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SPIVA[®] U.S. Scorecard

SUMMARY

- Starting with this scorecard, we will report the relative outperformance or underperformance of actively managed funds against their respective benchmarks over a 15-year investment horizon. The longer time horizon provides a complete market cycle to measure the effectiveness of managers across all categories.
- Given that market conditions can impact managers' performance from year to year, we also added rolling three-year relative performance figures from 2003 through 2016, calculated on a semiannual basis across major domestic and international equity categories.
- The U.S. equity market finished 2016 on a strong run. Even though the [S&P 500[®]](#), [S&P MidCap 400[®]](#), and [S&P SmallCap 600[®]](#) all posted 10% losses by mid-February 2016, the indices rallied back to finish the year on a positive note, posting 11.96%, 20.74%, and 26.56%, respectively. Approximately one-half of the year's total return for the S&P 500 and S&P MidCap 400 came within the last two months of the year, while almost two-thirds of the S&P SmallCap 600's gains came from the same period.
- During the one-year period ending Dec. 31, 2016, 66% of large-cap managers, 89.37% of mid-cap managers, and 85.54% of small-cap managers underperformed the S&P 500, the S&P MidCap 400, and the S&P SmallCap 600, respectively. These figures are on par with the one-year performance figures reported in June 2016, with the exception of large-cap managers, who fared relatively better.
- Figures over the five-year period did not change significantly from the SPIVA U.S. Mid-Year 2016 Scorecard.¹ During the five-year period ending Dec. 31, 2016, 88.3% of large-cap managers, 89.95% of mid-cap managers, and 96.57% of small-cap managers underperformed their respective benchmarks.

¹ For more information, see the [SPIVA U.S. Mid-Year 2016 Scorecard](#).

- Given that active managers' performance can vary based on market cycles, the newly available 15-year data tells a more stable narrative. Over the 15-year period ending Dec. 2016, 92.15% of large-cap, 95.4% of mid-cap, and 93.21% of small-cap managers trailed their respective benchmarks.
- During the same 15-year period, large-cap value managers fared better than their growth counterparts.
- International markets finished the year on a positive note. Global large caps, as measured by the [S&P Global 1200](#), and emerging markets, as measured by the [S&P/IFCI Composite](#), both rallied throughout the year to end with gains of 8.89% and 10.79%, respectively.
- Across all time horizons, the majority of managers across all international equity categories underperformed their benchmarks.
- In December 2016, the U.S. Federal Reserve raised the interest rate for the second time in a decade. Managers investing in intermediate- and short-term credit fared the best over the one-year period, with only 19.75% and 26.61% underperforming, respectively. The same trend held through the five-year period. The 10- and 15-year periods proved to be difficult for all credit managers.
- Trends seen at mid-year 2016 continued throughout the remainder of the year. Spreads continued to narrow, which tested high-yield bond market managers. More than 94% of managers in this category ended the one-year period lagging the index's performance of 17.13%.
- The continued strength in the high-yield bond market had a positive spillover effect to the leveraged loan sector. The [S&P/LSTA U.S. Leveraged Loan 100 Index](#) posted a gain of 10.88% year-over-year. This outperformance proved difficult for actively managed senior loan funds over the one-year period, with nearly 82% of funds underperforming the benchmark.
- Funds disappear at a significant rate. Over the 15-year period, more than 58% of domestic equity funds were either merged or liquidated. Similarly, almost 52% of global/international equity funds and 49% of fixed income funds were merged or liquidated. This finding highlights the importance of addressing survivorship bias in mutual fund analysis.

A UNIQUE SCORECARD FOR THE ACTIVE VERSUS PASSIVE DEBATE

There is nothing novel about the index versus active debate. It has been a contentious subject for decades, and there are few strong believers on both sides, with the vast majority of market participants falling somewhere in between. 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 far less frequently discussed, but are often far more fascinating. These data sets are rooted in the following fundamental principles of the SPIVA Scorecard, with which regular readers will be familiar.

- **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.
- **Apples-to-Apples Comparison:** Fund returns are often compared to popular benchmarks such as the [S&P 500](#), regardless of size or style classification. SPIVA Scorecards avoid this pitfall by measuring a fund's returns against the returns of a benchmark appropriate for that particular investment category.
- **Asset-Weighted Returns:** Average returns for a fund group are often calculated using only equal weighting, which results in the returns of a USD 10 billion fund affecting the average in the same manner as the returns of a USD 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.
- **Style Consistency:** SPIVA Scorecards measure style consistency for each style category across different time horizons. Style consistency is an important metric because style drift (the tendency of funds to diverge from their initial investment categorization) can have an impact on asset allocation decisions.
- **Data Cleaning:** SPIVA Scorecards avoid double counting multiple share classes in all count-based calculations, using only the share class with greater assets. Since this is meant to be a scorecard for active managers, index funds, leveraged and inverse funds, and other index-linked products are excluded.

Annual League Table

We have often written about the lack of consistency in results when viewing over a shorter horizon. The annual league table is evidence of that, and it shows the yearly match up of the active funds versus indices in the major U.S equity categories (see Exhibit 1).

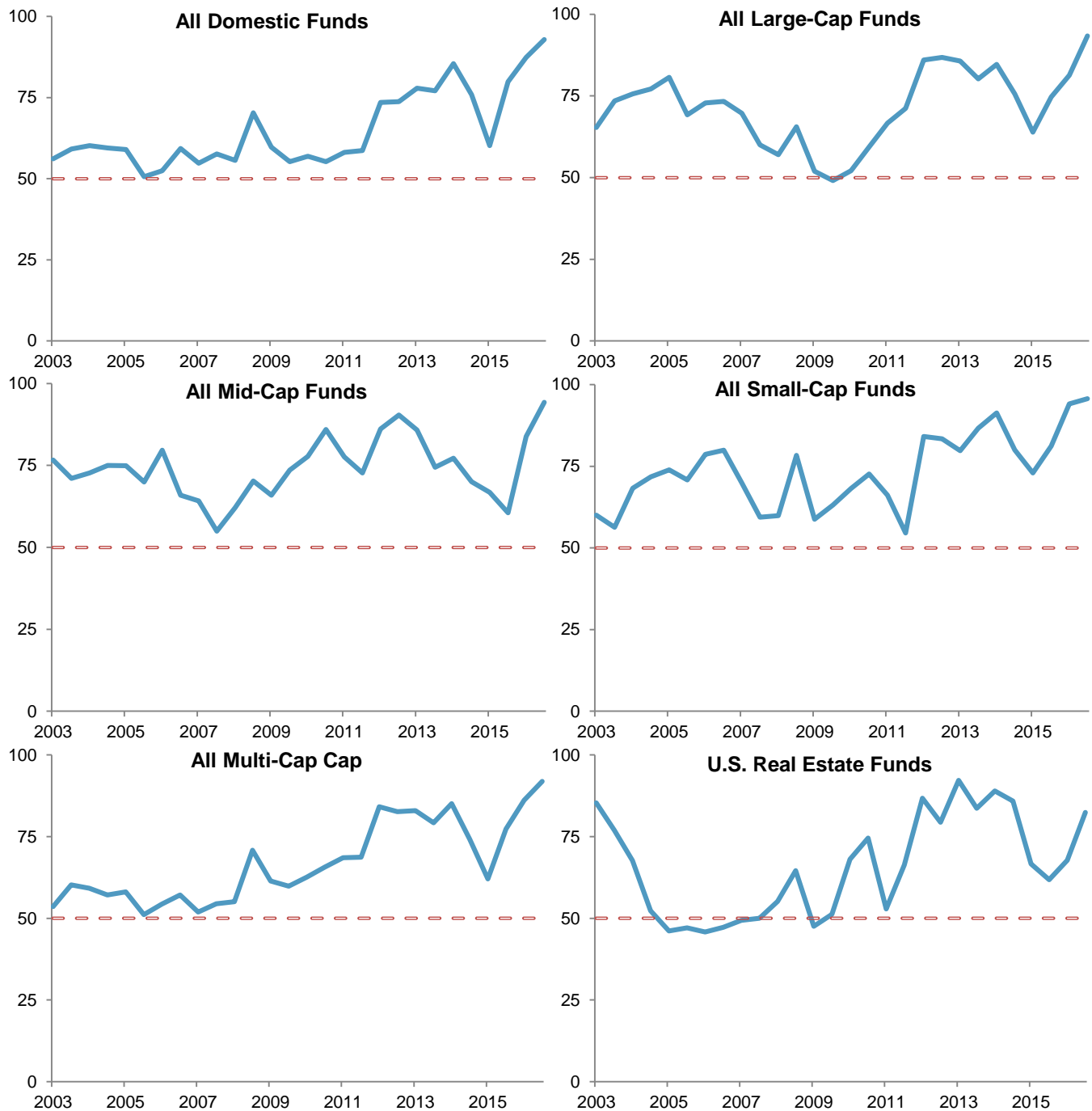
Exhibit 1: Annual League Table																	
FUND CATEGORY	BENCHMARK INDEX	(% OF ACTIVE FUNDS OUTPERFORMED BY THEIR BENCHMARK)															
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
All Domestic Funds	S&P 1500	54.87	58.34	48.01	51.43	42.26	68.02	48.90	64.91	40.68	48.28	84.65	64.91	43.26	86.89	74.03	60.49
All Large-Cap Funds	S&P 500	65.16	67.73	75.44	68.79	48.81	68.38	44.63	55.95	48.40	65.88	82.24	62.66	54.56	86.73	65.39	66.00
All Mid-Cap Funds	S&P MidCap 400	67.64	74.43	51.70	64.56	73.63	44.77	45.77	75.73	55.69	73.29	68.59	79.85	37.11	66.05	57.18	89.37
All Small-Cap Funds	S&P SmallCap 600	53.97	67.54	34.63	83.84	60.95	62.53	45.98	83.30	30.69	53.95	85.81	66.28	67.77	71.96	71.79	85.54
All Multi-Cap Funds	S&P 1500	54.73	54.02	49.21	49.38	37.14	68.77	45.97	70.14	39.30	60.39	83.88	65.22	46.84	81.62	70.10	74.88
Large-Cap Growth Funds	S&P 500 Growth	94.80	83.13	48.36	44.08	37.96	93.93	27.14	90.67	36.81	50.98	95.90	45.62	41.08	95.61	47.55	89.79
Large-Cap Core Funds	S&P 500	77.03	66.55	85.29	82.91	56.16	81.09	43.50	52.26	50.55	76.61	83.21	66.59	57.65	80.38	73.75	74.56
Large-Cap Value Funds	S&P 500 Value	30.77	34.63	85.98	86.47	54.11	80.28	45.79	24.45	45.71	70.55	54.28	85.05	64.86	77.78	61.52	77.99
Mid-Cap Growth Funds	S&P MidCap 400 Growth	87.96	86.24	35.75	64.16	79.67	27.96	41.97	90.95	54.01	84.11	76.53	86.81	34.48	55.37	79.68	94.58
Mid-Cap Core Funds	S&P MidCap 400	80.00	70.42	54.74	57.27	66.34	32.04	60.78	60.18	70.75	86.54	65.66	78.57	42.96	58.65	68.18	90.65
Mid-Cap Value Funds	S&P MidCap 400 Value	47.42	63.64	68.42	53.09	69.14	36.90	57.83	68.00	47.33	57.14	67.61	73.47	40.85	71.43	34.38	96.77
Small-Cap Growth Funds	S&P SmallCap 600 Growth	76.64	97.14	26.88	94.71	78.06	50.75	40.80	94.84	31.34	62.25	94.12	62.91	55.25	63.98	87.50	95.96
Small-Cap Core Funds	S&P SmallCap 600	57.78	67.27	34.88	79.47	58.33	56.34	55.51	82.07	33.22	58.63	86.01	68.68	77.74	66.92	77.46	89.47
Small-Cap Value Funds	S&P SmallCap 600 Value	39.07	29.93	48.08	71.76	45.24	71.26	39.36	72.07	25.17	41.98	81.82	61.54	78.81	94.07	45.04	88.89

