
Assessing the True Cost of Strategic-Beta ETFs

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Executive Summary

In the past 18 months, we have published two Global Guides to Strategic-Beta Exchange-Traded Products,¹ in which we defined the space and outlined some of the latest trends. In these reports, we highlighted the fact that strategic-beta ETPs, widely referred to as ‘smart beta’ ETPs, charge higher fees, on average, relative to their more ordinary passive peers.

In this study, we delve deeper into the topic of costs, not just examining the differences in fees between the two camps, but also looking more broadly at differences in the total cost of ownership. Cost is an important consideration that isn’t always at the top of investors’ minds when selecting strategic-beta funds, which are in many cases designed with the hopes of outperforming funds tied to broad market-capitalisation-weighted benchmarks.

The subject of this examination is a selection of European-domiciled strategic-beta and market-cap-weighted exchange-traded funds linked — either directly or indirectly — to some of the most widely used broad equity benchmarks.

Our Key Findings

- ▶ Strategic-beta ETFs are, on average, more expensive than their market-cap-weighted counterparts. Their average total expense ratios may be up to 3 times greater than those of market-cap-weighted peers. The biggest differences are seen amongst ETFs offering exposure to asset classes where funds tracking cap-weighted benchmarks have significantly cut fees, such as US large-cap equities.
- ▶ The range of fees across strategic-beta ETFs is wider than it is amongst ETFs tracking traditional market-cap-weighted indices.
- ▶ Strategic-beta ETFs are considerably cheaper to own than traditional actively managed funds.
- ▶ Average fees in the European strategic-beta ETF space² have declined in recent years. The average TER has dropped to 0.39% from 0.43% five years ago.
- ▶ We expect fees will continue their downward trend as the market matures and competition intensifies. But the ever-growing complexity of the underlying strategies will continue to be leveraged by index and ETF providers as a justification for premium prices relative to more-vanilla fare — whether warranted or not.

1. [A Global Guide to Strategic-Beta Exchange-Traded Products](#), Sept. 2014;

[A Global Guide to Strategic-Beta Exchange-Traded Products](#), Sept. 2015

2. Including equity and fixed-income ETFs only, excluding exchange-traded commodities.

- ▶ While one may argue that the 'active' element embedded in strategic-beta ETFs' underlying benchmarks can justify higher fees, investors must keep in mind that: **1)** Fees are the greatest predictor of future performance—low-cost funds have greater odds of future success; and **2)** The costs involved in building and maintaining these indexes are not significantly greater than those incurred in constructing and calculating a broad market-cap-weighted benchmark. Thus, it is difficult to justify the incremental cost.
- ▶ The higher turnover of strategic-beta indexes vis-à-vis more-traditional market-cap-weighted benchmarks results in relatively higher replication costs, in the form of higher transaction costs for physically replicated funds and higher swap costs for synthetically replicated funds. The biggest impact is seen amongst funds exposed to less liquid markets and those that levy a transaction tax (for example, stamp duty in the UK).
- ▶ Investors in strategic-beta ETFs may also face potentially higher trading costs. Because many strategic-beta ETFs are relatively new, small, and often used as buy-and-hold investments, they may have low trading volume and wider bid-ask spreads.
- ▶ In conclusion, knowing that strategic beta is part active and more costly vis-à-vis plain-vanilla market cap, investors in strategic-beta ETFs should have high conviction on the merits of the underlying strategies and carefully assess whether the higher costs sustained might severely impair long-term performance.

Introduction

Strategic-beta, widely referred to as ‘smart beta’, exchange-traded products have seen explosive growth in recent years. According to Morningstar data, as of 31 Dec 2015, there were 950 such products that seek to either improve return or alter risk relative to more-traditional market benchmarks, with collective assets of USD 478 billion worldwide.

In the past 18 months, we have published two Global Guides to Strategic-Beta Exchange-Traded Products,³ in which we defined the space and outlined some of the latest trends. In these reports, we highlighted the fact that strategic-beta ETPs charge higher fees, on average, relative to their more ordinary passive peers.

In this study, we delve deeper into the topic of costs, not just examining the differences in fees between the two camps, but also looking more broadly at differences in the total cost of ownership, which includes annual holding costs and one-time trading costs. Cost is an important consideration that isn’t always at the top of investors’ minds when selecting strategic-beta products.

The subject of this examination is a selection of European-domiciled strategic-beta and market-cap-weighted ETFs linked—either directly or indirectly—to some of the most widely used broad equity benchmarks, including the S&P 500, MSCI USA, MSCI World, FTSE All-Share, MSCI Europe, MSCI EMU, MSCI Emerging Markets, and TOPIX indexes. In total, we examine 100 strategic-beta ETFs, which represent 52% of all European-domiciled strategic-beta ETFs⁴ in the Morningstar Direct database.

3. [A Global Guide to Strategic-Beta Exchange-Traded Products](#), Sept. 2014;
[A Global Guide to Strategic-Beta Exchange-Traded Products](#), Sept. 2015

4. Including equity and fixed-income ETFs only, excluding exchange-traded commodities.

Higher Fees

Strategic-beta ETFs are, on average, more expensive than ETFs linked to standard market-cap-weighted indexes.

Strategic-beta ETFs in the US large-cap segment are the most expensive of all, in relative terms. The average TER⁵ of strategic-beta ETFs using the S&P 500 as a parent index is 3 times higher than that of ordinary S&P 500 ETFs. On the other hand, emerging-markets strategic-beta ETFs are only slightly more expensive than their cap-weighted counterparts, while strategic-beta ETFs offering exposure to Japanese equities are cheaper than their plain-vanilla peers, on average.

There are several factors that can explain the relatively higher fees taken by strategic-beta ETFs. For starters, these funds often bear the cost of higher index licensing fees. ETF providers merely pass on the higher fees that index providers charge them for the extra costs they incur in the process of researching, manufacturing, and marketing these strategies.

Some ETF providers, like WisdomTree, Ossiam, and First Trust, which specialise in strategic-beta funds, develop their own indexes. Hence, their funds don't incur any third-party index licensing fees. But that doesn't translate into lower TERs—quite the contrary: Funds offered by self-indexers are amongst the most expensive. The creation and marketing of new—especially non-plain-vanilla—indexes require resources, and providers need to reach sufficient scale to make it cost-effective.

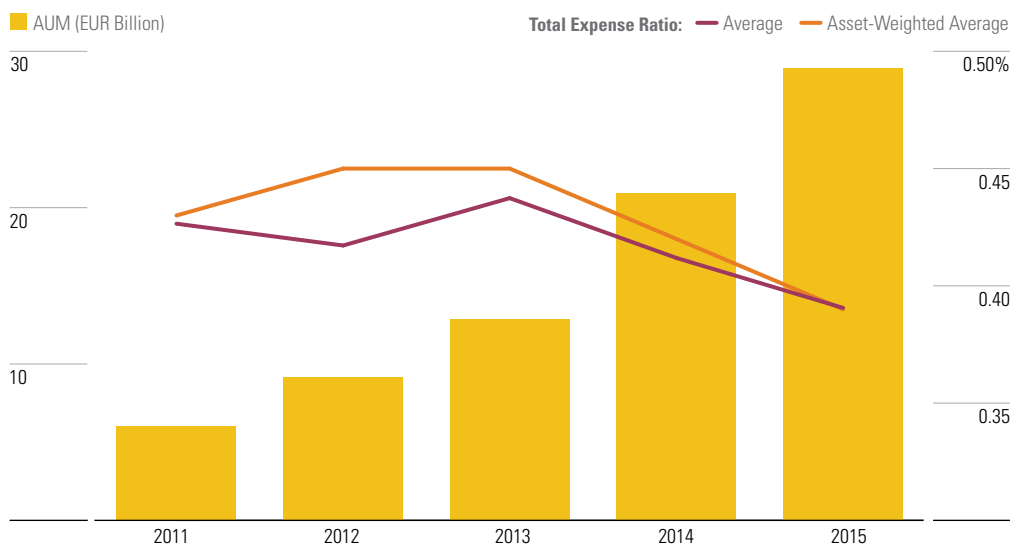
The higher fees taken by strategic-beta ETFs can also be simply explained by the fact that these funds offer 'new' and 'innovative' strategies. ETF providers leverage this 'newness' and 'innovation' to justify premium pricing, no different from any other product in any other industry at the early stage of its life cycle.

