

Europe Persistence Scorecard

INTRODUCTION

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For the first time, we are introducing the Europe Persistence Scorecard, differentiating skill from luck by examining the ability of active European equity funds to consistently outperform their peers and their benchmark. This scorecard looks to support the well-known disclaimer that past performance is not indicative of future results and that oftentimes an investor would have better success in selecting a fund at random rather than from a group of top performers.

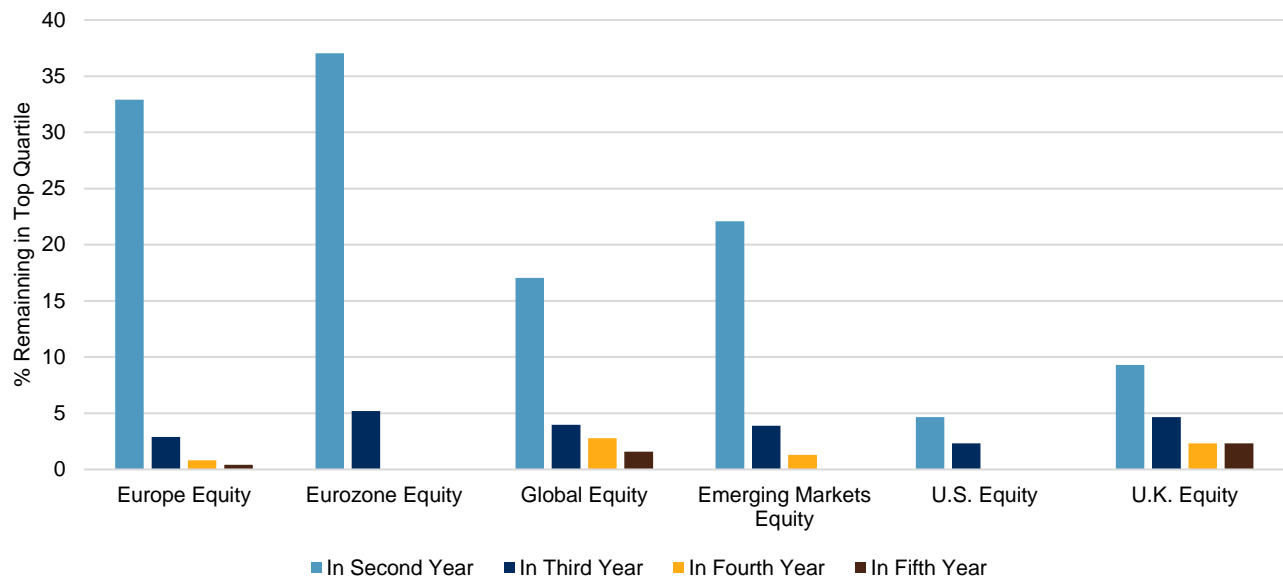
In this report, we pose two questions: did top funds stay ahead of the pack, and did outperforming funds continue to outperform their benchmark? In summary, active funds were generally less able to persistently outperform their benchmark than they were their peers.

PERSISTENCE – DID THE TOP FUNDS STAY AHEAD OF THE PACK?

Pan-European Equity Funds: Over the shorter term, Report 1 indicates that there may have been some predictability by selecting a top-quartile Europe Equity fund. The percentage of funds that remained in the top quartile for three consecutive 12-month periods was 15.8%, far higher than what would have been expected from selecting a fund at random ($0.25^2 = 6.25\%$).

This notion is not further substantiated after viewing the performance persistence over five consecutive 12-month periods (see Report 2). The percentage of funds that did so was 0.41%, close to what would have been expected from a random draw ($0.25^4 = 0.39\%$).

Exhibit 1: Percentage of European Equity Funds Consecutively Remaining in Top Quartile



Source: S&P Dow Jones Indices LLC, Morningstar. Based on funds performing in top quartile of respective category in 2016 calendar year. Data as of Dec. 31, 2020. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

A similar picture is evident when observing the persistence of funds remaining in the top half of their fund category group. From Report 2, the percentage of funds that remained in the top half for four more years was 5.14%; this is lower than what would be expected from selecting a fund at random. The probability of that fund remaining in the top half for four consecutive years is $0.5^4 = 6.25\%$.

However, when measuring performance over longer windows (rather than measuring persistence over more consecutive periods), the transition matrices in Report 3 and 5 again show evidence that supports persistence. 41.3% of top quartile European funds repeated their ability to position in the top quartile when observing two consecutive three-year windows, and up to 42.0% did so when observing five-year windows.