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

Rolling Semiannual 3-Year Relative Performance

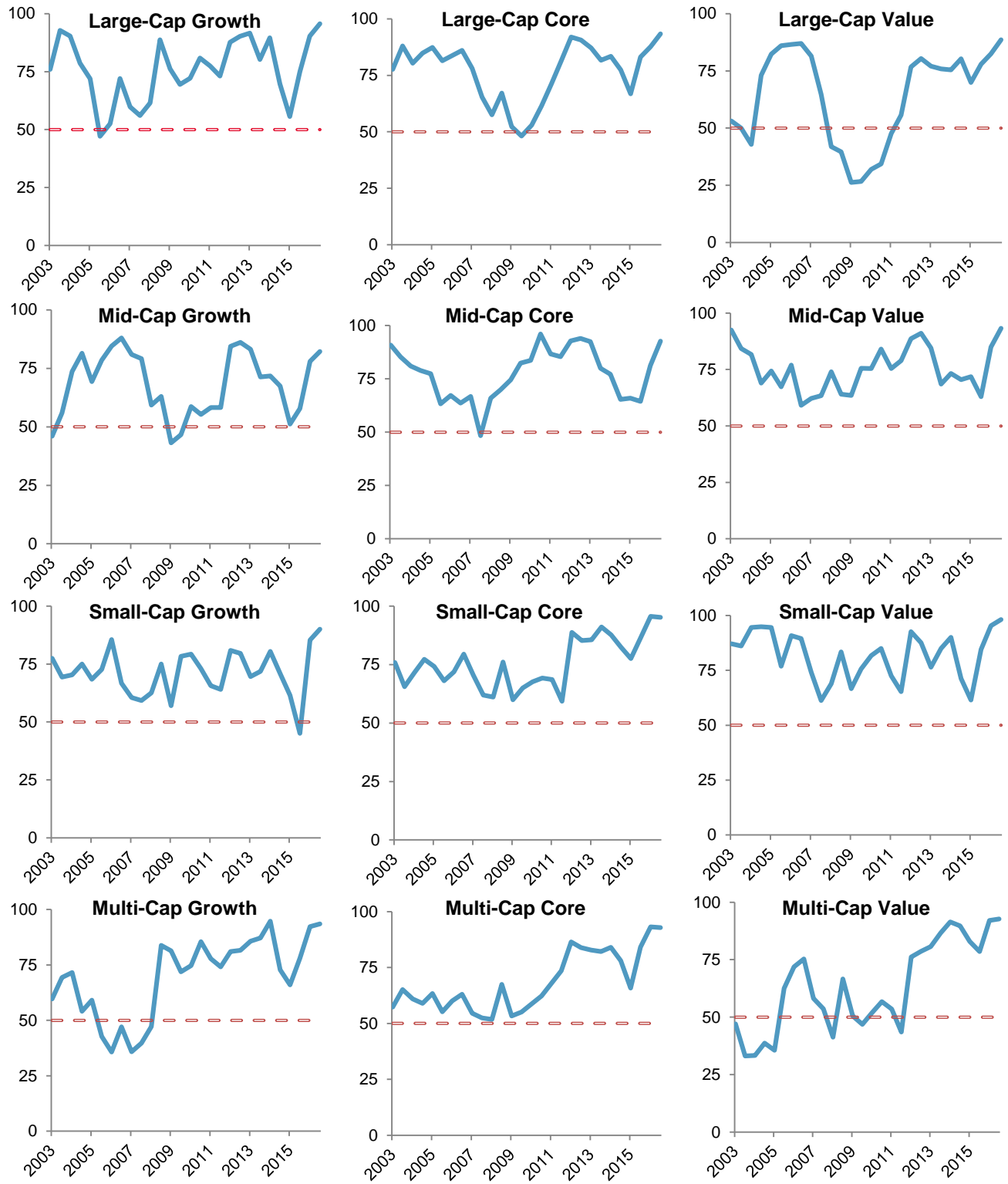
Given that market conditions can affect managers' performance on a year-over-year basis, it is more meaningful to examine the results on a rolling basis. We show the three-year relative performance of managers across major domestic and international equity categories in Exhibit 2. The figures are calculated on a rolling semiannual basis.

Exhibit 2: Percentage of U.S Equity Funds Outperformed by Benchmark – Based on Rolling 3-Year Returns



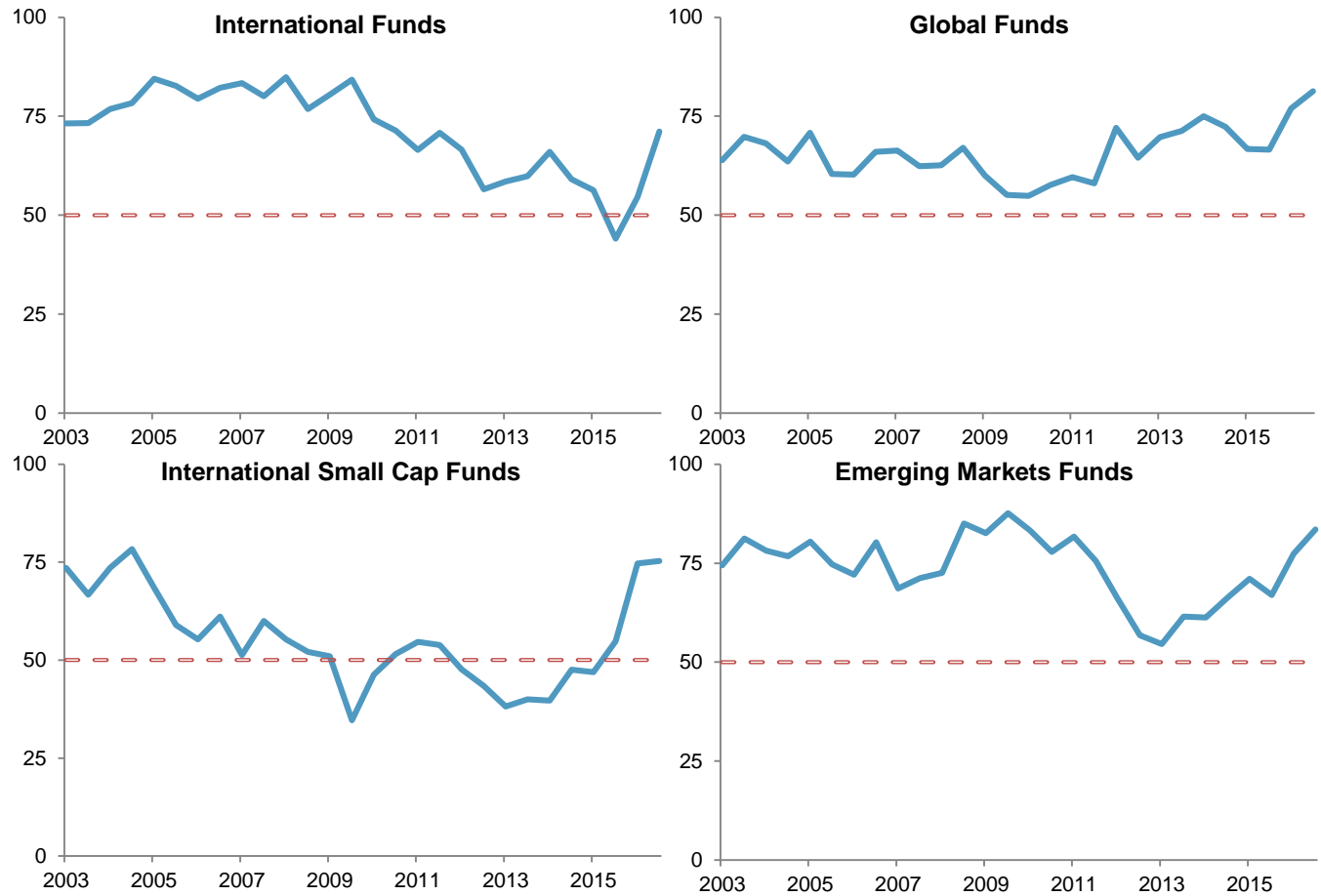
Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2016. Past performance is no guarantee of future results. Charts are provided for illustrative purposes.