Finally, charging a premium for strategic-beta offerings can be a way for many ETF providers to regain some of the profit they have lost as a result of the fee cuts within their core offerings in an attempt to attract assets.

⁵ The total expense ratio (TER) (also known as the ongoing charge) represents the costs incurred by the fund in direct relation to the management and administration of the fund, inclusive of payments for delegated services such as custody, accounting, valuation, distribution, registration and regulatory fees and auditing.

Fees Are Falling

Exhibit 1 Strategic-Beta ETF Asset Growth and Fee Trend in Europe



Source: Morningstar Direct. Data for all European-domiciled strategic-beta equity and fixed-income ETFs, excluding ETCs.

As assets in European strategic-beta ETFs have continued to rise, fees have declined. The average TER levied by European-domiciled strategic-beta ETFs has dropped to 0.39% in 2015 from 0.43% five years ago.

This decline can be solely attributed to the introduction of less-expensive strategic-beta products into the market. Virtually no provider has cut fees on existing products. This stands in stark contrast to the all-out fee war we have witnessed amongst providers of index funds and ETFs tied to standard market-cap-weighted benchmarks.

The decline in average fee levels amongst strategic-beta ETFs has gathered pace over the past two years with the acceleration of new product launches. Increased competition means that 'simpler' exposures, such as single factors, are now typically offered for less than 0.30% per year.

Nevertheless, there is still a wide disparity in the fees charged by strategic-beta ETFs, even across those offering exposure to similar strategies. A good case in point is iShares US Equity Buyback Achievers ETF. The fund was launched on 2 Feb 2015 with a TER of 0.55%. The following day, Amundi rolled out its S&P 500 Buyback fund. With a fee of just 0.15%, the Amundi fund takes a toll that is roughly a fourth that charged by its immediate predecessor. The next provider looking to enter this particular corner of the market will certainly position itself accordingly.

Investors Not So Focused on Fees

All that said, it appears that fees don't weigh as heavily in investors' selection process for strategic-beta ETFs as they do for funds tied to more-traditional benchmarks. Instead, investors are more concerned with performance and the nuts and bolts of a specific strategy. This is illustrated by the fact that the asset-weighted average TER has consistently been above the simple average TER over the past 5 years. Even though less expensive strategies are coming to the market, assets have generally stayed put in older and more expensive products.

If traditional beta is increasingly considered a 'commodity' product, then it follows logically that investors are apt to choose the cheapest available option. When it comes to strategic beta, however, a fund's construction and the rules that govern the strategy will have a far greater impact on performance than a TER differential that is a few basis points in magnitude.

Besides, the ever-growing complexity of the underlying strategies will continue to be leveraged by index and ETF providers as a justification for premium prices relative to more-vanilla fare—whether warranted or not.

For these reasons, while we expect fees for strategic-beta ETFs to continue their downward trend, we don't anticipate the same degree of price pressure in this space as we have witnessed in the realm of index funds and ETFs tracking more-traditional market-cap-weighted indexes.

Higher Replication Costs

Besides charging higher fees, strategic-beta ETFs also tend to incur higher replication costs vis-à-vis standard market-cap-weighted ETFs. This is mainly because strategic-beta indexes have higher turnover. While market-cap-weighted indexes, by their very nature, effectively 'self-rebalance', with turnover deriving from index inclusions and corporate actions, strategic-beta indexes tend to require substantially more periodic adjustments to the weighting of securities to stay within the boundaries of their strategies.

Strategic-beta indexes experience two-way turnover typically ranging from 20% to 30% per year, although in some cases it can be considerably higher. For example, indexes based on a momentum strategy and those that rebalance monthly have turnover rates much greater than 100%. By comparison, average turnover rates for standard market-cap-weighted indexes are between 3% and 8%, on average.

Turnover figures may vary significantly from strategy to strategy and from year to year. Nonmarket-cap-weighted indexes that rely heavily on price-related measures as selection criteria (for example, momentum, dividend yield) tend to have higher and more volatile turnover rates than the ones that use only fundamental metrics (for example, quality, which screens by return on equity).

Higher index turnover translates into relatively higher transaction costs for physically replicated ETFs. Transaction costs typically cover any bid-ask spreads and commission paid to brokers for trading, as well as any transaction taxes the fund may have to pay (for example, UK stamp duty). The less liquid and the less tax-efficient the underlying market, the higher the

rebalancing costs. Some strategic-beta indexes have turnover constraints built into their methodology in order to control these costs.

It is important investors understand that these replication costs are not included in the calculation of a fund's TER and thus represent an additional drag on fund performance.

Exhibit 2 Estimated Transaction Costs (in basis points)*

Two-way turnover (%)	5	10	20	30	50	100	200
UK ETFs	1.5	3.1	6.1	9.2	15.3	30.6	61.1
US ETFs	0.1	0.2	0.4	0.6	1.0	2.0	4.0
Emerging Markets ETFs	1.3	2.5	5.0	7.6	12.6	25.2	50.3
Japan ETFs	0.2	0.4	0.9	1.3	2.1	4.3	8.5
EMU ETFs	0.4	0.9	1.7	2.6	4.3	8.6	17.1
Europe ETFs	0.6	1.3	2.5	3.8	6.3	12.6	25.2
World ETFs	0.4	0.7	1.5	2.2	3.7	7.4	14.8

Source: Morningstar. Estimates based on data from ETF & index fund providers and market makers.

* Including brokerage commissions, bid-ask spreads and taxes

Based on data collected from various market participants, we have estimated average transaction costs for ETFs offering access to mainstream large-cap equity exposures. The purpose of the above table is to give an idea of the magnitude by which transaction costs may vary by geography and level of turnover. For example, based on our calculations, a world equity ETF with a 5% turnover rate might incur transaction costs amounting to just 0.4 basis points (0.004%) per year, while a UK equity ETF with 50% turnover in a given year would face annual transaction costs as high as 15.3 basis points (0.153%).

However, it should be stressed that these are indicative figures and they do not reflect the actual costs incurred by any particular fund. In fact, for strategic-beta funds, the actual costs may be higher as these funds tend to invest in less liquid stocks for which the costs of trading may be significantly greater than those associated with blue chip stocks.

In addition, transaction costs may vary depending on other factors, including whether the fund is fully replicated or optimised, the commission schedule negotiated with the broker, and the strategy used to minimise overall trading costs (for example, spreads and market impact).

Meanwhile, synthetically replicated strategic-beta ETFs also incur higher replication costs in the form of higher swap spreads. These reflect the increased hedging costs borne by the swap counterparty relative to bulk beta ETFs. Strategic-beta indexes are more difficult to hedge because their composition is less stable and there is a paucity of associated derivatives (for example, futures, swaps) by which to achieve exposure to the underlying benchmark.

For the purpose of this study, we were able to collect turnover rates for a majority of the indexes underlying the funds under analysis but not for the funds themselves. One should be mindful that index turnover doesn't necessarily equate to fund turnover. While fully replicated ETFs should be expected to have turnover figures similar to their underlying indexes, physical ETFs that use optimisation techniques may experience slightly different levels of turnover activity than their indexes. And of course, synthetic ETFs don't incur any turnover activity.

Potentially Higher Trading Costs

In addition to higher holding costs, investors in strategic-beta ETFs may also face potentially higher trading costs when they place buy and sell orders for the ETFs. Because many strategic-beta ETFs are relatively new, small, and often used as buy-and-hold investments, they may have low trading volume and show wider bid-ask spreads.

