

## SPIVA<sup>®</sup> U.S. Scorecard

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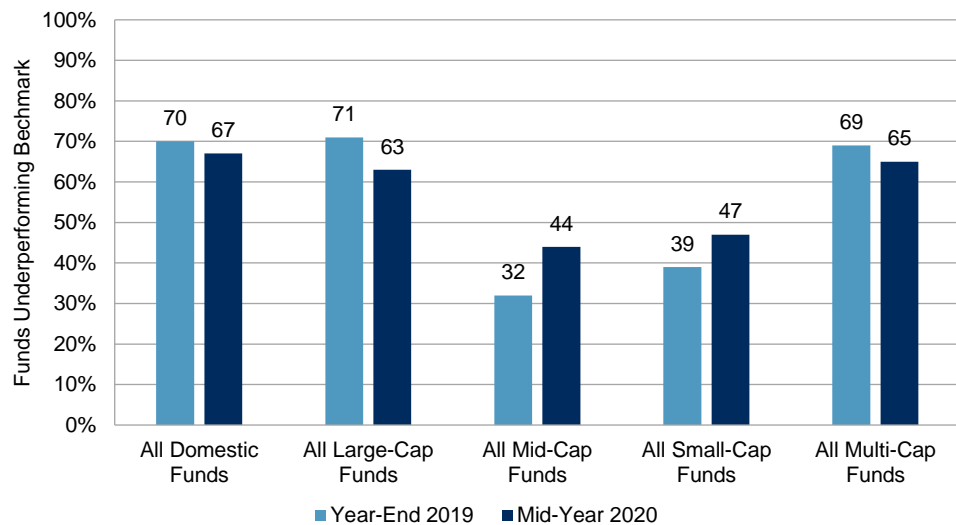
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### SUMMARY

Drastic volatility hit the U.S. stock market in the first half of 2020. The [S&P 500<sup>®</sup>](#) declined by 3.1%, with negative returns also posted by the [S&P MidCap 400<sup>®</sup>](#) (-12.8%) and the [S&P SmallCap 600<sup>®</sup>](#) (-17.9%). The S&P 500 reached an all-time high on Feb. 19, 2020, followed by a rapid 33.8% drop through March 23, 2020, as pandemic-driven restrictions suppressed economic activity. In April, stocks rebounded and the S&P 500 posted its best monthly return since January 1987. Encouraged by government stimulus programs and the expectation of economic reopening, the stock market continued its recovery in May and June.

In 11 out of the 18 categories of domestic equity funds, the majority of funds continued to underperform their benchmarks. **For example, 67% of domestic equity funds lagged the [S&P Composite 1500<sup>®</sup>](#) during the one-year period ending June 30, 2020.** Additionally, the majority of large-cap (63%) and multi-cap (65%) funds lagged their benchmarks. In contrast, mid-cap and small-cap active funds performed relatively better. Approximately 56% of mid-cap and 53% of small-cap active managers outperformed their benchmarks for the one-year period (see Exhibit 1).

### Exhibit 1: Domestic Equity Funds Underperforming Benchmarks in Trailing One-Year Period



Source: S&P Dow Jones Indices LLC. Data as of June 30, 2020. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Growth funds led across all capitalization segments in the one-year period; 74% of large-cap growth, 83% of mid-cap growth, and 89% of small-cap growth funds beat their benchmarks. However, their recent success was not enough to offset previous underperformance; 92% of large-cap growth, 74% of mid-cap growth, and 75% of small-cap growth funds underperformed over the past 15 years.

Value funds continued to lag their benchmarks over all time horizons; 73% of large-cap value, 59% of small-cap value, and 91% of multi-cap value funds underperformed their benchmarks over the past year. Mid-cap value funds were the only exception, with 62% outperforming the [S&P MidCap 400 Value](#) for the one-year period. For all investment horizons longer than three years, however, more than two-thirds of value funds across all capitalization segments underperformed their benchmarks.

**Despite divergent results over the one-year horizon, both growth and value funds underperformed their benchmarks over the past decade. Large-cap (growth 82%, value 86%), mid-cap (60%, 81%), and small-cap (57%, 90%) all delivered painful results.**

The pandemic also has a negative impact on global equities. The [S&P International 700](#), a barometer for international equities, lost 10.4% in the first six months of 2020. At least one-half of global funds, international funds, and international small-cap funds lagged their benchmarks for the one-year period. Emerging market funds had a better go of it, with 52% beating the [S&P/IFCI Composite](#), but it did not carry its success over to any longer time period (see Report 6).

**Fixed income results were not much different. In 13 out of the 14 fixed income categories, the majority of funds failed to keep up with their benchmarks (see Report 11).**

Government funds struggled across tenors, with 92%, 63%, and 68% underperforming in the long, intermediate, and short-term buckets, respectively, over the past year. Government bond funds in general had a miserable decade, as an incredible 99% of long bond funds failed to clear the bar over the past 10 years, along with 82% and 75% of intermediate and short bond funds, respectively.

Investment-grade funds had split results. While the vast majority of long funds (98%) and short funds (90%) underperformed, one-half of intermediate funds managed to outperform over the one-year period. High-yield funds had little reason to celebrate, with 68% falling short. These results matched their longer-term track records: more than 97% of high yield and investment-grade long funds fell short of their benchmark over the decade, but roughly one-half of the investment-grade intermediate and short funds did outperform.

SPIVA's accounting for survivorship bias continues to be a valuable cautionary tale. Fund liquidation numbers across segments regularly reached into the 60% range over a 15-year horizon.

