + |
| iShares Edge MSCI Wld Qual Fctr ETF \$Acc | Ireland | IWQU | Quality | 1,796.4 |  Silver | ● | ● | ● |
| iShares Edge S&P 500 Min Vol ETF USD Acc | Ireland | SPMV | Risk-Oriented | 1,877.4 |  Silver | + | + | + |
| iShares Euro Dividend ETF EUR Dist | Ireland | IDVY | Dividend | 1,080.5 |  Neutral | ● | ● | ● |
| iShares European Prpty Yld ETF EUR Acc | Ireland | IPRE | Dividend | 62.5 |  Neutral | ● | ● | ● |
| iShares European Prpty Yld ETF EUR Dist | Ireland | IPRP | Dividend | 1,995.6 |  Neutral | ● | ● | ● |
| iShares UK Dividend ETF GBP Dist | Ireland | IUKD | Dividend | 1,119.7 |  Negative | ● | ● | ● |
| iShares US Property Yield ETF USD Dist | Ireland | IDUP | Dividend | 945.9 |  Gold | ● | ● | ● |
| SPDR® S&P Euro Dividend Aristocrats ETF | Ireland | SPYW | Dividend | 2,126.1 |  Silver | ● | ● | ● |
| SPDR® S&P US Dividend Aristocrats ETFDis | Ireland | UDVD | Dividend | 3,603.4 |  Silver | + | + | ● |
| UBS ETF Fact MSCI USA Qual USD A dis | Ireland | UQLTD | Quality | 148.0 |  Bronze | + | + | ● |
| UBS ETF MSCI USA Sel Fac Mix USD A dis | Ireland | USFMD | Multi-Factor | 518.6 |  Bronze | + | + | ● |
| Vanguard FTSE AllWld HiDivYld ETF \$Dis | Ireland | VHYD | Dividend | 1,047.0 |  Bronze | + | + | + |
| Xtrackers MSCI World Quality ETF 1C | Ireland | | Quality | 383.6 |  Silver | ● | ● | ● |
| Xtrackers S&P 500 Equal Weight ETF 1C | Ireland | XDEW | Other | 613.1 |  Neutral | ● | ● | ● |
| Amundi IS JPX-Nikkei 400 ETF-C EUR | Luxembourg | JPNK | Quality | 176.2 |  Silver | ● | ● | ● |
| Amundi IS JPX-Nikkei 400 ETF-C JPY | Luxembourg | JPNY | Quality | 92.0 |  Silver | ● | ● | ● |
| Amundi IS MSCI Europe Quality Fctr ETF-C | Luxembourg | QCEU | Quality | 512.4 |  Silver | ● | ● | ● |
| Lyxor JPX Nikkei 400 (DR) ETF C EUR | Luxembourg | JPX4 | Quality | 329.6 |  Silver | ● | ● | ● |
| Lyxor SG Global Qual Inc NTR ETF C GBP | Luxembourg | SGQL | Dividend | 7.3 |  Negative | ● | ● | ● |
| Lyxor SG Global Qual Inc NTR ETF D EUR | Luxembourg | SGQI | Dividend | 164.3 |  Negative | ● | ● | ● |
| Xtrackers Stoxx Glb Sel Div 100 SwpETF1D | Luxembourg | DXSB | Dividend | 510.2 |  Neutral | ● | ● | ● |
| First Trust Large Cap Core AlphaDEX® ETF | United States | FEX | Multi-Factor | 1,387.5 |  Neutral | ● | ● | ● |