Another explanation for their potentially higher trading costs is the scarcity of direct hedging tools available to market makers quoting prices for ETFs linked to strategic-beta indexes. For example, the lack of futures tied to strategic-beta indexes with which market makers might hedge their exposures places strategic-beta funds at a slight cost disadvantage (that is, showing wider spreads) relative to market-cap-weighted peers, particularly to those linked to indexes for which there is a very liquid futures market available (for example, S&P 500, FTSE 100, EURO STOXX 50).

Comparative Analysis of Total Cost of Ownership by Benchmark Category

In this section, we carry out a comparative analysis of TERs, total holding costs (as measured by tracking differences), and trading spreads for eight samples of strategic-beta and market-cap-weighted European-domiciled ETFs linked to some of the most widely used broad equity benchmarks, including the S&P 500, MSCI USA, MSCI World, FTSE All-Share, MSCI Europe, MSCI EMU, MSCI Emerging Markets, and TOPIX indexes.

In total, we examine 100 strategic-beta ETFs, which represent 52% of all European-domiciled strategic-beta ETFs in the Morningstar Direct database, and 77 market-cap-weighted ETFs.

Methodology

In order to facilitate a meaningful comparison, wherever possible, we grouped all the strategic-beta ETFs with their more-vanilla peers on the basis of having a shared parent index. For example, iShares S&P 500 Minimum Volatility and Ossiam US Minimum Variance both use the S&P 500 as the starting point for their respective benchmark indexes.

Where not possible, we used a proxy index to form the samples. For example, we included SPDR S&P US Dividend Aristocrats, which uses the S&P 1500 Composite Index as base universe, in the same sample as UBS MSCI USA Value, which claims the MSCI USA Index as its parent index.

By doing so, we were able to build good-sized samples while ensuring a high level of consistency.

US Equities

Parent Index: S&P 500

Exhibit 3 Comparison Between Market-Cap-Weighted ETFs and Strategic-Beta ETFs Linked to the S&P 500

Name	Inception Date	Replication Method	Tracking Difference (%)			Index Turnover ² (%)	Index Rebalancing	Bid-Ask Spread ³ (%)	AUM (EUR Mill) ⁴
			TER (%)	1-year ¹ (%)	2-year Annualised ¹ (%)				
Market Cap-Weighted ETFs									
Amundi ETF S&P 500 EUR C	6/8/10	Synthetic	0.15	0.10	0.14	3	Quarterly	0.14	853
ComStage S&P 500 ETF	5/10/10	Synthetic	0.12	—	—	3	Quarterly	0.16	93
db x-trackers S&P 500 1C	3/26/10	Synthetic	0.20	0.34	0.30	3	Quarterly	0.10	1,708
HSBC S&P 500 ETF	5/17/10	Physical-Full	0.09	0.16	0.19	3	Quarterly	0.11	1,656
iShares Core S&P 500	5/19/10	Physical-Full	0.07	0.24	0.24	3	Quarterly	0.11	11,214
iShares S&P 500 Dist	3/15/02	Physical-Sampling	0.40	-0.08	-0.09	3	Quarterly	0.06	8,029
Lyxor ETF PEA S&P 500 C-EUR	5/20/14	Synthetic	0.15	0.34	—	3	Quarterly	0.25	12
Lyxor S&P 500 ETF D-EUR	3/26/10	Synthetic	0.15	0.35	0.31	3	Quarterly	0.12	1,529
S&P 500 THEAM Easy ETF C EUR	9/16/13	Synthetic	0.20	0.89	0.99	3	Quarterly	0.21	779
Source S&P 500 ETF	5/20/10	Synthetic	0.05	0.21	0.20	3	Quarterly	0.07	2,188
SPDR® S&P 500 ETF	3/19/12	Physical-Full	0.09	0.20	0.19	3	Quarterly	0.09	986
UBS ETF (IE) S&P 500	4/11/12	Physical-Full	0.14	0.16	0.18	3	Quarterly	0.22	128
UBS ETF (IE) S&P 500 SF	12/15/10	Synthetic	0.05	0.16	0.03	3	Quarterly	0.23	155
Vanguard S&P 500 ETF	5/22/12	Physical-Full	0.07	0.22	0.24	3	Quarterly	0.08	10,731
Strategic-Beta ETFs									
Amundi ETF S&P 500 Buyback EUR A/I	2/3/15	Synthetic	0.15	—	—	—	Quarterly	0.27	56
db x-trackers S&P 500 Equal Wt (DR) 1C	6/10/14	Physical-Full	0.25	0.69	—	—	Quarterly	0.24	307
FT US Large Cap Core AlphaDEX® ETF A USD	4/9/13	Physical-Sampling	0.65	-0.44	—	—	Quarterly	0.52	46
iShares S&P 500 Minimum Volatility	11/30/12	Physical-Sampling	0.20	0.17	0.21	22	Semi-annually	0.29	718
PowerShares Dynamic US Market ETF	11/5/07	Physical-Full	0.75	-0.73	-0.86	—	Quarterly	0.58	28
PowerShares S&P 500 Hi Div Low Vol/I ETF	5/11/15	Physical-Full	0.30	—	—	123	Semi-annually	0.75	5
iShares US Equity Buyback Achievers	2/2/15	Physical-Sampling	0.55	—	—	—	Quarterly	0.50	10
Ossiam US Minimum Var NR ETF 1C USD	6/7/11	Synthetic	0.65	—	—	545	Monthly	0.22	507
SPDR® S&P 500 Low Volatility ETF	10/3/12	Physical-Full	0.35	-0.08	-0.07	—	Quarterly	0.26	68
Summary			Market Cap-Weighted ETFs (%)				Strategic-Beta ETFs (%)		
Average TER			0.14				0.43		
Asset-Weighted Average TER			0.15				0.37		
Average 1-year Tracking Difference			0.25				-0.06		
Average 2-year Tracking Difference (Annualised)			0.24				-0.18		
Average Bid-Ask Spread			0.14				0.40		
Asset-Weighted Average Bid-Ask Spread			0.09				0.28		

Source: Morningstar Direct, fund factsheets, index factsheets, provider data.

1. Tracking Difference (Fund Return—Index Return) as of December 31, 2015.

2. Two-way turnover. 2014/2015 data.

3. Average of 3-month average spreads on the London Stock Exchange, Xetra, Deutsche Boerse, Swiss Exchange, Euronext Paris and Borsa Italiana as of January 11, 2016.

4. As of January 11, 2016.

Strategic-beta ETFs that share the S&P 500 as their parent index are the most expensive of all strategic-beta ETFs offering exposure to developed world equities, on average.

Strategic-beta ETFs derived from the S&P 500 are 3 times more expensive than ordinary S&P 500 ETFs (0.43% versus 0.14%), as measured in average TER terms. The range of fees is also much wider (0.15%-0.75% versus 0.05%-0.40%), and the most expensive strategic-beta S&P 500 ETF is 15 times more costly than the cheapest market-cap-weighted S&P 500 ETF. The average gap between the two camps can be mainly explained by the aggressive fee reductions we have seen in standard S&P 500 ETFs in recent years.

When looking at the total annual cost of holding an ETF, as measured by tracking difference (fund return minus index return), we found that strategic-beta S&P 500 ETFs are also more expensive on average. This should come as no surprise, as the TER is typically the biggest factor in determining an ETF's tracking performance. In 2015, strategic-beta S&P 500 ETFs lagged their respective underlying indexes by 0.06% on average, while ordinary S&P 500 ETFs beat theirs by 0.25%.

Tracking difference is generally expected to be negative, meaning that the ETF underperforms its benchmark. Assuming otherwise perfect tracking, an ETF should underperform by an amount equal to its TER on an annual basis. But in some cases, as seen here, tracking difference can be smaller than the expense ratio or even positive.