## 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 a few strong believers on both sides, with the vast majority of market participants unsure of which is the better way to invest. Since its first publication in 2002, the SPIVA Scorecard has served as the de facto scorekeeper of the active-versus-passive debate. When headline numbers have deviated from their beliefs, we have heard passionate arguments from both camps.

Often far more fascinating but less seen than 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. 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, it excludes index funds, leveraged and inverse funds, and other index-linked products.

## 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	67.40	70.59	80.09	84.49	87.23
All Large-Cap Funds	S&P 500	63.17	71.24	77.97	82.06	86.92
All Mid-Cap Funds	S&P MidCap 400	43.69	49.66	59.34	74.51	81.37
All Small-Cap Funds	S&P SmallCap 600	46.79	56.70	66.67	75.27	81.47
All Multi-Cap Funds	S&P Composite 1500	65.02	65.61	78.02	85.88	89.38
Large-Cap Growth Funds	S&P 500 Growth	25.66	48.32	61.48	82.13	92.35
Large-Cap Core Funds	S&P 500	70.70	84.42	93.07	94.71	90.63
Large-Cap Value Funds	S&P 500 Value	72.98	75.62	81.03	86.22	79.02
Mid-Cap Growth Funds	S&P MidCap 400 Growth	16.79	20.77	35.00	59.89	73.86
Mid-Cap Core Funds	S&P MidCap 400	61.62	64.60	79.82	87.58	92.66
Mid-Cap Value Funds	S&P MidCap 400 Value	38.10	67.92	74.14	80.82	82.50
Small-Cap Growth Funds	S&P SmallCap 600 Growth	11.23	20.67	40.31	57.35	74.86
Small-Cap Core Funds	S&P SmallCap 600	61.11	69.96	82.01	90.16	86.63
Small-Cap Value Funds	S&P SmallCap 600 Value	59.34	79.00	80.34	89.81	85.71
Multi-Cap Growth Funds	S&P Composite 1500 Growth	57.74	62.57	75.00	83.98	90.41
Multi-Cap Core Funds	S&P Composite 1500	77.06	83.88	93.82	91.32	89.33
Multi-Cap Value Funds	S&P Composite 1500 Value	90.83	89.72	89.81	88.41	86.79
Real Estate Funds	S&P United States REIT	21.52	35.37	46.43	71.43	80.82

Source: S&P Dow Jones Indices LLC. Data as of June 30, 2020. 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	2092	94.46	88.34
All Large-Cap Funds	763	95.41	88.47
All Mid-Cap Funds	293	95.90	88.40
All Small-Cap Funds	530	92.26	90.75
All Multi-Cap Funds	506	94.47	85.57
Large-Cap Growth Funds	226	96.46	90.27
Large-Cap Core Funds	215	96.28	88.37
Large-Cap Value Funds	322	94.10	87.27
Mid-Cap Growth Funds	131	96.18	93.13
Mid-Cap Core Funds	99	94.95	88.89
Mid-Cap Value Funds	63	96.83	77.78
Small-Cap Growth Funds	187	93.58	94.65
Small-Cap Core Funds	252	92.86	92.46
Small-Cap Value Funds	91	87.91	78.02
Multi-Cap Growth Funds	168	94.64	87.50
Multi-Cap Core Funds	218	95.87	79.82
Multi-Cap Value Funds	120	91.67	93.33
Real Estate Funds	79	96.20	98.73
<b>3-YEAR</b>			
All Domestic Funds	2220	85.95	75.05
All Large-Cap Funds	838	86.63	77.68
All Mid-Cap Funds	296	84.46	73.99
All Small-Cap Funds	552	85.14	81.88
All Multi-Cap Funds	535	86.54	64.49
Large-Cap Growth Funds	238	88.66	83.19
Large-Cap Core Funds	276	87.32	66.67
Large-Cap Value Funds	324	84.57	83.02
Mid-Cap Growth Funds	130	85.38	80.00
Mid-Cap Core Funds	113	84.07	71.68
Mid-Cap Value Funds	53	83.02	64.15
Small-Cap Growth Funds	179	86.59	89.94
Small-Cap Core Funds	273	84.25	83.15
Small-Cap Value Funds	100	85.00	64.00
Multi-Cap Growth Funds	187	89.30	63.64
Multi-Cap Core Funds	242	85.12	61.57
Multi-Cap Value Funds	107	85.05	71.96
Real Estate Funds	82	86.59	97.56