Exhibit 3: Percentage of U.S Equity Funds Outperformed by Benchmark – Based on Rolling 3-Year Returns



Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2016. Past performance is no guarantee of future results. Charts are provided for illustrative purposes.

Exhibit 4: Percentage of International Equity Funds Outperformed by Benchmark – Based on Rolling 3-Year Returns



Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2016. Past performance is no guarantee of future results. Charts are provided for illustrative purposes.

REPORTS

Report 1: Percentage of U.S. Equity Funds Outperformed by Benchmarks						
FUND CATEGORY	COMPARISON INDEX	1-YEAR (%)	3-YEAR (%)	5-YEAR (%)	10-YEAR (%)	15-YEAR (%)
All Domestic Funds	S&P 1500	60.49	92.91	85.82	82.87	82.23
All Large-Cap Funds	S&P 500	66.00	93.39	88.30	84.60	92.15
All Mid-Cap Funds	S&P MidCap 400	89.37	94.21	89.95	96.03	95.40
All Small-Cap Funds	S&P SmallCap 600	85.54	95.69	96.57	95.64	93.21
All Multi-Cap Funds	S&P 1500	74.88	91.88	87.19	89.31	88.15
Large-Cap Growth Funds	S&P 500 Growth	89.79	95.62	84.80	95.22	95.18
Large-Cap Core Funds	S&P 500	74.56	93.35	87.91	89.43	97.48
Large-Cap Value Funds	S&P 500 Value	77.99	88.56	91.48	64.49	78.54
Mid-Cap Growth Funds	S&P MidCap 400 Growth	94.58	92.61	92.18	97.93	97.35
Mid-Cap Core Funds	S&P MidCap 400	90.65	93.28	90.18	98.04	98.59
Mid-Cap Value Funds	S&P MidCap 400 Value	96.77	90.00	89.69	89.16	89.77
Small-Cap Growth Funds	S&P SmallCap 600 Growth	95.96	98.11	97.64	98.01	99.43
Small-Cap Core Funds	S&P SmallCap 600	89.47	95.13	97.37	94.32	94.64
Small-Cap Value Funds	S&P SmallCap 600 Value	88.89	92.74	94.03	91.75	80.71
Multi-Cap Growth Funds	S&P 1500 Growth	85.32	93.50	89.50	91.28	88.35
Multi-Cap Core Funds	S&P 1500	74.48	92.84	87.78	89.40	88.82
Multi-Cap Value Funds	S&P 1500 Value	71.20	82.20	79.86	81.05	86.75
Real Estate Funds	S&P BMI US REITs	84.04	82.42	85.15	83.91	81.82

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

Report 2: Survivorship and Style Consistency of U.S. Equity Funds			
FUND CATEGORY	NO. OF FUNDS AT START	SURVIVORSHIP (%)	STYLE CONSISTENCY (%)
1-YEAR			
All Domestic Funds	2659	94.73	94.55
All Large-Cap Funds	1003	94.42	90.13
All Mid-Cap Funds	370	94.59	87.30
All Small-Cap Funds	647	95.83	95.05
All Multi-Cap Funds	639	94.21	88.11
Large-Cap Growth Funds	287	93.73	89.20
Large-Cap Core Funds	344	94.77	87.79
Large-Cap Value Funds	372	94.62	87.37
Mid-Cap Growth Funds	168	96.43	82.74
Mid-Cap Core Funds	139	91.37	76.26
Mid-Cap Value Funds	63	96.83	77.78
Small-Cap Growth Funds	224	96.43	88.39
Small-Cap Core Funds	287	96.17	93.03
Small-Cap Value Funds	136	94.12	85.29
Multi-Cap Growth Funds	220	94.09	85.00
Multi-Cap Core Funds	293	94.54	82.94
Multi-Cap Value Funds	126	93.65	81.75
Real Estate Funds	95	96.84	96.84
3-YEAR			
All Domestic Funds	2668	88.12	85.31
All Large-Cap Funds	1020	86.86	76.47
All Mid-Cap Funds	383	86.42	68.41
All Small-Cap Funds	606	89.93	88.12
All Multi-Cap Funds	659	89.38	64.04
Large-Cap Growth Funds	299	83.28	73.58
Large-Cap Core Funds	377	87.00	67.64
Large-Cap Value Funds	344	89.83	77.03
Mid-Cap Growth Funds	178	85.39	64.61
Mid-Cap Core Funds	134	83.58	50.75
Mid-Cap Value Funds	71	94.37	52.11
Small-Cap Growth Funds	214	88.79	81.31
Small-Cap Core Funds	268	91.79	76.87
Small-Cap Value Funds	124	87.90	62.10
Multi-Cap Growth Funds	200	89.00	60.00
Multi-Cap Core Funds	339	89.68	52.80
Multi-Cap Value Funds	120	89.17	64.17
Real Estate Funds	92	93.48	92.39

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

Report 2: Survivorship and Style Consistency of U.S. Equity Funds (cont.)			
FUND CATEGORY	NO. OF FUNDS AT START	SURVIVORSHIP (%)	STYLE CONSISTENCY (%)
5-YEAR			
All Domestic Funds	2805	78.68	74.90
All Large-Cap Funds	1074	77.75	63.13
All Mid-Cap Funds	392	79.85	57.14
All Small-Cap Funds	614	82.08	78.66
All Multi-Cap Funds	725	76.55	46.76
Large-Cap Growth Funds	330	73.33	59.70
Large-Cap Core Funds	423	78.01	52.25
Large-Cap Value Funds	321	81.93	62.62
Mid-Cap Growth Funds	182	80.22	56.59
Mid-Cap Core Funds	112	74.11	40.18
Mid-Cap Value Funds	98	85.71	31.63
Small-Cap Growth Funds	213	78.40	68.54
Small-Cap Core Funds	267	83.90	61.80
Small-Cap Value Funds	134	84.33	50.75
Multi-Cap Growth Funds	219	76.26	41.55
Multi-Cap Core Funds	365	78.08	35.89
Multi-Cap Value Funds	141	73.05	34.75
Real Estate Funds	101	94.06	79.21
10-YEAR			
All Domestic Funds	2202	57.13	53.59
All Large-Cap Funds	669	56.05	44.84
All Mid-Cap Funds	378	56.35	35.71
All Small-Cap Funds	527	60.15	55.60
All Multi-Cap Funds	628	56.21	29.14
Large-Cap Growth Funds	209	48.33	37.32
Large-Cap Core Funds	246	56.91	35.37
Large-Cap Value Funds	214	62.62	44.39
Mid-Cap Growth Funds	193	46.63	28.50
Mid-Cap Core Funds	102	60.78	25.49
Mid-Cap Value Funds	83	73.49	19.28
Small-Cap Growth Funds	201	52.74	42.29
Small-Cap Core Funds	229	62.45	43.23
Small-Cap Value Funds	97	70.10	32.99
Multi-Cap Growth Funds	172	51.74	22.09
Multi-Cap Core Funds	302	57.62	17.22
Multi-Cap Value Funds	154	58.44	25.97
Real Estate Funds	87	71.26	49.43