| First Trust Value Line® Dividend ETF | United States | FVD | Dividend | 9,665.0 |  Neutral | ● | ● | ● |
| FlexShares iBoxx 3Yr Target Dur TIPS ETF | United States | TDTT | Fixed Income | 1,163.8 |  Silver | ● | ● | ● |
| FlexShares Quality Dividend ETF | United States | QDF | Dividend | 1,796.0 |  Silver | ● | ● | ● |
| Goldman Sachs ActiveBeta® EMkts Eq ETF | United States | GEM | Multi-Factor | 1,887.4 |  Neutral | ● | ● | ● |
| Goldman Sachs ActiveBeta® Intl Eq ETF | United States | GSIE | Multi-Factor | 1,786.0 |  Bronze | ● | ● | ● |
| Goldman Sachs ActiveBeta® US LgCp Eq ETF | United States | GSLC | Multi-Factor | 7,483.6 |  Silver | ● | ● | ● |
| Invesco BuyBack Achievers ETF | United States | PKW | Other | 1,418.7 |  Neutral | ● | ● | ● |
| Invesco Dynamic Large Cap Value ETF | United States | PWV | Value | 1,130.8 |  Neutral | ● | ● | ● |
| Invesco Emerging Markets Sov Debt ETF | United States | PCY | Fixed Income | 3,574.2 |  Neutral | ● | ● | ● |
| Invesco FTSE RAFI Dev Mkts ex-US ETF | United States | PXF | Fundamentals | 1,267.8 |  Bronze | + | + | ● |
| Invesco FTSE RAFI US 1000 ETF | United States | PRF | Fundamentals | 5,620.8 |  Bronze | + | + | ● |
| Invesco FTSE RAFI US 1500 Small-Mid ETF | United States | PRFZ | Fundamentals | 1,977.1 |  Silver | ● | ● | ● |
| Invesco Fundamental Hi Yld® Corp Bd ETF | United States | PHB | Fixed Income | 737.0 |  Neutral | ● | ● | ● |
| Invesco S&P 500® Equal Weight ETF | United States | RSP | Other | 16,770.2 |  Neutral | ● | + | ● |
| Invesco S&P 500® High Div Low Vol ETF | United States | SPHD | Dividend | 3,797.7 |  Bronze | ● | + | ● |
| Invesco S&P 500® Low Volatility ETF | United States | SPLV | Risk-Oriented | 12,032.7 |  Bronze | ● | ● | ● |
| Invesco S&P 500® Pure Growth ETF | United States | RPG | Growth | 2,702.1 |  Neutral | ● | + | ● |
| Invesco S&P 500® Pure Value ETF | United States | RPV | Value | 1,074.9 | Neutral | ● | ● | ● |
| Invesco S&P 500® Quality ETF | United States | SPHQ | Quality | 1,832.2 | Silver | ● | ● | ● |
| Invesco S&P SmallCap Low Volatility ETF | United States | XSLV | Risk-Oriented | 2,396.8 | Silver | ● | ● | ● |
| iShares Core S&P US Growth ETF | United States | IUSG | Growth | 7,837.6 | Gold | ● | ● | ● |