This phenomenon can be explained by the fact that the funds and the indexes they track are subject to different tax treatments. The 'net return' version of an index assumes certain withholding taxes on the dividends paid by its constituents. In practice, many physical ETFs, by virtue of their country of domicile and double tax treaties, can achieve lower withholding tax rates than those assumed by the index, thus creating a built-in degree of 'outperformance'. Synthetic ETFs can also benefit from the varying withholding tax regimes, depending on the swap agreement.

Also, it is worth noting that because the cost of trading US equities is extremely low, transaction costs within the funds shouldn't have a meaningful impact on performance, even for relatively high-turnover strategic-beta ETFs offering exposure to US equities.

Finally, on-screen spreads on strategic-beta ETFs derived from the S&P 500 are almost 3 times wider than those on standard S&P 500 ETFs (0.40% versus 0.14%) across the main European stock exchanges, on average. This can largely be attributed to the fact that most of these strategic-beta ETFs are new and/or small. When investor interest is low, market makers have little incentive to quote competitive prices and thus tend to keep spreads wide. While unfortunately some investors will trade at these unfavourable spreads, others will manage to get better prices, by either placing a limit order or transacting via a market maker. Investors in ETFs, especially ETFs with low trading volumes, are advised to use limit orders to ensure they are not paying more than they should, especially given the liquidity of the ETF's underlying market. In this case, strategic-beta S&P 500 ETFs invest in the same pool of highly liquid US large-cap stocks as market-cap-weighted S&P 500 ETFs, so spreads on the former shouldn't be much larger than those on the latter.

Parent Index: MSCI USA

Exhibit 4 Comparison Between Market-Cap-Weighted ETFs and Strategic-Beta ETFs Linked to the MSCI USA

Name	Inception Date	Replication Method	Tracking Difference (%)			Index Turnover ² (%)	Index Rebalancing	Bid-Ask Spread ³ (%)	AUM (EUR Mil) ⁴
			TER (%)	1-year ¹ (%)	2-year Annualised ¹ (%)				
Market Cap-Weighted ETFs									
Amundi ETF MSCI USA EUR A/I	12/4/08	Synthetic	0.28	-0.04	-0.05	6	Quarterly	0.10	1,384
ComStage MSCI USA TRN ETF	12/3/08	Synthetic	0.10	0.18	0.10	6	Quarterly	0.11	323
db x-trackers MSCI USA (DR) 1C	5/9/14	Physical-Full	0.07	0.25	—	6	Quarterly	0.14	1,509
db x-trackers MSCI USA 1C	1/8/07	Synthetic	0.30	0.22	0.18	6	Quarterly	0.11	1,503
Deka MSCI USA ETF	6/8/09	Physical-Full	0.30	—	—	6	Quarterly	0.15	214
HSBC MSCI USA ETF	6/2/10	Physical-Full	0.30	-0.07	-0.04	6	Quarterly	0.21	294
iShares MSCI USA	1/12/10	Physical-Full	0.33	-0.08	-0.06	6	Quarterly	0.17	395
Lyxor ETF MSCI USA D-EUR A/I	3/22/06	Synthetic	0.25	0.19	0.09	6	Quarterly	0.14	603
Lyxor ETF PEA MSCI USA C-EUR	5/13/14	Synthetic	0.25	0.06	—	6	Quarterly	0.26	95
Source MSCI USA ETF	3/31/09	Synthetic	0.30	0.01	0.00	6	Quarterly	0.09	109
UBS ETF (IE) MSCI USA	4/11/12	Physical-Full	0.20	0.03	0.06	6	Quarterly	0.19	22
UBS ETF (IE) MSCI USA SF	12/15/10	Synthetic	0.15	-0.02	-0.05	6	Quarterly	0.23	152
UBS ETF (LU) MSCI USA	10/29/01	Physical-Full	0.20	-0.21	-0.22	6	Quarterly	0.09	1,312
Strategic-Beta ETFs									
BMO MSCI USA Income Leaders USD	11/5/15	Physical-Sampling	0.35	—	—	—	Semi-annually	0.13	7
FundLogic MS Sctf Beta US EqFtr ETF USD	8/11/15	Synthetic	0.40	—	—	—	—	0.29	52
iShares MSCI USA Dividend IQ	6/6/14	Physical-Full	0.35	0.22	—	16	Semi-annually	0.23	72
iShares DJ US Select Dividend (DE)	9/28/05	Physical-Full	0.31	—	—	—	Annually	0.35	211
iShares FactorSelect MSCI USA	9/4/15	Physical-Sampling	0.35	—	—	41	Semi-annually	0.61	4
Lyxor ETF PEA FTSE RAFI US 1000 C-EUR	5/13/14	Synthetic	0.60	-0.45	—	—	Annually	0.43	1
Think Morningstar NA Eq UCITS ETF M	11/11/15	Synthetic	0.20	—	—	—	Annually	—	2
UBS ETF (IE) MSCI USA Growth SF	10/6/11	Synthetic	0.59	-0.65	-0.65	17	Semi-annually	0.25	35
SPDR® MSCI USA Value Wtd ETF USD	2/18/15	Physical-Sampling	0.25	—	—	—	Semi-annually	0.41	5
UBS ETF (IE) Fctr MSCI USAQuality	8/26/15	Physical-Full	0.25	—	—	23	Semi-annually	0.68	4
UBS ETF (IE) MSCI USA Value	4/11/12	Physical-Full	0.20	0.29	0.25	17	Semi-annually	0.34	290
UBS ETF (IE) Fctr MSCI USALowVol	8/18/15	Physical-Full	0.25	—	—	30	Semi-annually	0.69	4
UBS ETF (IE) Fctr MSCI USA TSY	8/26/15	Physical-Full	0.25	—	—	41	Semi-annually	0.69	4
UBS ETF (IE) Fctr MSCI USAPrmVal	8/26/15	Physical-Full	0.25	—	—	41	Semi-annually	0.77	3
WisdomTree US Equity Income ETF	10/21/14	Physical-Full	0.29	—	—	—	Annually	0.24	12
Summary			Market Cap-Weighted ETFs (%)				Strategic-Beta ETFs (%)		
Average TER			0.23				0.33		
Asset-Weighted Average TER			0.22				0.29		
Average 1-year Tracking Difference			0.04				-0.15		
Average 2-year Tracking Difference (Annualised)			0.00				-0.20		
Average Bid-Ask Spread			0.15				0.44		
Asset-Weighted Average Bid-Ask Spread			0.12				0.33		

Source: Morningstar Direct, fund factsheets, index factsheets, provider data.

1. Tracking Difference (Fund Return—Index Return) as of December 31, 2015.

2. Two-way turnover. 2014/2015 data.

3. Average of 3-month average spreads on the London Stock Exchange, Xetra, Deutsche Boerse, Swiss Exchange, Euronext Paris and Borsa Italiana as of January 11, 2016.

4. As of January 11, 2016.

With the great majority being less than two years old, strategic-beta ETFs linked to the MSCI USA Index are cheaper than those linked to the S&P 500 (0.33% versus 0.43%), as measured in average TER terms. The disparity between the cheapest and the most expensive strategic-beta MSCI USA ETFs (0.20%-0.60%) is also smaller.

Looking at posted bid-ask spreads, strategic-beta ETFs in this category look also 3 times more expensive to trade on average vis-à-vis their market-cap-weighted counterparts. Again, given the liquidity of the underlying market, investors don't have to trade at these unfavourable spreads. They could get better prices by either placing limit orders or transacting via a market maker.