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

Report 2: Survivorship and Style Consistency of U.S. Equity Funds (cont.)			
FUND CATEGORY	NO. OF FUNDS AT START	SURVIVORSHIP (%)	STYLE CONSISTENCY (%)
15-YEAR			
All Domestic Funds	2206	41.84	39.44
All Large-Cap Funds	815	34.11	25.77
All Mid-Cap Funds	348	49.14	22.13
All Small-Cap Funds	427	51.99	45.67
All Multi-Cap Funds	616	40.91	19.16
Large-Cap Growth Funds	332	27.41	17.17
Large-Cap Core Funds	278	34.89	19.06
Large-Cap Value Funds	205	43.90	26.34
Mid-Cap Growth Funds	189	37.04	16.93
Mid-Cap Core Funds	71	53.52	12.68
Mid-Cap Value Funds	88	71.59	12.50
Small-Cap Growth Funds	175	41.71	28.57
Small-Cap Core Funds	112	58.04	40.18
Small-Cap Value Funds	140	60.00	22.14
Multi-Cap Growth Funds	206	29.61	14.56
Multi-Cap Core Funds	161	45.96	11.80
Multi-Cap Value Funds	249	46.99	11.24
Real Estate Funds	66	60.61	46.97

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

Report 3: Average U.S. Equity Fund Performance (Equal-Weighted)						
CATEGORY	1-YEAR (ANNUALIZED %)	3-YEAR (ANNUALIZED %)	5-YEAR (ANNUALIZED %)	10-YEAR (ANNUALIZED %)	15-YEAR (ANNUALIZED %)	
S&P 1500	13.03	8.89	14.78	7.19	7.06	
All Domestic Funds	11.28	5.76	12.69	6.00	6.15	
S&P 500	11.96	8.87	14.66	6.95	6.69	
All Large-Cap Funds	9.14	6.32	12.67	5.70	5.21	
S&P MidCap 400	20.74	9.04	15.33	9.16	9.73	
All Mid-Cap Funds	11.04	5.14	12.55	6.63	7.02	
S&P SmallCap 600	26.56	9.47	16.62	9.03	10.17	
All Small-Cap Funds	17.64	5.04	12.91	6.43	7.41	
S&P 1500	13.03	8.89	14.78	7.19	7.06	
All Multi-Cap Funds	8.29	5.40	12.30	5.44	5.78	
LARGE-CAP						
S&P 500 Growth	6.89	9.03	14.54	8.29	6.60	
Large-Cap Growth Funds	1.65	5.59	12.70	6.44	4.86	
S&P 500	11.96	8.87	14.66	6.95	6.69	
Large-Cap Core Funds	9.78	6.67	12.83	5.58	5.07	
S&P 500 Value	17.40	8.51	14.69	5.50	6.67	
Large-Cap Value Funds	14.21	6.45	12.39	5.00	5.84	
MID-CAP						
S&P MidCap 400 Growth	14.77	7.99	14.42	9.74	9.06	
Mid-Cap Growth Funds	5.47	3.65	11.41	6.40	6.02	
S&P MidCap 400	20.74	9.04	15.33	9.16	9.73	
Mid-Cap Core Funds	14.32	5.66	12.82	6.63	7.55	
S&P MidCap 400 Value	26.53	9.81	16.07	8.48	10.25	
Mid-Cap Value Funds	18.29	7.16	14.27	6.81	8.62	
SMALL-CAP						
S&P SmallCap 600 Growth	22.16	9.26	16.35	9.90	10.38	
Small-Cap Growth Funds	9.56	3.05	11.97	6.29	6.01	
S&P SmallCap 600	26.56	9.47	16.62	9.03	10.17	
Small-Cap Core Funds	20.43	5.82	13.14	6.34	7.92	
S&P SmallCap 600 Value	31.32	9.64	16.88	8.18	9.89	
Small-Cap Value Funds	26.30	6.70	14.00	6.56	8.83	
MULTI-CAP						
S&P 1500 Growth	7.90	8.95	14.60	8.48	6.66	
Multi-Cap Growth Funds	2.42	4.83	12.24	6.14	5.51	
S&P 1500	13.03	8.89	14.78	7.19	7.06	
Multi-Cap Core Funds	10.03	5.42	12.07	5.33	5.62	
S&P 1500 Value	18.49	8.63	14.87	5.83	7.52	
Multi-Cap Value Funds	15.93	6.45	13.10	4.85	6.15	
REAL ESTATE						
S&P BMI US REITs	8.49	13.16	11.85	4.89	10.73	
Real Estate Funds	6.62	12.06	10.92	3.97	10.00	

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

Report 4: Average U.S. Equity Fund Performance (Asset-Weighted)						
CATEGORY	1-YEAR (ANNUALIZED %)	3-YEAR (ANNUALIZED %)	5-YEAR (ANNUALIZED %)	10-YEAR (ANNUALIZED %)	15-YEAR (ANNUALIZED %)	
S&P 1500	13.03	8.89	14.78	7.19	7.06	
All Domestic Funds	10.52	6.53	13.39	6.22	6.39	
S&P 500	11.96	8.87	14.66	6.95	6.69	
All Large-Cap Funds	9.75	7.06	13.50	5.92	5.68	
S&P MidCap 400	20.74	9.04	15.33	9.16	9.73	
All Mid-Cap Funds	10.86	5.59	13.02	6.84	7.53	
S&P SmallCap 600	26.56	9.47	16.62	9.03	10.17	
All Small-Cap Funds	18.10	5.30	13.11	6.88	8.15	
S&P 1500	13.03	8.89	14.78	7.19	7.06	
All Multi-Cap Funds	8.73	6.17	13.33	6.10	6.51	
LARGE-CAP						
S&P 500 Growth	6.89	9.03	14.54	8.29	6.60	
Large-Cap Growth Funds	3.14	6.47	13.73	6.83	5.34	
S&P 500	11.96	8.87	14.66	6.95	6.69	
Large-Cap Core Funds	11.68	7.58	13.77	5.73	5.28	
S&P 500 Value	17.40	8.51	14.69	5.50	6.67	
Large-Cap Value Funds	15.05	7.17	13.15	5.53	6.36	
MID-CAP						
S&P MidCap 400 Growth	14.77	7.99	14.42	9.74	9.06	
Mid-Cap Growth Funds	6.24	4.45	12.03	7.08	6.78	
S&P MidCap 400	20.74	9.04	15.33	9.16	9.73	
Mid-Cap Core Funds	13.50	6.20	13.54	6.98	8.08	
S&P MidCap 400 Value	26.53	9.81	16.07	8.48	10.25	
Mid-Cap Value Funds	20.16	7.34	14.54	6.90	8.58	
SMALL-CAP						
S&P SmallCap 600 Growth	22.16	9.26	16.35	9.90	10.38	
Small-Cap Growth Funds	9.81	3.46	12.50	7.11	6.87	
S&P SmallCap 600	26.56	9.47	16.62	9.03	10.17	
Small-Cap Core Funds	20.85	5.99	13.17	6.82	8.34	
S&P SmallCap 600 Value	31.32	9.64	16.88	8.18	9.89	
Small-Cap Value Funds	26.80	6.85	14.10	6.77	9.20	
MULTI-CAP						
S&P 1500 Growth	7.90	8.95	14.60	8.48	6.66	
Multi-Cap Growth Funds	3.46	6.14	13.78	7.06	6.55	
S&P 1500	13.03	8.89	14.78	7.19	7.06	
Multi-Cap Core Funds	10.87	6.06	12.63	5.94	6.42	
S&P 1500 Value	18.49	8.63	14.87	5.83	7.52	
Multi-Cap Value Funds	15.61	6.40	13.93	4.71	6.16	
REAL ESTATE						
S&P BMI US REITs	8.49	13.16	11.85	4.89	10.73	
Real Estate Funds	6.39	12.40	11.20	4.40	10.29	

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

Report 5: Quartile Breakpoints of U.S. Equity Funds			
FUND CATEGORY	THIRD QUARTILE	SECOND QUARTILE	FIRST QUARTILE
1-YEAR			
All Domestic Funds	6.14	11.28	17.02
All Large-Cap Funds	4.75	10.13	13.83
All Mid-Cap Funds	5.36	11.26	16.59
All Small-Cap Funds	12.07	18.97	24.46
All Multi-Cap Funds	4.54	9.04	13.59
Large-Cap Growth Funds	0.09	2.21	4.55
Large-Cap Core Funds	8.34	10.19	12.09
Large-Cap Value Funds	11.61	14.33	17.24
Mid-Cap Growth Funds	2.31	5.29	7.53
Mid-Cap Core Funds	11.89	15.18	17.89
Mid-Cap Value Funds	15.96	18.26	21.46
Small-Cap Growth Funds	6.55	10.01	13.53
Small-Cap Core Funds	17.26	20.34	24.29
Small-Cap Value Funds	22.11	26.23	29.51
Multi-Cap Growth Funds	0.19	2.43	6.08
Multi-Cap Core Funds	7.46	10.09	13.55
Multi-Cap Value Funds	12.33	16.02	19.25
Real Estate Funds	5.60	6.59	7.95
3-YEAR			
All Domestic Funds	4.17	6.23	7.62
All Large-Cap Funds	5.52	6.74	7.79
All Mid-Cap Funds	3.19	5.07	7.20
All Small-Cap Funds	3.33	5.71	7.66
All Multi-Cap Funds	3.83	5.89	7.30
Large-Cap Growth Funds	5.06	6.39	7.07
Large-Cap Core Funds	6.01	7.26	7.99
Large-Cap Value Funds	5.73	6.79	7.83
Mid-Cap Growth Funds	2.28	3.38	5.17
Mid-Cap Core Funds	4.22	5.44	7.46
Mid-Cap Value Funds	6.20	7.25	8.43
Small-Cap Growth Funds	1.09	3.88	5.73
Small-Cap Core Funds	4.61	6.54	7.99
Small-Cap Value Funds	4.74	6.96	8.37
Multi-Cap Growth Funds	3.46	5.60	6.86
Multi-Cap Core Funds	3.82	5.56	7.26
Multi-Cap Value Funds	5.31	6.90	8.22
Real Estate Funds	11.70	12.46	13.05