Exhibit 52 Strategic-Beta ETPs With Morningstar Analyst Ratings (Continued)

| Name | Domicile | Ticker | Strategic-Beta Group | Assets* (USD Mil) | Morningstar Analyst Rating | Pillars | | |
|--|---------------|--------|----------------------|-------------------|----------------------------|---------|--------|--------|
| | | | | | | Process | People | Parent |
| iShares Core S&P US Value ETF | United States | IUSV | Value | 7,032.7 | Gold | ● | ● | ● |
| iShares Edge MSCI Min Vol EAFE ETF | United States | EFAV | Risk-Oriented | 13,031.8 | Silver | + | + | + |
| iShares Edge MSCI Min Vol Emerg Mkts ETF | United States | EEMV | Risk-Oriented | 5,621.4 | Silver | + | + | + |
| iShares Edge MSCI Min Vol Global ETF | United States | ACWV | Risk-Oriented | 5,645.1 | Silver | + | + | + |
| iShares Edge MSCI Min Vol USA ETF | United States | USMV | Risk-Oriented | 37,245.0 | Silver | ● | ● | ● |
| iShares Edge MSCI Multifactor EmMkts ETF | United States | EMGF | Multi-Factor | 458.2 | Neutral | ● | + | + |
| iShares Edge MSCI Multifactor Intl ETF | United States | INTF | Multi-Factor | 1,114.0 | Silver | ● | ● | ● |
| iShares Edge MSCI Multifactor USA ETF | United States | LRGF | Multi-Factor | 961.8 | Silver | ● | ● | ● |
| iShares Edge MSCI USA Momentum Fctr ETF | United States | MTUM | Momentum | 9,412.0 | Silver | ● | ● | ● |
| iShares Edge MSCI USA Quality Factor ETF | United States | QUAL | Quality | 16,307.9 | Silver | ● | ● | ● |
| iShares Edge MSCI USA Value Factor ETF | United States | VLUE | Value | 4,691.1 | Bronze | + | + | + |
| iShares Russell 1000 Growth ETF | United States | IWF | Growth | 49,446.8 | Bronze | ● | ● | ● |
| iShares Russell 1000 Value ETF | United States | IWD | Value | 42,555.4 | Silver | ● | ● | ● |
| iShares Russell 2000 Growth ETF | United States | IWO | Growth | 9,817.0 | Neutral | ○ | ● | ● |
| iShares Russell 2000 Value ETF | United States | IWN | Value | 9,929.0 | Neutral | ○ | ● | ● |
| iShares Russell Mid-Cap Growth ETF | United States | IWP | Growth | 11,619.0 | Silver | ● | ● | ● |
| iShares Russell Mid-Cap Value ETF | United States | IWS | Value | 11,924.6 | Silver | ● | ● | ● |
| iShares S&P 500 Growth ETF | United States | IVW | Growth | 24,765.2 | Bronze | + | + | + |
| iShares S&P 500 Value ETF | United States | IVE | Value | 17,873.2 | Silver | ● | ● | ● |
| iShares S&P Mid-Cap 400 Growth ETF | United States | IJK | Growth | 7,595.9 | Silver | ● | ● | ● |
| iShares S&P Mid-Cap 400 Value ETF | United States | IJJ | Value | 6,627.9 | Silver | ● | ● | ● |
| iShares S&P Small-Cap 600 Growth ETF | United States | IJT | Growth | 5,499.6 | Bronze | ● | ● | ● |
| iShares S&P Small-Cap 600 Value ETF | United States | IJS | Value | 6,784.0 | Bronze | ● | ● | ● |
| iShares Select Dividend ETF | United States | DVY | Dividend | 18,708.9 | Neutral | ○ | ● | ● |
| Schwab Fundamental Emerg Mkts Lg Co ETF | United States | FNDE | Fundamentals | 2,946.5 | Neutral | ○ | ○ | ● |
| Schwab Fundamental Intl Lg Co ETF | United States | FNDF | Fundamentals | 4,871.8 | Bronze | + | ● | + |
| Schwab Fundamental US Large Company ETF | United States | FNDX | Fundamentals | 6,207.0 | Bronze | + | ● | + |
| Schwab Fundamental US Small Company ETF | United States | FNDA | Fundamentals | 3,885.2 | Silver | ● | ○ | ● |
| Schwab US Dividend Equity ETF™ | United States | SCHD | Dividend | 11,617.9 | Silver | ● | ● | ● |
| Schwab US Large-Cap Growth ETF™ | United States | SCHG | Growth | 9,210.3 | Silver | ● | ● | ● |
| Schwab US Large-Cap Value ETF™ | United States | SCHV | Value | 7,108.2 | Silver | ● | ● | ● |
| SPDR® Portfolio S&P 500 Growth ETF | United States | SPYG | Growth | 5,370.5 | Silver | ● | ● | ○ |
| SPDR® S&P Dividend ETF | United States | SDY | Dividend | 20,027.3 | Silver | + | + | ● |
| SPDR® S&P International Dividend ETF | United States | DWX | Dividend | 809.7 | Negative | ● | ● | ○ |
| Vanguard Dividend Appreciation ETF | United States | VIG | Dividend | 42,110.0 | Silver | ● | ● | ● |
| Vanguard Growth ETF | United States | VUG | Growth | 46,467.4 | Silver | ● | ● | ● |
| Vanguard High Dividend Yield ETF | United States | VYM | Dividend | 30,217.7 | Silver | + | + | + |
| Vanguard Intl Div Apprec ETF | United States | VIGI | Dividend | 1,521.9 | Bronze | + | + | + |
| Vanguard Intl Hi Div Yld Idx ETF | United States | VYMI | Dividend | 1,409.8 | Bronze | + | + | + |
| Vanguard Mega Cap Growth ETF | United States | MGK | Growth | 5,171.1 | Silver | + | + | + |
| Vanguard Mega Cap Value ETF | United States | MGV | Value | 2,795.0 | Gold | ● | ● | ● |
| Vanguard Mid-Cap Growth ETF | United States | VOT | Growth | 6,995.3 | Gold | ● | ● | ● |
| Vanguard Mid-Cap Value ETF | United States | VOE | Value | 10,336.3 | Gold | ● | ● | ● |
| Vanguard S&P 500 Growth ETF | United States | VOOG | Growth | 3,123.2 | Bronze | ● | ● | ● |
| Vanguard Small-Cap Growth ETF | United States | VBK | Growth | 9,818.2 | Gold | ● | ● | ● |

