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# SPIVA® U.S. Scorecard

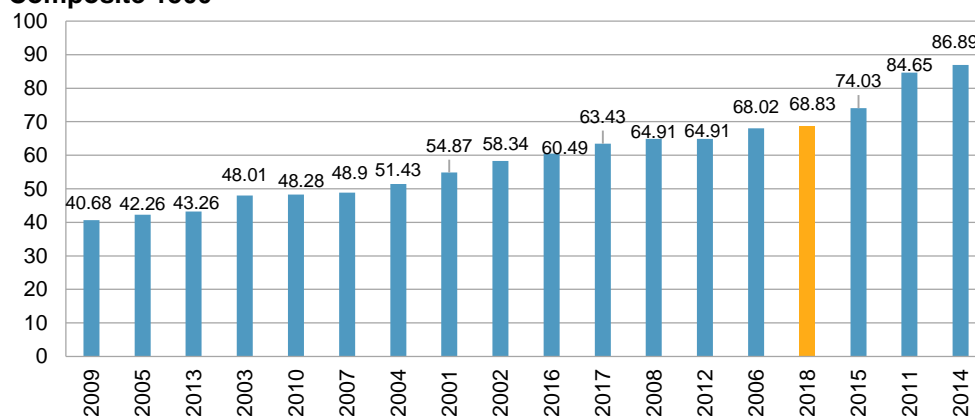
## SUMMARY

2018 was a rollercoaster ride for financial markets: after trade tensions weighed on investors' sentiment in Q1, strong corporate earnings and a rosy U.S. economic outlook initially drove a recovery, before uncertainty over global economic growth and future Fed policy wiped off YTD gains for many equity benchmarks in Q4.

The [S&P 500®](#) (-4.38%) finished 2018 with its first calendar-year loss in a decade, while the [S&P MidCap 400®](#) (-11.08%) and the [S&P SmallCap 600®](#) (-8.48%) also fell.

Amid the market volatility, **2018 was the fourth-worst year for U.S. equity managers since 2001**; 68.83% of domestic equity funds lagged the [S&P Composite 1500®](#) during the one-year period ending Dec. 31, 2018.

### Exhibit 1: Percentage of Domestic Equity Funds Underperforming the S&P Composite 1500



Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

**For the ninth consecutive year, the majority (64.49%) of large-cap funds underperformed the S&P 500.** The figures highlight that heightened market volatility does not necessarily result in better relative performance for active investing.

**Similarly, small-cap equity managers found it more challenging to navigate 2018's market environment compared with 2017's range-bound market movements;** 68.45% of all small-cap funds lagged the S&P SmallCap 600 over the one-year horizon. Underperformance was

particularly noticeable in the small-cap value (83.33%) and small-cap core (87.55%) categories.

Growth style investing dominated through the third quarter of 2018, before succumbing to the market turbulence observed after September. However, **most domestic large- and small-cap growth managers lagged their respective benchmarks in 2018**. In fact, compared with results from 12 months prior, we saw 27.35 and 46.37 percentage point increases in the proportion of funds lagging the [S&P 500 Growth](#) and [S&P SmallCap 600 Growth](#), respectively.

**U.S. large-cap value offered a bright spot for active management in 2018**; roughly 54% of the managers in the category beat the [S&P 500 Value](#).

**For the second consecutive year, most domestic mid-cap funds outperformed the S&P MidCap 400**. The impressive performance of mid-cap growth funds helped; 84.80% of managers beat the [S&P MidCap 400 Growth](#), which in turn outperformed the S&P MidCap 400 in 2018.

Over the long-term investment horizon, such as 10 or 15 years, 80% or more of active managers across all categories underperformed their respective benchmarks.

**It was a challenging year for global equities as all but 2 of the [S&P Global BMI](#)'s 48 country constituents declined (in USD terms)**. International and emerging market funds generally struggled to navigate the headwinds; 76.84% of international funds lagged the [S&P 700](#), while the majority of emerging market managers failed to beat the S&P/IFCI Composite.

**International small-cap funds had difficulty outperforming the benchmark in 2018**; 65.52% of the category's funds lagged the 18.41% plunge of the [S&P Developed Ex-U.S. SmallCap](#).

**Uncertainty over future Federal Reserve policy offered headwinds for fixed income managers at the shorter end of the curve**. The vast majority of government short funds, and all of their intermediate counterparts, lagged in 2018. Similar results were recorded by the investment-grade short and intermediate categories.

In contrast, the long-end of the curve fared much better; **a thumping 83.02% of government long funds and 90.91% of investment-grade long funds outperformed over the one-year horizon**. But in signs that recent out-performance is no guarantee of future results, over 90% of both categories lagged over the three-year period.

Elsewhere, the majority of high-yield managers, municipal bond funds, leveraged loan funds, and MBS funds underperformed their benchmarks in 2018.

While there were some differences in relative performance figures compared with prior reports, **the longer-term 15-year figures show that most active fixed income managers underperformed their benchmarks**.

The disappearance of funds remains meaningful; 57% of domestic equity funds, 49% of international equity funds, and 52% of all fixed income funds were merged or liquidated over the 15-year horizon. This highlights the need to correct for survivorship bias.

## 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 16 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.

## HISTORICAL VIEW

To provide context for the relative performance of active funds, we compile annual league tables (see Exhibits 2a, 2b, and 2c) across the U.S. equity, international equity, and fixed income categories. The tables show how active funds performed against their benchmarks in each calendar year since 2001.

We also provide the three-year relative performance of managers across major domestic and international equity categories (see Exhibits 3, 4, and 5). The figures are calculated on a rolling semi-annual basis.

**Exhibit 2a: Annual League Table (U.S. Equity Funds)**

FUND CATEGORY	COMPARISON INDEX	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
All Domestic Funds	S&P Composite 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	63.43	68.83
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	63.08	64.49
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	44.41	45.64
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	47.70	68.45
All Multi-Cap Funds	S&P Composite 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	56.46	66.79
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	32.92	60.27
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	68.98	75.85
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	46.88	46.27
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	18.05	15.20
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	61.67	62.18
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	43.14	72.22
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	15.08	61.45
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	58.59	87.55
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	74.07	83.33
Multi-Cap Growth Funds	S&P Composite 1500 Growth	75.86	61.46	34.21	51.45	17.73	73.24	29.82	88.27	41.96	45.74	94.76	51.60	38.76	87.37	65.50	85.32	46.32	65.90
Multi-Cap Core Funds	S&P Composite 1500	61.46	49.07	55.24	60.57	38.11	77.39	45.18	65.81	39.22	66.06	82.95	68.25	53.25	84.13	83.93	74.48	68.78	81.74
Multi-Cap Value Funds	S&P Composite 1500 Value	30.65	61.32	57.07	79.23	72.02	83.95	58.11	48.45	35.83	68.21	66.67	72.59	47.86	67.27	55.56	71.20	49.57	74.77
Real Estate Funds	S&P United States REIT	90.63	47.69	57.35	43.06	43.59	68.35	45.35	72.88	38.32	66.67	66.35	62.00	64.77	67.78	43.01	84.04	36.90	88.89

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

**Exhibit 2b: Annual League Table (International Equity Funds)**

FUND CATEGORY	COMPARISON INDEX	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Global Funds	S&P Global 1200	65.25	57.63	58.49	59.00	49.46	75.26	54.21	61.60	52.32	43.79	71.82	61.76	47.49	76.50	58.18	79.71	50.21	70.61
International Funds	S&P 700	60.32	61.30	81.31	72.95	70.65	74.73	68.15	64.33	71.47	40.17	69.45	44.35	43.16	68.18	25.55	84.94	53.95	76.84
International Small Cap Funds	S&P Developed Ex-U.S. SmallCap	69.70	67.57	56.41	55.56	60.00	64.58	36.54	53.13	49.23	45.28	60.00	24.59	47.89	69.01	48.91	71.84	44.05	65.52
Emerging Markets Funds	S&P/IFCI Composite	84.38	62.79	65.33	78.79	65.15	77.61	69.86	65.26	71.22	64.86	52.56	45.60	54.95	70.72	66.04	63.90	64.89	78.10