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

Report 5: Quartile Breakpoints of U.S. Equity Funds (cont.)			
FUND CATEGORY	THIRD QUARTILE	SECOND QUARTILE	FIRST QUARTILE
5-YEAR			
All Domestic Funds	11.42	13.13	14.36
All Large-Cap Funds	11.84	13.29	14.20
All Mid-Cap Funds	11.05	12.88	14.26
All Small-Cap Funds	11.68	13.54	15.05
All Multi-Cap Funds	10.51	12.85	14.25
Large-Cap Growth Funds	12.17	13.38	14.32
Large-Cap Core Funds	11.74	13.33	14.29
Large-Cap Value Funds	11.62	13.00	13.97
Mid-Cap Growth Funds	10.38	11.58	13.21
Mid-Cap Core Funds	11.69	13.16	14.66
Mid-Cap Value Funds	12.92	14.22	15.35
Small-Cap Growth Funds	10.84	12.21	13.91
Small-Cap Core Funds	12.43	13.93	15.28
Small-Cap Value Funds	12.55	14.31	15.59
Multi-Cap Growth Funds	10.58	12.56	13.67
Multi-Cap Core Funds	9.90	12.45	14.12
Multi-Cap Value Funds	12.44	13.50	14.95
Real Estate Funds	9.81	10.87	11.47
10-YEAR			
All Domestic Funds	5.27	6.40	7.45
All Large-Cap Funds	5.19	6.16	7.03
All Mid-Cap Funds	5.87	6.94	7.84
All Small-Cap Funds	5.92	6.96	7.96
All Multi-Cap Funds	4.48	5.58	6.81
Large-Cap Growth Funds	6.22	7.13	7.89
Large-Cap Core Funds	5.16	6.05	6.81
Large-Cap Value Funds	4.75	5.67	6.65
Mid-Cap Growth Funds	6.04	7.01	8.07
Mid-Cap Core Funds	6.01	6.98	7.91
Mid-Cap Value Funds	5.69	6.88	7.56
Small-Cap Growth Funds	6.02	7.06	8.13
Small-Cap Core Funds	5.88	6.87	8.01
Small-Cap Value Funds	5.77	6.95	7.54
Multi-Cap Growth Funds	5.32	6.69	7.62
Multi-Cap Core Funds	4.19	5.54	6.74
Multi-Cap Value Funds	4.38	5.25	6.19
Real Estate Funds	1.68	4.10	4.68

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

Report 5: Quartile Breakpoints of U.S. Equity Funds (cont.)

FUND CATEGORY	THIRD QUARTILE	SECOND QUARTILE	FIRST QUARTILE
15-YEAR			
All Domestic Funds	5.75	6.75	7.97
All Large-Cap Funds	5.22	5.87	6.60
All Mid-Cap Funds	6.34	7.44	8.43
All Small-Cap Funds	7.28	8.31	9.55
All Multi-Cap Funds	5.60	6.47	7.28
Large-Cap Growth Funds	4.95	5.55	6.22
Large-Cap Core Funds	5.13	5.77	6.30
Large-Cap Value Funds	5.73	6.63	7.43
Mid-Cap Growth Funds	5.79	6.70	7.54
Mid-Cap Core Funds	7.08	7.77	8.34
Mid-Cap Value Funds	6.85	7.98	9.31
Small-Cap Growth Funds	6.47	7.19	7.93
Small-Cap Core Funds	7.74	8.43	9.56
Small-Cap Value Funds	8.31	9.32	10.19
Multi-Cap Growth Funds	5.51	6.42	6.97
Multi-Cap Core Funds	5.28	6.31	7.04
Multi-Cap Value Funds	5.81	6.61	7.70
Real Estate Funds	9.04	9.98	10.98

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

Report 6: Percentage of International Equity Funds Outperformed by Benchmarks

FUND CATEGORY	COMPARISON INDEX	1-YEAR (%)	3-YEAR (%)	5-YEAR (%)	10-YEAR (%)	15-YEAR (%)
Global Funds	S&P Global 1200	79.71	81.28	85.29	84.26	83.05
International Funds	S&P International 700	84.94	71.09	66.95	83.89	89.36
International Small Cap Funds	S&P Developed Ex US Small Cap	71.84	75.34	61.90	62.96	82.05
Emerging Markets Funds	S&P/IFCI Composite	63.90	83.56	74.73	85.71	89.89

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

Report 7: Survivorship and Style Consistency of International Equity Funds

FUND CATEGORY	NO. OF FUNDS AT START	SURVIVORSHIP (%)	STYLE CONSISTENCY (%)
1-YEAR			
Global Funds	277	94.58	90.97
International Funds	484	96.28	94.21
International Small Cap Funds	103	95.15	94.17
Emerging Markets Funds	278	95.32	96.04
3-YEAR			
Global Funds	220	85.00	72.27
International Funds	342	88.89	87.13
International Small Cap Funds	73	95.89	93.15
Emerging Markets Funds	226	88.94	88.50
5-YEAR			
Global Funds	204	71.08	53.92
International Funds	353	79.89	75.64
International Small Cap Funds	63	92.06	88.89
Emerging Markets Funds	186	83.33	82.26
10-YEAR			
Global Funds	108	61.11	49.07
International Funds	299	61.54	58.86
International Small Cap Funds	54	74.07	64.81
Emerging Markets Funds	77	76.62	72.73
15-YEAR			
Global Funds	118	38.98	27.12
International Funds	330	43.33	41.52
International Small Cap Funds	39	56.41	51.28
Emerging Markets Funds	89	53.93	51.69

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

Report 8: Average International Equity Fund Performance (Equal-Weighted)

CATEGORY	1-YEAR (ANNUALIZED %)	3-YEAR (ANNUALIZED %)	5-YEAR (ANNUALIZED %)	10-YEAR (ANNUALIZED %)	15-YEAR (ANNUALIZED %)
S&P Global 1200	8.89	4.40	10.84	4.45	6.42
Global Funds	4.65	2.01	8.93	3.23	5.32
S&P International 700	4.79	-1.01	6.35	1.66	6.30
International Funds	0.13	-2.17	5.60	0.34	4.52
S&P Developed Ex US Small Cap	3.78	2.02	9.67	3.03	9.51
International Small Cap Funds	-0.08	-0.35	8.69	2.61	8.41
S&P/IFCI Composite	10.79	-1.36	2.56	2.67	10.71
Emerging Markets Funds	7.96	-3.43	1.24	0.63	8.48

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

Report 9: Average International Equity Fund Performance (Asset-Weighted)

CATEGORY	1-YEAR (ANNUALIZED %)	3-YEAR (ANNUALIZED %)	5-YEAR (ANNUALIZED %)	10-YEAR (ANNUALIZED %)	15-YEAR (ANNUALIZED %)
S&P Global 1200	8.89	4.40	10.84	4.45	6.42
Global Funds	6.18	2.99	10.19	4.15	6.56
S&P International 700	4.79	-1.01	6.35	1.66	6.30
International Funds	1.58	-1.57	6.47	1.26	5.57
S&P Developed Ex US Small Cap	3.78	2.02	9.67	3.03	9.51
International Small Cap Funds	1.66	0.57	9.48	3.39	9.28
S&P/IFCI Composite	10.79	-1.36	2.56	2.67	10.71
Emerging Markets Funds	10.04	-2.77	2.04	1.71	9.70

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

Report 10: Quartile Breakpoints of International Equity Funds

FUND CATEGORY	THIRD QUARTILE	SECOND QUARTILE	FIRST QUARTILE
1-YEAR			
Global Funds	2.16	5.42	8.05
International Funds	-1.81	0.61	3.06
International Small Cap Funds	-2.83	-0.29	4.72
Emerging Markets Funds	4.47	8.80	12.33
3-YEAR			
Global Funds	0.92	2.32	4.16
International Funds	-3.08	-1.74	-0.72
International Small Cap Funds	-1.45	0.22	2.00
Emerging Markets Funds	-4.33	-2.91	-1.74
5-YEAR			
Global Funds	7.96	9.33	10.55
International Funds	5.05	6.17	6.98
International Small Cap Funds	7.76	9.32	10.28
Emerging Markets Funds	0.29	1.77	2.82
10-YEAR			
Global Funds	3.06	3.82	4.56
International Funds	-0.15	0.73	1.79
International Small Cap Funds	1.53	3.02	3.65
Emerging Markets Funds	0.39	0.98	2.41
15-YEAR			
Global Funds	5.09	6.09	6.89
International Funds	4.45	5.50	6.24
International Small Cap Funds	7.46	8.72	10.59
Emerging Markets Funds	8.16	9.30	10.64

