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SPIVA[®] Europe Scorecard

SUMMARY

S&P Dow Jones Indices has been the de facto scorekeeper of the ongoing active versus passive debate since the first publication of the S&P Indices Versus Active Funds (SPIVA) U.S. Scorecard in 2002. Over the years, we have built on more than a decade of experience publishing the report by expanding coverage into Canada, India, Japan, Australia, Latin America, and South Africa. While the report will not end the debate on active versus passive investing, we hope to make a meaningful contribution by examining market segments in which one strategy might work better than the other.

The SPIVA Europe Scorecard measures the performance of actively managed European equity funds denominated in euro (EUR), British pound sterling (GBP), and other European local currencies against the performance of their respective S&P DJI benchmark indices over 1-, 3-, 5-, and 10-year investment horizons. In 2015, the range of fund categories covered in the SPIVA Europe Scorecard was expanded to include domestic equity funds from Italy, the Netherlands, Poland, Spain, Switzerland, and the Nordic region, with specific data for Denmark and Sweden.

Equity Funds Denominated in Euros (EUR)

Global equity markets, as measured by the S&P Global 1200, rose 11.51% over the one-year period in euro terms. This improved performance was due to a more benign global economic outlook and an easing of uncertainty that followed the Brexit referendum and the U.S. presidential election. While the prevailing market conditions turned more positive, our report indicates that euro-denominated active funds invested in pan-European equities underperformed across all time horizons analyzed. That said, there were a few exceptions over the short term. Some active fund categories invested in single countries (e.g., Denmark and Switzerland) managed to beat their corresponding benchmarks over the one-year period, even though they underperformed over the longer run.

In regard to emerging market equities, performance was strong, as macroeconomic data in many major economies appeared to stabilize. Even so, there is often a widely held belief that active portfolio management can be most effective in less efficient markets, such as emerging market equities, because these markets can provide managers the opportunity to exploit perceived mispricing. However, this view was not substantiated by our research, as over 90% of active funds underperformed their benchmarks over all time horizons.

In the U.S., equity markets delivered strong returns over the one-year period, but more than 79% of U.S. active funds underperformed the S&P 500[®]. This poor performance persisted over the longer term, as over 97% of active funds trailed the benchmark over the 10-year period.

The relationship between the size of funds (i.e., the amount of assets under management) and their success appears to be uncertain across different categories of funds. Results from Reports 3 and 4 highlight that equal-weighted returns were higher than asset-weighted returns in some, but not all, categories. Over the 10-year period, more than 50% of euro-denominated active funds invested in European equities were either liquidated or merged.

Funds Denominated in Pound Sterling (GBP)

With respect to GBP-denominated categories, the majority of actively managed funds invested in UK equities and UK large- and mid-cap equities lagged their benchmarks over the one-year horizon. This stands in contrast with UK small-cap funds, which outperformed their corresponding benchmark over the same period. In spite of this, active funds in all UK equity categories underperformed their benchmarks over the long-term.

As for other fund categories covered in this report, they generally underperformed their benchmarks across all time periods.

Funds Denominated in Other European Local Currencies

The performance of funds in this category was generally mixed over the short run, but all funds trailed their benchmarks over the 10-year horizon.

A UNIQUE SCORECARD FOR THE ACTIVE VERSUS PASSIVE DEBATE

Since its first publication 15 years ago, the SPIVA Scorecard has served as the de facto scorekeeper of the active versus passive debate. For more than a decade, we have heard passionate arguments from believers in both camps when headline numbers have deviated from their beliefs.

Beyond the SPIVA Scorecard's widely cited headline numbers is a rich data set that addresses issues related to measurement techniques, universe composition, and fund survivorship that are less frequently discussed, but are often more fascinating. These data sets are rooted in the fundamental principles of the SPIVA Scorecard that regular readers will be familiar with, including the following.

- **Survivorship Bias Correction:** Many funds might be liquidated or merged during a period of study. However, for someone making an investment decision at the beginning of the period, these funds are part of the opportunity set. Unlike other commonly available comparison reports, SPIVA Scorecards account for the entire opportunity set—not just the survivors—thereby eliminating survivorship bias.
- **Asset-Weighted Returns:** Average returns for a fund group are often calculated using only equal weighting, which means the returns of a EUR 10 billion fund affect the average in the same manner as the returns of a EUR 10 million fund. An accurate representation of how market participants fared in a particular period can be ascertained by calculating weighted average returns where each fund's return is weighted by net assets. SPIVA Scorecards show both equal- and asset-weighted averages.
- **Data Cleaning:** SPIVA Scorecards avoid double counting multiple share classes in all count-based calculations by using only the share class with greater assets. Index, leveraged, and inverse funds, along with other index-linked products, are excluded because this is meant to be a scorecard for active managers.