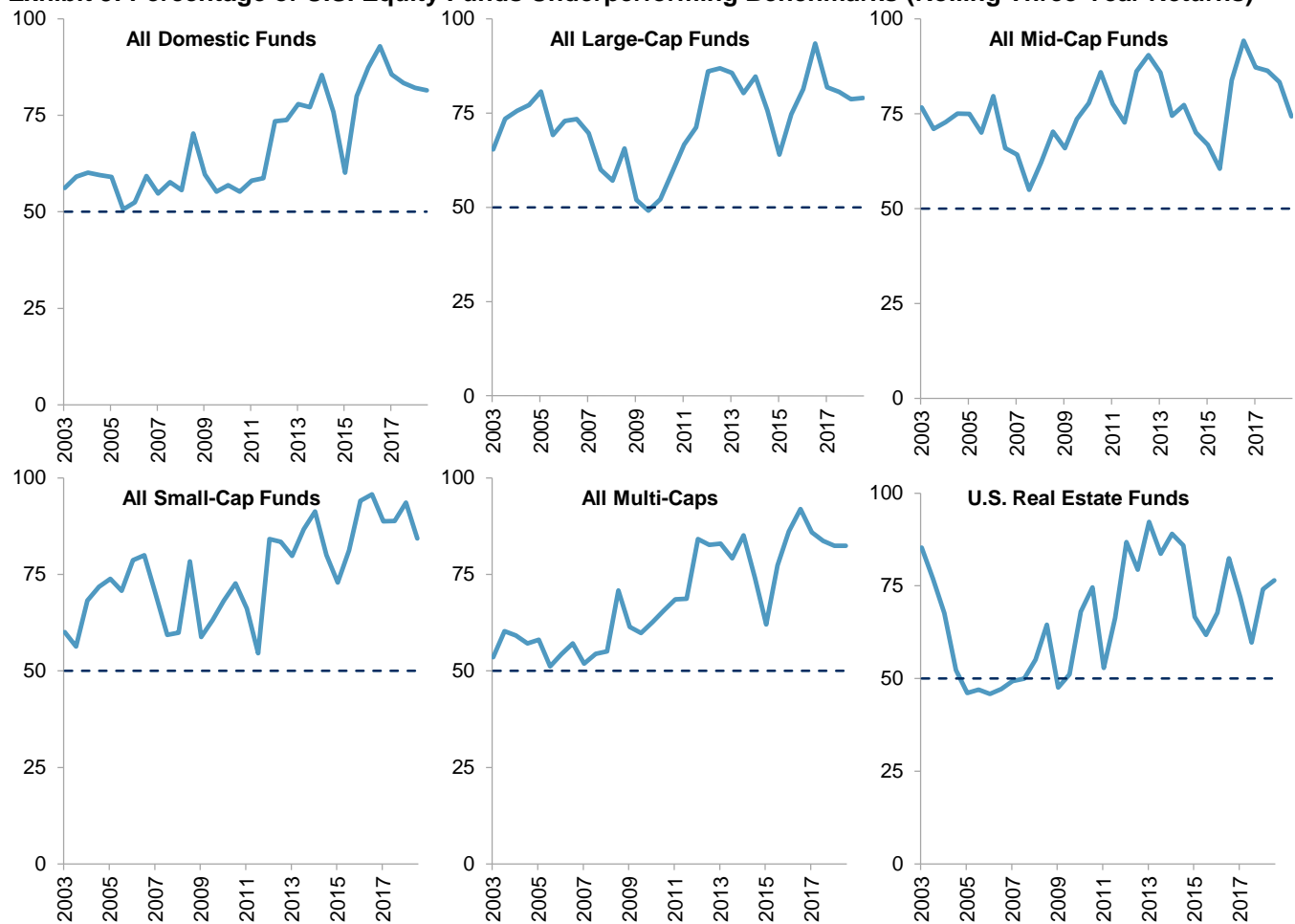
Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

**Exhibit 2c: Annual League Table (Fixed Income Funds)**

FUND CATEGORY	COMPARISON INDEX	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Government Long Funds	Barclays US Government Long	28.95	98.44	85.45	98.25	96.49	20.00	89.36	95.74	8.33	95.29	96.55	71.43	10.94	96.83	20.34	87.93	96.43	16.98
Government Intermediate Funds	Barclays US Government Intermediate	91.40	66.67	77.03	62.86	65.08	57.63	92.59	90.00	9.09	73.81	60.53	33.33	76.67	44.44	88.89	74.07	57.89	100.0
Government Short Funds	Barclays US Government (1-3 Year)	94.74	72.00	82.98	62.22	65.91	71.43	90.70	86.05	23.81	59.52	60.98	42.50	95.12	60.00	89.74	63.16	47.83	86.96
Investment-Grade Long Funds	Barclays US Government/Credit Long	38.27	99.36	68.18	95.95	99.26	9.24	84.26	95.24	7.38	78.01	99.27	62.02	7.32	98.02	12.15	75.00	96.74	9.09
Investment-Grade Intermediate Funds	Barclays US Government/Credit Intermediate	87.14	85.58	55.35	36.24	37.73	49.07	93.02	89.87	14.09	31.43	49.65	20.70	63.54	33.07	93.25	19.75	31.37	90.82
Investment-Grade Short Funds	Barclays US Government/Credit (1-3 Year)	100.0	87.27	67.21	37.50	53.42	46.91	96.34	98.84	16.67	25.00	56.58	11.11	52.56	50.00	70.87	26.61	22.22	92.55
High Yield Funds	Barclays US Corporate High Yield	74.32	41.50	83.21	80.14	54.61	83.92	44.22	39.19	90.69	75.25	80.00	72.86	68.35	74.09	34.75	94.17	80.95	75.60
Mortgage-Backed Securities Funds	Barclays US Aggregate Securitized - MBS	84.21	64.29	83.33	95.00	67.24	92.86	87.50	94.34	36.51	25.00	53.13	24.62	71.21	75.81	72.88	60.00	67.92	84.62
Global Income Funds	Barclays Global Aggregate	61.54	64.41	35.85	41.18	55.56	69.23	69.35	77.03	30.00	39.64	77.68	18.49	48.92	37.78	61.54	33.08	64.86	60.95
Emerging Markets Debt Funds	Barclays Emerging Markets	9.09	60.00	21.74	28.57	50.00	30.00	42.86	65.38	48.28	34.48	91.43	50.85	74.00	77.78	89.33	39.19	22.58	92.98
General Municipal Debt Funds	S&P National AMT-Free Municipal Bond	78.99	67.24	47.75	79.63	79.25	73.12	84.09	81.48	25.00	57.32	77.22	20.78	68.67	31.33	59.30	71.91	42.86	85.33
California Municipal Debt Funds	S&P California AMT-Free Municipal Bond	75.51	57.78	15.22	85.11	75.56	72.09	95.24	94.87	10.53	77.78	75.00	6.06	91.43	13.89	38.89	61.11	25.71	93.94
New York Municipal Debt Funds	S&P New York AMT-Free Municipal Bond	89.13	73.81	79.49	76.92	76.92	76.32	91.18	88.24	27.27	58.06	75.00	17.24	100.0	7.14	53.57	74.07	33.33	76.00
Loan Participation Funds	S&P/LSTA U.S. Leveraged Loan 100	-	-	-	-	-	-	-	-	-	55.00	14.81	77.50	36.84	56.86	13.46	81.82	52.08	56.86