Exhibit 52 Strategic-Beta ETPs With Morningstar Analyst Ratings (Continued)

| Name | Domicile | Ticker | Strategic-Beta Group | Assets* (USD Mil) | Morningstar Analyst Rating | Pillars | | |
|--|---------------|--------|----------------------|-------------------|----------------------------|---------|--------|--------|
| | | | | | | Process | People | Parent |
| Vanguard Small-Cap Value ETF | United States | VBR | Value | 14,784.5 | Gold | ● | ● | ● |
| Vanguard Value ETF | United States | VTV | Value | 55,841.2 | Gold | ● | ● | ● |
| WisdomTree Emerging Markets High Div ETF | United States | DEM | Dividend | 2,402.7 | Neutral | ● | ● | ● |
| WisdomTree Europe Hedged Equity ETF | United States | HEDJ | Dividend | 3,479.8 | Neutral | ● | ● | ● |
| WisdomTree US High Dividend ETF | United States | DHS | Dividend | 957.0 | Neutral | ● | ● | ● |
| WisdomTree US LargeCap Dividend ETF | United States | DLN | Dividend | 2,405.0 | Silver | ● | ● | ● |
| WisdomTree US MidCap Dividend ETF | United States | DON | Dividend | 4,199.2 | Silver | ● | ● | ● |
| WisdomTree US Quality Dividend Gr ETF | United States | DGRW | Dividend | 3,295.8 | Bronze | + | ● | ● |
| WisdomTree US SmallCap Dividend ETF | United States | DES | Dividend | 2,193.5 | Silver | ● | ● | ● |
| WisdomTree Yield Enhanced US Aggt Bd ETF | United States | AGGY | Fixed Income | 1,038.9 | Silver | ● | ● | ● |

Source: Morningstar Direct. Asset data as of 12/31/19 (*assets at share class level). Morningstar Analyst Ratings and Pillar scores as of 5/31/20.

Definitions and Morningstar Strategic-Beta and Index Attributes

Strategic beta—widely referred to as “smart beta”—refers broadly to a group of indexes and the ETPs and other investment products that track them. Most seek to enhance returns or minimize risk relative to more-traditional benchmarks. Others seek to address oft-cited drawbacks of standard benchmarks, such as the negative effect of contango in long-only commodity futures indexes, and the overweighting of the most indebted issuers in market-value-weighted fixed-income benchmarks. These indexes may also aim to capture a specific factor or set of factors such as value, momentum, small size, low volatility, or quality.

Index selection and weighting methodologies can vary for different strategic-beta indexes that otherwise appear similar. These indexes can also employ some of the same selection or weighting methodologies as more-traditional benchmarks. Therefore, it is valuable to both recognize and distinguish strategic-beta indexes versus traditional benchmarks but also to understand the underlying index selection and weighting methodologies for both.

The goal of Morningstar’s Strategic Beta and Index attribute data is to provide a more-granular view of how indexes are constructed. Morningstar first introduced its strategic-beta taxonomy in 2014; it aimed to provide additional detail on strategic-beta products through assignment of one or more strategic-beta attributes as well as a strategic-beta group. Our updated methodology, which took effect in 2018, replaced strategic-beta attributes with index selection and index-weighting attributes for all eligible index-tracking products, and uses a more descriptive list of Strategic-Beta Groups for strategic-beta index-tracking products.

In addition to collecting Index Selection, Index Weighting, and the Strategic-Beta Group, Morningstar also has a strategic-beta tag in some products. We define this as an indication that the index, or the investable product that tracks the index, follows a strategic-beta investment mandate. Strategic-beta products employ rules to exploit a specific list of factors in order to improve their return profile or alter their risk profile.