REPORTS

Report 1: Percentage of European Equity Funds Outperformed by Benchmarks					
FUND CATEGORY	COMPARISON INDEX	ONE-YEAR	THREE-YEAR	FIVE-YEAR	TEN-YEAR
DATA IN EUROS (EUR)					
Europe Equity	S&P Europe 350	80.41	73.64	74.17	88.25
Eurozone Equity	S&P Eurozone BMI	79.96	84.46	87.84	90.41
Nordic Equity	S&P Nordic BMI	39.13	46.51	52.78	75.76
Global Equity	S&P Global 1200	88.52	90.47	97.95	98.45
Emerging Markets Equity	S&P/IFCI	93.62	86.94	98.17	100.00
U.S. Equity	S&P 500	77.20	97.08	97.86	97.91
France Equity	S&P France BMI	66.97	66.67	77.87	84.12
Germany Equity	S&P Germany BMI	87.91	78.02	79.55	82.30
Italy Equity	S&P Italy BMI	60.78	64.00	57.89	76.09
Spain Equity	S&P Spain BMI	65.52	67.11	70.33	81.97
Netherlands Equity	S&P Netherlands BMI	62.50	81.82	93.75	97.06
DATA IN POUND STERLING (GBP)					
Europe Equity	S&P Europe 350	84.47	53.68	55.10	75.64
Europe Ex-U.K. Equity	S&P Europe Ex-U.K. BMI	75.78	77.12	67.19	73.68
U.K. Equity	S&P United Kingdom BMI	87.22	61.64	50.00	74.19
U.K. Large-/Mid-Cap Equity	S&P United Kingdom LargeMidCap	92.54	58.79	41.63	77.47
U.K. Small-Cap Equity	S&P United Kingdom SmallCap	36.92	57.58	70.42	76.00
Global Equity	S&P Global 1200	93.81	80.16	90.62	94.04
Emerging Markets Equity	S&P/IFCI	93.83	82.09	88.68	92.98
U.S. Equity	S&P 500	67.29	93.30	92.16	90.64
DATA IN OTHER EUROPEAN LOCAL CURRENCIES					
Denmark Equity	S&P Denmark BMI	2.94	21.88	21.21	80.00
Poland Equity	S&P Poland BMI	68.89	52.08	54.17	78.26
Switzerland Equity	S&P Switzerland BMI	22.29	47.98	62.43	73.83
Sweden Equity	S&P Sweden BMI	54.55	22.58	44.74	53.57

Source: S&P Dow Jones Indices LLC, Morningstar. Data for periods ending Dec. 31, 2016. Outperformance is based on equal-weighted fund counts. Index performance based on total return. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 2: Survivorship Consistency of European Equity Funds		
FUND CATEGORY	NO. OF FUNDS AT START	SURVIVORSHIP (%)
ONE-YEAR (EUR)		
Europe Equity	1115	94.80
Eurozone Equity	599	95.49
Nordic Equity	49	93.88
Global Equity	1313	95.05
Emerging Markets Equity	361	94.18
U.S. Equity	414	94.20
France Equity	229	97.82
Germany Equity	97	93.81
Italy Equity	51	98.04
Spain Equity	88	94.32
Netherlands Equity	8	100.00
ONE-YEAR (GBP)		
Europe Equity	119	95.80
Europe Ex-U.K. Equity	132	95.45
U.K. Equity	382	93.98
U.K. Large-/Mid-Cap Equity	218	93.12
U.K. Small-Cap Equity	67	92.54
Global Equity	498	94.78
Emerging Markets Equity	191	93.72
U.S. Equity	242	92.56
ONE-YEAR (OTHER EUROPEAN LOCAL CURRENCIES)		
Denmark Equity	34	97.06
Poland Equity	63	100.00
Switzerland Equity	185	95.14
Sweden Equity	36	88.89
THREE-YEAR (EUR)		
Europe Equity	1090	82.75
Eurozone Equity	613	84.50
Nordic Equity	47	78.72
Global Equity	1256	81.93
Emerging Markets Equity	351	79.77
U.S. Equity	387	81.91
France Equity	238	87.82
Germany Equity	98	84.69
Italy Equity	50	88.00
Spain Equity	78	87.18
Netherlands Equity	11	72.73