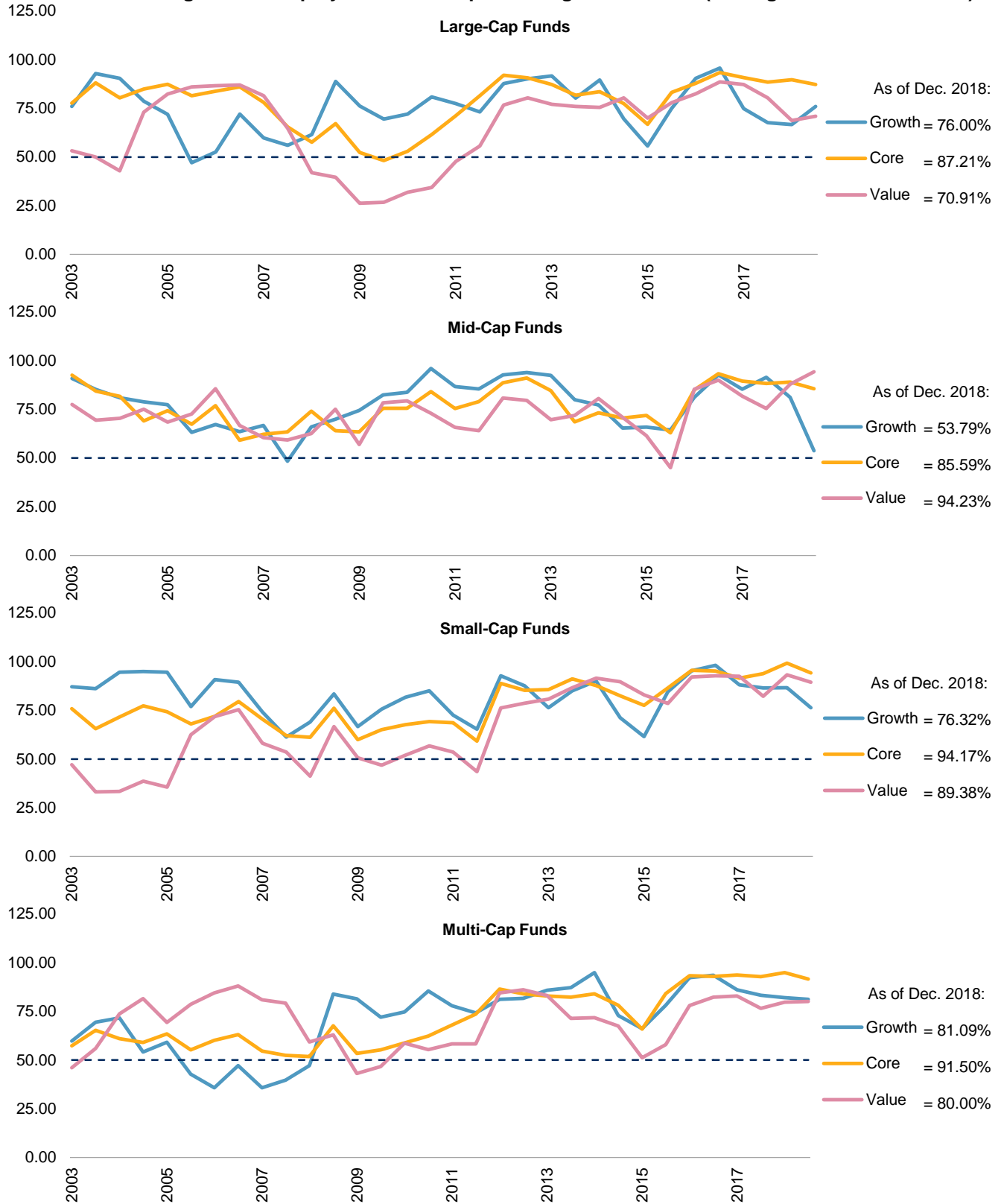
Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

**Exhibit 3: Percentage of U.S. Equity Funds Underperforming Benchmarks (Rolling Three-Year Returns)**



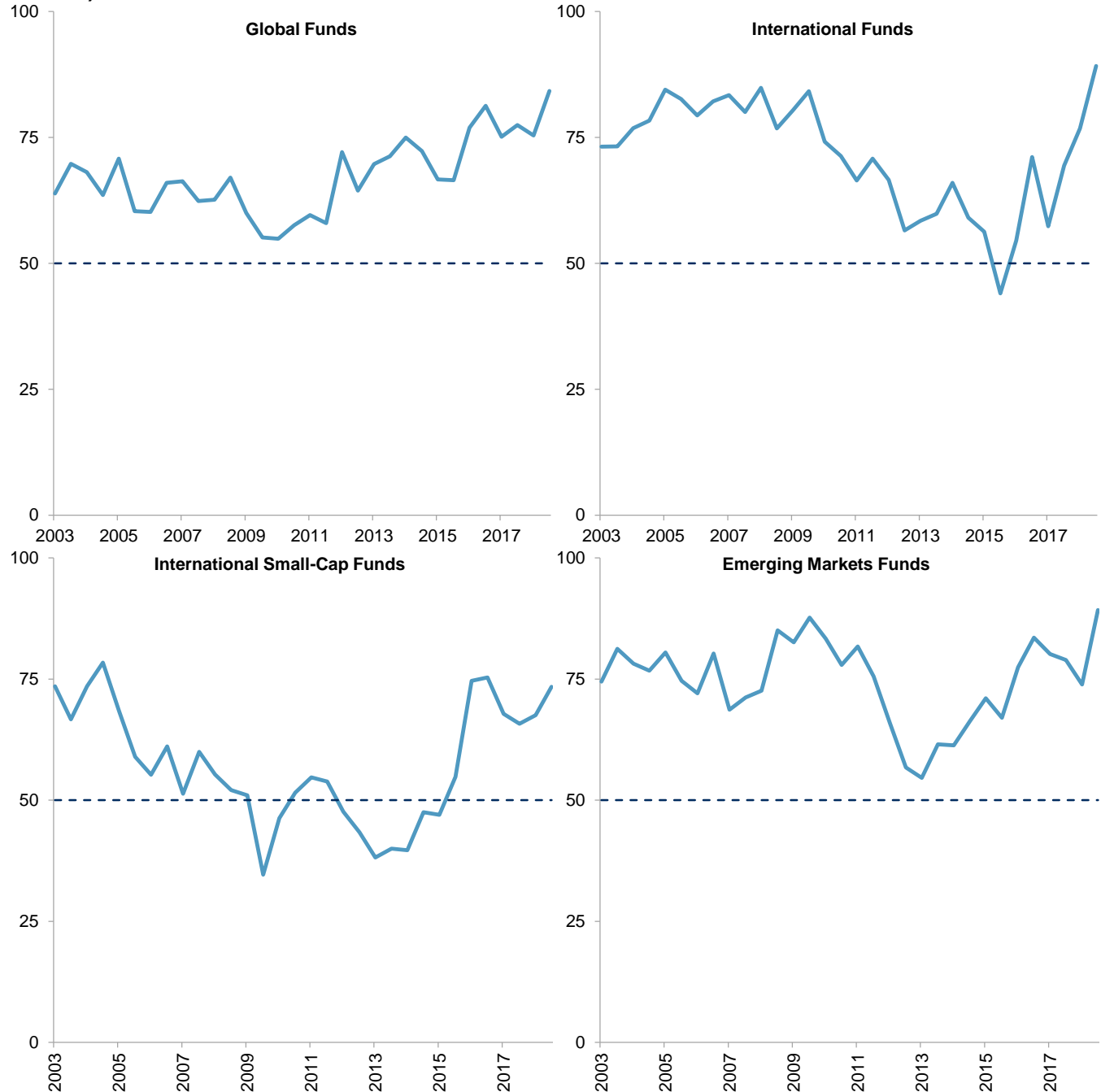
Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Charts are provided for illustrative purposes.

**Exhibit 4: Percentage of U.S. Equity Funds Underperforming Benchmarks (Rolling Three-Year Returns)**



Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Charts are provided for illustrative purposes.

**Exhibit 5: Percentage of International Equity Funds Underperforming Benchmarks (Rolling Three-Year Returns)**



Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. 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 Composite 1500	68.83	81.49	88.13	84.49	88.97
All Large-Cap Funds	S&P 500	64.49	78.98	82.14	85.14	91.62
All Mid-Cap Funds	S&P MidCap 400	45.64	74.29	79.88	88.03	92.71
All Small-Cap Funds	S&P SmallCap 600	68.45	84.35	89.40	85.67	96.73
All Multi-Cap Funds	S&P Composite 1500	66.79	82.44	88.58	86.36	90.70
Large-Cap Growth Funds	S&P 500 Growth	60.27	76.00	87.50	84.08	94.59
Large-Cap Core Funds	S&P 500	75.85	87.21	92.35	93.27	92.09
Large-Cap Value Funds	S&P 500 Value	46.27	70.91	79.08	81.71	79.33
Mid-Cap Growth Funds	S&P MidCap 400 Growth	15.20	53.79	69.38	87.40	91.45
Mid-Cap Core Funds	S&P MidCap 400	62.18	85.59	89.26	90.23	95.05
Mid-Cap Value Funds	S&P MidCap 400 Value	72.22	94.23	93.55	87.77	92.11
Small-Cap Growth Funds	S&P SmallCap 600 Growth	61.45	76.32	88.17	85.65	98.17
Small-Cap Core Funds	S&P SmallCap 600	87.55	94.17	95.13	92.97	97.44
Small-Cap Value Funds	S&P SmallCap 600 Value	83.33	89.38	94.39	87.41	93.51
Multi-Cap Growth Funds	S&P Composite 1500 Growth	65.90	81.09	88.33	87.39	90.55
Multi-Cap Core Funds	S&P Composite 1500	81.74	91.50	98.33	91.79	92.44
Multi-Cap Value Funds	S&P Composite 1500 Value	74.77	80.00	88.89	81.48	86.59
Real Estate Funds	S&P United States REIT	88.89	76.47	75.00	88.17	86.21

