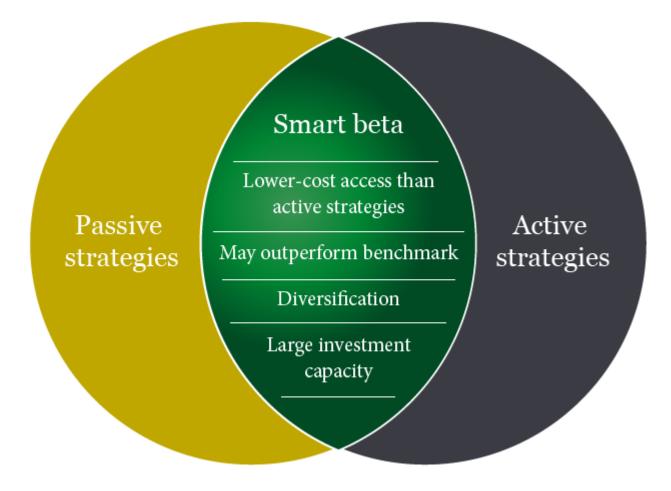
Introduction to smart beta investing

Behrang Asadi April 2024 Ph.D., CFA

Active or passive ? | Alpha | Beta | Smart Beta Combining the benefits of active and passive investing



Pros and cons on smart beta investing

- Detential for Higher Returns:
- Lower Costs
- Enhanced Diversification
- □ Transparency
- □ Reduced Risk (potentially)

- No Guaranteed Outperformance
- Limited Track Record
- □ Fees Can Still Be Higher Than Traditional Index Funds
- Choosing the Right Smart Beta Strategy
- Performance Dependence on Factors

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MORNINGSTAR

A Global Guide to Strategic-Beta Exchange-Traded Products

Executive Summery Morningstar Manager Research 28 June 2023

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Beta and Index Attributes

Molath Almahasneh

Associate Analyst Passive Strategies-United States moath almahasneh@morningstar.com

Monika Calay Director, Passive Strategies-Europe monika calay@mominestar.com

Jackie Choy, DFA Director, Passive Investment Ratings-Global jackie choy@morningstar.com

Key Takeawaya

Kongkon Gogoi Senior Manager Research Analyst Passive Strategies-Australia

kongkon.gogzi@morningstar.com Ryan Jackson

Analyst, Passive Strategies-United States ryan.jackcon@morningstar.com

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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 report, we provide an update on the state of the global strategic-beta ETP landscape, framed using our latest strategic-beta and index attributes, launched in Morningstar's global database in the fourth quarter of 2018.1

Over most of the past decade, the strategic-beta space grew more rapidly than the broader ETP market. New cash flows, new launches, and the entrance of new players have driven strategic-beta ETPs' growth. However, more recently, these products' market share gains have stalled in most markets we examined - a sign that this segment has reached maturity.

While the strategic-beta ETP segment continued to see healthy net flows in 2022, the overall quantity of strategic-beta funds has decreased in most markets. The number of strategic-beta ETPs declined year over year in the United States, Canada, and Europe, and these ETPs' fees have been squeezed, albeit at a marginal pace. That said, the market share of strategic-beta funds relative to the total ETP market has remained stable in most of the markets that we examined. Environmental, social, and governance products, actively managed exchange-traded funds, and thematic funds have been hogging the spotlight in terms of new launches in recent years. However, it seems that the integration of strategic beta and sustainability is not a prevailing trend across most markets. The subset of sustainable strategicbeta ETPs accounted only for a small percentage of the strategic-beta ETP market.

- As of Dec. 31, 2022, there were 1,384 strategic-beta ETPs worldwide, with collective assets under management of approximately \$1.53 trillion.
- Assets in these products fell 6.5% in 2022. Top-line figures were hindered by the retreat of the equity markets and foreign-exchange movements, as the Morningstar Global Markets Index fell 17.9%, along
- with an 8.3% appreciation of the U.S. dollar, as measured by the ICE USD Spot Index. Strategic-beta ETPs amassed \$161.2 billion in net new cash flows, translating to organic growth of 9.8%. Annual net flows were at a record high for two consecutive years.
- A sharp slowdown in new launches and unrelenting fee competition are signs that the space has reached maturity.