Source: S&P Dow Jones Indices LLC. Data as of June 30, 2020. 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	2346	76.77	66.97
All Large-Cap Funds	908	76.98	72.69
All Mid-Cap Funds	332	74.70	59.04
All Small-Cap Funds	552	78.08	75.18
All Multi-Cap Funds	555	76.40	54.23
Large-Cap Growth Funds	257	79.38	81.32
Large-Cap Core Funds	303	77.56	63.04
Large-Cap Value Funds	348	74.71	74.71
Mid-Cap Growth Funds	160	75.63	65.63
Mid-Cap Core Funds	114	71.93	54.39
Mid-Cap Value Funds	58	77.59	50.00
Small-Cap Growth Funds	196	76.53	84.18
Small-Cap Core Funds	239	78.66	77.41
Small-Cap Value Funds	117	79.49	55.56
Multi-Cap Growth Funds	188	80.85	54.26
Multi-Cap Core Funds	259	75.68	51.74
Multi-Cap Value Funds	108	70.37	60.19
Real Estate Funds	84	80.95	96.43
<b>10-YEAR</b>			
All Domestic Funds	2612	62.17	47.21
All Large-Cap Funds	942	62.00	58.60
All Mid-Cap Funds	408	59.56	38.48
All Small-Cap Funds	562	66.55	56.23
All Multi-Cap Funds	701	60.34	29.81
Large-Cap Growth Funds	319	59.87	62.38
Large-Cap Core Funds	340	61.76	55.00
Large-Cap Value Funds	283	64.66	58.66
Mid-Cap Growth Funds	182	53.85	54.40
Mid-Cap Core Funds	153	60.13	28.10
Mid-Cap Value Funds	73	72.60	20.55
Small-Cap Growth Funds	211	62.09	71.09
Small-Cap Core Funds	244	67.62	54.10
Small-Cap Value Funds	108	73.15	31.48
Multi-Cap Growth Funds	206	58.25	34.95
Multi-Cap Core Funds	357	63.03	28.29
Multi-Cap Value Funds	138	56.52	26.09
Real Estate Funds	91	82.42	75.82

Source: S&P Dow Jones Indices LLC. Data as of June 30, 2020. 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	2145	45.45	49.88
All Large-Cap Funds	688	42.88	61.63
All Mid-Cap Funds	365	46.85	41.64
All Small-Cap Funds	464	48.06	59.05
All Multi-Cap Funds	631	45.64	35.02
Large-Cap Growth Funds	196	37.24	66.84
Large-Cap Core Funds	288	39.24	59.72
Large-Cap Value Funds	205	53.66	59.51
Mid-Cap Growth Funds	176	40.91	55.68
Mid-Cap Core Funds	109	44.04	38.53
Mid-Cap Value Funds	80	63.75	15.00
Small-Cap Growth Funds	179	40.22	75.98
Small-Cap Core Funds	202	49.50	54.46
Small-Cap Value Funds	84	61.90	33.33
Multi-Cap Growth Funds	146	36.30	41.10
Multi-Cap Core Funds	328	48.17	34.15
Multi-Cap Value Funds	159	49.06	31.45
Real Estate Funds	73	61.64	73.97

Source: S&P Dow Jones Indices LLC. Data as of June 30, 2020. 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	6.08	9.91	10.20	13.75	8.79
All Domestic Funds	0.50	6.30	6.55	10.80	6.90
S&P 500	7.51	10.73	10.73	13.99	8.83
All Large-Cap Funds	4.37	8.22	7.92	11.49	7.32
S&P MidCap 400	-6.70	2.39	5.22	11.34	8.21
All Mid-Cap Funds	-1.15	5.75	5.91	10.66	7.19
S&P SmallCap 600	-11.29	0.56	4.48	11.24	7.65
All Small-Cap Funds	-6.49	2.40	3.92	9.85	6.38
S&P Composite 1500	6.08	9.91	10.20	13.75	8.79
All Multi-Cap Funds	2.92	7.56	7.23	10.62	6.59
<b>LARGE-CAP</b>					
S&P 500 Growth	17.75	16.75	14.63	16.62	10.87
Large-Cap Growth Funds	20.39	17.16	13.08	14.33	9.28
S&P 500	7.51	10.73	10.73	13.99	8.83
Large-Cap Core Funds	5.31	7.84	7.80	11.30	7.48
S&P 500 Value	-4.50	3.74	5.98	10.88	6.45
Large-Cap Value Funds	-6.52	2.23	4.10	9.08	5.49
<b>MID-CAP</b>					
S&P MidCap 400 Growth	0.56	5.85	7.18	12.64	9.28
Mid-Cap Growth Funds	10.44	12.87	9.54	12.74	8.71
S&P MidCap 400	-6.70	2.39	5.22	11.34	8.21
Mid-Cap Core Funds	-7.37	1.90	3.74	9.81	6.42
S&P MidCap 400 Value	-14.75	-1.52	2.77	9.77	6.93
Mid-Cap Value Funds	-13.99	-2.73	1.24	8.47	5.71
<b>SMALL-CAP</b>					
S&P SmallCap 600 Growth	-5.68	4.11	6.62	12.83	8.89
Small-Cap Growth Funds	7.00	12.03	8.93	12.93	8.10
S&P SmallCap 600	-11.29	0.56	4.48	11.24	7.65
Small-Cap Core Funds	-12.01	-1.06	1.79	8.51	5.82
S&P SmallCap 600 Value	-17.38	-3.15	2.19	9.58	6.33
Small-Cap Value Funds	-17.41	-5.09	0.16	7.44	4.92
<b>MULTI-CAP</b>					
S&P Composite 1500 Growth	16.06	15.72	13.94	16.28	10.62
Multi-Cap Growth Funds	15.15	14.97	11.72	12.98	8.36
S&P Composite 1500	6.08	9.91	10.20	13.75	8.79
Multi-Cap Core Funds	1.50	5.30	5.52	9.88	6.23
S&P Composite 1500 Value	-5.54	3.19	5.66	10.79	6.64
Multi-Cap Value Funds	-10.45	0.23	3.26	8.94	5.40
<b>REAL ESTATE</b>					
S&P United States REIT	-12.95	-0.02	3.86	8.94	5.88
Real Estate Funds	-8.01	1.29	4.05	8.03	4.58