Source: S&P Dow Jones Indices LLC, Morningstar. Data for periods ending Dec. 31, 2016. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 2: Survivorship Consistency of European Equity Funds (cont.)		
FUND CATEGORY	NO. OF FUNDS AT START	SURVIVORSHIP (%)
THREE-YEAR (GBP)		
Europe Equity	105	80.95
Europe Ex-U.K. Equity	125	83.20
U.K. Equity	387	84.50
U.K. Large-/Mid-Cap Equity	217	83.87
U.K. Small-Cap Equity	69	85.51
Global Equity	442	82.81
Emerging Markets Equity	163	83.44
U.S. Equity	208	79.33
THREE-YEAR (OTHER EUROPEAN LOCAL CURRENCIES)		
Denmark Equity	33	96.97
Poland Equity	66	95.45
Switzerland Equity	179	87.15
Sweden Equity	33	84.85
FIVE-YEAR (EUR)		
Europe Equity	1167	70.01
Eurozone Equity	693	69.70
Nordic Equity	40	80.00
Global Equity	1284	68.69
Emerging Markets Equity	311	72.03
U.S. Equity	390	68.97
France Equity	265	72.45
Germany Equity	95	75.79
Italy Equity	57	70.18
Spain Equity	93	68.82
Netherlands Equity	16	43.75
FIVE-YEAR (GBP)		
Europe Equity	104	59.62
Europe Ex-U.K. Equity	134	68.66
U.K. Equity	439	68.34
U.K. Large-/Mid-Cap Equity	246	68.70
U.K. Small-Cap Equity	74	71.62
Global Equity	412	69.66
Emerging Markets Equity	121	71.07
U.S. Equity	187	63.64
FIVE-YEAR (OTHER EUROPEAN LOCAL CURRENCIES)		
Denmark Equity	34	88.24
Poland Equity	66	93.94
Switzerland Equity	194	75.26
Sweden Equity	40	65.00

Source: S&P Dow Jones Indices LLC, Morningstar. Data for periods ending Dec. 31, 2016. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 2: Survivorship Consistency of European Equity Funds (cont.)		
FUND CATEGORY	NO. OF FUNDS AT START	SURVIVORSHIP (%)
TEN-YEAR (EUR)		
Europe Equity	1305	47.66
Eurozone Equity	789	47.53
Nordic Equity	37	67.57
Global Equity	1381	43.66
Emerging Markets Equity	208	57.69
U.S. Equity	522	37.74
France Equity	305	51.80
Germany Equity	118	53.39
Italy Equity	92	33.70
Spain Equity	124	44.35
Netherlands Equity	34	17.65
TEN-YEAR (GBP)		
Europe Equity	82	39.02
Europe Ex-U.K. Equity	138	57.97
U.K. Equity	535	45.98
U.K. Large-/Mid-Cap Equity	334	41.92
U.K. Small-Cap Equity	76	56.58
Global Equity	340	52.94
Emerging Markets Equity	62	66.13
U.S. Equity	188	41.49
TEN-YEAR (OTHER EUROPEAN LOCAL CURRENCIES)		
Denmark Equity	35	65.71
Poland Equity	34	97.06
Switzerland Equity	151	64.90
Sweden Equity	29	51.72

Source: S&P Dow Jones Indices LLC, Morningstar. Data for periods ending Dec. 31, 2016. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 3: Average European Equity Fund Performance (Equal Weighted)				
CATEGORY	ONE-YEAR (%)	THREE-YEAR (ANNUALIZED %)	FIVE-YEAR (ANNUALIZED %)	TEN-YEAR (ANNUALIZED %)
DATA IN EUR				
Europe Equity	-0.23	5.95	11.33	2.15
S&P Europe 350	3.44	6.62	11.59	3.38
Eurozone Equity	2.56	5.85	11.66	1.48
S&P Eurozone BMI	5.18	7.49	13.49	2.63
Nordic Equity	5.91	11.29	14.59	5.48
S&P Nordic BMI	3.25	9.54	14.62	5.60
Global Equity	6.37	9.48	11.38	3.08
S&P Global 1200	11.51	12.77	16.65	6.64
Emerging Markets Equity	11.69	5.20	4.50	2.05
S&P/IFCI	19.63	7.29	8.27	6.27
U.S. Equity	12.54	14.31	15.62	6.17
S&P 500	15.31	19.02	19.52	9.36
France Equity	7.70	9.51	14.04	2.95
S&P France BMI	8.38	8.77	14.19	3.51
Germany Equity	2.04	5.96	13.27	4.81
S&P Germany BMI	6.69	7.08	15.03	5.76
Italy Equity	-8.43	3.73	10.27	-2.62
S&P Italy BMI	-6.82	4.13	9.39	-3.51
Spain Equity	2.25	2.00	7.76	0.01
S&P Spain BMI	2.86	2.22	7.13	0.03
Netherlands Equity	7.55	9.76	12.08	2.20
S&P Netherlands BMI	8.88	11.95	16.13	6.10
DATA IN GBP				
Europe Equity	14.69	8.20	13.86	6.04
S&P Europe 350	21.61	7.15	11.83	5.94
Europe Ex-U.K. Equity	16.45	8.76	14.46	6.96
S&P Europe Ex-U.K. BMI	20.28	9.17	14.27	6.38
U.K. Equity	10.44	5.80	12.33	5.95
S&P United Kingdom BMI	17.10	5.86	10.11	5.73
U.K. Large-/Mid-Cap Equity	11.08	5.54	11.30	5.49
S&P United Kingdom LargeMidCap	19.43	5.39	8.63	5.28
U.K. Small-Cap Equity	7.97	7.01	16.08	7.63
S&P United Kingdom SmallCap	5.58	7.40	17.36	8.35
Global Equity	22.53	11.11	13.02	6.90
S&P Global 1200	31.71	13.90	16.48	9.37
Emerging Markets Equity	31.68	7.23	6.17	7.38
S&P/IFCI	40.12	8.23	8.12	8.94
U.S. Equity	31.37	16.66	17.78	10.09
S&P 500	33.55	20.04	20.04	11.98
DATA IN OTHER EUROPEAN LOCAL CURRENCIES				
Denmark Equity	2.06	18.68	23.64	8.40
S&P Denmark BMI	-9.75	15.62	20.77	9.04
Poland Equity	7.52	-3.36	3.32	3.03
S&P Poland BMI	11.57	0.00	6.22	0.17
Switzerland Equity	4.03	6.47	12.11	2.56
S&P Switzerland BMI	-1.29	4.85	11.26	3.12
Sweden Equity	8.34	18.48	19.92	9.15
S&P Sweden BMI	10.09	11.49	15.74	7.17