> The number of strategic-beta ETPs listed worldwide grew just 1.8% in 2022. However, this growth was mostly attributable to the net adds in the Asia-Pacific region. In the U.S., the number of closures (45)

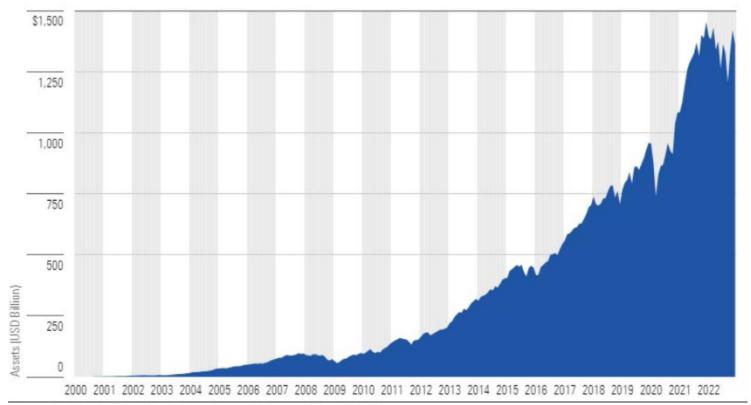
1. See the Accordin for a full lot of attributes and definitions

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- As of Dec. 31, 2022, there were 1,384 strategic-beta ETPs, with collective assets of approximately \$1.53 trillion worldwide
- For most of the past decade-plus, strategic-beta ETPs made inroads against their peers that are benchmarked to more-traditional indexes.
- More recently, the space has matured in the U.S. and Europe. The category's market share gains have stalled, and closures of products that have not gathered assets have been a common theme. In the Asia-Pacific region, In recent years, sustainable investments have become more prevalent, particularly in Europe.
- Some new products have also introduced the combination of sustainability and strategic beta. However, it is worth mentioning that this blend has not become a prominent trend in terms of asset-gathering at the time of writing this report on the other hand, net flows and product launches both picked up in certain markets in 2022.

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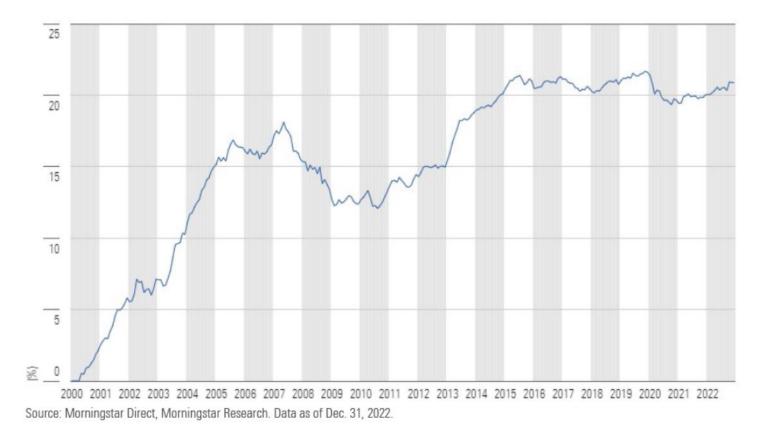
Exhibit 2 U.S. Strategic-Beta ETP Asset Growth



Course: Marningeter Direct Marningeter Desearch, Data as of Dec. 21, 2022

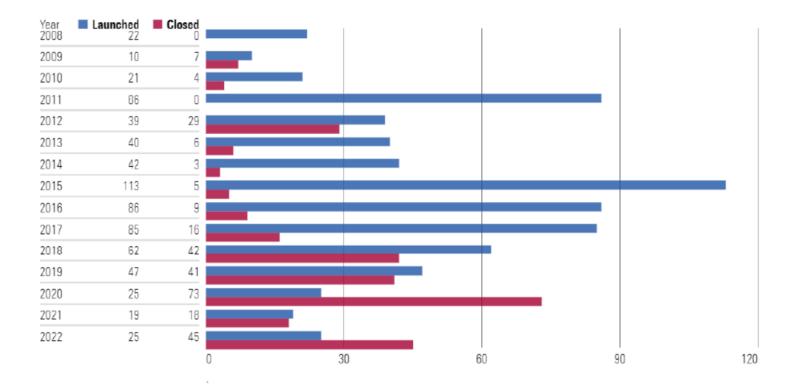
% of U.S. ETP Market

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



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Exhibit 5 U.S. Number of Strategic-Beta ETP Launches and Closures by Year