Source: S&P Dow Jones Indices LLC. Data as of June 30, 2020. 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	6.08	9.91	10.20	13.75	8.79
All Domestic Funds	6.34	9.41	9.09	12.36	7.86
S&P 500	7.51	10.73	10.73	13.99	8.83
All Large-Cap Funds	7.45	10.03	9.71	12.84	7.79
S&P MidCap 400	-6.70	2.39	5.22	11.34	8.21
All Mid-Cap Funds	2.97	6.87	6.96	11.36	7.55
S&P SmallCap 600	-11.29	0.56	4.48	11.24	7.65
All Small-Cap Funds	-3.08	6.36	6.82	11.36	7.81
S&P Composite 1500	6.08	9.91	10.20	13.75	8.79
All Multi-Cap Funds	7.96	9.87	9.17	12.09	8.02
<b>LARGE-CAP</b>					
S&P 500 Growth	17.75	16.75	14.63	16.62	10.87
Large-Cap Growth Funds	20.76	17.44	14.38	15.54	10.34
S&P 500	7.51	10.73	10.73	13.99	8.83
Large-Cap Core Funds	4.45	7.89	8.71	11.80	7.45
S&P 500 Value	-4.50	3.74	5.98	10.88	6.45
Large-Cap Value Funds	-4.86	3.64	5.50	10.71	6.76
<b>MID-CAP</b>					
S&P MidCap 400 Growth	0.56	5.85	7.18	12.64	9.28
Mid-Cap Growth Funds	11.33	12.31	10.01	13.72	9.18
S&P MidCap 400	-6.70	2.39	5.22	11.34	8.21
Mid-Cap Core Funds	-7.32	1.99	3.52	10.10	6.47
S&P MidCap 400 Value	-14.75	-1.52	2.77	9.77	6.93
Mid-Cap Value Funds	-8.25	0.34	2.49	8.34	6.06
<b>SMALL-CAP</b>					
S&P SmallCap 600 Growth	-5.68	4.11	6.62	12.83	8.89
Small-Cap Growth Funds	6.12	14.36	11.01	14.72	9.58
S&P SmallCap 600	-11.29	0.56	4.48	11.24	7.65
Small-Cap Core Funds	-11.27	0.04	2.79	9.32	6.75
S&P SmallCap 600 Value	-17.38	-3.15	2.19	9.58	6.33
Small-Cap Value Funds	-16.03	-4.14	0.90	7.84	5.11
<b>MULTI-CAP</b>					
S&P Composite 1500 Growth	16.06	15.72	13.94	16.28	10.62
Multi-Cap Growth Funds	19.27	16.10	13.17	15.35	10.14
S&P Composite 1500	6.08	9.91	10.20	13.75	8.79
Multi-Cap Core Funds	3.89	7.29	6.84	11.26	7.33
S&P Composite 1500 Value	-5.54	3.19	5.66	10.79	6.64
Multi-Cap Value Funds	-10.65	-0.89	2.75	9.93	6.31
<b>REAL ESTATE</b>					
S&P United States REIT	-12.95	-0.02	3.86	8.94	5.88
Real Estate Funds	-8.59	1.44	4.32	8.32	5.14

Source: S&P Dow Jones Indices LLC. Data as of June 30, 2020. 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	-9.47	-0.08	10.52
All Large-Cap Funds	-6.09	3.98	16.37
All Mid-Cap Funds	-10.92	-3.39	10.50
All Small-Cap Funds	-16.41	-8.59	2.67
All Multi-Cap Funds	-7.65	3.17	11.24
Large-Cap Growth Funds	18.20	20.67	23.55
Large-Cap Core Funds	2.54	5.62	8.25
Large-Cap Value Funds	-9.99	-6.73	-3.32
Mid-Cap Growth Funds	5.47	10.62	15.26
Mid-Cap Core Funds	-11.19	-7.97	-3.84
Mid-Cap Value Funds	-17.74	-13.00	-10.04
Small-Cap Growth Funds	1.04	5.92	12.37
Small-Cap Core Funds	-16.79	-12.35	-8.07
Small-Cap Value Funds	-20.48	-18.01	-14.26
Multi-Cap Growth Funds	7.99	15.49	21.41
Multi-Cap Core Funds	-2.94	2.26	5.95
Multi-Cap Value Funds	-13.02	-10.60	-8.38
Real Estate Funds	-11.79	-8.20	-6.07
<b>3-YEAR</b>			
All Domestic Funds	0.42	6.10	12.33
All Large-Cap Funds	2.71	7.90	14.89
All Mid-Cap Funds	-0.42	4.16	12.95
All Small-Cap Funds	-3.91	0.73	8.73
All Multi-Cap Funds	1.49	7.05	13.79
Large-Cap Growth Funds	15.97	17.67	19.97
Large-Cap Core Funds	5.75	8.82	10.17
Large-Cap Value Funds	0.40	2.02	4.28
Mid-Cap Growth Funds	10.90	13.50	16.97
Mid-Cap Core Funds	-1.14	1.69	3.73
Mid-Cap Value Funds	-6.18	-2.35	-0.05
Small-Cap Growth Funds	8.44	11.84	16.20
Small-Cap Core Funds	-3.91	-1.17	1.80
Small-Cap Value Funds	-6.75	-5.35	-3.24
Multi-Cap Growth Funds	11.65	14.88	19.04
Multi-Cap Core Funds	2.40	5.95	8.79
Multi-Cap Value Funds	-1.59	-0.02	1.47
Real Estate Funds	-0.02	1.66	2.89