Source: S&P Dow Jones Indices LLC, Morningstar. Data for periods ending Dec. 31, 2016. 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 4: Average European Equity Fund Performance (Asset Weighted)				
CATEGORY	ONE-YEAR (%)	THREE-YEAR (ANNUALIZED %)	FIVE-YEAR (ANNUALIZED %)	TEN-YEAR (ANNUALIZED %)
DATA IN EUR				
Europe Equity	-0.88	5.75	11.24	2.21
S&P Europe 350	3.44	6.62	11.59	3.38
Eurozone Equity	2.39	5.77	11.80	1.29
S&P Eurozone BMI	5.18	7.49	13.49	2.63
Nordic Equity	3.33	10.17	13.68	5.00
S&P Nordic BMI	3.25	9.54	14.62	5.60
Global Equity	6.76	10.05	12.00	3.47
S&P Global 1200	11.51	12.77	16.65	6.64
Emerging Markets Equity	11.60	5.84	4.96	2.56
S&P/IFCI	19.63	7.29	8.27	6.27
U.S. Equity	11.80	14.73	15.71	6.36
S&P 500	15.31	19.02	19.52	9.36
France Equity	6.19	7.88	12.99	2.42
S&P France BMI	8.38	8.77	14.19	3.51
Germany Equity	2.85	6.57	14.92	5.41
S&P Germany BMI	6.69	7.08	15.03	5.76
Italy Equity	-8.15	3.72	10.06	-2.72
S&P Italy BMI	-6.82	4.13	9.39	-3.51
Spain Equity	1.68	2.12	8.10	0.37
S&P Spain BMI	2.86	2.22	7.13	0.03
Netherlands Equity	7.11	8.85	11.39	2.31
S&P Netherlands BMI	8.88	11.95	16.13	6.10
DATA IN GBP				
Europe Equity	13.95	8.80	14.03	7.26
S&P Europe 350	21.61	7.15	11.83	5.94
Europe Ex-U.K. Equity	14.55	8.79	14.22	6.53
S&P Europe Ex-U.K. BMI	20.28	9.17	14.27	6.38
U.K. Equity	11.15	5.66	11.84	5.76
S&P United Kingdom BMI	17.10	5.86	10.11	5.73
U.K. Large-/Mid-Cap Equity	11.72	5.67	11.52	5.67
S&P United Kingdom LargeMidCap	19.43	5.39	8.63	5.28
U.K. Small-Cap Equity	8.53	7.61	16.44	7.68
S&P United Kingdom SmallCap	5.58	7.40	17.36	8.35
Global Equity	24.56	12.70	14.39	7.50
S&P Global 1200	31.71	13.90	16.48	9.37
Emerging Markets Equity	32.16	7.93	7.00	7.60
S&P/IFCI	40.12	8.23	8.12	8.94
U.S. Equity	31.76	17.49	17.74	10.20
S&P 500	33.55	20.04	20.04	11.98
DATA IN OTHER EUROPEAN LOCAL CURRENCIES				
Denmark Equity	1.47	18.42	23.21	8.41
S&P Denmark BMI	-9.75	15.62	20.77	9.04
Poland Equity	7.16	-4.04	2.52	-0.13
S&P Poland BMI	11.57	0.00	6.22	0.17
Switzerland Equity	3.21	6.49	12.30	2.75
S&P Switzerland BMI	-1.29	4.85	11.26	3.12
Sweden Equity	9.00	19.79	21.29	9.83
S&P Sweden BMI	10.09	11.49	15.74	7.17