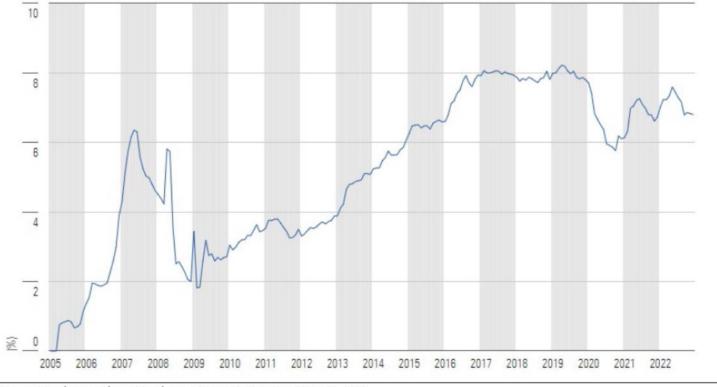
Strategic Beta Group

Exhibit 6 U.S. Ranking of Strategic-Beta ETPs by Strategic-Beta Group

Strategic Beta Group	No of ETPs	Assets (USD Bil)	% of Assets	2021 Flows (USD Bil)	2021 Organic Growth %
Dividend	146	373.0	27.4	69.8	21.0
Value	46	356.1	26.1	18.6	5.0
Growth	41	302.0	22.2	24.7	6.2
Risk-Oriented	39	70.8	5.2	8.8	12.4
Multi-Factor	152	68.4	5.0	2.4	3.1
Other	42	57.9	4.3	13.6	25.4
Fundamentals	31	50.4	3.7	10.3	22.1
Quality	20	43.6	3.2	0.0	0.0
Momentum	30	21.7	1.6	0.2	0.8
Fixed Income	41	12.0	0.9	-0.2	-1.1
Commodity	27	6.4	0.5	-0.3	-5.2
Total	615	1,362.4		148.0	10.2

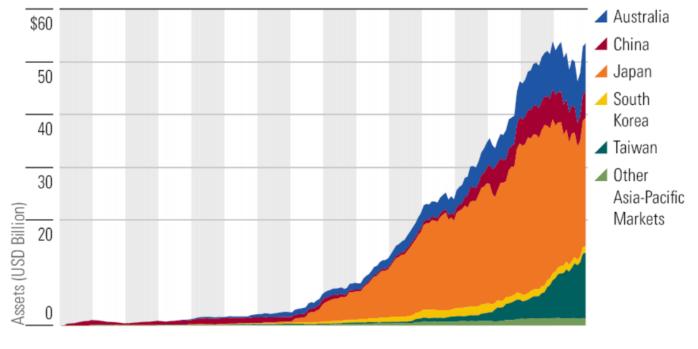
European market : Few Launches and Closures in 2022, but ETP Industry Product Development Focus Is Not on Strategic Beta

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



Asia-Pacific Market

Exhibit 27 Asia-Pacific Strategic-Beta ETP Asset Growth



2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022

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

			% Attribute	e AUM												
Strategic-beta Group	# of	AUM (USD	Australia	China	Hong	India	Japan	Malaysia	New Singapore		South	Taiwan	Thailand	Total	2022 Flows	Oragnic
	ETPs	Mil)			Kong				Zealand		Korea			Asia-Pac	(USD Mil)	Growth %
Quality	41	25,201.9	6.0	0.5	0.1	0.0	40.3	0.0	0.0	0.0	0.1	0.0	0.0	47.1	555.3	1.8
Dividend	96	21,201.7	5.5	5.6	0.4	0.0	3.9	0.0	0.1	0.5	1.4	22.0	0.0	39.6	7,811.4	47.3
Other	16	2,162.7	2.6	0.2	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	4.0	23.2	0.9
Multifactor	43	1,962.6	0.5	2.0	0.4	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.0	3.7	457.4	21.0
Risk-Oriented	20	891.3	0.4	0.1	0.0	0.5	0.1	0.0	0.0	0.0	0.1	0.5	0.0	1.7	371.9	55.8
Fixed Income	8	719.4	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	1.3	141.3	19.4
Growth	6	457.9	0.0	0.6	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.9	290.4	105.2
Fundamentals	6	441.3	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	12.4	2.6
Value	17	332.2	0.3	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.6	98.2	34.0
Momentum	12	149.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.3	62.7	42.3
Commodity	2	29.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	-7.0	-21.3
Total	267	53,549.8	17.1	9.4	0.9	0.6	45.4	0.0	0.5	0.5	2.3	23.2	0.0	100.0	9,817.2	18.2

comparison

	Smart Beta Investing	Factor Investing	Thematic Investing
Focus	Capturing factor premiums	Established factors	Long-term trends/themes
Selection	Rules-based weighting	Quantitative models	Active research-driven
Risk	Moderate	Generally lower	Potentially higher
Example	Equal-weighted value index	Value and growth stocks	Electric vehicle companies

Smart Beta Strategy examples (Cont'd)