World Equities

Parent Index: MSCI World

Exhibit 5 Comparison Between Market-Cap-Weighted ETFs and Strategic-Beta ETFs Linked to the MSCI World

Name	Inception Date	Replication Method	Tracking Difference (%)			Index Turnover ² (%)	Index Rebalancing	Bid-Ask Spread ³ (%)	AUM (EUR Mil) ⁴
			TER (%)	1-year ¹ (%)	2-year Annualised ¹ (%)				
Market Cap-Weighted ETFs									
Amundi ETF MSCI World EUR A/I	6/16/09	Synthetic	0.38	0.23	-0.03	5	Quarterly	0.09	497
ComStage MSCI World TRN ETF	11/27/08	Synthetic	0.20	0.08	-0.03	5	Quarterly	0.09	581
db x-trackers MSCI World (DR)1C	7/22/14	Physical-Sampling	0.19	-0.12	—	5	Quarterly	0.28	931
db x-trackers MSCI World 1C	12/19/06	Physical-Sampling	0.45	-0.10	-0.13	5	Quarterly	0.11	1,871
HSBC MSCI World ETF	12/8/10	Physical-Sampling	0.35	-0.93	-0.56	5	Quarterly	0.17	219
iShares Core MSCI World	9/25/09	Physical-Sampling	0.20	0.11	0.11	5	Quarterly	0.11	4,852
iShares MSCI World Dist	10/28/05	Physical-Sampling	0.50	-0.17	-0.14	5	Quarterly	0.09	5,153
Lyxor ETF MSCI World D-EUR A/I	5/2/06	Synthetic	0.30	0.08	-0.02	5	Quarterly	0.11	1,169
Lyxor ETF PEA MSCI World C-EUR	5/13/14	Synthetic	0.30	-0.01	—	5	Quarterly	0.36	15
Source MSCI World ETF	4/2/09	Synthetic	0.35	-0.13	-0.14	5	Quarterly	0.14	357
UBS ETF (IE) MSCI World	4/11/12	Physical-Sampling	0.30	-0.24	-0.16	5	Quarterly	0.24	34
UBS ETF (LU) MSCI World	6/25/08	Physical-Full	0.30	-0.26	-0.21	5	Quarterly	0.16	914
Strategic-Beta ETFs									
db x-trackers Equity Low Beta Fctr(DR)1C	9/5/14	Physical-Sampling	0.25	-0.07	—	—	Quarterly	0.48	28
db x-trackers Equity Momentum Fctr(DR)1C	9/5/14	Physical-Sampling	0.25	-0.04	—	—	Quarterly	0.47	46
db x-trackers Equity Quality Fctr (DR)1C	9/11/14	Physical-Sampling	0.25	0.07	—	—	Quarterly	0.44	23
db x-trackers Equity Value Factor (DR)1C	9/11/14	Physical-Sampling	0.25	—	—	—	Quarterly	0.44	62
db x-trackers Stoxx GIBL Sel Div 100 1D	6/1/07	Synthetic	0.50	-0.29	-0.33	19	Annually	0.22	526
iShares FactorSelect MSCI World	9/4/15	Physical-Sampling	0.50	—	—	41	Semi-annually	0.64	13
iShares MSCI World Minimum Volatility	11/30/12	Physical-Sampling	0.30	-0.08	-0.07	23	Semi-annually	0.31	772
iShares MSCI World Momentum Factor	10/3/14	Physical-Sampling	0.30	-0.23	—	178	Semi-annually	0.45	66
iShares MSCI World Quality Factor	10/3/14	Physical-Sampling	0.30	-0.15	—	29	Semi-annually	0.59	158
iShares MSCI World Size Factor	10/3/14	Physical-Sampling	0.30	0.18	—	28	Semi-annually	0.38	32
iShares MSCI World Value Factor	10/3/14	Physical-Sampling	0.30	0.01	—	17	Semi-annually	0.45	62
iShares STOXX Global Sel Div 100 (DE)	9/25/09	Physical-Full	0.46	0.32	0.15	19	Annually	0.23	848
Lyxor MSCI World Risk Weighted ETF C-EUR	5/21/12	Synthetic	0.45	-0.44	-0.45	20	Semi-annually	0.64	2
Lyxor SG Global Qual Inc NTR ETF D-EUR	9/25/12	Synthetic	0.45	-0.39	-0.40	—	Quarterly	0.55	651
Lyxor SG Global Value Beta ETF C-USD	7/7/14	Synthetic	0.40	-0.34	—	—	Quarterly	0.67	61
MS Scientific Beta Global Eq Factors ETF	5/30/14	Synthetic	0.40	—	—	—	—	0.29	106
Ossiam World Minimum Var NR ETF 1C EUR	9/4/12	Synthetic	0.65	—	—	142	Semi-annually	0.38	73
PowerShares Global Buyback Achievers ETF	10/24/14	Physical-Full	0.39	-0.49	—	10	Semi-annually	0.48	72
Source Goldman Sachs Eq Factor Wld ETF	1/9/14	Synthetic	0.65	-0.65	—	—	Monthly	0.57	570
SPDR® S&P Global Div Aristocrats ETF	5/14/13	Physical-Sampling	0.45	-0.05	-0.17	34	Annually	0.31	113
Think Global Equity ETF	3/9/11	Physical-Full	0.20	—	—	—	—	—	357
Think Sustainable World ETF	5/3/13	Physical-Full	0.31	—	—	—	—	—	84
UBS ETF (IE) DJ Global Select Dividend	9/4/14	Physical-Full	0.30	0.06	—	19	Annually	0.57	20

Exhibit 5 Comparison Between Market-Cap-Weighted ETFs and Strategic-Beta ETFs Linked to the MSCI World (Continued)

Summary	Market Cap-Weighted ETFs (%)	Strategic-Beta ETFs (%)
Average TER	0.32	0.37
Asset-Weighted Average TER	0.34	0.42
Average 1-year Tracking Difference	-0.12	-0.14
Average 2-year Tracking Difference (Annualised)	-0.13	-0.18
Average Bid-Ask Spread	0.16	0.46
Asset-Weighted Average Bid-Ask Spread	0.11	0.35

Source: Morningstar Direct, fund factsheets, index factsheets, provider data.

1. Tracking Difference (Fund Return—Index Return) as of December 31, 2015.

2. Two-way turnover. 2014/2015 data.

3. Average of 3-month average spreads on the London Stock Exchange, Xetra, Deutsche Boerse, Swiss Exchange, Euronext Paris and Borsa Italiana as of January 11, 2016.

4. As of January 11, 2016.

The difference in average fees between strategic-beta ETFs and market-cap-weighted ETFs in the MSCI World category is the smallest of all categories under study (0.37% versus 0.30%).

When looking at annual holding costs, as measured by the tracking difference (fund return minus index return), we found that strategic-beta ETFs in this sample are also very much in line with their market-cap-weighted counterparts.

UK Equities**Parent Index: FTSE All-Share****Exhibit 6** Comparison Between Market-Cap-Weighted ETFs and Strategic-Beta ETFs Linked to the FTSE All-Share

Name	Inception Date	Replication Method	Tracking Difference (%)			Index Turnover ² (%)	Index Rebalancing	Bid-Ask Spread ³ (%)	AUM (EUR Mil) ⁴
			TER (%)	1-year ¹ (%)	2-year Annualised ¹ (%)				
Market Cap-Weighted ETFs									
db x-trackers FTSE All-Share (DR) 1D	6/15/07	Physical-Sampling	0.40	-0.48	-0.37	8	Quarterly	0.38	153
Lyxor ETF FTSE All Share A/I	5/15/07	Synthetic	0.40	-0.32	-0.35	8	Quarterly	0.69	13
SPDR® FTSE UK All Share ETF	2/28/12	Physical-Sampling	0.20	-0.21	-0.16	8	Quarterly	0.27	170
Strategic-Beta ETFs									
BMO MSCI UK Income Leaders £	11/5/15	Physical-Sampling	0.35	—	—	—	Semi-annually	0.25	5
FT United Kingdom AlphaDEX® ETF A GBP	4/9/13	Physical-Full	0.65	—	—	—	Semi-annually	0.51	15
iShares UK Dividend	11/4/05	Physical-Full	0.40	-0.39	-0.52	41	Semi-annually	0.32	1,025
PowerShares FTSE RAFI UK 100 ETF	12/3/07	Physical-Full	0.50	-0.48	-0.53	24	Annually	0.55	28
SPDR® S&P UK Dividend Aristocrats ETF	2/28/12	Physical-Full	0.30	-0.53	-0.42	29	Quarterly	0.37	98
WisdomTree UK Eq Inc ETF GBP	9/28/15	Physical-Sampling	0.29	—	—	—	Annually	0.37	3
Summary									
			Market Cap-Weighted ETFs (%)			Strategic-Beta ETFs (%)			
Average TER			0.33			0.42			
Asset-Weighted Average TER			0.30			0.40			
Average 1-year Tracking Difference			-0.34			-0.47			
Average 2-year Tracking Difference (Annualised)			-0.29			-0.49			
Average Bid-Ask Spread			0.45			0.40			
Asset-Weighted Average Bid-Ask Spread			0.34			0.33			

Source: Morningstar Direct, fund factsheets, index factsheets, provider data.