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

Report 11: Percentage of Fixed Income Funds Outperformed by Benchmarks

FUND CATEGORY	COMPARISON INDEX	1-YEAR (%)	3-YEAR (%)	5-YEAR (%)	10-YEAR (%)	15-YEAR (%)
Government Long Funds	Barclays US Government Long	87.93	98.36	98.78	95.65	96.83
Government Intermediate Funds	Barclays US Government Intermediate	74.07	67.86	81.08	78.18	81.82
Government Short Funds	Barclays US Government (1-3 Year)	63.16	75.00	70.00	76.74	86.00
Investment-Grade Long Funds	Barclays US Government/Credit Long	75.00	98.04	74.80	96.30	97.44
Investment-Grade Intermediate Funds	Barclays US Government/Credit Intermediate	19.75	37.65	34.39	58.60	72.60
Investment-Grade Short Funds	Barclays US Government/Credit (1-3 Year)	26.61	38.16	26.39	64.63	72.73
High Yield Funds	Barclays US Corporate High Yield	94.17	90.91	88.04	96.60	95.92
Mortgage-Backed Securities Funds	Barclays US Aggregate Securitized - MBS	60.00	68.25	70.31	80.36	87.50
Global Income Funds	Barclays Global Aggregate	33.08	41.91	36.97	61.29	69.49
Emerging Markets Debt Funds	Barclays Emerging Markets	39.19	82.54	86.44	76.19	76.00
General Municipal Debt Funds	S&P National AMT-Free Municipal Bond	71.91	38.55	32.47	72.73	83.62
California Municipal Debt Funds	S&P California AMT-Free Municipal Bond	61.11	27.78	24.24	85.71	84.44
New York Municipal Debt Funds	S&P New York AMT-Free Municipal Bond	74.07	39.29	55.17	94.12	90.48
Loan Participation Funds	S&P/LSTA U.S. Leveraged Loan 100	81.82	45.10	57.50	-	-

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

Report 12: Survivorship and Style Consistency of Fixed Income Funds

FUND CATEGORY	NO. OF FUNDS AT START	SURVIVORSHIP (%)	STYLE CONSISTENCY (%)
1-YEAR			
Government Long Funds	60	96.67	96.67
Government Intermediate Funds	27	88.89	88.89
Government Short Funds	38	92.11	86.84
Investment-Grade Long Funds	111	100.00	94.59
Investment-Grade Intermediate Funds	244	97.54	93.85
Investment-Grade Short Funds	110	98.18	94.55
High Yield Funds	241	97.51	97.51
Mortgage-Backed Securities Funds	61	100.00	98.36
Global Income Funds	131	98.47	97.71
Emerging Markets Debt Funds	74	98.65	98.65
General Municipal Debt Funds	90	97.78	95.56
California Municipal Debt Funds	36	97.22	97.22
New York Municipal Debt Funds	27	100.00	100.00
Loan Participation Funds	55	100.00	98.18

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

Report 12: Survivorship and Style Consistency of Fixed Income Funds (cont.)			
FUND CATEGORY	NO. OF FUNDS AT START	SURVIVORSHIP (%)	STYLE CONSISTENCY (%)
3-YEAR			
Government Long Funds	63	90.48	87.30
Government Intermediate Funds	28	82.14	82.14
Government Short Funds	40	80.00	75.00
Investment-Grade Long Funds	106	98.11	85.85
Investment-Grade Intermediate Funds	257	91.44	77.04
Investment-Grade Short Funds	77	92.21	84.42
High Yield Funds	222	94.14	92.34
Mortgage-Backed Securities Funds	64	90.63	78.13
Global Income Funds	136	87.50	80.88
Emerging Markets Debt Funds	63	95.24	92.06
General Municipal Debt Funds	84	96.43	89.29
California Municipal Debt Funds	36	97.22	97.22
New York Municipal Debt Funds	28	96.43	96.43
Loan Participation Funds	51	100.00	96.08
5-YEAR			
Government Long Funds	84	86.90	63.10
Government Intermediate Funds	37	70.27	59.46
Government Short Funds	40	72.50	62.50
Investment-Grade Long Funds	130	93.08	62.31
Investment-Grade Intermediate Funds	287	83.28	55.05
Investment-Grade Short Funds	73	86.30	78.08
High Yield Funds	210	88.57	85.71
Mortgage-Backed Securities Funds	65	86.15	73.85
Global Income Funds	119	84.03	68.91
Emerging Markets Debt Funds	59	89.83	61.02
General Municipal Debt Funds	77	90.91	83.12
California Municipal Debt Funds	33	96.97	96.97
New York Municipal Debt Funds	29	86.21	86.21
Loan Participation Funds	40	97.50	95.00

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

Report 12: Survivorship and Style Consistency of Fixed Income Funds (cont.)			
FUND CATEGORY	NO. OF FUNDS AT START	SURVIVORSHIP (%)	STYLE CONSISTENCY (%)
10-YEAR			
Government Long Funds	47	61.70	53.19
Government Intermediate Funds	55	58.18	40.00
Government Short Funds	43	62.79	51.16
Investment-Grade Long Funds	108	61.11	34.26
Investment-Grade Intermediate Funds	215	59.53	42.79
Investment-Grade Short Funds	82	58.54	53.66
High Yield Funds	147	69.39	63.27
Mortgage-Backed Securities Funds	56	71.43	64.29
Global Income Funds	62	67.74	53.23
Emerging Markets Debt Funds	21	80.95	76.19
General Municipal Debt Funds	88	65.91	59.09
California Municipal Debt Funds	42	76.19	73.81
New York Municipal Debt Funds	34	70.59	70.59
Loan Participation Funds	-	-	-
15-YEAR			
Government Long Funds	64	42.19	32.81
Government Intermediate Funds	88	42.05	21.59
Government Short Funds	50	46.00	36.00
Investment-Grade Long Funds	156	42.95	19.23
Investment-Grade Intermediate Funds	208	42.79	31.25
Investment-Grade Short Funds	55	58.18	54.55
High Yield Funds	147	51.02	44.90
Mortgage-Backed Securities Funds	56	60.71	53.57
Global Income Funds	59	52.54	44.07
Emerging Markets Debt Funds	25	60.00	56.00
General Municipal Debt Funds	116	47.41	43.10
California Municipal Debt Funds	45	64.44	60.00
New York Municipal Debt Funds	42	57.14	50.00
Loan Participation Funds	-	-	-

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

Report 13: Average Fixed Income Fund Performance (Equal-Weighted)						
CATEGORY	1-YEAR (ANNUALIZED %)	3-YEAR (ANNUALIZED %)	5-YEAR (ANNUALIZED %)	10-YEAR (ANNUALIZED %)	15-YEAR (ANNUALIZED %)	
Barclays US Government Long	1.43	7.71	2.57	6.60	6.77	
Government Long Funds	0.64	2.07	1.03	3.33	3.51	
Barclays US Government Intermediate	1.05	1.58	1.04	3.42	3.59	
Government Intermediate Funds	0.71	1.38	0.77	2.81	3.00	
Barclays US Government (1-3 Year)	0.87	0.69	0.59	2.18	2.45	
Government Short Funds	0.63	0.42	0.31	1.69	1.94	
Barclays US Government/Credit Long	6.67	7.16	4.07	6.85	7.03	
Investment-Grade Long Funds	5.43	3.65	3.61	4.67	4.77	
Barclays US Government/Credit Intermediate	2.08	2.09	1.85	3.84	4.07	
Investment-Grade Intermediate Funds	2.81	2.30	2.31	3.51	3.70	
Barclays US Government/Credit (1-3 Year)	1.28	0.90	0.92	2.44	2.72	
Investment-Grade Short Funds	1.86	0.90	1.35	1.69	2.05	
Barclays US Corporate High Yield	17.13	4.66	7.36	7.45	8.35	
High Yield Funds	13.20	3.18	6.05	5.35	6.44	
Barclays US Aggregate Securitized - MBS	1.67	3.07	2.06	4.28	4.47	
Mortgage-Backed Securities Funds	1.61	2.59	1.88	3.55	3.69	
Barclays Global Aggregate	2.09	-0.19	0.21	3.29	4.79	
Global Income Funds	3.68	0.40	1.21	3.42	4.79	
Barclays Emerging Markets	9.88	5.25	5.69	6.71	9.25	
Emerging Markets Debt Funds	10.76	2.86	3.80	4.46	7.87	
S&P National AMT-Free Municipal Bond	0.36	4.12	3.06	4.02	4.56	
General Municipal Debt Funds	0.00	4.23	3.42	3.54	3.97	
S&P California AMT-Free Municipal Bond	0.00	4.51	3.82	4.44	4.78	
California Municipal Debt Funds	-0.16	5.04	4.25	3.85	4.21	
S&P New York AMT-Free Municipal Bond	0.39	4.21	3.27	4.17	4.68	
New York Municipal Debt Funds	0.31	4.54	3.17	3.53	3.99	
S&P/LSTA U.S. Leveraged Loan 100	10.88	2.88	4.79	-	-	
Loan Participation Funds	8.90	2.66	4.47	-	-	