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Returns shown are annualized. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

<b>Report 2: Survivorship and Style Consistency of U.S. Equity Funds</b>			
<b>FUND CATEGORY</b>	<b>NO. OF FUNDS AT START</b>	<b>SURVIVORSHIP (%)</b>	<b>STYLE CONSISTENCY (%)</b>
<b>1-YEAR</b>			
All Domestic Funds	2191	95.94	96.30
All Large-Cap Funds	816	96.08	90.81
All Mid-Cap Funds	301	96.01	91.03
All Small-Cap Funds	548	95.80	94.53
All Multi-Cap Funds	526	95.82	85.17
Large-Cap Growth Funds	224	96.43	90.63
Large-Cap Core Funds	268	95.15	79.85
Large-Cap Value Funds	324	96.60	91.67
Mid-Cap Growth Funds	126	96.83	91.27
Mid-Cap Core Funds	120	95.83	81.67
Mid-Cap Value Funds	55	94.55	76.36
Small-Cap Growth Funds	181	95.58	91.16
Small-Cap Core Funds	277	95.31	89.17
Small-Cap Value Funds	90	97.78	90.00
Multi-Cap Growth Funds	174	97.13	78.74
Multi-Cap Core Funds	244	95.08	77.87
Multi-Cap Value Funds	108	95.37	84.26
Real Estate Funds	81	91.36	92.59
<b>3-YEAR</b>			
All Domestic Funds	2321	85.78	85.44
All Large-Cap Funds	893	85.33	75.48
All Mid-Cap Funds	317	85.17	72.24
All Small-Cap Funds	548	87.77	85.77
All Multi-Cap Funds	563	84.90	65.90
Large-Cap Growth Funds	250	84.80	75.20
Large-Cap Core Funds	309	84.47	62.14
Large-Cap Value Funds	334	86.53	74.55
Mid-Cap Growth Funds	146	86.99	68.49
Mid-Cap Core Funds	119	81.51	57.14
Mid-Cap Value Funds	52	88.46	65.38
Small-Cap Growth Funds	192	86.98	77.60
Small-Cap Core Funds	243	88.07	79.01
Small-Cap Value Funds	113	88.50	61.06
Multi-Cap Growth Funds	201	87.06	57.21
Multi-Cap Core Funds	251	84.46	56.97
Multi-Cap Value Funds	111	81.98	54.95
Real Estate Funds	85	84.71	85.88

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

<b>Report 2: Survivorship and Style Consistency of U.S. Equity Funds (cont.)</b>			
<b>FUND CATEGORY</b>	<b>NO. OF FUNDS AT START</b>	<b>SURVIVORSHIP (%)</b>	<b>STYLE CONSISTENCY (%)</b>
<b>5-YEAR</b>			
All Domestic Funds	2382	80.31	77.37
All Large-Cap Funds	927	79.40	66.45
All Mid-Cap Funds	346	77.46	60.98
All Small-Cap Funds	525	82.86	80.38
All Multi-Cap Funds	584	81.16	51.37
Large-Cap Growth Funds	272	76.84	63.97
Large-Cap Core Funds	345	79.42	51.01
Large-Cap Value Funds	310	81.61	66.45
Mid-Cap Growth Funds	161	75.78	61.49
Mid-Cap Core Funds	123	73.17	39.84
Mid-Cap Value Funds	62	90.32	46.77
Small-Cap Growth Funds	189	80.42	73.02
Small-Cap Core Funds	229	85.59	70.31
Small-Cap Value Funds	107	81.31	49.53
Multi-Cap Growth Funds	180	79.44	49.44
Multi-Cap Core Funds	304	83.55	39.47
Multi-Cap Value Funds	100	77.00	44.00
Real Estate Funds	80	86.25	86.25
<b>10-YEAR</b>			
All Domestic Funds	2897	57.61	53.81
All Large-Cap Funds	1010	57.13	44.55
All Mid-Cap Funds	521	55.47	36.66
All Small-Cap Funds	626	60.70	55.75
All Multi-Cap Funds	740	57.16	27.97
Large-Cap Growth Funds	333	53.15	40.24
Large-Cap Core Funds	345	56.81	32.75
Large-Cap Value Funds	332	61.45	45.78
Mid-Cap Growth Funds	247	50.61	32.39
Mid-Cap Core Funds	134	52.99	24.63
Mid-Cap Value Funds	140	66.43	22.86
Small-Cap Growth Funds	232	56.90	45.26
Small-Cap Core Funds	259	61.78	42.47
Small-Cap Value Funds	135	65.19	28.15
Multi-Cap Growth Funds	230	52.61	20.87
Multi-Cap Core Funds	346	60.40	17.92
Multi-Cap Value Funds	164	56.71	21.95
Real Estate Funds	93	78.49	62.37

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

<b>Report 2: Survivorship and Style Consistency of U.S. Equity Funds (cont.)</b>			
<b>FUND CATEGORY</b>	<b>NO. OF FUNDS AT START</b>	<b>SURVIVORSHIP (%)</b>	<b>STYLE CONSISTENCY (%)</b>
<b>15-YEAR</b>			
All Domestic Funds	1923	43.11	40.35
All Large-Cap Funds	681	37.59	28.78
All Mid-Cap Funds	329	47.11	27.05
All Small-Cap Funds	397	48.11	43.32
All Multi-Cap Funds	516	43.99	20.93
Large-Cap Growth Funds	185	28.11	20.00
Large-Cap Core Funds	316	37.03	18.04
Large-Cap Value Funds	180	48.33	35.00
Mid-Cap Growth Funds	152	36.84	22.37
Mid-Cap Core Funds	101	50.50	14.85
Mid-Cap Value Funds	76	63.16	19.74
Small-Cap Growth Funds	164	42.07	29.27
Small-Cap Core Funds	156	48.72	30.77
Small-Cap Value Funds	77	59.74	23.38
Multi-Cap Growth Funds	127	37.80	16.54
Multi-Cap Core Funds	225	43.56	13.33
Multi-Cap Value Funds	164	49.39	15.24
Real Estate Funds	58	60.34	50.00

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

<b>Report 3: Average U.S. Equity Fund Performance (Equal-Weighted)</b>						
<b>CATEGORY</b>	<b>1-YEAR (%)</b>	<b>3-YEAR (%)</b>	<b>5-YEAR (%)</b>	<b>10-YEAR (%)</b>	<b>15-YEAR (%)</b>	
S&P Composite 1500	-4.96	9.17	8.25	13.20	7.93	
All Domestic Funds	-8.26	6.67	5.14	11.53	6.50	
S&P 500	-4.38	9.26	8.49	13.12	7.77	
All Large-Cap Funds	-5.96	7.34	6.30	11.41	6.28	
S&P MidCap 400	-11.08	7.66	6.03	13.68	8.90	
All Mid-Cap Funds	-9.84	5.85	4.31	12.05	7.00	
S&P SmallCap 600	-8.48	9.46	6.34	13.61	9.19	
All Small-Cap Funds	-11.21	6.34	3.32	11.54	6.55	
S&P Composite 1500	-4.96	9.17	8.25	13.20	7.93	
All Multi-Cap Funds	-7.84	6.40	5.27	11.20	6.30	
<b>LARGE-CAP</b>						
S&P 500 Growth	-0.01	10.85	10.55	14.81	8.63	
Large-Cap Growth Funds	-1.28	9.13	8.48	13.39	7.19	
S&P 500	-4.38	9.26	8.49	13.12	7.77	
Large-Cap Core Funds	-6.47	7.18	6.28	11.20	6.03	
S&P 500 Value	-8.95	7.23	6.06	11.21	6.72	
Large-Cap Value Funds	-8.76	6.17	4.68	9.93	5.83	
<b>MID-CAP</b>						
S&P MidCap 400 Growth	-10.34	7.26	6.25	14.42	9.18	
Mid-Cap Growth Funds	-5.47	7.47	5.46	12.91	7.25	
S&P MidCap 400	-11.08	7.66	6.03	13.68	8.90	
Mid-Cap Core Funds	-11.76	4.99	3.52	11.28	6.70	
S&P MidCap 400 Value	-11.88	7.79	5.56	12.82	8.49	
Mid-Cap Value Funds	-15.24	4.08	3.09	11.31	6.90	
<b>SMALL-CAP</b>						
S&P SmallCap 600 Growth	-4.05	10.39	7.51	14.86	9.98	
Small-Cap Growth Funds	-4.87	8.63	5.02	12.96	6.90	
S&P SmallCap 600	-8.48	9.46	6.34	13.61	9.19	
Small-Cap Core Funds	-13.65	5.19	2.60	10.87	6.40	
S&P SmallCap 600 Value	-12.64	8.56	5.13	12.37	8.38	
Small-Cap Value Funds	-16.37	4.90	1.91	10.38	6.32	
<b>MULTI-CAP</b>						
S&P Composite 1500 Growth	-0.82	10.62	10.17	14.83	8.77	
Multi-Cap Growth Funds	-2.90	8.07	7.15	12.72	7.22	
S&P Composite 1500	-4.96	9.17	8.25	13.20	7.93	
Multi-Cap Core Funds	-9.00	5.86	4.58	10.66	5.90	
S&P Composite 1500 Value	-9.29	7.32	5.98	11.38	7.14	
Multi-Cap Value Funds	-12.86	5.00	3.71	9.97	5.55	
<b>REAL ESTATE</b>						
S&P United States REIT	-3.79	2.88	7.78	12.16	8.18	
Real Estate Funds	-7.14	1.48	6.65	11.07	7.10	