Source: S&P Dow Jones Indices LLC, Morningstar. Data for periods ending Dec .31, 2016. Index performance based on total returns. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 5: Quartile Breakpoints of European Equity Funds			
FUND CATEGORY	THIRD QUARTILE	SECOND QUARTILE	FIRST QUARTILE
ONE-YEAR (EUR)			
Europe Equity	-3.21	-0.20	2.75
Eurozone Equity	0.11	2.54	4.67
Nordic Equity	1.20	4.14	8.64
Global Equity	3.21	5.98	8.90
Emerging Markets Equity	8.39	11.20	14.75
U.S. Equity	7.60	11.27	15.22
France Equity	3.66	6.18	10.50
Germany Equity	-0.12	2.70	4.92
Italy Equity	-10.87	-7.66	-5.22
Spain Equity	-1.54	0.87	5.89
Netherlands Equity	7.44	8.43	9.39
ONE-YEAR (GBP)			
Europe Equity	11.43	15.24	19.14
Europe Ex-U.K. Equity	13.45	16.92	20.34
U.K. Equity	6.35	10.41	14.69
U.K. Large-/Mid-Cap Equity	7.54	12.14	15.44
U.K. Small-Cap Equity	3.90	8.53	12.34
Global Equity	18.29	23.39	27.42
Emerging Markets Equity	26.67	30.78	35.19
U.S. Equity	26.65	30.94	36.85
ONE-YEAR (OTHER EUROPEAN LOCAL CURRENCIES)			
Denmark Equity	16.35	17.70	19.49
Poland Equity	-2.81	10.38	11.92
Switzerland Equity	3.80	2.67	7.78
Sweden Equity	16.21	10.11	11.01
THREE-YEAR (EUR)			
Europe Equity	3.82	5.34	7.41
Eurozone Equity	4.09	5.46	6.73
Nordic Equity	8.84	11.27	14.15
Global Equity	7.16	9.47	11.48
Emerging Markets Equity	3.93	5.42	6.79
U.S. Equity	13.06	14.94	16.56
France Equity	6.21	7.45	11.96
Germany Equity	3.93	5.12	7.12
Italy Equity	1.61	3.76	5.24
Spain Equity	-0.60	1.07	3.25
Netherlands Equity	9.00	10.99	11.73
THREE-YEAR (GBP)			
Europe Equity	5.71	7.67	9.97
Europe Ex-U.K. Equity	6.83	8.05	9.90
U.K. Equity	3.99	5.61	7.52
U.K. Large-/Mid-Cap Equity	4.03	5.44	6.96
U.K. Small-Cap Equity	3.65	7.37	10.32
Global Equity	8.78	11.55	13.88
Emerging Markets Equity	6.13	7.31	8.13
U.S. Equity	14.66	16.96	18.96
THREE-YEAR (OTHER EUROPEAN LOCAL CURRENCIES)			
Denmark Equity	16.35	17.70	19.49
Poland Equity	-2.81	0.05	2.21
Switzerland Equity	3.80	5.54	8.87
Sweden Equity	16.21	19.03	21.30

Source: S&P Dow Jones Indices LLC, Morningstar. Data for periods ending Dec. 31, 2016. Index performance based on total returns. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 5: Quartile Breakpoints of European Equity Funds (cont.)			
FUND CATEGORY	THIRD QUARTILE	SECOND QUARTILE	FIRST QUARTILE
FIVE-YEAR (EUR)			
Europe Equity	9.13	10.70	12.91
Eurozone Equity	9.74	11.35	12.79
Nordic Equity	12.89	15.13	16.45
Global Equity	9.51	11.52	13.23
Emerging Markets Equity	3.42	4.58	5.56
U.S. Equity	13.98	15.64	17.28
France Equity	11.20	12.59	15.20
Germany Equity	11.49	12.96	15.34
Italy Equity	8.17	9.75	11.67
Spain Equity	5.01	6.60	9.37
Netherlands Equity	11.89	12.27	13.60
FIVE-YEAR (GBP)			
Europe Equity	12.47	13.51	15.60
Europe Ex-U.K. Equity	12.75	14.25	15.39
U.K. Equity	9.98	11.91	14.58
U.K. Large-/Mid-Cap Equity	9.30	10.88	12.54
U.K. Small-Cap Equity	14.23	16.57	18.34
Global Equity	11.19	13.04	15.27
Emerging Markets Equity	5.15	6.11	7.23
U.S. Equity	16.26	17.50	19.14
FIVE-YEAR (OTHER EUROPEAN LOCAL CURRENCIES)			
Denmark Equity	21.29	22.34	24.55
Poland Equity	2.54	6.50	9.70
Switzerland Equity	9.96	11.27	14.17
Sweden Equity	19.53	21.30	22.78
TEN-YEAR (EUR)			
Europe Equity	0.74	1.92	3.48
Eurozone Equity	0.08	1.19	2.50
Nordic Equity	3.44	5.49	6.74
Global Equity	2.17	3.39	4.45
Emerging Markets Equity	0.91	2.11	3.01
U.S. Equity	5.29	6.55	7.53
France Equity	1.05	2.15	4.65
Germany Equity	4.09	4.99	6.45
Italy Equity	-3.65	-2.84	-1.57
Spain Equity	-1.37	-0.52	1.07
Netherlands Equity	2.22	2.42	3.01
TEN-YEAR (GBP)			
Europe Equity	5.64	6.77	7.60
Europe Ex-U.K. Equity	5.25	6.26	7.76
U.K. Equity	4.91	6.10	7.64
U.K. Large-/Mid-Cap Equity	4.33	5.42	6.64
U.K. Small-Cap Equity	7.11	8.18	9.45
Global Equity	5.81	6.92	8.33
Emerging Markets Equity	5.54	6.27	7.22
U.S. Equity	9.69	11.13	11.99
TEN-YEAR (OTHER EUROPEAN LOCAL CURRENCIES)			
Denmark Equity	7.54	7.93	9.09
Poland Equity	-3.98	-2.41	-0.13
Switzerland Equity	1.41	2.61	4.09
Sweden Equity	8.97	9.84	10.09