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

Report 14: Average Fixed Income Fund Performance (Asset-Weighted)						
CATEGORY	1-YEAR (ANNUALIZED %)	3-YEAR (ANNUALIZED %)	5-YEAR (ANNUALIZED %)	10-YEAR (ANNUALIZED %)	15-YEAR (ANNUALIZED %)	
Barclays US Government Long	1.43	7.71	2.57	6.60	6.77	
Government Long Funds	0.83	2.66	1.46	3.89	4.02	
Barclays US Government Intermediate	1.05	1.58	1.04	3.42	3.59	
Government Intermediate Funds	1.13	1.87	1.48	3.43	3.58	
Barclays US Government (1-3 Year)	0.87	0.69	0.59	2.18	2.45	
Government Short Funds	0.91	0.72	0.68	2.12	2.33	
Barclays US Government/Credit Long	6.67	7.16	4.07	6.85	7.03	
Investment-Grade Long Funds	5.36	3.96	4.07	4.73	5.03	
Barclays US Government/Credit Intermediate	2.08	2.09	1.85	3.84	4.07	
Investment-Grade Intermediate Funds	3.48	2.80	2.93	4.54	4.68	
Barclays US Government/Credit (1-3 Year)	1.28	0.90	0.92	2.44	2.72	
Investment-Grade Short Funds	2.31	1.39	1.90	2.60	2.82	
Barclays US Corporate High Yield	17.13	4.66	7.36	7.45	8.35	
High Yield Funds	13.48	3.55	6.43	5.73	6.82	
Barclays US Aggregate Securitized - MBS	1.67	3.07	2.06	4.28	4.47	
Mortgage-Backed Securities Funds	1.78	3.10	2.41	4.26	4.28	
Barclays Global Aggregate	2.09	-0.19	0.21	3.29	4.79	
Global Income Funds	4.25	0.94	2.60	4.25	5.54	
Barclays Emerging Markets	9.88	5.25	5.69	6.71	9.25	
Emerging Markets Debt Funds	12.84	4.34	4.63	5.33	9.05	
S&P National AMT-Free Municipal Bond	0.36	4.12	3.06	4.02	4.56	
General Municipal Debt Funds	0.20	4.71	3.86	3.87	4.38	
S&P California AMT-Free Municipal Bond	0.00	4.51	3.82	4.44	4.78	
California Municipal Debt Funds	0.29	5.48	4.56	4.17	4.56	
S&P New York AMT-Free Municipal Bond	0.39	4.21	3.27	4.17	4.68	
New York Municipal Debt Funds	1.59	5.08	3.42	3.46	4.23	
S&P/LSTA U.S. Leveraged Loan 100	10.88	2.88	4.79	-	-	
Loan Participation Funds	9.84	2.92	4.51	-	-	

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

Report 15: Quartile Breakpoints of Fixed Income Funds			
FUND CATEGORY	THIRD QUARTILE	SECOND QUARTILE	FIRST QUARTILE
1-YEAR			
Government Long Funds	0.50	0.94	1.22
Government Intermediate Funds	0.52	0.88	1.08
Government Short Funds	0.42	0.65	1.09
Investment-Grade Long Funds	3.48	4.82	6.68
Investment-Grade Intermediate Funds	2.37	2.95	3.82
Investment-Grade Short Funds	1.27	1.73	2.22
High Yield Funds	11.14	13.33	15.29
Mortgage-Backed Securities Funds	1.29	1.53	2.20
Global Income Funds	1.67	3.45	6.06
Emerging Markets Debt Funds	9.01	10.92	13.68
General Municipal Debt Funds	-0.36	0.09	0.39
California Municipal Debt Funds	-0.42	-0.17	0.37
New York Municipal Debt Funds	-0.08	0.10	0.43
Loan Participation Funds	7.34	8.39	10.18
3-YEAR			
Government Long Funds	1.47	2.03	2.48
Government Intermediate Funds	1.05	1.30	1.97
Government Short Funds	0.32	0.59	0.71
Investment-Grade Long Funds	2.74	3.42	4.08
Investment-Grade Intermediate Funds	1.75	2.66	3.07
Investment-Grade Short Funds	0.76	1.01	1.24
High Yield Funds	2.81	3.52	4.24
Mortgage-Backed Securities Funds	2.33	2.78	3.19
Global Income Funds	-0.52	0.61	2.62
Emerging Markets Debt Funds	1.46	3.50	4.85
General Municipal Debt Funds	3.62	4.43	4.89
California Municipal Debt Funds	4.52	5.07	5.78
New York Municipal Debt Funds	4.01	4.41	4.98
Loan Participation Funds	2.66	2.90	3.32

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

Report 15: Quartile Breakpoints of Fixed Income Funds (cont.)			
FUND CATEGORY	THIRD QUARTILE	SECOND QUARTILE	FIRST QUARTILE
5-YEAR			
Government Long Funds	0.75	1.04	1.48
Government Intermediate Funds	0.65	0.88	1.04
Government Short Funds	0.21	0.54	0.77
Investment-Grade Long Funds	2.35	3.14	4.13
Investment-Grade Intermediate Funds	2.01	2.68	3.16
Investment-Grade Short Funds	1.20	1.66	1.94
High Yield Funds	5.80	6.43	6.92
Mortgage-Backed Securities Funds	1.48	1.91	2.30
Global Income Funds	0.23	1.56	3.50
Emerging Markets Debt Funds	-0.72	3.63	5.15
General Municipal Debt Funds	3.05	3.63	4.10
California Municipal Debt Funds	3.91	4.39	4.67
New York Municipal Debt Funds	2.92	3.31	3.82
Loan Participation Funds	4.16	4.70	5.07
10-YEAR			
Government Long Funds	3.15	3.64	4.83
Government Intermediate Funds	2.88	3.31	3.75
Government Short Funds	1.61	1.85	2.47
Investment-Grade Long Funds	3.61	4.53	5.31
Investment-Grade Intermediate Funds	3.74	4.31	4.81
Investment-Grade Short Funds	2.19	2.57	2.93
High Yield Funds	5.46	5.99	6.60
Mortgage-Backed Securities Funds	3.58	3.79	4.36
Global Income Funds	2.46	3.52	4.71
Emerging Markets Debt Funds	5.25	6.18	6.86
General Municipal Debt Funds	3.42	3.90	4.19
California Municipal Debt Funds	3.90	4.14	4.33
New York Municipal Debt Funds	3.57	3.77	4.02
Loan Participation Funds	-	-	-

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

Report 15: Quartile Breakpoints of Fixed Income Funds (cont.)			
FUND CATEGORY	THIRD QUARTILE	SECOND QUARTILE	FIRST QUARTILE
15-YEAR			
Government Long Funds	3.42	3.94	4.64
Government Intermediate Funds	3.07	3.49	4.03
Government Short Funds	1.94	2.16	2.55
Investment-Grade Long Funds	4.09	4.55	5.23
Investment-Grade Intermediate Funds	3.73	4.43	4.92
Investment-Grade Short Funds	2.43	2.70	2.99
High Yield Funds	6.44	6.91	7.39
Mortgage-Backed Securities Funds	3.70	3.93	4.41
Global Income Funds	4.29	5.25	5.82
Emerging Markets Debt Funds	8.28	8.94	9.44
General Municipal Debt Funds	3.96	4.30	4.65
California Municipal Debt Funds	4.35	4.48	4.67
New York Municipal Debt Funds	4.06	4.31	4.52
Loan Participation Funds	-	-	-

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

APPENDIX A

SPIVA Styles and Lipper Fund Classifications

The CRSP Survivor-Bias-Free US Mutual Fund Database is the only complete database of both active and liquidated or merged mutual funds. It was created in 1995 and contains fund data from December 1961. Current and historical data from August 1998 has been supplied by Lipper and Thomson Reuters. The fund classifications are based upon the Lipper fund classification system. The SPIVA Scorecard covers domestic equity, global equity, and global fixed income categories.

U.S. Equity

SPIVA covers major capitalization levels (large-, mid-, small-, and multi-cap funds) and investment styles (growth, core, and value). S&P Dow Jones Indices uses the Lipper fund classifications, which determine a fund portfolio's capitalization and investment style assignments.

Lipper assigns a market capitalization to each fund based on the percentages of a fund's three-year weighted equity assets that fall into each of Lipper's three defined market capitalization slices. The market capitalization breakpoints are calculated using all common stocks, excluding all non-U.S. domiciled stocks and ADRs, trading on the NYSE, AMEX, and NASDAQ. Funds are assigned to the capitalization level in which they have a 75% or higher weighting. Any fund that has less than 75% of its three-year weighted allocation in any of the three market capitalization ranges is classified as a multi-cap fund.

For investment style selection, the Lipper classification system uses three-year fundamental portfolio characteristics (price/earnings, price/book, and three-year sales-per-share growth) and, if necessary, confirming secondary characteristics (price-to-sales and price-to-operating cash flow). Fund statistics

are compared to their relevant S&P Dow Jones Indices capitalization-level index to determine the growth, core, or value style.

In some cases, S&P Dow Jones Indices combines closely related Lipper fund classifications in one SPIVA category. Exhibit 5 maps the SPIVA U.S. Equity fund categories to Lipper classifications.