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Returns shown are annualized. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

<b>Report 4: Average U.S. Equity Fund Performance (Asset-Weighted)</b>						
<b>CATEGORY</b>	<b>1-YEAR (%)</b>	<b>3-YEAR (%)</b>	<b>5-YEAR (%)</b>	<b>10-YEAR (%)</b>	<b>15-YEAR (%)</b>	
S&P Composite 1500	-4.96	9.17	8.25	13.20	7.93	
All Domestic Funds	-6.02	8.09	6.68	12.37	7.20	
S&P 500	-4.38	9.26	8.49	13.12	7.77	
All Large-Cap Funds	-4.85	8.68	7.48	12.30	6.89	
S&P MidCap 400	-11.08	7.66	6.03	13.68	8.90	
All Mid-Cap Funds	-7.36	7.23	5.58	12.81	7.90	
S&P SmallCap 600	-8.48	9.46	6.34	13.61	9.19	
All Small-Cap Funds	-10.29	7.09	3.95	12.04	7.34	
S&P Composite 1500	-4.96	9.17	8.25	13.20	7.93	
All Multi-Cap Funds	-7.20	7.06	6.05	12.03	7.14	
<b>LARGE-CAP</b>						
S&P 500 Growth	-0.01	10.85	10.55	14.81	8.63	
Large-Cap Growth Funds	-1.19	10.10	9.36	14.23	7.73	
S&P 500	-4.38	9.26	8.49	13.12	7.77	
Large-Cap Core Funds	-5.51	8.61	7.40	11.93	6.44	
S&P 500 Value	-8.95	7.23	6.06	11.21	6.72	
Large-Cap Value Funds	-7.39	7.47	5.79	11.02	6.48	
<b>MID-CAP</b>						
S&P MidCap 400 Growth	-10.34	7.26	6.25	14.42	9.18	
Mid-Cap Growth Funds	-2.78	8.91	6.89	13.68	8.46	
S&P MidCap 400	-11.08	7.66	6.03	13.68	8.90	
Mid-Cap Core Funds	-11.62	5.30	4.20	12.17	7.39	
S&P MidCap 400 Value	-11.88	7.79	5.56	12.82	8.49	
Mid-Cap Value Funds	-12.32	6.18	4.17	11.81	7.39	
<b>SMALL-CAP</b>						
S&P SmallCap 600 Growth	-4.05	10.39	7.51	14.86	9.98	
Small-Cap Growth Funds	-4.79	9.28	5.83	14.03	8.04	
S&P SmallCap 600	-8.48	9.46	6.34	13.61	9.19	
Small-Cap Core Funds	-12.76	5.99	2.97	11.08	7.02	
S&P SmallCap 600 Value	-12.64	8.56	5.13	12.37	8.38	
Small-Cap Value Funds	-16.39	5.03	2.02	10.32	6.51	
<b>MULTI-CAP</b>						
S&P Composite 1500 Growth	-0.82	10.62	10.17	14.83	8.77	
Multi-Cap Growth Funds	-3.51	8.90	8.29	14.05	8.57	
S&P Composite 1500	-4.96	9.17	8.25	13.20	7.93	
Multi-Cap Core Funds	-7.60	6.59	5.19	11.43	6.68	
S&P Composite 1500 Value	-9.29	7.32	5.98	11.38	7.14	
Multi-Cap Value Funds	-14.94	4.09	3.03	9.41	5.24	
<b>REAL ESTATE</b>						
S&P United States REIT	-3.79	2.88	7.78	12.16	8.18	
Real Estate Funds	-6.00	2.09	7.19	11.31	7.52	

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Returns shown are annualized. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

<b>Report 5: Quartile Breakpoints of U.S. Equity Funds</b>			
<b>FUND CATEGORY</b>	<b>THIRD QUANTILE (%)</b>	<b>SECOND QUANTILE (%)</b>	<b>FIRST QUANTILE (%)</b>
<b>1-YEAR</b>			
All Domestic Funds	-12.17	-7.68	-3.80
All Large-Cap Funds	-8.90	-5.69	-2.11
All Mid-Cap Funds	-13.84	-10.20	-4.94
All Small-Cap Funds	-15.72	-11.77	-6.63
All Multi-Cap Funds	-11.41	-7.25	-3.66
Large-Cap Growth Funds	-3.00	-0.84	1.71
Large-Cap Core Funds	-7.89	-5.84	-4.33
Large-Cap Value Funds	-10.33	-8.60	-5.97
Mid-Cap Growth Funds	-7.38	-5.17	-2.55
Mid-Cap Core Funds	-14.75	-11.89	-9.95
Mid-Cap Value Funds	-18.22	-14.12	-11.65
Small-Cap Growth Funds	-8.30	-4.87	-0.98
Small-Cap Core Funds	-16.25	-13.07	-10.12
Small-Cap Value Funds	-19.11	-15.82	-13.04
Multi-Cap Growth Funds	-5.04	-2.64	0.14
Multi-Cap Core Funds	-11.80	-8.16	-5.79
Multi-Cap Value Funds	-14.74	-11.74	-9.13
Real Estate Funds	-7.49	-5.87	-4.53
<b>3-YEAR</b>			
All Domestic Funds	5.12	6.94	8.88
All Large-Cap Funds	5.93	7.66	9.24
All Mid-Cap Funds	4.12	6.21	8.33
All Small-Cap Funds	4.48	6.48	8.67
All Multi-Cap Funds	4.82	6.73	8.73
Large-Cap Growth Funds	8.46	9.84	11.02
Large-Cap Core Funds	6.06	7.70	8.68
Large-Cap Value Funds	5.39	6.51	7.76
Mid-Cap Growth Funds	5.87	7.37	9.14
Mid-Cap Core Funds	2.90	5.19	6.93
Mid-Cap Value Funds	3.67	4.83	5.87
Small-Cap Growth Funds	6.70	8.45	10.54
Small-Cap Core Funds	4.06	5.71	7.35
Small-Cap Value Funds	3.51	5.26	7.29
Multi-Cap Growth Funds	6.44	8.49	10.31
Multi-Cap Core Funds	4.29	6.15	7.57
Multi-Cap Value Funds	4.35	5.79	7.26
Real Estate Funds	0.63	1.87	3.02

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Returns shown are annualized. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