1. Tracking Difference (Fund Return—Index Return) as of December 31, 2015.

2. Two-way turnover. 2014/2015 data.

3. Average of 3-month average spreads on the London Stock Exchange, Xetra, Deutsche Boerse, Swiss Exchange, Euronext Paris and Borsa Italiana as of January 11, 2016.

4. As of January 11, 2016.

With an average fee of 0.42%, strategic-beta ETFs offering exposure to the UK all-cap market sit at the high end of the range of ETFs in our study, neck-and-neck with strategic-beta ETFs linked to the S&P 500.

Differences in fees between strategic-beta ETFs and market-cap-weighted ETFs in this category are not as significant as in the case of the S&P 500 ETFs. But that's because we compared our sample of strategic-beta UK equity ETFs to FTSE All-Share ETFs. Had we compared our sample to ETFs that track the more narrowly focused FTSE 100 Index, the differences in fees would have been more pronounced, as many FTSE 100 ETFs now charge fees of less than 0.10%.

When looking at tracking difference, we found that strategic-beta ETFs linked to UK all-cap equities are also more expensive to hold, on average, vis-à-vis their market-cap-weighted counterparts. While higher TERs are the main culprit, higher transaction costs can also explain the gap. Every time a UK equity fund rebalances, it has to pay 0.50% stamp duty on the shares it buys. Because strategic-beta funds have higher turnover rates than market-cap funds, they typically incur higher transaction costs.

Finally, the table above shows that strategic-beta ETFs on UK equities are not necessarily more expensive to trade than plain-vanilla FTSE All-Share ETFs, with average spreads on the former coming in at 0.40% versus 0.45% for the latter. While many investors will likely be able to trade both types of ETFs at more favourable spreads, they shouldn't expect to be quoted spreads as narrow as those they would get on FTSE 100 ETFs. FTSE 100 ETFs benefit from highly liquid futures markets that market makers can use to hedge their exposure. In contrast, for UK all-cap ETFs, which also have exposure to mid- and small caps, there are no direct hedging tools available.

European Equities

Parent Index: MSCI EMU

Exhibit 7 Comparison Between Market-Cap-Weighted ETFs and Strategic-Beta ETFs Linked to the MSCI EMU

Name	Inception Date	Replication Method	Tracking Difference (%)			Index Turnover ² (%)	Index Rebalancing	Bid-Ask Spread ³ (%)	AUM (EUR Mil) ⁴
			TER (%)	1-year ¹ (%)	2-year Annualised ¹ (%)				
Market Cap-Weighted ETFs									
Amundi ETF MSCI EMU A/I	9/16/08	Synthetic	0.25	0.34	0.31	5	Quarterly	0.11	999
ComStage MSCI EMU TRN ETF	12/1/08	Synthetic	0.25	0.25	0.21	5	Quarterly	0.32	6
db x-trackers MSCI EMU (DR) 1C	3/31/15	Physical-Full	0.15	—	—	5	Quarterly	0.42	696
iShares MSCI EMU	1/12/10	Physical-Full	0.33	0.43	0.50	5	Quarterly	0.19	1,417
Lyxor MSCI EMU (DR) ETF D-EUR A/I	9/25/03	Physical-Full	0.25	0.17	0.18	5	Quarterly	0.23	233
SPDR® MSCI EMU ETF	1/25/13	Physical-Full	0.25	0.19	0.21	5	Quarterly	0.19	250
UBS ETF (IE) MSCI EMU SF	3/23/11	Synthetic	0.23	-0.26	-0.05	5	Quarterly	0.35	140
UBS ETF (LU) MSCI EMU	9/19/02	Physical-Full	0.23	0.31	0.37	5	Quarterly	0.16	1,909
Strategic-Beta ETFs									
Amundi ETF MSCI EMU High Dividend C	2/26/09	Synthetic	0.30	0.13	-0.16	15	Semi-annually	0.11	38
ComStage EURO STOXX® Sel Div 30 NR ETF	9/1/08	Synthetic	0.25	0.52	0.53	21	Annually	0.14	51
db x-trackers Euro Stoxx SelDiv 30(DR)1D	6/1/07	Physical-Full	0.30	0.64	0.45	21	Annually	0.22	165
Deka EURO STOXX® Select Dividend 30 ETF	6/23/08	Physical-Full	0.30	—	—	21	Annually	0.23	85
iShares EURO Dividend	10/28/05	Physical-Full	0.40	0.60	0.64	21	Annually	0.25	640

Exhibit 7 Comparison Between Market-Cap-Weighted ETFs and Strategic-Beta ETFs Linked to the MSCI EMU (Continued)

Name	Inception Date	Replication Method	Tracking Difference (%)			Index Turnover ² (%)	Index Rebalancing	Bid-Ask Spread ³ (%)	AUM (EUR Mil) ⁴
			TER (%)	1-year ¹ (%)	2-year Annualised ¹ (%)				
iShares EURO STOXX Select Div 30 (DE)	5/3/05	Physical-Full	0.31	1.02	0.92	21	Annually	0.13	452
iShares EURO Total Market Growth Large	11/4/05	Physical-Full	0.40	0.01	0.19	—	Annually	0.28	193
Lyxor ETF MSCI EMU Growth A/I	4/13/05	Synthetic	0.40	-0.06	0.02	22	Semi-annually	0.64	26
Lyxor ETF MSCI EMU Value A/I	4/13/05	Synthetic	0.40	0.17	0.20	21	Semi-annually	0.26	231
Lyxor SG European Qual Inc NTR ETF D-EUR	8/19/13	Synthetic	0.45	-0.49	-0.45	—	Quarterly	0.41	75
SPDR® EURO STOXX Low Volatility ETF	3/20/14	Physical-Sampling	0.30	0.12	0.17	—	Quarterly	0.27	36
UBS ETF (IE) MSCI EMU Growth SF	10/6/11	Synthetic	0.23	-0.46	-0.44	22	Semi-annually	0.64	2
UBS ETF (LU) MSCI EMU Value	10/2/09	Physical-Full	0.25	0.39	0.46	21	Semi-annually	0.27	174
UBS ETF (LU) Fact MSCI EMU TtIshdYd EUR	8/18/15	Physical-Full	0.28	—	—	49	Semi-annually	0.59	8
UBS ETF (LU) Fact MSCI EMU Quality EUR	8/18/15	Physical-Full	0.28	—	—	15	Semi-annually	0.60	8
UBS ETF (LU) Fact MSCI EMU PrimeVal EUR	8/18/15	Physical-Full	0.28	—	—	48	Semi-annually	0.60	7
WisdomTree Europe Equity ETF-USD Hdq	5/18/15	Physical-Full	0.58	—	—	14	Annually	0.87	157
Summary			Market Cap-Weighted ETFs (%)					Strategic-Beta ETFs (%)	
Average TER					0.24				0.33
Asset-Weighted Average TER					0.25				0.37
Average 1-year Tracking Difference					0.20				0.22
Average 2-year Tracking Difference (Annualised)					0.25				0.21
Average Bid-Ask Spread					0.25				0.38
Asset-Weighted Average Bid-Ask Spread					0.20				0.28

Source: Morningstar Direct, fund factsheets, index factsheets, provider data.