Below are general parameters and characteristics we use to recognize strategic-beta products:

- ▶ These benchmarks and the investable products that track them exploit many of the same “factors” (size, value, quality, momentum, and so on) or mitigate risk in a manner similar to active managers.
- ▶ This group represents a middle ground on the active-to-passive spectrum—deviating from a traditional strictly passive market portfolio but doing so in a rules-based, transparent, and relatively low-cost manner.
- ▶ Many have defined the space in the negative, including products tracking any benchmark that does not weight its constituents on the basis of their market capitalization.
- ▶ Per our definition, while most of the indexes’ underlying investment products in this class are not market-cap-weighted, some are (for example, those that have style “tilts” that screen their investable universe for certain characteristics and subsequently weight constituents by their market cap).
- ▶ We do not include market-cap-weighted sector indexes (though we do include non-cap-weighted sector benchmarks), thematic indexes, market-cap-weighted country indexes (again, we will include non-cap-weighted ones), and other types of indexes that screen constituents strictly on the basis of sector membership, investment theme, or geography in this grouping.
- ▶ We exclude products tracking benchmarks that employ options strategies (for example, covered calls or protective puts).
- ▶ We exclude quantitative tactical strategies.
- ▶ We exclude products offering some form of exposure to volatility (for example, VIX or VSTOXX.)
- ▶ We also exclude benchmarks that underlie those products that are included in our “trading” categories, such as leveraged and inverse funds.

The common elements among this diverse set of products are:

1. They are index-tracking investment products.
2. They track nontraditional benchmarks that have an "active" element contained within their methodology that typically aims to improve returns and/or alter the index's risk profile relative to a standard benchmark.
3. Many of their benchmarks have short track records and were designed for the sole purpose of serving as the basis of an investment product.
4. Their expense ratios tend to be lower relative to actively managed funds.
5. Their expense ratios are often substantially higher relative to products tracking broad, market-capitalization weighted benchmarks, like the S&P 500.

Eligible for Collection

The strategic-beta and index strategy data points reflect the methodology of an index, so that any two eligible investment products tracking the same index will also display the same data. Eligibility for collection is based off the investment product, though, so not all indexes Morningstar covers will have the strategic-beta and index strategy data points populated.

Index Selection, Index Weighting, and Strategic-Beta Group are not assigned to all indexes, exchange-traded products, and open-end funds. Index Selection and Index Weighting are collected for all eligible index-tracking products and the indexes they track. Strategic-Beta Group will apply to eligible strategic-beta products and is assigned as "Not Applicable" for standard indexes and the investment products that track them. Index Selection, Index Weighting, and Strategic-Beta Group will not be populated for excluded products.

Eligible

- We include global index-tracking ETPs and open-end funds that do not track a blended benchmark and are not included in our "trading" categories, such as leveraged and inverse funds.
- An index will be assigned only when an eligible investment product is tracking it.
- If the investment product and its index are strategic beta, a Strategic Beta Group is assigned.
- Standard benchmarks are assigned as "not applicable" for Strategic Beta Group.

Strategic-Beta Group

A group used to classify strategic-beta products with similar objectives. Eligible strategic-beta investment products and the indexes they track will be assigned to one group from the choices below.

Commodity

A group for strategic-beta products that aim to improve upon the performance of standard commodity indexes (such as the Bloomberg Commodity Index or S&P GSCI). They may do so by attempting to avoid the chief drawbacks of standard commodity indexes, such as roll losses resulting from contango. These indexes may also seek to harness other fundamental factors, such as momentum.

Dividend

A group for strategic-beta products that seek to deliver equity income by employing a number of dividend-related screening and/or weighting criteria. Dividend-oriented strategies include screening a universe of stocks for dividend-paying firms, weighting stocks on the basis of dividend payments, screening on the basis of dividend growth or yield, isolating firms based on metrics that would indicate dividend stability, and other dividend-related criteria.

Fixed Income

A group for strategic-beta products that aim to enhance returns and/or reduce risk relative to traditional fixed-income benchmarks. They may do so by selecting and weighting constituents based on measures of credit quality, momentum, yield, or other gauges of issuers' fundamentals. Other strategies in this category may have specific risk, yield, or duration targets.

Fundamentals

A group for strategic-beta products that select and weight constituents on a variety of fundamental measures of their value. These inputs may include sales, adjusted sales, cash flow, dividends, share buybacks, book value, and others.