Source: S&P Dow Jones Indices LLC, Morningstar. Data for periods Dec. 31, 2016. Index performance based on total returns. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

APPENDIX A

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 as well as other major markets where material numbers of European UCITS funds are available (chiefly Hong Kong, Singapore, Taiwan, and South Africa). Offshore European equity funds are excluded. Funds are classified based on the Morningstar fund classification system, and the SPIVA Scorecard covers European and global equity categories.

European Equity Funds Denominated in EUR, GBP, and Other European Local Currencies

The SPIVA Europe Scorecard covers both regional and country-specific funds that are denominated in EUR, GBP, and other European local currencies, and they have been mapped to the relevant Morningstar fund categories as we indicate here. 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 1: Morningstar Categories and SPIVA Peer Groups for European Equity Funds	
EUROPEAN FUNDS DENOMINATED IN EUROS (EUR)	
MORNINGSTAR CATEGORY	SPIVA CATEGORY
Europe Open-Ended Europe Flex-Cap Equity	
Europe Open-Ended Europe Large-Cap Blend Equity	
Europe Open-Ended Europe Large-Cap Growth Equity	S&P Europe 350 (EUR) Gross Total Return
Europe Open-Ended Europe Large-Cap Value Equity	
Europe Open-Ended Europe Mid-Cap Equity	
Europe Open-Ended Europe Small-Cap Equity	
Europe Open-Ended Eurozone Flex-Cap Equity	
Europe Open-Ended Eurozone Large-Cap Equity	S&P Eurozone BMI (EUR) Gross Total Return
Europe Open-Ended Eurozone Mid-Cap Equity	
Europe Open-Ended Eurozone Small-Cap Equity	
Europe Open-Ended France Large-Cap Equity	S&P France BMI (EUR) Gross Total Return
Europe Open-Ended France Small-/Mid-Cap Equity	
Europe Open-Ended Germany Large-Cap Equity	S&P Germany BMI (EUR) Gross Total Return
Europe Open-Ended Germany Small-/Mid-Cap Equity	
Europe Open-Ended Italy Equity	S&P Italy BMI (EUR) Gross Total Return
Europe Open-Ended Netherlands Equity	S&P Netherlands BMI (EUR) Gross Total Return
Europe Open-Ended Nordic Equity	S&P Nordic BMI (EUR) Gross Total Return
Europe Open-Ended Spain Equity	S&P Spain BMI (EUR) Gross Total Return

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

Exhibit 1: Morningstar Categories and SPIVA Peer Groups for European Equity Funds (cont.)

EUROPEAN FUNDS DENOMINATED IN POUND STERLING (GBP)

MORNINGSTAR CATEGORY	SPIVA CATEGORY
Europe Open-Ended Europe Flex-Cap Equity	
Europe Open-Ended Europe Large-Cap Blend Equity	
Europe Open-Ended Europe Large-Cap Growth Equity	S&P Europe 350 (GBP) (WM) Gross Total Return
Europe Open-Ended Europe Large-Cap Value Equity	
Europe Open-Ended Europe Mid-Cap Equity	
Europe Open-Ended Europe Small-Cap Equity	
Europe Open-Ended Europe Ex-U.K. Large-Cap Equity	S&P Europe Ex-U.K. BMI (GBP) Gross Total Return
Europe Open-Ended Europe Ex-U.K. Small-/Mid-Cap Equity	
Europe Open-Ended U.K. Large-Cap Blend Equity	
Europe Open-Ended U.K. Large-Cap Growth Equity	S&P United Kingdom LargeMidCap (GBP) Gross Total Return
Europe Open-Ended U.K. Large-Cap Value Equity	
Europe Open-Ended U.K. Mid-Cap Equity	
Europe Open-Ended U.K. Small-Cap Equity	S&P United Kingdom SmallCap (GBP) Gross Total Return
Europe Open-Ended U.K. Large-Cap Blend Equity	
Europe Open-Ended U.K. Large-Cap Growth Equity	
Europe Open-Ended U.K. Large-Cap Value Equity	S&P United Kingdom BMI (GBP) Gross Total Return
Europe Open-Ended U.K. Mid-Cap Equity	
Europe Open-Ended U.K. Small-Cap Equity	
Europe Open-Ended U.K. Flex-Cap Equity	