<b>Report 5: Quartile Breakpoints of U.S. Equity Funds (cont.)</b>			
<b>FUND CATEGORY</b>	<b>THIRD QUARTILE (%)</b>	<b>SECOND QUARTILE (%)</b>	<b>FIRST QUARTILE (%)</b>
<b>5-YEAR</b>			
All Domestic Funds	3.64	5.34	7.21
All Large-Cap Funds	4.92	6.49	8.22
All Mid-Cap Funds	3.20	4.70	6.20
All Small-Cap Funds	2.14	3.72	5.34
All Multi-Cap Funds	3.70	5.34	7.13
Large-Cap Growth Funds	7.74	9.30	10.07
Large-Cap Core Funds	5.41	6.58	7.77
Large-Cap Value Funds	4.14	4.92	6.11
Mid-Cap Growth Funds	4.86	5.68	7.04
Mid-Cap Core Funds	2.42	3.86	5.32
Mid-Cap Value Funds	2.68	3.70	4.16
Small-Cap Growth Funds	4.14	5.62	6.63
Small-Cap Core Funds	1.85	3.29	4.38
Small-Cap Value Funds	0.46	2.57	3.50
Multi-Cap Growth Funds	5.85	7.64	9.54
Multi-Cap Core Funds	3.10	4.57	6.23
Multi-Cap Value Funds	3.22	4.91	5.48
Real Estate Funds	6.02	6.92	7.94
<b>10-YEAR</b>			
All Domestic Funds	10.49	11.88	13.33
All Large-Cap Funds	10.37	11.68	13.24
All Mid-Cap Funds	11.14	12.58	13.52
All Small-Cap Funds	10.92	12.00	13.54
All Multi-Cap Funds	9.70	11.60	13.16
Large-Cap Growth Funds	12.78	13.90	15.06
Large-Cap Core Funds	10.42	11.65	12.47
Large-Cap Value Funds	9.67	10.53	11.38
Mid-Cap Growth Funds	12.61	13.29	14.42
Mid-Cap Core Funds	10.83	11.87	12.96
Mid-Cap Value Funds	10.61	11.57	12.67
Small-Cap Growth Funds	12.60	13.58	14.94
Small-Cap Core Funds	10.58	11.58	12.64
Small-Cap Value Funds	10.32	11.10	11.95
Multi-Cap Growth Funds	12.13	13.52	14.70
Multi-Cap Core Funds	9.14	10.99	12.45
Multi-Cap Value Funds	9.46	10.60	11.75
Real Estate Funds	9.49	11.11	11.94

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Returns shown are annualized. 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 QUANTILE (%)	SECOND QUANTILE (%)	FIRST QUANTILE (%)
<b>15-YEAR</b>			
All Domestic Funds	6.08	7.07	7.96
All Large-Cap Funds	6.09	6.95	7.67
All Mid-Cap Funds	6.07	7.39	8.41
All Small-Cap Funds	6.52	7.39	8.12
All Multi-Cap Funds	5.74	6.74	7.78
Large-Cap Growth Funds	6.82	7.54	8.27
Large-Cap Core Funds	6.16	6.93	7.64
Large-Cap Value Funds	5.80	6.48	7.33
Mid-Cap Growth Funds	6.83	8.20	9.10
Mid-Cap Core Funds	6.30	7.29	8.08
Mid-Cap Value Funds	5.59	6.86	7.70
Small-Cap Growth Funds	7.04	7.93	8.48
Small-Cap Core Funds	6.09	7.05	7.72
Small-Cap Value Funds	6.41	7.09	7.78
Multi-Cap Growth Funds	7.04	7.81	8.70
Multi-Cap Core Funds	5.73	6.59	7.54
Multi-Cap Value Funds	5.32	6.31	7.35
Real Estate Funds	6.23	7.22	8.15

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Returns shown are annualized. 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	70.61	84.26	84.92	81.20	83.16
International Funds	S&P 700	76.84	89.19	81.78	81.07	89.83
International Small-Cap Funds	S&P Developed Ex-U.S. SmallCap	65.52	73.42	73.68	64.15	75.86
Emerging Markets Funds	S&P/IFCI Composite	78.10	89.27	92.67	87.72	96.15

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Returns shown are annualized. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

<b>Report 7: Survivorship and Style Consistency of International Equity Funds</b>			
<b>FUND CATEGORY</b>	<b>NO. OF FUNDS AT START</b>	<b>SURVIVORSHIP (%)</b>	<b>STYLE CONSISTENCY (%)</b>
<b>1-YEAR</b>			
Global Funds	228	95.61	93.42
International Funds	357	96.36	96.08
International Small-Cap Funds	87	93.10	91.95
Emerging Markets Funds	210	97.14	98.10
<b>3-YEAR</b>			
Global Funds	235	84.26	77.02
International Funds	373	87.67	86.06
International Small-Cap Funds	79	87.34	83.54
Emerging Markets Funds	233	83.69	83.69
<b>5-YEAR</b>			
Global Funds	179	76.54	60.89
International Funds	258	78.68	75.97
International Small-Cap Funds	57	84.21	84.21
Emerging Markets Funds	191	78.01	77.49
<b>10-YEAR</b>			
Global Funds	133	57.14	42.11
International Funds	280	60.36	57.86
International Small-Cap Funds	53	71.70	62.26
Emerging Markets Funds	114	72.81	67.54
<b>15-YEAR</b>			
Global Funds	95	46.32	29.47
International Funds	236	46.61	43.64
International Small-Cap Funds	29	68.97	62.07
Emerging Markets Funds	52	67.31	63.46

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

<b>Report 8: Average International Equity Fund Performance (Equal-Weighted)</b>					
<b>CATEGORY</b>	<b>1-YEAR (%)</b>	<b>3-YEAR (%)</b>	<b>5-YEAR (%)</b>	<b>10-YEAR (%)</b>	<b>15-YEAR (%)</b>
S&P Global 1200	-8.17	7.39	5.29	10.29	6.85
Global Funds	-10.28	5.17	3.24	8.75	5.49
S&P 700	-13.21	4.82	1.29	7.01	5.74
International Funds	-15.80	2.12	-0.17	5.64	3.96
S&P Developed Ex-U.S. SmallCap	-18.41	3.88	2.78	10.00	7.51
International Small-Cap Funds	-19.26	2.29	1.03	9.37	6.60
S&P/IFCI Composite	-14.22	9.43	2.57	9.03	8.92
Emerging Markets Funds	-17.02	6.30	-0.06	6.77	6.28

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Returns shown are annualized. 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 (%)	3-YEAR (%)	5-YEAR (%)	10-YEAR (%)	15-YEAR (%)
S&P Global 1200	-8.17	7.39	5.29	10.29	6.85
Global Funds	-10.15	5.59	3.81	9.27	6.50
S&P 700	-13.21	4.82	1.29	7.01	5.74
International Funds	-16.00	2.86	0.21	6.66	5.03
S&P Developed Ex-U.S. SmallCap	-18.41	3.88	2.78	10.00	7.51
International Small-Cap Funds	-18.08	3.08	1.80	9.59	7.42
S&P/IFCI Composite	-14.22	9.43	2.57	9.03	8.92
Emerging Markets Funds	-15.87	7.18	0.89	7.94	7.42

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Returns shown are annualized. 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 (%)
<b>1-YEAR</b>			
Global Funds	-13.20	-9.67	-6.81
International Funds	-17.54	-15.43	-13.39
International Small-Cap Funds	-22.71	-19.78	-16.52
Emerging Markets Funds	-19.19	-17.14	-14.58
<b>3-YEAR</b>			
Global Funds	4.03	5.55	6.85
International Funds	0.93	2.29	3.73
International Small-Cap Funds	0.87	2.81	4.57
Emerging Markets Funds	5.06	6.84	8.29
<b>5-YEAR</b>			
Global Funds	1.84	3.50	4.89
International Funds	-0.95	0.02	1.12
International Small-Cap Funds	0.29	1.64	3.21
Emerging Markets Funds	-0.51	0.51	1.45
<b>10-YEAR</b>			
Global Funds	7.81	9.27	10.60
International Funds	5.03	6.00	7.31
International Small-Cap Funds	8.00	9.89	11.63
Emerging Markets Funds	6.75	7.61	8.46
<b>15-YEAR</b>			
Global Funds	4.95	5.76	7.15
International Funds	3.60	4.69	5.42
International Small-Cap Funds	5.79	6.27	8.14
Emerging Markets Funds	5.97	6.83	7.72

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2018. Returns shown are annualized. 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	16.98	100.00	96.61	94.94	98.04
Government Intermediate Funds	Barclays US Government Intermediate	100.00	100.00	81.82	80.56	91.67
Government Short Funds	Barclays US Government (1-3 Year)	86.96	81.48	79.31	67.65	82.86
Investment-Grade Long Funds	Barclays US Government/Credit Long	9.09	93.48	98.91	80.31	98.41
Investment-Grade Intermediate Funds	Barclays US Government/Credit Intermediate	90.82	40.00	51.63	49.38	76.63
Investment-Grade Short Funds	Barclays US Government/Credit (1-3 Year)	92.55	45.45	54.84	43.75	70.21
High Yield Funds	Barclays US Corporate High Yield	75.60	96.63	96.52	96.63	99.15
Mortgage-Backed Securities Funds	Barclays US Aggregate Securitized - MBS	84.62	74.07	84.48	64.81	95.83
Global Income Funds	Barclays Global Aggregate	60.95	59.09	57.66	47.22	62.86
Emerging Markets Debt Funds	Barclays Emerging Markets	92.98	68.97	98.00	90.91	85.71
General Municipal Debt Funds	S&P National AMT-Free Municipal Bond	85.33	67.07	46.25	44.59	84.11
California Municipal Debt Funds	S&P California AMT-Free Municipal Bond	93.94	47.22	27.78	36.84	86.96
New York Municipal Debt Funds	S&P New York AMT-Free Municipal Bond	76.00	62.96	35.71	54.55	86.84
Loan Participation Funds	S&P/LSTA U.S. Leveraged Loan 100	56.86	72.92	51.06	80.95	-