Growth

A group for strategic-beta products that primarily aim to capture growth characteristics through their screening and/or weighting methodology. Strategic-beta products belonging to the growth strategic-beta group will screen a segment of the stock market looking to identify those stocks that display growth characteristics and/or may also more heavily weight constituents based on growth characteristics. These characteristics will differ across index providers. Common growth characteristics include above-average long-term projected earnings growth, historical earnings growth, sales growth, cash flow growth, book value growth, momentum, and others.

Momentum

A group for strategic-beta products that primarily aim to capture momentum characteristics through their screening and/or weighting methodology. Strategic-beta products belonging to the momentum strategic-beta group will select and/or weight their constituent securities on a number of momentum factors, which might include price momentum, adjustments to earnings estimates, and earnings surprises.

Multifactor

A group for strategic-beta products that set out to combine a variety of factors (such as value, growth, size, momentum, quality, and low volatility) to improve risk-adjusted performance relative to a standard benchmark.

Other

The Other group is for strategic-beta products that do not fit neatly into any of the remaining strategic-beta groups. They will tend to be highly specialized strategies and may be few in number—thus, not warranting a dedicated group of their own. As such, this group will represent different types of strategies. Morningstar routinely reviews industry trends and what products are being assigned to the Other group to determine whether a new stand-alone group is warranted.

Quality

A group for strategic-beta products that primarily aim to capture quality characteristics through their screening and/or weighting methodology. Strategic-beta products belonging to the Quality strategic-beta group will screen a segment of the stock market looking to identify those stocks that display quality characteristics and may also more heavily weight constituents based on quality characteristics. These characteristics will differ across index providers. Common quality characteristics include high and stable levels of profitability, clean balance sheets, capital efficiency, return on assets, economic moats, and others.

Risk-Oriented

A group for strategic-beta products that attempt to either reduce or increase the level of risk relative to a standard benchmark. Low-volatility and high-beta strategies are the most common examples of risk-oriented strategies.

Value

A group for strategic-beta products that primarily aim to capture value characteristics through their screening and/or weighting methodology. Strategic-beta products in the value strategic-beta group will screen a segment of the stock market looking to identify those stocks that display value characteristics and may also more heavily weight constituents based on value characteristics. These characteristics will differ across index providers. Common value characteristics include low price/prospective earnings, price/book, price/sales, and price/cash flow ratios, above-average dividend yields, and others.

Index Selection

Index selection attributes describe how indexes select their constituents. Eligible index-tracking investment products and the indexes they track will be assigned one or more index-selection criteria from the choices below.

Beta

An indication the index selects constituents based on their market beta.

Buyback/Shareholder Yield

An indication the index selects constituents based on one or more measures of share buybacks or shareholder yield.

Committee

An indication there is a committee that selects constituents based on various criteria.

Credit

An indication the index selects constituents based on one or more credit measures such as issuer credit ratings.

Dividend

An indication the index selects constituents based on one or more dividend-related measures such as dividend yield or dividend growth.

Duration

An indication the index selects bonds based on one or more duration measures such as targeted duration.

Earnings

An indication the index selects constituents based on one or more earnings measures such as the amount of earnings or earnings growth.

Fixed

An indication the index has a fixed universe of constituents.

Fundamentals

An indication the index selects constituents based on one or more measures of their fundamentals such as sales, adjusted sales, cash flow, dividends, share buybacks, book value, and others.

Growth

An indication the index selects constituents based on one or more growth measures such as long-term projected earnings growth, historical earnings growth, sales growth, cash flow growth, book value growth, momentum, and others.

Liquidity

An indication the index selects constituents based on one or more measures of their liquidity such as trading volume.

Market Capitalization

An indication the index selects constituents based on their market capitalization or market value.

Maturity

An indication the index selects bonds based on their maturity.

Momentum

An indication the index selects constituents based on one or more measures of their momentum such as price momentum, adjustments to earnings estimates, and earnings surprises.

Optimization

An indication the index uses an optimizer to select constituents.

Other

An indication the index selects constituents based on other measures that do not fit neatly within any of the remaining index-selection attributes. These factors will tend to be highly specialized. As such, they may be few in number and do not warrant a dedicated attribute of their own. Consequently, this attribute is applied to a variety of different selection strategies. Morningstar routinely reviews industry trends to determine whether a new stand-alone selection attribute may be warranted.

Proprietary

An indication the index selects constituents based on one or more proprietary measures.