Source: S&P Dow Jones Indices LLC. Data as of June 30, 2020. 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 QUANTILE (%)</b>	<b>SECOND QUANTILE (%)</b>	<b>FIRST QUANTILE (%)</b>
<b>5-YEAR</b>			
All Domestic Funds	3.06	6.67	10.34
All Large-Cap Funds	4.81	8.13	11.44
All Mid-Cap Funds	2.32	6.84	10.48
All Small-Cap Funds	0.31	3.68	8.15
All Multi-Cap Funds	3.31	7.25	10.83
Large-Cap Growth Funds	12.75	14.54	15.92
Large-Cap Core Funds	6.49	8.60	9.75
Large-Cap Value Funds	2.88	4.13	6.03
Mid-Cap Growth Funds	8.90	10.45	12.04
Mid-Cap Core Funds	1.56	3.60	6.48
Mid-Cap Value Funds	-1.10	1.80	3.26
Small-Cap Growth Funds	7.22	8.98	11.24
Small-Cap Core Funds	0.25	2.13	4.29
Small-Cap Value Funds	-1.18	-0.02	1.69
Multi-Cap Growth Funds	9.42	11.99	15.08
Multi-Cap Core Funds	2.96	5.82	8.26
Multi-Cap Value Funds	1.56	3.09	4.49
Real Estate Funds	3.03	4.48	5.40
<b>10-YEAR</b>			
All Domestic Funds	8.95	11.04	13.75
All Large-Cap Funds	9.73	12.11	14.63
All Mid-Cap Funds	8.86	10.65	13.75
All Small-Cap Funds	8.12	10.01	12.97
All Multi-Cap Funds	8.74	10.84	13.60
Large-Cap Growth Funds	14.45	15.87	16.86
Large-Cap Core Funds	10.43	12.27	13.13
Large-Cap Value Funds	8.79	9.44	10.69
Mid-Cap Growth Funds	12.50	13.86	14.97
Mid-Cap Core Funds	8.64	9.79	10.95
Mid-Cap Value Funds	7.33	8.78	9.84
Small-Cap Growth Funds	12.38	13.72	15.11
Small-Cap Core Funds	7.83	9.13	10.42
Small-Cap Value Funds	7.22	8.05	9.10
Multi-Cap Growth Funds	12.06	14.18	16.45
Multi-Cap Core Funds	8.50	10.19	12.62
Multi-Cap Value Funds	8.09	9.30	10.41
Real Estate Funds	6.74	8.24	9.46

Source: S&P Dow Jones Indices LLC. Data as of June 30, 2020. 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	5.78	7.16	9.08
All Large-Cap Funds	6.07	7.61	9.19
All Mid-Cap Funds	6.07	7.52	9.74
All Small-Cap Funds	5.40	6.89	8.95
All Multi-Cap Funds	5.42	6.76	8.62
Large-Cap Growth Funds	8.95	9.88	10.74
Large-Cap Core Funds	6.98	7.88	8.81
Large-Cap Value Funds	5.34	5.99	7.22
Mid-Cap Growth Funds	8.36	9.96	10.82
Mid-Cap Core Funds	6.06	6.90	7.57
Mid-Cap Value Funds	4.96	6.08	7.00
Small-Cap Growth Funds	8.30	9.28	10.25
Small-Cap Core Funds	5.61	6.68	7.87
Small-Cap Value Funds	4.36	5.32	6.28
Multi-Cap Growth Funds	7.71	9.51	10.82
Multi-Cap Core Funds	5.68	6.75	8.45
Multi-Cap Value Funds	4.96	5.63	6.75
Real Estate Funds	3.94	5.48	6.17

Source: S&P Dow Jones Indices LLC. Data as of June 30, 2020. 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	51.72	64.17	75.30	82.24	81.25
International Funds	S&P 700	51.35	63.69	71.93	78.45	84.65
International Small-Cap Funds	S&P Developed Ex-U.S. SmallCap	50.00	57.65	64.94	56.52	67.50
Emerging Markets Funds	S&P/IFCI Composite	48.26	65.30	70.18	73.28	84.21

Source: S&P Dow Jones Indices LLC. Data as of June 30, 2020. 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	232	95.69	82.76
International Funds	370	95.14	82.97
International Small-Cap Funds	84	88.10	86.90
Emerging Markets Funds	201	92.04	100.00
<b>3-YEAR</b>			
Global Funds	240	86.25	63.33
International Funds	369	87.80	64.77
International Small-Cap Funds	85	77.65	72.94
Emerging Markets Funds	219	82.19	93.61
<b>5-YEAR</b>			
Global Funds	247	75.30	48.58
International Funds	374	80.21	51.60
International Small-Cap Funds	77	72.73	63.64
Emerging Markets Funds	228	74.12	93.42
<b>10-YEAR</b>			
Global Funds	152	58.55	22.37
International Funds	283	62.54	26.86
International Small-Cap Funds	46	73.91	47.83
Emerging Markets Funds	131	68.70	90.84
<b>15-YEAR</b>			
Global Funds	96	55.21	20.83
International Funds	228	50.88	27.19
International Small-Cap Funds	40	62.50	37.50
Emerging Markets Funds	57	70.18	92.98

Source: S&P Dow Jones Indices LLC. Data as of June 30, 2020. 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	3.17	7.18	7.57	10.45	7.22
Global Funds	3.28	5.95	5.95	8.52	5.88
S&P 700	-3.35	2.10	3.19	6.19	5.14
International Funds	-2.74	2.08	2.71	5.63	4.13
S&P Developed Ex-U.S. SmallCap	-3.75	0.37	3.45	7.65	6.10
International Small-Cap Funds	-2.51	0.60	2.76	7.25	5.76
S&P/IFCI Composite	-4.03	1.84	3.20	3.94	7.09
Emerging Markets Funds	-2.61	1.16	2.21	2.65	5.25