Other Equity Funds in Europe: From the remaining five equity fund categories, Global Equity, U.S. Equity, and U.K. Equity also displayed a higher degree of persistence of funds remaining in the top quartile for three consecutive 12-month periods than would otherwise be expected from a random selection. However, only Global Equity and U.K. Equity funds demonstrated a better-than-random persistence on the same basis over five consecutive 12-month periods. Strikingly, none of the funds in Eurozone Equity, Emerging Markets Equity, or U.S. Equity were able to deliver five consecutive top-quartile rankings.

FLEETING ALPHA – DID OUTPERFORMING FUNDS CONTINUE TO BEAT THEIR BENCHMARK?

Pan-European Equity Funds: Over the initial three-year period ending Dec. 31, 2017, 45% of European Equity funds beat the benchmark. Of these funds, 13%, 7%, and 6% went on to consecutively beat their benchmark in 2018, 2019, and 2020 respectively.

To avoid the risk of drawing conclusions from a single time period, Report 8 analyzes the persistence of outperformance on average over rolling quarters. In total, Report 7, which shows the outperformance

of Europe Equity funds over three consecutive 12-month periods, is run for 17 quarters and the average of these results are displayed in Report 8. Again, Europe Equity funds fail to show outperforming funds were persistently able to maintain their outperformance. Only 6.2% of outperforming funds in this category were able to beat the benchmark for three consecutive years, highlighting the difficulties funds face to stay at the top, and that picking a fund based on past performance is not likely to be a consistent winning strategy.

Other Equity Funds in Europe: U.K. Equity featured funds with the strongest ability to consistently beat their benchmark. Over the initial three-year period ending Dec. 31, 2017, 47% of U.K. Equity funds beat their benchmark. Of these funds, 22% went on to consecutively beat the benchmark in 2018, 2019, and 2020. This level of consistent outperformance against the benchmark can be considered an outlier when compared with the quarterly rolling average performance. Only 8.8% of outperforming U.K. Equity funds were able to beat the benchmark for three consecutive years.

Over the long run, Report 8 highlights that an active fund manager has no better chance at consistently beating the benchmark than through luck alone. In fact, the percentage of outperforming funds that were able to beat the benchmark for three consecutive years is far below what would be expected from a random draw, assuming a 50% chance of outperformance e.g. $0.5^3 = 12.5\%$.

ABOUT THE PERSISTENCE SCORECARD

The phrase “past performance is no guarantee of future results” (or some variation thereof) can be found in the fine print of most mutual fund literature. Yet many investors and advisors consider past performance and related metrics to be important factors in fund selection. So does past performance really matter?

To answer this question, Reports 1-6 track the degree to which historical relative performance is predictive of future relative performance. The scorecard highlights performance persistence over three and five consecutive 12-month periods and two non-overlapping three- and five-year periods.

Reports 7,8, and 9 showcase the degree to which outperforming funds from one period continue to beat their benchmarks thereafter. Specifically, we first identify funds that beat their benchmarks, based on three-year annualized returns. We then examine whether these funds (the “winners”) can continue to outperform during each of the following three one-year periods.

Report 8 covers the period from Dec. 31, 2010, to Dec. 31, 2020. On a quarterly basis beginning on Dec. 31, 2010, we compute the trailing three-year annualized returns for each fund in our universe, as well as for their benchmarks. We then identify funds that beat their benchmarks and track their relative performance in each of the next three years. Quarterly results are then averaged to arrive at the final report. By identifying funds that beat their benchmarks as “winners” and those that do not as “losers,” this approach applies the “winner-winner, winner-loser” methodology developed by Brown and Goetzmann¹ and examines if winners in period t are also winners in $t + j$, where $j = \text{Year 1, Year 2, and Year 3}$.

Key features of the S&P Persistence Scorecard include:

- **Historical rankings without survivorship bias:** For anyone making an investment decision, all funds available at the time of that decision are part of the initial opportunity set. Ignoring funds that liquidate or merge during a period of study biases measurements of persistence. The S&P Persistence Scorecard ranks all funds available at each point in time and tracks the top-quartile and top-half performers throughout the time.
- **Clean universe:** The fund universe used in these reports comprises actively managed domestic European equity funds. Index funds and leveraged funds are excluded from the sample. To avoid double counting multiple share classes, only the share class with the highest previous period return of each fund is used.
- **Tracking reports of top performers:** The tracking reports show the percentages of funds that remain in the top-quartile or top-half rankings over consecutive three- and five-year periods.
- **Transition matrices:** Transition matrices show the movements between quartiles and halves over non-overlapping three- and five-year periods. They also track the percentage of funds that have merged or liquidated.