Exhibit 5: U.S. Equity Category Mappings	
SPIVA CATEGORY	LIPPER FUND CLASSIFICATION
Large-Cap Growth Funds	Large-Cap Growth Funds
Large-Cap Core Funds	Large-Cap Core Funds
Large-Cap Value Funds	Large-Cap Value Funds
	Equity Income Funds
Mid-Cap Growth Funds	Mid-Cap Growth Funds
Mid-Cap Core Funds	Mid-Cap Core Funds
Mid-Cap Value Funds	Mid-Cap Value Funds
Small-Cap Growth Funds	Small-Cap Growth Funds
Small-Cap Core Funds	Small-Cap Core Funds
Small-Cap Value Funds	Small-Cap Value Funds
Multi-Cap Growth Funds	Multi-Cap Growth Funds
Multi-Cap Core Funds	Multi-Cap Core Funds
Multi-Cap Value Funds	Multi-Cap Value Funds
Real Estate Funds	Real Estate Funds

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

International Equity

For international equity, SPIVA reports on four major categories (Global, International, International Small-Cap, and Emerging Market Funds) of interest to global asset allocators. These categories also include multiple Lipper capitalization and style classifications.

Exhibit 6: Global Equity Category Mappings	
SPIVA CATEGORY	LIPPER FUND CLASSIFICATION
Global Funds	Global Large-Cap Growth Funds
	Global Large-Cap Core Funds
	Global Large-Cap Value Funds
	Global Multi-Cap Growth Funds
	Global Multi-Cap Core Funds
	Global Multi-Cap Value Funds
International Funds	International Large-Cap Growth Funds
	International Large-Cap Core Funds
	International Large-Cap Value Funds
	International Multi-Cap Growth Funds
	International Multi-Cap Core Funds
	International Multi-Cap Value Funds
International Small-Cap Funds	International Small-/Mid-Cap Growth Funds
	International Small-/Mid-Cap Core Funds
	International Small-/Mid-Cap Value Funds
Emerging Market Funds	Emerging Markets Funds

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

Fixed Income

SPIVA reports on nine domestic, two global, and three municipal fixed income categories. The Lipper domestic fixed income classifications are based on maturity and credit quality. For maturity, long is 10+ years, intermediate is 5-10 years, short/intermediate is 1-5 years, and short is 1-3.5 years. For credit quality, bonds are assigned to U.S. Treasury, U.S. Government (includes government and agency issues), A- or BBB-rated (according to Lipper fund rating methodology), Loan Participations, and High Yield classifications. Lipper also includes U.S. Mortgages and GNMA classifications.

In global fixed income, Lipper differentiates between global (including the U.S.) and international (excluding the U.S.) objectives. For municipal debt funds, we include the general classification (invests in the top four credit ratings) plus two state funds (California and New York).

Exhibit 7: Fixed Income Category Mappings	
SPIVA CATEGORY	LIPPER FUND CLASSIFICATION
Government Long Funds	General U.S. Government Funds
	General U.S. Treasury Funds
Government Intermediate Funds	Intermediate U.S. Government
	Short-Intermediate U.S. Government
Government Short Funds	Short U.S. Government Funds
	Short U.S. Treasury
Investment-Grade Long Funds	Corporate Debt Funds A-Rated
	Corporate Debt Funds BBB-Rated
Investment-Grade Intermediate Funds	Intermediate Investment-Grade Debt Funds
	Short-Intermediate Investment-Grade Debt Funds
Investment-Grade Short Funds	Short Investment-Grade Debt Funds
High-Yield Funds	High Current Yield Funds
Mortgage-Backed Securities Funds	U.S. Mortgage Funds
	GNMA Funds
Global Income Funds	Global Income Funds
	International Income Funds
Emerging Market Debt Funds	Emerging Market Debt Funds
Loan Participation Funds	Loan Participation Funds
General Municipal Debt Funds	General Municipal Debt Funds
California Municipal Debt Funds	California Municipal Debt Funds
New York Municipal Debt Funds	New York Municipal Debt Funds

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

APPENDIX B: GLOSSARY

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 (%)

This measure represents the percentage of funds in existence at the beginning of the time period that is still active at the end of the time period.

Style Consistency (%)

This calculation shows the percentage of funds that had the same style classification at the end of the time period as at the beginning 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 more accurately reflect the returns of the total money invested in that particular style category.

Quartiles Breakpoints

The p^{th} 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, 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. These reports remove this bias by (a) using 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, (b) explicitly showing the survivorship rate in each category, and (c) constructing 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.

Indices²

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

U.S. Equity

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 500 leading companies in the foremost industries of the U.S. economy and provides over 80% coverage of U.S. equities.

S&P MIDCAP 400

This index consists of 400 mid-sized companies and covers approximately 7% of the U.S. equities market.

S&P SMALLCAP 600

This index consists of 600 small-cap stocks and covers approximately 3% of the U.S. equities market.

S&P COMPOSITE 1500

This is a broad, market-capitalization-weighted index of 1500 stocks. This index is comprised of three size-based indices: the S&P 500, S&P MidCap 400, and S&P SmallCap 600, which measure the performance of large-, mid-, and small-cap stocks, respectively. This index represents 90% of U.S. equities.

S&P 500 GROWTH AND VALUE

These indices form an exhaustive, multi-factor style series covering the entire market capitalization of the S&P 500. Constituents, weighted according to market capitalization, are classified as growth, value, or a mix of growth and value.

S&P MIDCAP 400 GROWTH AND VALUE

These indices form an exhaustive, multi-factor style series covering the entire market capitalization of the S&P MidCap 400.

S&P SMALLCAP 600 GROWTH AND VALUE

These indices form an exhaustive, multi-factor style series covering the entire market capitalization of the S&P SmallCap 600.

S&P COMPOSITE 1500 GROWTH AND VALUE

These indices form an exhaustive, multi-factor style series covering the entire market capitalization of the S&P Composite 1500.

² For more information on S&P Dow Jones Indices, please visit www.spindices.com.

S&P UNITED STATES REIT INDEX

This index measures the investable universe of publicly traded real estate investment trusts.

International Equity

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 700

This index measures the non-U.S. component of the global equity markets, covering all the regions included in the S&P Global 1200, excluding the U.S. (S&P 500).

S&P WORLD EX-U.S. SMALL CAP

This index represents the small-cap segment—the bottom 15%—of the world's universe of institutionally investable securities, excluding the U.S.

S&P/IFCI COMPOSITE

This index 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 market participants.

Fixed Income³

BARCLAYS CAPITAL LONG GOVERNMENT BOND INDEX

This index consists of U.S. Treasury and U.S. Government agency bonds with maturities greater than 10 years.

BARCLAYS CAPITAL INTERMEDIATE GOVERNMENT BOND INDEX

This index consists of U.S. Treasury and U.S. Government agency bonds with maturities from 1 to 10 years.

BARCLAYS CAPITAL 1-3 YEAR GOVERNMENT BOND INDEX

This index consists of U.S. Treasury and U.S. Government agency bonds with maturities from one to three years.

³ Barclays Capital Fixed Income Indices were formerly the Lehman Brothers Indices.

BARCLAYS CAPITAL LONG GOVERNMENT/CREDIT BOND INDEX

This index covers corporate and non-corporate fixed income securities that are rated investment grade and have maturities greater than 10 years.

BARCLAYS CAPITAL INTERMEDIATE GOVERNMENT/CREDIT BOND INDEX

This index covers corporate and non-corporate fixed income securities that are rated investment grade with maturities from 1 to 10 years.

BARCLAYS CAPITAL 1-3 YEAR GOVERNMENT/CREDIT BOND INDEX

This index covers corporate and non-corporate fixed income securities that are rated investment grade and have one to three years until their final maturity.

BARCLAYS CAPITAL HIGH YIELD BOND INDEX

This index includes all fixed income securities with a maximum quality rating of Ba1/BB+ (including defaulted issues), a minimum amount outstanding of USD 100 million, and at least one year to maturity.

BARCLAYS CAPITAL BROTHERS MORTGAGE-BACKED SECURITIES INDEX

This index includes 15- and 30-year fixed-rate securities backed by mortgage pools of the Government National Mortgage Association (GNMA), Federal Home Loan Mortgage Corporation (FHLMC), and Federal National Mortgage Association (FNMA)

BARCLAYS CAPITAL GLOBAL AGGREGATE BOND INDEX

This index covers the most-liquid portion of the global investment-grade, fixed-rate bond market, including government, credit, and collateralized securities.

BARCLAYS CAPITAL EMERGING MARKETS INDEX

This index includes fixed- and floating-rate USD-denominated debt from emerging markets.

S&P/LSTA U.S. LEVERAGED LOAN 100 INDEX

This index is designed to reflect the performance of the largest facilities in the floating-rate bank loan, or senior loan, market.

S&P NATIONAL AMT-FREE MUNICIPAL BOND INDEX

This index is a broad, comprehensive, market-value-weighted index designed to measure the performance of the investment-grade U.S. municipal bonds that are exempt from the Alternative Minimum Tax.

S&P CALIFORNIA AMT-FREE MUNICIPAL BOND INDEX

This index is designed to measure the performance of the investment-grade California municipal bonds that are exempt from the Alternative Minimum Tax.

S&P NEW YORK AMT-FREE MUNICIPAL BOND INDEX

This index is designed to measure the performance of the investment-grade New York bonds that are exempt from the alternative minimum tax.

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