1. Tracking Difference (Fund Return—Index Return) as of December 31, 2015.

2. Two-way turnover. 2014/2015 data.

3. Average of 3-month average spreads on the London Stock Exchange, Xetra, Deutsche Boerse, Swiss Exchange, Euronext Paris and Borsa Italiana as of January 11, 2016.

4. As of January 11, 2016.

Parent Index: MSCI Europe**Exhibit 8** Comparison Between Market-Cap-Weighted ETFs and Strategic-Beta ETFs Linked to the MSCI Europe

Name	Inception Date	Replication Method	Tracking Difference (%)			Index Turnover ² (%)	Index Rebalancing	Bid-Ask Spread ³ (%)	AUM (EUR Mil) ⁴
			TER (%)	1-year ¹ (%)	2-year Annualised ¹ (%)				
Market Cap-Weighted ETFs									
Amundi ETF MSCI Europe C	9/16/08	Synthetic	0.28	0.15	0.16	4	Quarterly	0.12	586
db x-trackers MSCI Europe (DR) 1C	1/10/07	Physical-Full	0.30	0.02	0.01	4	Quarterly	0.15	2,765
ComStage MSCI Europe TRN ETF	12/1/08	Synthetic	0.25	0.03	0.00	4	Quarterly	0.15	22
Deka MSCI Europe ETF	6/9/09	Physical-Full	0.30	—	—	4	Quarterly	0.19	198
HSBC MSCI Europe ETF	6/2/10	Physical-Full	0.30	-0.06	0.03	4	Quarterly	0.28	215
iShares MSCI Europe (Acc)	9/25/09	Physical-Sampling	0.33	0.08	0.06	4	Quarterly	0.19	550
iShares MSCI Europe Dist	7/6/07	Physical-Sampling	0.35	0.01	0.01	4	Quarterly	0.13	5,564
Lyxor ETF MSCI Europe D-EUR A/I	1/13/06	Synthetic	0.25	0.16	0.16	4	Quarterly	0.17	1,645
Source MSCI Europe ETF	3/23/09	Synthetic	0.20	-0.01	-0.02	4	Quarterly	0.11	442
SPDR® MSCI Europe ETF	12/8/14	Physical-Full	0.25	0.08	0.04	4	Quarterly	0.25	637
UBS ETF (LU) MSCI Europe	10/2/09	Physical-Full	0.20	0.13	0.14	4	Quarterly	0.26	199
Strategic-Beta ETFs									
Amundi ETF MSCI Europe Buyback A/I	9/8/15	Synthetic	0.30	—	—	52	Annually	0.20	64
Amundi ETF MSCI Europe Growth A/I	2/26/09	Synthetic	0.35	-0.43	-0.41	20	Semi-annually	0.15	10
Amundi ETF MSCI Europe Minimum Vol A/I	2/26/09	Synthetic	0.23	0.03	-0.04	21	Semi-annually	0.15	48
Amundi ETF MSCI Europe Value A/I	2/26/09	Synthetic	0.35	-0.37	-0.38	21	Semi-annually	0.13	12
db x-trackers MSCI Europe Value 1C	3/26/10	Synthetic	0.40	-0.39	-0.40	21	Semi-annually	0.26	26

Exhibit 8 Comparison Between Market-Cap-Weighted ETFs and Strategic-Beta ETFs Linked to the MSCI Europe (Continued)

Name	Inception Date	Replication Method	Tracking Difference (%)			Index Turnover ² (%)	Index Rebalancing	Bid-Ask Spread ³ (%)	AUM (EUR Mil) ⁴
			TER (%)	1-year ¹ (%)	2-year Annualised ¹ (%)				
iShares FactorSelect MSCI Europe	9/4/15	Physical-Sampling	0.45	—	—	41	Semi-annually	0.83	29
iShares MSCI Europe Minimum Volatility	11/30/12	Physical-Sampling	0.25	-0.08	-0.09	21	Semi-annually	0.32	590
iShares MSCI Europe Momentum Factor	1/16/15	Physical-Sampling	0.25	—	—	160	Semi-annually	0.56	51
iShares MSCI Europe Quality Factor	1/16/15	Physical-Sampling	0.25	—	—	22	Semi-annually	0.48	10
iShares MSCI Europe Size Factor	1/16/15	Physical-Sampling	0.25	—	—	19	Semi-annually	0.53	10
iShares MSCI Europe Value Factor	1/16/15	Physical-Sampling	0.25	—	—	10	Semi-annually	0.45	16
Lyxor ETF Fnvx Sustn Low Vol Eurp C€	8/11/14	Synthetic	0.60	-0.65	—	—	—	0.73	5
Ossiam Shiller BarclCp® EuScVITr 1C Acc	12/30/14	Synthetic	0.65	—	—	150	—	0.29	53
Source Man GLG Continental Eurp Pls ETF	9/10/13	Synthetic	0.75	-0.74	-0.51	—	Monthly	0.31	14
Source Man GLG Europe Plus ETF	1/27/11	Synthetic	0.75	-0.28	-0.86	—	Monthly	0.22	97
Source Morgan Stanley Eurp MEMO Pls ETF	6/20/14	Synthetic	0.30	-0.29	—	—	Monthly	0.45	27
Source MSCI Europe Value ETF	3/15/12	Synthetic	0.35	-0.35	-0.36	10	Semi-annually	0.29	429
SPDR® MSCI Europe Value Wtd ETF EUR	2/18/15	Physical-Sampling	0.25	—	—	12	Semi-annually	0.37	2

Summary

	Market Cap-Weighted ETFs (%)	Strategic-Beta ETFs (%)
Average TER	0.27	0.39
Asset-Weighted Average TER	0.31	0.34
Average 1-year Tracking Difference	0.06	-0.36
Average 2-year Tracking Difference (Annualised)	0.06	-0.38
Average Bid-Ask Spread	0.18	0.37
Asset-Weighted Average Bid-Ask Spread	0.15	0.32

Source: Morningstar Direct, fund factsheets, index factsheets, provider data.

1. Tracking Difference (Fund Return—Index Return) as of December 31, 2015.

2. Two-way turnover. 2014/2015 data.

3. Average of 3-month average spreads on the London Stock Exchange, Xetra, Deutsche Boerse, Swiss Exchange, Euronext Paris and Borsa Italiana as of January 11, 2016.

4. As of January 11, 2016.

Strategic-beta ETFs offering exposure to broad Eurozone and European equities are around 0.09-0.12 percentage points more expensive than their market-cap-weighted cousins, on average.

As is the case with US equity funds, many European equity funds 'outperform' their respective benchmarks. Again, this is mainly because of the differences between these funds' tax treatment and the tax rates embedded in their underlying benchmarks. Strategic-beta ETFs offering exposure to EMU equities—especially those with high dividend yields—will enjoy a relatively larger performance 'boost'.