Source: S&P Dow Jones Indices LLC. Data as of June 30, 2020. 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	3.17	7.18	7.57	10.45	7.22
Global Funds	2.99	5.73	6.10	9.46	6.74
S&P 700	-3.35	2.10	3.19	6.19	5.14
International Funds	-0.75	1.69	2.72	6.23	4.86
S&P Developed Ex-U.S. SmallCap	-3.75	0.37	3.45	7.65	6.10
International Small-Cap Funds	1.29	3.29	4.80	8.31	6.46
S&P/IFCI Composite	-4.03	1.84	3.20	3.94	7.09
Emerging Markets Funds	-0.23	3.71	4.29	4.43	6.53

Source: S&P Dow Jones Indices LLC. Data as of June 30, 2020. 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	-2.84	3.25	9.74
International Funds	-8.40	-2.85	2.85
International Small-Cap Funds	-8.39	-1.34	3.74
Emerging Markets Funds	-6.95	-2.45	3.53
<b>3-YEAR</b>			
Global Funds	1.95	5.44	10.65
International Funds	-2.06	0.97	4.15
International Small-Cap Funds	-2.39	1.33	5.41
Emerging Markets Funds	-0.72	0.98	3.87
<b>5-YEAR</b>			
Global Funds	3.14	5.82	8.99
International Funds	0.12	1.95	4.00
International Small-Cap Funds	0.99	3.12	6.00
Emerging Markets Funds	1.01	2.55	4.59
<b>10-YEAR</b>			
Global Funds	7.22	9.20	10.91
International Funds	4.39	5.53	6.89
International Small-Cap Funds	6.80	8.10	9.43
Emerging Markets Funds	2.08	2.88	4.74
<b>15-YEAR</b>			
Global Funds	5.22	6.25	8.23
International Funds	3.00	4.07	5.47
International Small-Cap Funds	5.21	6.42	7.29
Emerging Markets Funds	4.59	5.33	6.93

Source: S&P Dow Jones Indices LLC. Data as of June 30, 2020. 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	91.67	98.18	96.36	98.75	98.08
Government Intermediate Funds	Barclays US Government Intermediate	62.96	89.47	82.61	81.82	88.46
Government Short Funds	Barclays US Government (1-3 Year)	68.00	76.00	79.31	75.00	83.78
Investment-Grade Long Funds	Barclays US Government/Credit Long	97.59	97.70	98.89	98.39	98.15
Investment-Grade Intermediate Funds	Barclays US Government/Credit Intermediate	49.74	49.50	47.18	50.85	68.45
Investment-Grade Short Funds	Barclays US Government/Credit (1-3 Year)	90.11	90.53	70.79	47.46	74.24
High Yield Funds	Barclays US Corporate High Yield	67.95	87.68	95.22	97.16	99.21
Mortgage-Backed Securities Funds	Barclays US Aggregate Securitized - MBS	79.17	88.00	81.48	81.48	95.65
Global Income Funds	Barclays Global Aggregate	73.12	78.50	74.11	64.77	62.50
Emerging Markets Debt Funds	Barclays Emerging Markets	95.16	96.61	98.21	100.00	100.00
General Municipal Debt Funds	S&P National AMT-Free Municipal Bond	79.73	75.00	74.07	57.33	85.71
California Municipal Debt Funds	S&P California AMT-Free Municipal Bond	94.29	82.35	68.57	55.56	88.64
New York Municipal Debt Funds	S&P New York AMT-Free Municipal Bond	85.71	80.77	80.77	67.74	86.49
Loan Participation Funds	S&P/LSTA U.S. Leveraged Loan 100	96.23	98.00	97.92	95.24	91.67

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of June 30, 2020. 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	36	100.00	100.00
Government Intermediate Funds	27	100.00	100.00
Government Short Funds	25	84.00	92.00
Investment-Grade Long Funds	83	97.59	96.39
Investment-Grade Intermediate Funds	195	96.92	98.46
Investment-Grade Short Funds	91	96.70	100.00
High-Yield Funds	156	98.08	99.36
Mortgage-Backed Securities Funds	48	93.75	100.00
Global Income Funds	93	100.00	100.00
Emerging Markets Debt Funds	62	91.94	100.00
General Municipal Debt Funds	74	100.00	100.00
California Municipal Debt Funds	35	97.14	100.00
New York Municipal Debt Funds	28	96.43	100.00
Loan Participation Funds	53	100.00	100.00

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of June 30, 2020. 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	55	87.27	76.36
Government Intermediate Funds	19	89.47	94.74
Government Short Funds	25	80.00	88.00
Investment-Grade Long Funds	87	91.95	90.80
Investment-Grade Intermediate Funds	200	89.50	96.50
Investment-Grade Short Funds	95	91.58	93.68
High-Yield Funds	211	89.57	75.36
Mortgage-Backed Securities Funds	50	84.00	98.00
Global Income Funds	107	87.85	87.85
Emerging Markets Debt Funds	59	74.58	94.92
General Municipal Debt Funds	76	92.11	97.37
California Municipal Debt Funds	34	91.18	100.00
New York Municipal Debt Funds	26	92.31	100.00
Loan Participation Funds	50	98.00	100.00
<b>5-YEAR</b>			
Government Long Funds	55	80.00	80.00
Government Intermediate Funds	23	73.91	95.65
Government Short Funds	29	72.41	86.21
Investment-Grade Long Funds	90	86.67	84.44
Investment-Grade Intermediate Funds	195	82.05	93.33
Investment-Grade Short Funds	89	84.27	95.51
High-Yield Funds	209	84.69	77.99
Mortgage-Backed Securities Funds	54	83.33	88.89
Global Income Funds	112	78.57	83.04
Emerging Markets Debt Funds	56	69.64	94.64
General Municipal Debt Funds	81	88.89	92.59
California Municipal Debt Funds	35	88.57	97.14
New York Municipal Debt Funds	26	92.31	96.15
Loan Participation Funds	48	95.83	97.92