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of Dec. 31, 2018. Returns shown are annualized. 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 (%)
<b>1-YEAR</b>			
Government Long Funds	53	94.34	94.34
Government Intermediate Funds	17	100.00	94.12
Government Short Funds	23	100.00	95.65
Investment-Grade Long Funds	91	98.90	94.51
Investment-Grade Intermediate Funds	199	95.48	96.98
Investment-Grade Short Funds	94	97.87	97.87
High-Yield Funds	210	93.81	93.81
Mortgage-Backed Securities Funds	52	90.38	94.23
Global Income Funds	105	95.24	94.29
Emerging Markets Debt Funds	57	89.47	89.47
General Municipal Debt Funds	75	94.67	93.33
California Municipal Debt Funds	33	100.00	100.00
New York Municipal Debt Funds	25	100.00	100.00
Loan Participation Funds	51	98.04	100.00

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

<b>Report 12: Survivorship and Style Consistency of Fixed Income Funds (cont.)</b>			
<b>FUND CATEGORY</b>	<b>NO. OF FUNDS AT START</b>	<b>SURVIVORSHIP (%)</b>	<b>STYLE CONSISTENCY (%)</b>
<b>3-YEAR</b>			
Government Long Funds	56	85.71	87.50
Government Intermediate Funds	22	77.27	72.73
Government Short Funds	27	88.89	81.48
Investment-Grade Long Funds	97	90.72	80.41
Investment-Grade Intermediate Funds	193	89.64	88.08
Investment-Grade Short Funds	88	93.18	90.91
High-Yield Funds	210	89.05	89.05
Mortgage-Backed Securities Funds	54	88.89	88.89
Global Income Funds	112	83.93	80.36
Emerging Markets Debt Funds	58	75.86	75.86
General Municipal Debt Funds	82	90.24	85.37
California Municipal Debt Funds	36	94.44	91.67
New York Municipal Debt Funds	27	96.30	92.59
Loan Participation Funds	48	93.75	91.67
<b>5-YEAR</b>			
Government Long Funds	59	77.97	77.97
Government Intermediate Funds	22	72.73	68.18
Government Short Funds	29	75.86	68.97
Investment-Grade Long Funds	97	93.81	79.38
Investment-Grade Intermediate Funds	218	83.94	70.64
Investment-Grade Short Funds	63	85.71	79.37
High-Yield Funds	203	82.76	81.28
Mortgage-Backed Securities Funds	58	82.76	72.41
Global Income Funds	113	77.88	70.80
Emerging Markets Debt Funds	50	74.00	70.00
General Municipal Debt Funds	80	90.00	80.00
California Municipal Debt Funds	36	94.44	91.67
New York Municipal Debt Funds	28	92.86	89.29
Loan Participation Funds	47	95.74	91.49

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

<b>Report 12: Survivorship and Style Consistency of Fixed Income Funds (cont.)</b>			
<b>FUND CATEGORY</b>	<b>NO. OF FUNDS AT START</b>	<b>SURVIVORSHIP (%)</b>	<b>STYLE CONSISTENCY (%)</b>
<b>10-YEAR</b>			
Government Long Funds	79	64.56	50.63
Government Intermediate Funds	36	55.56	38.89
Government Short Funds	34	58.82	44.12
Investment-Grade Long Funds	131	75.57	47.33
Investment-Grade Intermediate Funds	245	64.08	42.04
Investment-Grade Short Funds	65	63.08	55.38
High-Yield Funds	180	71.67	68.33
Mortgage-Backed Securities Funds	54	68.52	62.96
Global Income Funds	73	76.71	64.38
Emerging Markets Debt Funds	22	77.27	68.18
General Municipal Debt Funds	74	72.97	68.92
California Municipal Debt Funds	38	76.32	76.32
New York Municipal Debt Funds	33	69.70	66.67
Loan Participation Funds	21	85.71	80.95
<b>15-YEAR</b>			
Government Long Funds	51	43.14	33.33
Government Intermediate Funds	60	35.00	23.33
Government Short Funds	35	42.86	34.29
Investment-Grade Long Funds	126	42.06	20.63
Investment-Grade Intermediate Funds	184	43.48	32.61
Investment-Grade Short Funds	47	53.19	51.06
High-Yield Funds	117	54.70	51.28
Mortgage-Backed Securities Funds	48	47.92	43.75
Global Income Funds	36	66.67	58.33
Emerging Markets Debt Funds	14	64.29	64.29
General Municipal Debt Funds	107	46.73	42.99
California Municipal Debt Funds	46	60.87	58.70
New York Municipal Debt Funds	38	60.53	55.26
Loan Participation Funds	51	43.14	33.33

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of Dec. 31, 2018. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

<b>Report 13: Average Fixed Income Fund Performance (Equal-Weighted)</b>					
<b>CATEGORY</b>	<b>1-YEAR (%)</b>	<b>3-YEAR (%)</b>	<b>5-YEAR (%)</b>	<b>10-YEAR (%)</b>	<b>15-YEAR (%)</b>
Barclays US Government Long	-1.79	2.63	5.90	4.15	5.93
Government Long Funds	-0.29	0.90	1.64	2.38	2.85
Barclays US Government Intermediate	1.43	1.21	1.46	1.83	2.97
Government Intermediate Funds	0.18	0.56	0.97	1.59	2.22
Barclays US Government (1-3 Year)	1.58	0.96	0.82	1.03	2.05
Government Short Funds	0.92	0.69	0.52	0.92	1.53
Barclays US Government/Credit Long	-4.68	4.03	5.37	5.88	6.02
Investment-Grade Long Funds	-2.56	2.53	2.52	4.95	3.73
Barclays US Government/Credit Intermediate	0.88	1.70	1.86	2.90	3.34
Investment-Grade Intermediate Funds	-0.73	1.67	1.74	3.62	2.91
Barclays US Government/Credit (1-3 Year)	1.60	1.24	1.03	1.52	2.28
Investment-Grade Short Funds	0.66	1.34	0.91	2.12	1.64
Barclays US Corporate High Yield	-2.08	7.23	3.83	11.12	7.00
High Yield Funds	-3.47	5.08	2.36	8.68	5.05
Barclays US Aggregate Securitized - MBS	0.99	1.71	2.53	3.11	3.91
Mortgage-Backed Securities Funds	0.15	1.26	1.94	3.12	3.11
Barclays Global Aggregate	-1.20	2.70	1.08	2.49	3.32
Global Income Funds	-2.31	2.55	0.92	3.13	3.18
Barclays Emerging Markets	-2.46	5.05	4.23	8.47	7.08
Emerging Markets Debt Funds	-6.76	4.34	2.02	6.15	5.20
S&P National AMT-Free Municipal Bond	1.01	2.13	3.68	4.62	4.00
General Municipal Debt Funds	0.27	1.79	3.57	4.90	3.40
S&P California AMT-Free Municipal Bond	0.96	2.01	3.91	5.03	4.36
California Municipal Debt Funds	0.13	1.85	4.11	5.63	3.72
S&P New York AMT-Free Municipal Bond	0.67	1.88	3.57	4.64	4.00
New York Municipal Debt Funds	0.62	1.81	3.72	4.84	3.39
S&P/LSTA U.S. Leveraged Loan 100	-0.59	4.43	2.26	8.11	-
Loan Participation Funds	-0.81	3.78	2.05	7.06	-

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of Dec. 31, 2018. Returns shown are annualized. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