Emerging-Markets Equities

Parent Index: MSCI Emerging Markets

Exhibit 9 Comparison Between Market-Cap-Weighted ETFs and Strategic-Beta ETFs Linked to the MSCI Emerging Markets

Name	Inception Date	Replication Method	TER (%)	Tracking Difference (%)		Index Turnover ² (%)	Index Rebalancing	Bid-Ask Spread ³ (%)	AUM (EUR Mil) ⁴	
				1-year ¹ (%)	2-year Annualised ¹ (%)					
Market Cap-Weighted ETFs										
Amundi ETF MSCI Emerging Markets EUR A/I	11/30/10	Synthetic	0.20	-0.36	-0.52	8	Quarterly	0.22	348	
db x-trackers MSCI Emerging Markets 1C	6/22/07	Synthetic	0.65	-0.70	-0.77	8	Quarterly	0.11	1,291	
Deka MSCI Em. Mkts. ETF	7/1/10	Synthetic	0.65	—	—	8	Quarterly	0.34	12	
HSBC MSCI Emerg Mkts ETF	9/7/11	Physical-Sampling	0.60	-0.62	-0.94	8	Quarterly	0.31	186	
iShares MSCI Emerging Markets (Acc)	9/25/09	Physical-Sampling	0.68	-0.44	-0.57	8	Quarterly	0.39	259	
iShares MSCI Emerging Markets Dist	11/18/05	Physical-Sampling	0.75	-0.45	-0.54	8	Quarterly	0.11	2,958	
Lycor MSCI Emerging Markets ETF C-EUR	6/12/07	Synthetic	0.55	-0.71	-0.81	8	Quarterly	0.11	1,097	
Lycor ETF PEA MSCI Emerging Markets C-EUR	5/5/14	Synthetic	0.55	-0.73	—	8	Quarterly	0.24	7	
Source MSCI Emerging Markets ETF	4/26/10	Synthetic	0.45	-0.79	-0.92	8	Quarterly	0.24	114	
SPDR® MSCI Emerging Markets ETF	5/13/11	Physical-Sampling	0.42	-0.80	-0.70	8	Quarterly	0.37	118	
UBS ETF (IE) MSCI Emerging Markets SF	4/27/11	Synthetic	0.45	-0.76	-0.83	8	Quarterly	0.43	1,546	
UBS ETF (LU) MSCI Emerging Markets	11/12/10	Physical-Sampling	0.45	-0.44	-0.49	8	Quarterly	0.40	438	
Strategic-Beta ETFs										
FT Emerging Markets AlphaDEX® ETF A USD	4/9/13	Physical-Sampling	0.80	-0.90	—	—	Semi-annually	0.77	10	
iShares MSCI Emerg Mkts Minimum Volatil	11/30/12	Physical-Sampling	0.40	-0.56	-0.62	21	Semi-annually	0.38	250	
iShares Emerging Markets Dividend	11/25/11	Physical-Sampling	0.65	-0.28	-0.25	—	Quarterly	0.50	135	
Ossiam EM Minimum Var NR ETF 1C EUR	2/3/12	Synthetic	0.75	0.00	0.00	142	Semi-annually	0.48	143	
SPDR® S&P Emerging Markets Dividend ETF	10/14/11	Physical-Sampling	0.55	-0.72	-0.66	—	Semi-annually	0.61	41	
WisdomTree Emerg Mkts Eq Inc ETF	11/19/14	Physical-Sampling	0.46	—	—	37	Annually	0.61	11	
Summary			Market Cap-Weighted ETFs (%)				Strategic-Beta ETFs (%)			
Average TER			0.53				0.60			
Asset-Weighted Average TER			0.60				0.56			
Average 1-year Tracking Difference			-0.62				-0.49			
Average 2-year Tracking Difference (Annualised)			-0.71				-0.38			
Average Bid-Ask Spread			0.27				0.56			
Asset-Weighted Average Bid-Ask Spread			0.21				0.46			

Source: Morningstar Direct, fund factsheets, index factsheets, provider data.

1. Tracking Difference (Fund Return—Index Return) as of December 31, 2015.

2. Two-way turnover. 2014/2015 data.

3. Average of 3-month average spreads on the London Stock Exchange, Xetra, Deutsche Boerse, Swiss Exchange, Euronext Paris and Borsa Italiana as of January 11, 2016.

4. As of January 11, 2016.

For emerging-markets exposures, strategic-beta ETFs are only slightly more expensive, on average, vis-à-vis their market-cap-weighted counterparts. In fact, some are even cheaper, as evidenced by iShares MSCI EM Minimum Volatility and iShares EM Dividend, which charge 0.40% and 0.65%, respectively, while iShares MSCI EM (Acc) and iShares MSCI EM Dist levy fees of 0.68% and 0.75%, respectively. This can be explained by the fact that fees on standard MSCI Emerging Markets ETFs remain high on average. Only a couple of funds have seen their fees cut in recent years. Some providers, including iShares and Vanguard, offer cheaper market-cap-weighted alternatives on emerging markets, but these track different indexes: MSCI Emerging Markets IMI and FTSE Emerging Markets indexes, respectively.

Trading spreads on strategic-beta emerging-markets ETFs, however, are twice as high as those on plain-vanilla equivalents, on average (0.56% versus 0.27%). Again, it is possible for investors to trade at better prices by either placing limit orders or transacting via a market maker.

Japanese Equities

Parent Index: TOPIX

Exhibit 10 Comparison Between Market-Cap-Weighted ETFs and Strategic-Beta ETFs Linked to the TOPIX

Name	Inception Date	Replication Method	Tracking Difference (%)			Index Turnover ² (%)	Index Rebalancing	Bid-Ask Spread ³ (%)	AUM (EUR Mil) ⁴	
			TER (%)	1-year ¹ (%)	2-year Annualised ¹ (%)					
Market Cap-Weighted ETFs										
ComStage TOPIX® ETF	12/5/08	Synthetic	0.25	—	—	—	Semi-annually	0.31	20	
Lyxor ETF Japan (TOPIX) D-EUR A/I	11/10/05	Synthetic	0.45	-0.94	-0.96	—	Semi-annually	0.17	1,035	
Lyxor ETF PEA Japan (Topix) C-EUR	5/20/14	Synthetic	0.45	-0.83	—	—	Semi-annually	0.41	6	
Topix THEAM Easy ETF EUR	2/17/09	Synthetic	0.50	-1.88	-1.49	—	Semi-annually	0.53	20	
Strategic-Beta ETFs										
Amundi ETF Jpx-Nikkei 400 EUR A/I	11/13/14	Synthetic	0.18	-0.33	—	8	Annually	0.28	371	
db x-trackers JPX-Nikkei 400 (DR) 1D	3/31/15	Physical-Sampling	0.20	—	—	8	Annually	0.44	147	
First Trust Japan AlphaDEX® ETF A	6/24/15	Physical-Full	0.70	—	—	—	Annually	0.43	4	
Lyxor JPX-Nikkei 400 ETF DR C-EUR	9/15/14	Physical-Full	0.25	-0.42	—	8	Annually	0.41	747	
Source JPX-Nikkei 400 ETF	9/10/14	Synthetic	0.20	—	—	8	Annually	0.24	224	
WisdomTree Japan Equity ETF JPY Acc	11/2/15	Physical-Sampling	0.40	—	—	—	Annually	—	30	
Summary			Market Cap-Weighted ETFs (%)				Strategic-Beta ETFs (%)			
Average TER			0.41				0.32			
Asset-Weighted Average TER			0.45				0.23			
Average 1-year Tracking Difference			-1.22				-0.38			
Average 2-year Tracking Difference (Annualised)			-1.23				—			
Average Bid-Ask Spread			0.35				0.36			
Asset-Weighted Average Bid-Ask Spread			0.18				0.35			

Source: Morningstar Direct, fund factsheets, index factsheets, provider data.

1. Tracking Difference (Fund Return—Index Return) as of December 31, 2015.

2. Two-way turnover. 2014/2015 data.

3. Average of 3-month average spreads on the London Stock Exchange, Xetra, Deutsche Boerse, Swiss Exchange, Euronext Paris and Borsa Italiana as of January 11, 2016.

4. As of January 11, 2016.

Strategic-beta ETFs offering exposure to Japanese equities are cheaper, on average, than their market-cap-weighted counterparts. Some funds, in particular those tracking the JPX-Nikkei 400 Index, charge highly competitive fees of 0.20% or less. The JPX-Nikkei 400⁶ was created to better reflect the new reality of the Japanese economy, in particular the initiation of government-led efforts to improve Japanese companies' corporate governance. The index screens companies according to their profitability, shareholder return, and superior corporate governance.

Looking at bid-ask spreads, one can see that the cost of trading strategic-beta ETFs in this category is at par with that of trading plain-vanilla TOPIX ETFs, with average spreads on the former coming in at 0.36% versus 0.35% for the latter. Again, it is possible for investors to trade at better prices by either placing limit orders or transacting via a market maker. ■■■

⁷ Read more: [Japan ETFs That Boot Out the Badly Behaved Companies](#)

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