Quality

An indication the index selects constituents based on one or more measures of quality such as profitability and financial leverage.

Sector

An indication the index selects constituents based on one or more specific sectors such as industrials or financial.

Single Commodity

An indication the index is composed of futures contracts for a single commodity.

Small Size

An indication the index tilts toward smaller stocks within its selection universe.

Target Maturity

An indication the index selects fixed-income constituents based on a targeted maturity date.

Value

An indication the index selects constituents based on one or more value measures such as low price/prospective earnings, price/book, price/sales, and price/cash flow ratios, above-average dividend yields, and others.

Volatility

An indication the index selects constituents based on one or more measures of volatility.

Yield

An indication the index selects constituents based on one or more yield measures.

Index Weighting

Index-weighting attributes describe how indexes weight their constituents. Eligible index-tracking investment products and the indexes they track will be assigned one or more index-weighting criteria from the choices below.

Beta

An indication the index weights constituents based on their market beta.

Buyback/Shareholder Yield

An indication the index weights constituents based on one or more measures of share buybacks or shareholder yield.

Dividend

An indication the index weights constituents based on one or more dividend-related measures such as dividend yield or total dividend payments.

Duration

An indication the index weights bonds based on one or more duration measures such as targeted duration.

Earnings

An indication the index weights constituents based on one or more earnings measures such as the amount of earnings or earnings growth.

Equal

An indication the index weights constituents equally.

Fixed

An indication the index applies fixed weights to constituents.

Fundamentals

An indication the index weights constituents based on multiple fundamental measures such as sales, adjusted sales, cash flow, dividends, share buybacks, book value, and others.

Growth

An indication the index weights constituents based on their growth characteristics such as long-term projected earnings growth, historical earnings growth, sales growth, cash flow growth, book value growth, momentum, and others.

Liquidity

An indication the index weights constituents based on one or more measures of their liquidity such as trading volume.

Market Capitalization

An indication the index weights constituents by market capitalization or market value.

Maturity

An indication the index weights bonds based on their maturity.

Modified Market Capitalization

An indication the index weights constituents based on their modified market capitalization. Examples include benchmarks that apply weighting caps or other adjustments to conform with diversification-related regulatory requirements.

Momentum

An indication the index weights constituents based on one or more measures of their momentum such as price momentum, adjustments to earnings estimates, and earnings surprises.

Optimization

An indication the index uses an optimizer to weight constituents.

Other

An indication the index weights constituents based on other measures that do not fit neatly within any of the remaining index-weighting attributes. These factors will tend to be highly specialized. As such, they may be few in number and do not warrant a dedicated attribute of their own. Consequently, this attribute is applied to a variety of different weighting strategies. Morningstar routinely reviews industry trends to determine whether a new stand-alone weighting attribute may be warranted.

Production

An indication the index weights commodities based on the quantity of each commodity in the index that is produced.

Proprietary

An indication the index weights constituents based on proprietary metrics.

Quality

An indication the index weights constituents on the basis of their quality characteristics such as profitability and financial leverage.

Revenue

An indication the index weights constituents based on their revenue.

Single Commodity

An indication the index is composed of futures contracts for a single commodity.

Size

An indication the index weights constituents on the basis of their size to tilt toward smaller companies within the selection universe.

Tiered

An indication the index assigns constituents to multiple tiers. Each tier will likely have a target weight. Within each tier, constituents may be weighted in a variety of ways (equally, based on market cap, and so on).

Value

An indication the index weights constituents based on their value characteristics such as low price/prospective earnings, price/book, price/sales, and price/cash flow ratios, above-average dividend yields, and others.

Volatility

An indication the index weights constituents based on one or more measures of their volatility.

Yield

An indication the index weights constituents based on one or more measures of their yield.