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of June 30, 2020. 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	80	68.75	63.75
Government Intermediate Funds	33	57.58	75.76
Government Short Funds	32	53.13	78.13
Investment-Grade Long Funds	124	75.81	60.48
Investment-Grade Intermediate Funds	236	69.92	67.37
Investment-Grade Short Funds	59	71.19	88.14
High-Yield Funds	176	74.43	84.66
Mortgage-Backed Securities Funds	54	70.37	85.19
Global Income Funds	88	70.45	72.73
Emerging Markets Debt Funds	25	72.00	64.00
General Municipal Debt Funds	75	76.00	88.00
California Municipal Debt Funds	36	80.56	97.22
New York Municipal Debt Funds	31	70.97	96.77
Loan Participation Funds	21	100.00	90.48
<b>15-YEAR</b>			
Government Long Funds	52	50.00	80.77
Government Intermediate Funds	52	42.31	73.08
Government Short Funds	37	37.84	75.68
Investment-Grade Long Funds	108	48.15	62.04
Investment-Grade Intermediate Funds	187	48.66	74.33
Investment-Grade Short Funds	66	53.03	86.36
High-Yield Funds	127	59.84	82.68
Mortgage-Backed Securities Funds	46	52.17	82.61
Global Income Funds	40	67.50	70.00
Emerging Markets Debt Funds	14	78.57	85.71
General Municipal Debt Funds	98	50.00	91.84
California Municipal Debt Funds	44	63.64	95.45
New York Municipal Debt Funds	37	59.46	91.89
Loan Participation Funds	12	83.33	91.67

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of June 30, 2020. 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	25.14	11.96	9.21	7.71	7.14
Government Long Funds	9.61	4.71	3.46	2.94	3.55
Barclays US Government Intermediate	7.01	4.09	2.97	2.51	3.44
Government Intermediate Funds	6.33	2.82	1.96	1.74	2.72
Barclays US Government (1-3 Year)	4.12	2.71	1.86	1.36	2.35
Government Short Funds	3.28	2.11	1.43	1.11	1.66
Barclays US Government/Credit Long	18.91	10.32	8.98	7.84	7.08
Investment-Grade Long Funds	8.52	5.29	4.63	4.25	4.19
Barclays US Government/Credit Intermediate	7.12	4.43	3.46	3.13	3.83
Investment-Grade Intermediate Funds	6.72	4.14	3.49	3.24	3.42
Barclays US Government/Credit (1-3 Year)	4.20	2.87	2.11	1.63	2.59
Investment-Grade Short Funds	2.47	1.92	1.68	1.62	2.00
Barclays US Corporate High Yield	0.03	3.33	4.79	6.68	6.84
High Yield Funds	-1.25	1.98	3.09	5.12	4.79
Barclays US Aggregate Securitized - MBS	5.67	3.97	3.23	3.06	4.11
Mortgage-Backed Securities Funds	4.36	3.24	2.67	2.74	3.41
Barclays Global Aggregate	4.22	3.79	3.56	2.81	3.55
Global Income Funds	1.84	2.53	2.70	2.71	3.36
Barclays Emerging Markets	2.96	4.17	5.18	5.99	6.77
Emerging Markets Debt Funds	-1.73	1.48	3.23	2.96	4.14
S&P National AMT-Free Municipal Bond	4.23	4.08	3.83	4.04	4.08
General Municipal Debt Funds	2.88	3.38	3.23	3.61	3.35
S&P California AMT-Free Municipal Bond	4.88	4.21	3.87	4.57	4.41
California Municipal Debt Funds	2.81	3.38	3.44	4.39	3.82
S&P New York AMT-Free Municipal Bond	3.43	3.50	3.50	3.91	4.06
New York Municipal Debt Funds	2.28	3.11	3.20	3.59	3.46
S&P/LSTA U.S. Leveraged Loan 100	-0.43	2.47	2.95	4.13	4.21
Loan Participation Funds	-3.99	0.61	1.63	3.24	3.13