As in our widely followed SPIVA Europe Scorecards, Morningstar serves as our underlying data source.

¹ Brown, S. J., and Goetzmann, W. N. (1995). Performance Persistence. *The Journal of Finance*, 50(2), 679-698.

REPORTS

Report 1: Performance Persistence of European Equity Funds over Three Consecutive 12-Month Periods			
FUND CATEGORY	FUND COUNT AT START (DECEMBER 2018)	PERCENTAGE REMAINING IN TOP QUARTILE	
		DECEMBER 2019	DECEMBER 2020
TOP QUARTILE			
EURO-DENOMINATED FUNDS (EUR)			
Europe Equity	253	28.06	15.81
Eurozone Equity	136	22.79	6.62
Global Equity	262	43.51	24.81
Emerging Markets Equity	82	13.41	6.10
U.S. Equity	90	44.44	32.22
POUND STERLING-DENOMINATED FUNDS (GBP)			
U.K. Equity	86	17.44	13.95
FUND CATEGORY	FUND COUNT AT START (DECEMBER 2018)	PERCENTAGE REMAINING IN TOP HALF	
		DECEMBER 2019	DECEMBER 2020
TOP HALF			
EURO-DENOMINATED FUNDS (EUR)			
Europe Equity	506	49.21	31.23
Eurozone Equity	272	51.10	26.84
Global Equity	524	58.40	39.12
Emerging Markets Equity	163	39.26	22.70
U.S. Equity	179	58.66	41.34
POUND STERLING-DENOMINATED FUNDS (GBP)			
U.K. Equity	171	35.09	22.81

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2020. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 2: Performance Persistence of European Equity Funds over Five Consecutive 12-Month Periods					
FUND CATEGORY	FUND COUNT AT START (DECEMBER 2016)	PERCENTAGE REMAINING IN TOP QUARTILE			
		DECEMBER 2017	DECEMBER 2018	DECEMBER 2019	DECEMBER 2020
TOP QUARTILE					
EURO-DENOMINATED FUNDS (EUR)					
Europe Equity	243	32.92	2.88	0.82	0.41
Eurozone Equity	135	37.04	5.19	0.00	0.00
Global Equity	252	17.06	3.97	2.78	1.59
Emerging Markets Equity	77	22.08	3.90	1.30	0.00
U.S. Equity	86	4.65	2.33	0.00	0.00
POUND STERLING-DENOMINATED FUNDS (GBP)					
U.K. Equity	86	9.30	4.65	2.33	2.33
FUND CATEGORY	FUND COUNT AT START (DECEMBER 2016)	PERCENTAGE REMAINING IN TOP HALF			
		DECEMBER 2017	DECEMBER 2018	DECEMBER 2019	DECEMBER 2020
TOP HALF					
EURO-DENOMINATED FUNDS (EUR)					
Europe Equity	486	48.35	17.90	8.44	5.14
Eurozone Equity	270	52.96	20.00	11.48	8.15
Global Equity	503	39.36	20.08	14.51	11.13
Emerging Markets Equity	154	49.35	24.68	13.64	7.79
U.S. Equity	171	33.33	13.45	8.19	2.92
POUND STERLING-DENOMINATED FUNDS (GBP)					
U.K. Equity	172	38.37	23.26	11.05	6.98