EUROPEAN FUNDS DENOMINATED IN OTHER EUROPEAN LOCAL CURRENCIES

Europe Open-Ended Denmark Equity	S&P Denmark BMI (Local Currency) Gross Total Return
Europe Open-Ended Poland Equity	S&P Poland BMI (Local Currency) Gross Total Return
Europe Open-Ended Sweden Large-Cap Equity	S&P Sweden BMI (Local Currency) Gross Total Return
Europe Open-Ended Sweden Small/Mid-Cap Equity	
Europe Open-Ended Switzerland Small/Mid-Cap Equity	S&P Switzerland BMI (Local Currency) Gross Total Return
Europe Open-Ended Switzerland Large-Cap Equity	

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

International Funds Denominated in EUR and GBP

For international equities, the SPIVA Europe Scorecard reports on three major categories (U.S., global, and global emerging markets) in both EUR and GBP. These categories also include multiple Morningstar classifications.

Exhibit 2: Morningstar Categories and SPIVA Peer Groups for International Equity Funds

EUR-DENOMINATED INTERNATIONAL FUNDS	
MORNINGSTAR CATEGORY	SPIVA CATEGORY
Europe Open-Ended Global Large-Cap Blend Equity	
Europe Open-Ended Global Large-Cap Growth Equity	
Europe Open-Ended Global Large-Cap Value Equity	S&P Global 1200 Total Return (EUR)
Europe Open-Ended Global Small-Cap Equity	
Europe Open-Ended U.S. Large-Cap Blend Equity	
Europe Open-Ended U.S. Large-Cap Growth Equity	
Europe Open-Ended U.S. Large-Cap Value Equity	S&P 500 Total Return (EUR)
Europe Open-Ended U.S. Mid-Cap Equity	
Europe Open-Ended U.S. Flex-Cap Equity	
Europe Open-Ended U.S. Small-Cap Equity	
Europe Open-Ended Global Emerging Markets Equity	S&P/IFCI Total Return (EUR)
Europe Open-Ended Global Large-Cap Blend Equity	
Europe Open-Ended Global Large-Cap Growth Equity	
Europe Open-Ended Global Large-Cap Value Equity	S&P Global 1200 Total Return (GBP)
Europe Open-Ended Global Small-Cap Equity	
Europe Open-Ended U.S. Large-Cap Blend Equity	
Europe Open-Ended U.S. Large-Cap Growth Equity	
Europe Open-Ended U.S. Large-Cap Value Equity	S&P 500 Total Return (GBP)
Europe Open-Ended U.S. Mid-Cap Equity	
Europe Open-Ended U.S. Small-Cap Equity	
Europe Open-Ended U.S. Flex-Cap Equity	
Europe Open-Ended Global Emerging Markets Equity	S&P/IFCI (GBP)

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

APPENDIX B

Glossary—Reports

PERCENTAGE OF FUNDS OUTPERFORMED BY THE INDEX

To correct for survivorship bias, we use the opportunity set available at the beginning of the period as the denominator. We determine the count of funds that have survived and beat the index. We then report the index outperformance percentage.

SURVIVORSHIP (%)

The survivorship measure represents the percentage of funds in existence at the beginning of the time period that are still active at the end of the time period.

EQUAL-WEIGHTED FUND PERFORMANCE

Equal-weighted returns for a particular style category are determined by calculating a simple average return of all active funds in that category in a particular month.

ASSET-WEIGHTED FUND PERFORMANCE

Asset-weighted returns for a particular style category are determined by calculating a weighted average return of all funds in that category in a particular month, with each fund's return weighted by its total net assets. Asset-weighted returns are a better indicator of fund category performance because they reflect the returns of the total money invested in that particular style category with more accuracy.

QUARTILE BREAKPOINTS

The pth percentile for a set of data is the value that is greater than or equal to p% of the data but is less than or equal to (100-p)% of the data. In other words, it is a value that divides the data into two parts: the lower p% of the values and the upper (100-p)% of the values. The first quartile is the 75th percentile, which is the value separating the elements of a population into the lower 75% and the upper 25%. The second quartile is the 50th percentile, and the third quartile is the 25th percentile. For fund category quartiles in a particular time horizon, the data used is the return of the largest share class of the fund net of fees, excluding loads.

SURVIVORSHIP BIAS

Many funds might liquidate or merge during a period of study. This usually occurs due to continued poor performance by the fund. Therefore, if index returns were compared to fund returns using only surviving funds, the comparison would be biased in favor of the fund category. The SPIVA reports remove this bias in three ways. The first method to remove the bias is to use the entire investment opportunity set, made up of all funds in that particular category at the outset of the period, as the denominator for outperformance calculations. The second is explicitly to show the survivorship rate in each category. The final way is to construct a peer average return series for each category based on all available funds at the outset of the period.

FEES

The fund returns used are net of fees, excluding loads.