Smart Beta Strategy	Description	Focus Factor(s)	Potential Benefit	Potential Drawback	
Value	Invests in stocks considered undervalued based on traditional metrics like price-to- earnings ratio.	Value	Potentially higher returns	May underperform in growth markets	
Momentum	Focuses on stocks with a history of recent price appreciation, aiming to capture ongoing upward trends.	Momentum	Potential for continued growth	Can be more volatile and susceptible to corrections	
Low Volatility	Aims to select stocks with historically lower price fluctuations, aiming for smoother returns.	Low Volatility	Reduced portfolio volatility	May underperform the market in strong uptrends	

Smart Beta Strategy examples

Smart Beta Strategy	Description	Focus Factor(s)	Potential Benefit	Potential Drawback
Quality	Invests in companies with strong financial metrics like profitability and low debt.	Quality	Potentially better risk- adjusted returns	May be more expensive due to focus on established companies
Size	Weights holdings based on a company's size (market capitalization) in a different way than traditional cap- weighted indexes (e.g., equal weighting, favoring smaller or larger companies).	Size	Potentially capture different risk-return profiles from traditional cap weighting	Performance may depend on the chosen size bias
Multi-Factor	Combines exposure to multiple factors like value, momentum, and quality.	Multiple Factors	Diversification and potentially capturing various market inefficiencies	Complexity in managing and understanding the strategy

Smart beta product's design

- 1. Factor(s) Selection
- 2. Ratio and variable selection
- 3. Index Construction
- 4. Rebalancing Rules
- 5. Risk Management
- 6. Cost Management
- 7. Back testing and Simulation
- 8. Implementation Vehicles
- 9. Monitoring and Rebalancing
- **10. Review and Adjust**

Smart Beta Q1 **Compass** 2024 Seeking 04 Investment Outlook Safety in the Soft Landing 09 Investor Behaviour

13 Factor Performance and Flows



Factors Annual Performance

	2023 (%)	2022 (%)	2021 (%)	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)
Global & World Factors	37.00	-4.74	25.66	33.72	36.08	-2.03	32.09	13.82	5.16	12.37	32.38	17.49
	32.39	-6.52	22.09	28.17	33.68	-2.34	28.01	12.67	4.06	11.37	30.86	16.07
	24.96	-6.84	21.94	22.14	29.71	-2.76	25.96	12.30	3.71	8.45	29.66	15.78
	23.79	-9.54	21.82	17.89	27.67	-5.50	24.63	9.26	3.11	7.28	28.62	15.51
	22.79	-9.79	21.18	15.91	27.67	-6.74	22.69	8.76	2.64	6.55	27.06	15.46
	15.76	-10.65	19.32	15.86	26.19	-7.56	22.66	8.75	1.09	6.48	26.73	14.91
	11.75	-17.79	16.99	2.61	23.17	-7.59	22.40	7.49	-0.31	6.14	26.68	14.04
	11.51	-18.14	15.83	0.52	23.15	-7.61	19.58	7.45	-0.87	4.94	26.62	13.01
	9.13	-18.76	15.75	-0.03	23.06	-8.71	18.14	6.08	-2.63	3.69	21.91	12.21
	7.42	-19.56	15.41	-0.36	22.90	-10.78	17.32	4.54	-3.20	3.19	19.76	11.20
	6.90	-22.21	14.64	-1.16	21.75	-13.86	17.10	4.18	-3.95	2.48	18.61	9.45
	2.39	-29.21	14.26	-11.03	20.31	-14.52	15.99	2.79	-4.82	1.90	18.40	8.03

Momentum Quality Growth Div Aristo

Value Select **High Dividend**

Min Vol

MSCI World Index

Small Cap Low Vol

Value

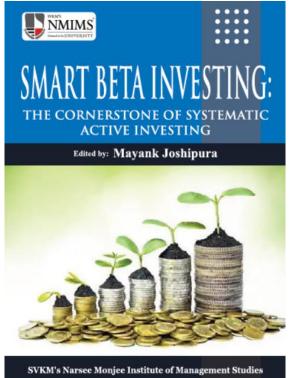
STX Global Index



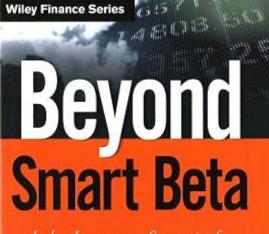
critique

- 1. Sustainability of Factor Premiums
- 2. High Costs Can Erode Performance
- 3. Implementation Challenges
- 4. Difficulties in Backtesting

further reading



(NMIMS) Deemed-to-be-University



Index Investment Strategies for Active Portfolio Management

GÖKHAN KULA, CFA, FRM Martin Raab, caia Sebastian Stahn, cfa

WILEY

Implication for Iranian capital market

- Index publishing
- Index investing products
- ETFs without AP/market maker role
- innovation
- Asset managers role
- SEO role