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2020. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 3: Three-Year Transition Matrix – Performance over Two Non-Overlapping Three-Year Periods (Based on Quartile)						
QUARTILE	FUND COUNT AT START (DECEMBER 2017)	THREE-YEAR PERCENTAGES AT END (DECEMBER 2020)				
		1ST QUARTILE (%)	2ND QUARTILE (%)	3RD QUARTILE (%)	4TH QUARTILE (%)	MERGED/ LIQUIDATED (%)
EURO-DENOMINATED FUNDS (EUR)						
EUROPE EQUITY						
1st Quartile	213	41.31	16.90	15.96	12.21	13.62
2nd Quartile	213	15.02	23.47	19.25	24.41	17.84
3rd Quartile	213	15.49	23.00	22.07	22.54	16.90
4th Quartile	213	9.86	17.84	23.94	22.54	25.82
EUROZONE EQUITY						
1st Quartile	126	36.51	14.29	15.08	22.22	11.90
2nd Quartile	125	26.40	26.40	20.80	15.20	11.20
3rd Quartile	126	12.70	23.81	21.43	21.43	20.63
4th Quartile	126	9.52	20.63	27.78	26.19	15.87
GLOBAL EQUITY						
1st Quartile	213	39.44	18.78	11.74	16.90	13.15
2nd Quartile	213	23.00	24.41	21.13	20.19	11.27
3rd Quartile	213	11.27	23.94	25.82	20.19	18.78
4th Quartile	213	9.86	16.43	24.88	26.76	22.07
EMERGING MARKETS EQUITY						
1st Quartile	65	41.54	29.23	10.77	1.54	16.92
2nd Quartile	65	18.46	29.23	20.00	23.08	9.23
3rd Quartile	65	13.85	20.00	29.23	18.46	18.46
4th Quartile	66	7.58	3.03	21.21	39.39	28.79
U.S. EQUITY						
1st Quartile	77	36.36	18.18	16.88	7.79	20.78
2nd Quartile	76	18.42	25.00	17.11	19.74	19.74
3rd Quartile	76	17.11	22.37	17.11	26.32	17.11
4th Quartile	77	6.49	11.69	25.97	24.68	31.17
POUND STERLING-DENOMINATED FUNDS (GBP)						
U.K. EQUITY						
1st Quartile	80	55.00	25.00	10.00	5.00	5.00
2nd Quartile	79	18.99	29.11	24.05	13.92	13.92
3rd Quartile	79	2.53	13.92	34.18	31.65	17.72
4th Quartile	80	6.25	15.00	15.00	32.50	31.25

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2020. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 4: Three-Year Transition Matrix – Performance over Two Non-Overlapping Three-Year Periods (Based on Halves)				
HALF	FUND COUNT AT START (DECEMBER 2017)	THREE-YEAR PERCENTAGES AT END (DECEMBER 2020)		
		TOP HALF (%)	BOTTOM HALF (%)	MERGED/LIQUIDATED (%)
EURO-DENOMINATED FUNDS (EUR)				
EUROPE EQUITY				
Top Half	426	48.36	35.92	15.73
Bottom Half	426	33.10	45.54	21.36
EUROZONE EQUITY				
Top Half	251	51.79	36.65	11.55
Bottom Half	252	33.33	48.41	18.25
GLOBAL EQUITY				
Top Half	426	52.82	34.98	12.21
Bottom Half	426	30.75	48.83	20.42
EMERGING MARKETS EQUITY				
Top Half	130	59.23	27.69	13.08
Bottom Half	131	22.14	54.20	23.66
U.S. EQUITY				
Top Half	153	49.02	30.72	20.26
Bottom Half	153	28.76	47.06	24.18
POUND STERLING-DENOMINATED FUNDS (GBP)				
U.K. EQUITY				
Top Half	159	64.15	26.42	9.43
Bottom Half	159	18.87	56.60	24.53

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2020. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 5: Five-Year Transition Matrix - Performance over Two Non-Overlapping Five-Year Periods (Based on Quartile)						
QUARTILE	FUND COUNT AT START (DECEMBER 2015)	FIVE-YEAR PERCENTAGES AT END (DECEMBER 2020)				
		1ST QUARTILE (%)	2ND QUARTILE (%)	3RD QUARTILE (%)	4TH QUARTILE (%)	MERGED/ LIQUIDATED (%)
EURO-DENOMINATED FUNDS (EUR)						
EUROPE EQUITY						
1st Quartile	188	42.02	20.74	10.64	9.04	17.55
2nd Quartile	187	13.37	23.53	20.86	18.72	23.53
3rd Quartile	188	11.70	19.15	24.47	14.36	30.32
4th Quartile	188	6.91	10.64	18.09	32.45	31.91
EUROZONE EQUITY						
1st Quartile	115	44.35	14.78	14.78	10.43	15.65
2nd Quartile	114	15.79	28.07	16.67	21.05	18.42
3rd Quartile	114	9.65	27.19	30.70	14.04	18.42
4th Quartile	115	10.43	9.57	17.39	34.78	27.83
GLOBAL EQUITY						
1st Quartile	180	36.67	17.78	12.22	13.33	20.00
2nd Quartile	179	21.79	21.23	18.44	15.64	22.91
3rd Quartile	179	7.26	20.11	29.61	18.99	24.02
4th Quartile	180	8.89	15.00	14.44	26.67	35.00
EMERGING MARKETS EQUITY						
1st Quartile	50	26.00	16.00	10.00	16.00	32.00
2nd Quartile	50	28.00	22.00	20.00	16.00	14.00
3rd Quartile	50	6.00	22.00	30.00	26.00	16.00
4th Quartile	50	18.00	16.00	16.00	20.00	30.00
U.S. EQUITY						
1st Quartile	61	40.98	21.31	13.11	9.84	14.75
2nd Quartile	61	18.03	22.95	16.39	14.75	27.87
3rd Quartile	61	3.28	19.67	26.23	21.31	29.51
4th Quartile	61	9.84	6.56	14.75	26.23	42.62
POUND STERLING-DENOMINATED FUNDS (GBP)						
U.K. EQUITY						
1st Quartile	77	42.86	14.29	7.79	19.48	15.58
2nd Quartile	76	15.79	26.32	23.68	17.11	17.11
3rd Quartile	76	7.89	18.42	22.37	19.74	31.58
4th Quartile	77	6.49	12.99	19.48	16.88	44.16