Indices

A benchmark index provides an investment vehicle against which fund performance can be measured.

S&P 500

Widely regarded as the best single gauge of the U.S. equities market, this market-capitalization-weighted index includes a representative sample of the 500 leading companies in the leading industries of the U.S. economy and provides over 80% coverage of U.S. equities.

S&P/IFCI

The S&P/IFCI is widely recognized as a comprehensive and reliable measure of the world's emerging markets. It measures the returns of stocks that are legally and practically available to foreign investors.

S&P DENMARK BMI

The S&P Denmark BMI, a subset of the [S&P Global BMI](#), is an equity index that is designed to represent the Danish stock market. The S&P Global BMI is a comprehensive, rules-based index designed to measure global stock market performance.

S&P EUROPE 350

Covering approximately 70% of the region's market capitalization, the [S&P Europe 350](#) is an equity index drawn from 17 major European markets.

S&P EUROPE EX-U.K. BMI

The S&P Europe ex-U.K. BMI, a subset of the S&P Global BMI, is designed to represent the stock markets of Europe, excluding the U.K. The S&P Global BMI is a comprehensive, rules-based index designed to measure global stock market performance.

S&P EUROZONE BMI

The [S&P Eurozone BMI](#), a subset of the S&P Global BMI, is designed to represent the stock markets of European countries that adopt the euro currency.

S&P FRANCE BMI

The S&P France BMI, a subset of the S&P Global BMI, is an equity index that is designed to represent the French stock market. The S&P Global BMI is a comprehensive, rules-based index designed to measure global stock market performance.

S&P GERMANY BMI

The S&P Germany BMI, a subset of the S&P Global BMI, is an equity index that is designed to represent the German stock market. The S&P Global BMI is a comprehensive, rules-based index designed to measure global stock market performance.

S&P GLOBAL 1200

Capturing approximately 70% of the world's capital markets, the [S&P Global 1200](#) is a composite of seven headline indices, many of which are accepted leaders in their regions. It includes the [S&P 500](#) (U.S.), [S&P Europe 350](#) (Europe), [S&P/TOPIX 150](#) (Japan), [S&P/TSX 60](#) (Canada), [S&P/ASX All Australian 50](#) (Australia), [S&P Asia 50](#) (Asia Ex-Japan), and [S&P Latin America 40](#) (Latin America).

S&P ITALY BMI

The S&P Italy BMI, a subset of the S&P Global BMI, is an equity index that is designed to represent the Italian stock market. The S&P Global BMI is a comprehensive, rules-based index designed to measure global stock market performance.

S&P NETHERLANDS BMI

The S&P Netherlands BMI, a subset of the S&P Global BMI, is an equity index that is designed to represent the Dutch stock market. The S&P Global BMI is a comprehensive, rules-based index designed to measure global stock market performance.

S&P NORDIC BMI

The S&P Nordic BMI, a subset of the S&P Global BMI, is an equity index that is designed to represent the Swedish, Danish, Norwegian, and Finnish stock markets. The S&P Global BMI is a comprehensive, rules-based index designed to measure global stock market performance.

S&P POLAND BMI

The S&P Poland BMI, a subset of the S&P Global BMI, is an equity index that is designed to represent the Polish stock market. The S&P Global BMI is a comprehensive, rules-based index designed to measure global stock market performance.

S&P SPAIN BMI

The S&P Spain BMI, a subset of the S&P Global BMI, is an equity index that is designed to represent the Spanish stock market. The S&P Global BMI is a comprehensive, rules-based index designed to measure global stock market performance.

S&P SWEDEN BMI

The S&P Sweden BMI, a subset of the S&P Global BMI, is an equity index that is designed to represent the Swedish stock market. The S&P Global BMI is a comprehensive, rules-based index designed to measure global stock market performance.

S&P SWITZERLAND BMI

The S&P Switzerland BMI, a subset of the S&P Global BMI, is an equity index that is designed to represent the Swiss stock market. The S&P Global BMI is a comprehensive, rules-based index designed to measure global stock market performance.

S&P UNITED KINGDOM BMI

The S&P United Kingdom BMI, a subset of the S&P Global BMI, is an equity index that is designed to represent the U.K. stock market. The S&P Global BMI is a comprehensive, rules-based index designed to measure global stock market performance.

S&P UNITED KINGDOM LARGEMIDCAP

The S&P United Kingdom LargeMidCap, a subset of the S&P Global BMI, is an equity index that is designed to represent the large- and mid-cap companies of the U.K. stock market and covers approximately 85% of the float market-cap. The S&P Global BMI is a comprehensive, rules-based index designed to measure global stock market performance.

S&P UNITED KINGDOM SMALLCAP

The S&P United Kingdom SmallCap, a subset of the S&P Global BMI, is an equity index that is designed to represent the small-cap companies of the U.K. stock market. The S&P Global BMI is a comprehensive, rules-based index designed to measure global stock market performance.

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