<b>Report 14: Average Fixed Income Fund Performance (Asset-Weighted)</b>					
<b>CATEGORY</b>	<b>1-YEAR (%)</b>	<b>3-YEAR (%)</b>	<b>5-YEAR (%)</b>	<b>10-YEAR (%)</b>	<b>15-YEAR (%)</b>
Barclays US Government Long	-1.79	2.63	5.90	4.15	5.93
Government Long Funds	-0.20	1.13	2.01	2.84	3.36
Barclays US Government Intermediate	1.43	1.21	1.46	1.83	2.97
Government Intermediate Funds	0.53	0.91	1.29	2.28	2.83
Barclays US Government (1-3 Year)	1.58	0.96	0.82	1.03	2.05
Government Short Funds	1.12	0.93	0.85	1.28	2.01
Barclays US Government/Credit Long	-4.68	4.03	5.37	5.88	6.02
Investment-Grade Long Funds	-3.09	2.78	3.05	5.33	4.01
Barclays US Government/Credit Intermediate	0.88	1.70	1.86	2.90	3.34
Investment-Grade Intermediate Funds	-0.58	2.29	2.30	4.34	3.69
Barclays US Government/Credit (1-3 Year)	1.60	1.24	1.03	1.52	2.28
Investment-Grade Short Funds	0.72	1.68	1.37	2.93	2.52
Barclays US Corporate High Yield	-2.08	7.23	3.83	11.12	7.00
High Yield Funds	-3.52	5.43	2.77	9.27	5.51
Barclays US Aggregate Securitized - MBS	0.99	1.71	2.53	3.11	3.91
Mortgage-Backed Securities Funds	0.61	1.52	2.33	3.40	3.75
Barclays Global Aggregate	-1.20	2.70	1.08	2.49	3.32
Global Income Funds	-0.24	2.84	1.11	3.82	4.21
Barclays Emerging Markets	-2.46	5.05	4.23	8.47	7.08
Emerging Markets Debt Funds	-7.26	5.08	3.34	7.47	6.26
S&P National AMT-Free Municipal Bond	1.01	2.13	3.68	4.62	4.00
General Municipal Debt Funds	0.58	2.22	4.12	5.56	3.90
S&P California AMT-Free Municipal Bond	0.96	2.01	3.91	5.03	4.36
California Municipal Debt Funds	0.41	2.25	4.55	5.94	4.17
S&P New York AMT-Free Municipal Bond	0.67	1.88	3.57	4.64	4.00
New York Municipal Debt Funds	2.13	2.75	4.39	5.84	3.79
S&P/LSTA U.S. Leveraged Loan 100	-0.59	4.43	2.26	8.11	-
Loan Participation Funds	-0.68	4.31	2.29	7.08	-

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of Dec. 31, 2018. Returns shown are annualized. Past performance is no guarantee of future results. Table is provided for illustrative purposes.



<b>Report 15: Quartile Breakpoints of Fixed Income Funds</b>			
<b>FUND CATEGORY</b>	<b>THIRD QUARTILE</b>	<b>SECOND QUARTILE</b>	<b>FIRST QUARTILE</b>
<b>1-YEAR</b>			
Government Long Funds	-0.13	0.25	0.59
Government Intermediate Funds	0.17	0.32	0.68
Government Short Funds	0.80	0.98	1.21
Investment-Grade Long Funds	-3.35	-2.09	-0.99
Investment-Grade Intermediate Funds	-1.11	-0.62	0.11
Investment-Grade Short Funds	0.62	0.95	1.14
High-Yield Funds	-3.88	-3.21	-1.98
Mortgage-Backed Securities Funds	0.08	0.42	0.77
Global Income Funds	-4.17	-1.75	-0.18
Emerging Markets Debt Funds	-7.51	-6.29	-4.91
General Municipal Debt Funds	0.11	0.37	0.71
California Municipal Debt Funds	0.02	0.26	0.46
New York Municipal Debt Funds	-0.09	0.15	0.53
Loan Participation Funds	-1.19	-0.65	-0.33
<b>3-YEAR</b>			
Government Long Funds	0.92	1.17	1.29
Government Intermediate Funds	0.60	0.73	1.02
Government Short Funds	0.54	0.80	0.93
Investment-Grade Long Funds	2.06	2.69	3.24
Investment-Grade Intermediate Funds	1.55	1.93	2.32
Investment-Grade Short Funds	1.06	1.35	1.75
High-Yield Funds	4.54	5.32	6.13
Mortgage-Backed Securities Funds	1.03	1.33	1.85
Global Income Funds	1.86	2.68	3.76
Emerging Markets Debt Funds	3.78	4.71	5.85
General Municipal Debt Funds	1.65	1.93	2.36
California Municipal Debt Funds	1.67	2.03	2.44
New York Municipal Debt Funds	1.64	1.83	2.02
Loan Participation Funds	3.14	3.94	4.48

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of Dec. 31, 2018. Returns shown are annualized. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

<b>Report 15: Quartile Breakpoints of Fixed Income Funds (cont.)</b>			
<b>FUND CATEGORY</b>	<b>THIRD QUARTILE</b>	<b>SECOND QUARTILE</b>	<b>FIRST QUARTILE</b>
<b>5-YEAR</b>			
Government Long Funds	1.37	1.65	2.01
Government Intermediate Funds	0.82	1.00	1.51
Government Short Funds	0.40	0.66	0.83
Investment-Grade Long Funds	2.14	2.64	3.00
Investment-Grade Intermediate Funds	1.41	1.97	2.41
Investment-Grade Short Funds	0.75	1.05	1.26
High-Yield Funds	2.27	2.81	3.24
Mortgage-Backed Securities Funds	1.74	2.08	2.45
Global Income Funds	0.57	1.18	2.00
Emerging Markets Debt Funds	1.12	2.76	3.20
General Municipal Debt Funds	3.17	3.82	4.34
California Municipal Debt Funds	3.94	4.25	4.78
New York Municipal Debt Funds	3.47	3.81	4.13
Loan Participation Funds	1.99	2.27	2.60
<b>10-YEAR</b>			
Government Long Funds	2.11	2.39	3.49
Government Intermediate Funds	1.19	1.66	2.21
Government Short Funds	0.79	1.16	1.48
Investment-Grade Long Funds	3.89	4.71	6.09
Investment-Grade Intermediate Funds	3.05	4.16	4.87
Investment-Grade Short Funds	2.00	2.55	2.90
High-Yield Funds	8.59	9.19	9.87
Mortgage-Backed Securities Funds	2.67	3.14	3.67
Global Income Funds	1.85	3.22	4.57
Emerging Markets Debt Funds	3.54	7.18	7.69
General Municipal Debt Funds	4.63	5.17	5.85
California Municipal Debt Funds	5.16	5.73	6.21
New York Municipal Debt Funds	4.44	4.95	5.66
Loan Participation Funds	6.62	6.77	7.91

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of Dec. 31, 2018. Returns shown are annualized. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

<b>Report 15: Quartile Breakpoints of Fixed Income Funds (cont.)</b>			
<b>FUND CATEGORY</b>	<b>THIRD QUARTILE</b>	<b>SECOND QUARTILE</b>	<b>FIRST QUARTILE</b>
<b>15-YEAR</b>			
Government Long Funds	2.86	3.11	4.12
Government Intermediate Funds	2.26	2.57	2.96
Government Short Funds	1.68	1.92	2.12
Investment-Grade Long Funds	3.26	3.76	4.40
Investment-Grade Intermediate Funds	2.89	3.39	3.94
Investment-Grade Short Funds	1.82	2.33	2.58
High-Yield Funds	5.31	5.59	5.96
Mortgage-Backed Securities Funds	3.04	3.36	3.72
Global Income Funds	2.70	3.53	4.30
Emerging Markets Debt Funds	6.28	6.75	6.97
General Municipal Debt Funds	3.50	3.81	4.05
California Municipal Debt Funds	3.89	4.10	4.24
New York Municipal Debt Funds	3.53	3.72	3.93
Loan Participation Funds	-	-	-

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of Dec. 31, 2018. Returns shown are annualized. 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 2 maps the SPIVA U.S. Equity fund categories to Lipper classifications.

**Exhibit A1: 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 A2: 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).

<b>Exhibit A3: Fixed Income Category Mappings</b>	
<b>SPIVA CATEGORY</b>	<b>LIPPER FUND CLASSIFICATION</b>
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
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
Loan Participation Funds	Loan Participation 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  $p^{\text{th}}$  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 75<sup>th</sup> percentile, the value separating the elements of a population into the lower 75% and the upper 25%. The second quartile is the 50<sup>th</sup> percentile and the third quartile is the 25<sup>th</sup> 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.

## INDICES<sup>1</sup>

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 INDICES

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 INDICES

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 INDICES

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

<sup>1</sup> For more information on S&P Dow Jones Indices, please visit [www.spindices.com](http://www.spindices.com).



## S&P COMPOSITE 1500 GROWTH AND VALUE INDICES

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

### S&P UNITED STATES REIT

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 DEVELOPED EX-U.S. SMALLCAP

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 Income<sup>2</sup>

### 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.

<sup>2</sup> Barclays Capital Fixed Income Indices were formerly the Lehman Brothers Indices.

**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.

**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 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.

### 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.

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