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2020. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 6: Five-Year Transition Matrix – Performance over Two Non-Overlapping Five-Year Periods (Based on Halves)				
HALF	FUND COUNT AT START (DECEMBER 2015)	FIVE-YEAR PERCENTAGES AT END (DECEMBER 2020)		
		TOP HALF (%)	BOTTOM HALF (%)	MERGED/LIQUIDATED (%)
EURO-DENOMINATED FUNDS (EUR)				
EUROPE EQUITY				
Top Half	375	49.87	29.60	20.53
Bottom Half	376	24.20	44.68	31.12
EUROZONE EQUITY				
Top Half	229	51.53	31.44	17.03
Bottom Half	229	28.38	48.47	23.14
GLOBAL EQUITY				
Top Half	359	48.75	29.81	21.45
Bottom Half	359	25.63	44.85	29.53
EMERGING MARKETS EQUITY				
Top Half	100	46.00	31.00	23.00
Bottom Half	100	31.00	46.00	23.00
U.S. EQUITY				
Top Half	122	51.64	27.05	21.31
Bottom Half	122	19.67	44.26	36.07
POUND STERLING-DENOMINATED FUNDS (GBP)				
U.K. EQUITY				
Top Half	153	49.67	33.99	16.34
Bottom Half	153	22.88	39.22	37.91

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2020. Index performance based on total return. Funds are equal weighted, but indices are not. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 7: Outperformance Persistence over Three Consecutive Years

FUND CATEGORY	BENCHMARK	TOTAL NUMBER OF FUNDS	NUMBER OF FUNDS OUTPERFORMING THE BENCHMARK	PERCENTAGE OF FUNDS OUTPERFORMING THE BENCHMARK	PERCENTAGE OUTPERFORMING THE BENCHMARK (PERIOD END)		
					DECEMBER 2017	DECEMBER 2018	DECEMBER 2019
EURO-DENOMINATED FUNDS (EUR)							
Europe Equity	S&P Europe 350	1009	453	44.90	13.47	6.84	6.18
Eurozone Equity	S&P Eurozone BMI	580	137	23.62	13.87	4.38	3.65
Global Equity	S&P Global 1200	1051	113	10.75	31.86	20.35	16.81
Emerging Markets Equity	S&P/IFCI Composite	325	36	11.08	11.11	11.11	5.56
U.S. Equity	S&P 500	360	40	11.11	50.00	22.50	22.50
POUND STERLING-DENOMINATED FUNDS (GBP)							
U.K. Equity	S&P United Kingdom BMI	369	175	47.43	31.43	25.14	22.29

Source: S&P Dow Jones Indices LLC, Morningstar. Data for periods ending Dec. 31, 2020. Index performance based on total returns. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 8: Rolling Quarterly Average Outperformance Persistence over Three Consecutive Years