Exhibit 53 Morningstar Strategic-Beta and Index Attributes

| Strategic Beta | Strategic-Beta Group | Index Selection | Index Weighting |
|----------------|----------------------|---------------------------|--------------------------------|
| Yes | Commodity | Beta | Beta |
| No | Dividend | Buyback/Shareholder Yield | Buyback/Shareholder Yield |
| | Fixed Income | Committee | Dividend |
| | Fundamentals | Credit | Duration |
| | Growth | Dividend | Earnings |
| | Momentum | Duration | Equal |
| | Multifactor | Earnings | Fixed |
| | Other | Fixed | Fundamentals |
| | Quality | Fundamentals | Growth |
| | Risk-Oriented | Growth | Liquidity |
| | Value | Liquidity | Market Capitalization |
| | Not Applicable | Market Capitalization | Maturity |
| | | Maturity | Modified Market Capitalization |
| | | Momentum | Momentum |
| | | Optimization | Optimization |
| | | Other | Other |
| | | Proprietary | Production |
| | | Quality | Proprietary |
| | | Sector | Quality |
| | | Single Commodity | Revenue |
| | | Small Size | Single Commodity |
| | | Target Maturity | Size |
| | | Value | Tiered |
| | | Volatility | Value |
| | | Yield | Volatility |
| | | | Yield |

Source: Morningstar Research

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The Five Pillars

Morningstar has identified five key areas that we believe are crucial to predicting the future success of funds: People, Parent, Process, Performance, and Price. Each pillar is evaluated when assessing a fund as well as the interaction between the pillars, which we believe is crucial to understanding a fund's overall merit.

People

The overall quality of a fund's investment team is a significant key to its ability to deliver superior performance relative to its benchmark and/or peers. Evaluating a fund's investment team requires that analysts assess several relevant items including how key decisions are made.

Parent

We believe the parent organization is of utmost importance in evaluating funds. The fund's management set the tone for key elements of our evaluation, including capacity management, risk management, recruitment and retention of talent, and incentive pay. Beyond these operational areas, we prefer firms that have a culture of stewardship and put investors first to those that are too heavily weighted to salesmanship.

Process

We look for funds with a performance objective and investment process (for both security selection and portfolio construction) that is sensible, clearly defined, and repeatable. In addition, the portfolio should be constructed in a manner that is consistent with the investment process and performance objective.

Performance

We do not believe past performance is necessarily predictive of future results, and this factor accordingly receives a relatively small weighting in our evaluation process. In particular, we strive not to anchor on short-term performance. However, we do believe that the evaluation of long-term return and risk patterns is vital to determining if a fund is delivering to our expectations.

Price

To reflect actual investor experience, price is evaluated within the context of the relevant market or cross-border region—for example, the United States, Australia, Canada, or Europe. In recognition of differences in scale and distribution costs in various markets, the level at which a fund is penalised for high fees or rewarded for low fees can vary with region. In Europe, for example, funds are penalised if they land in the most expensive quintile of their Morningstar category and are rewarded if they land in the cheapest quintile. The assessment is made using annual expense ratios, but in the case of funds with performance fees, expenses are evaluated excluding any performance fees and then the structure of the performance fee is evaluated separately.

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Gold

Represents funds that our analyst has the highest-conviction in for that given investment mandate. By giving a fund a Gold rating, we are expressing an expectation that it will outperform its relevant performance benchmark and/or peer group within the context of the level of risk taken over the long term (defined as a full market cycle or at least five years). To earn a Gold rating, a fund must distinguish itself across the five pillars that are the basis for our analysis.

Silver

Represents funds our analyst has high-conviction in, but not in all of the five pillars. With those fundamental strengths, we expect these funds will outperform their relevant performance benchmark and/or peer group within the context of the level of risk taken over the long term (defined as a full market cycle or at least five years).

Bronze

Represents funds that have advantages that clearly outweigh any disadvantages across the pillars, giving analyst the conviction to award them a positive rating. We expect these funds to beat their relevant performance benchmark and/or peer group within the context of the level of risk taken over a full market cycle (or at least five years).

Neutral

Represents funds in which our analysts don't have a strong positive or negative conviction. In our judgment, these funds are not likely to deliver standout returns, but they aren't likely to seriously underperform their relevant performance benchmark and/or peer group either.

Negative

Represents funds that possess at least one flaw that our analysts believe is likely to significantly hamper future performance, such as high fees or an unstable management team. Because of these faults, we believe these funds are inferior to most competitors and will likely underperform their relevant performance benchmark and/or peer group, within the context of the level of risk taken, over a full market cycle.

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For More Information

Mike Laske

Product Manager, Manager Research Services, North America

+1 312 696-6394

Jonathan Miller

Director, Manager Research, UK

+44 20 3194-1133

Tim Murphy

Director of Manager Research Services, APAC

+61 2 9276 4436