FUND CATEGORY	BENCHMARK	TOTAL NUMBER OF FUNDS	NUMBER OF FUNDS OUTPERFORMING THE BENCHMARK	PERCENTAGE OF FUNDS OUTPERFORMING THE BENCHMARK	PERCENTAGE OUTPERFORMING THE BENCHMARK (PERIOD END)		
					CURRENT PERIOD	YEAR 1	YEAR 2
EURO-DENOMINATED FUNDS (EUR)							
Europe Equity	S&P Europe 350	1047	328	31.64	53.61	21.76	8.92
Eurozone Equity	S&P Eurozone BMI	603	105	17.48	46.25	19.10	7.87
Global Equity	S&P Global 1200	1067	96	8.99	32.98	14.48	8.31
Emerging Markets Equity	S&P/IFCI Composite	309	52	16.84	35.84	10.70	4.69
U.S. Equity	S&P 500	348	25	7.24	33.71	20.34	14.60
POUND STERLING-DENOMINATED FUNDS (GBP)							
U.K. Equity	S&P United Kingdom BMI	407	229	56.11	55.20	20.21	8.79

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2020. Index performance based on total returns. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 9: Universe Statistics		
FUND CATEGORY	AVERAGE	MEDIAN
EURO-DENOMINATED FUNDS (EUR)		
Europe Equity	1047	1020
Eurozone Equity	603	600
Global Equity	1067	1057
Emerging Markets Equity	309	315
U.S. Equity	348	347
POUND STERLING-DENOMINATED FUNDS (GBP)		
U.K. Equity	407	408

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2020. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

APPENDIX

SPIVA Styles and Morningstar Fund Classifications

Data from Morningstar Europe is obtained for all managed funds for which month-end data is available during the performance period. The data includes funds domiciled in European markets. Offshore European equity funds are excluded. Funds are classified based on the Morningstar fund classification system, and the Persistence Scorecard covers European and global equity categories.

European Equity Funds Denominated in EUR and GBP

The Europe Persistence Scorecard covers regional and country-specific funds that are denominated in EUR and GBP, and they have been mapped to the relevant Morningstar fund categories as indicated in Exhibit 1. The Morningstar classification system produces narrow, style-based classifications for funds, particularly in relation to European and international equities. S&P Dow Jones Indices has consolidated the style-based categories in order to generate a larger sample size and develop a broad-market comparison to market-based benchmarks. A narrow, style-based comparison would yield a limited sample size, given that value and growth style segments are not consistently discernible over the past five years.

Morningstar categories have been mapped to SPIVA peer groups in the following manner.

Exhibit 2: Morningstar Categories and SPIVA Peer Groups for European Equity Funds	
EUROPEAN FUNDS DENOMINATED IN EUROS (EUR)	
MORNINGSTAR CATEGORY	SPIVA CATEGORY
EAA Fund Europe Flex-Cap Equity	Europe Equity
EAA Fund Europe Large-Cap Blend Equity	
EAA Fund Europe Large-Cap Growth Equity	
EAA Fund Europe Large-Cap Value Equity	
EAA Fund Europe Mid-Cap Equity	
EAA Fund Europe Small-Cap Equity	Eurozone Equity
EAA Fund Eurozone Flex-Cap Equity	
EAA Fund Eurozone Large-Cap Equity	
EAA Fund Eurozone Mid-Cap Equity	
EAA Fund Eurozone Small-Cap Equity	Global Equity
EAA Fund Global Large-Cap Blend Equity	
EAA Fund Global Large-Cap Growth Equity	
EAA Fund Global Large-Cap Value Equity	U.S. Equity
EAA Fund Global Small/Mid-Cap Equity	
EAA Fund U.S. Large-Cap Blend Equity	
EAA Fund U.S. Large-Cap Growth Equity	
EAA Fund U.S. Large-Cap Value Equity	
EAA Fund U.S. Mid-Cap Equity	U.S. Equity
EAA Fund U.S. Flex-Cap Equity	
EAA Fund U.S. Small-Cap Equity	U.S. Equity
EAA Fund U.S. Small-Cap Equity	
EAA Fund Global Emerging Markets Equity	Emerging Markets Equity

Source: S&P Dow Jones Indices LLC and Morningstar. Table is provided for illustrative purposes.

Exhibit 2: Morningstar Categories and SPIVA Peer Groups for European Equity Funds (cont.)

EUROPEAN FUNDS DENOMINATED IN BRITISH POUND STERLING (GBP)

MORNINGSTAR CATEGORY	SPIVA CATEGORY
EAA Fund UK Large-Cap Blend Equity	
EAA Fund UK Large-Cap Growth Equity	
EAA Fund UK Large-Cap Value Equity	U.K. Equity
EAA Fund UK Mid-Cap Equity	
EAA Fund UK Small-Cap Equity	
EAA Fund UK Flex-Cap Equity	

Source: S&P Dow Jones Indices LLC and Morningstar. Table is provided for illustrative purposes.

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