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of June 30, 2020. 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	25.14	11.96	9.21	7.71	7.14
Government Long Funds	13.22	6.13	4.42	3.21	3.78
Barclays US Government Intermediate	7.01	4.09	2.97	2.51	3.44
Government Intermediate Funds	7.61	2.68	2.04	2.58	3.39
Barclays US Government (1-3 Year)	4.12	2.71	1.86	1.36	2.35
Government Short Funds	4.28	2.65	1.89	1.49	2.35
Barclays US Government/Credit Long	18.91	10.32	8.98	7.84	7.08
Investment-Grade Long Funds	10.83	6.34	5.49	4.51	4.40
Barclays US Government/Credit Intermediate	7.12	4.43	3.46	3.13	3.83
Investment-Grade Intermediate Funds	7.76	4.87	4.17	3.87	4.19
Barclays US Government/Credit (1-3 Year)	4.20	2.87	2.11	1.63	2.59
Investment-Grade Short Funds	3.60	2.79	2.38	2.27	2.78
Barclays US Corporate High Yield	0.03	3.33	4.79	6.68	6.84
High Yield Funds	-1.17	2.41	3.58	5.68	5.37
Barclays US Aggregate Securitized - MBS	5.67	3.97	3.23	3.06	4.11
Mortgage-Backed Securities Funds	5.18	3.64	2.96	3.04	3.96
Barclays Global Aggregate	4.22	3.79	3.56	2.81	3.55
Global Income Funds	0.34	2.05	2.21	2.93	3.92
Barclays Emerging Markets	2.96	4.17	5.18	5.99	6.77
Emerging Markets Debt Funds	-2.92	0.99	4.03	4.25	5.67
S&P National AMT-Free Municipal Bond	4.23	4.08	3.83	4.04	4.08
General Municipal Debt Funds	3.14	3.89	3.75	4.36	3.98
S&P California AMT-Free Municipal Bond	4.88	4.21	3.87	4.57	4.41
California Municipal Debt Funds	3.73	4.10	4.05	4.83	4.25
S&P New York AMT-Free Municipal Bond	3.43	3.50	3.50	3.91	4.06
New York Municipal Debt Funds	2.90	4.07	4.12	4.15	3.85
S&P/LSTA U.S. Leveraged Loan 100	-0.43	2.47	2.95	4.13	4.21
Loan Participation Funds	-6.12	-0.11	1.48	3.17	3.05

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of June 30, 2020. 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	6.51	8.03	9.38
Government Intermediate Funds	4.91	6.62	7.71
Government Short Funds	2.66	3.70	4.52
Investment-Grade Long Funds	6.78	8.09	9.69
Investment-Grade Intermediate Funds	5.25	7.26	8.44
Investment-Grade Short Funds	2.08	3.10	3.69
High-Yield Funds	-2.92	-1.03	0.35
Mortgage-Backed Securities Funds	4.43	4.91	5.47
Global Income Funds	0.15	2.82	4.33
Emerging Markets Debt Funds	-2.65	-1.02	0.45
General Municipal Debt Funds	2.40	3.03	3.93
California Municipal Debt Funds	2.36	3.07	3.90
New York Municipal Debt Funds	2.23	2.62	3.31
Loan Participation Funds	-4.17	-3.11	-2.34
<b>3-YEAR</b>			
Government Long Funds	3.55	4.35	4.84
Government Intermediate Funds	2.60	2.88	3.74
Government Short Funds	1.95	2.27	2.80
Investment-Grade Long Funds	4.42	5.15	6.05
Investment-Grade Intermediate Funds	3.45	4.55	5.05
Investment-Grade Short Funds	2.00	2.42	2.65
High-Yield Funds	1.63	2.24	2.98
Mortgage-Backed Securities Funds	3.09	3.40	3.74
Global Income Funds	1.48	3.03	3.79
Emerging Markets Debt Funds	1.25	1.99	2.89
General Municipal Debt Funds	3.18	3.61	4.13
California Municipal Debt Funds	3.27	3.73	4.00
New York Municipal Debt Funds	3.03	3.24	3.45
Loan Participation Funds	0.54	0.93	1.32

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of June 30, 2020. 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	2.50	3.22	3.59
Government Intermediate Funds	1.79	2.21	2.75
Government Short Funds	1.42	1.68	1.90
Investment-Grade Long Funds	3.94	4.49	5.38
Investment-Grade Intermediate Funds	2.98	3.86	4.20
Investment-Grade Short Funds	1.69	2.00	2.21
High-Yield Funds	2.79	3.47	4.07
Mortgage-Backed Securities Funds	2.52	2.80	3.17
Global Income Funds	1.81	3.09	3.65
Emerging Markets Debt Funds	2.87	3.78	4.38
General Municipal Debt Funds	3.08	3.49	3.90
California Municipal Debt Funds	3.26	3.65	4.09
New York Municipal Debt Funds	3.07	3.35	3.45
Loan Participation Funds	1.51	1.78	2.36
<b>10-YEAR</b>			
Government Long Funds	2.43	2.95	3.33
Government Intermediate Funds	1.48	1.65	2.64
Government Short Funds	0.95	1.34	1.65
Investment-Grade Long Funds	3.80	4.22	5.34
Investment-Grade Intermediate Funds	2.84	3.69	4.21
Investment-Grade Short Funds	1.64	1.83	2.24
High-Yield Funds	5.26	5.66	6.07
Mortgage-Backed Securities Funds	2.49	2.80	3.12
Global Income Funds	2.01	2.81	3.61
Emerging Markets Debt Funds	3.85	4.56	4.90
General Municipal Debt Funds	3.73	4.10	4.52
California Municipal Debt Funds	4.36	4.59	4.96
New York Municipal Debt Funds	3.51	3.84	4.13
Loan Participation Funds	3.24	3.37	3.76

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of June 30, 2020. 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	3.12	3.67	4.22
Government Intermediate Funds	2.62	2.93	3.59
Government Short Funds	1.87	2.26	2.45
Investment-Grade Long Funds	3.85	4.38	5.12
Investment-Grade Intermediate Funds	3.54	4.10	4.46
Investment-Grade Short Funds	2.34	2.58	2.88
High-Yield Funds	5.19	5.52	5.88
Mortgage-Backed Securities Funds	3.27	3.63	3.94
Global Income Funds	2.81	3.72	4.43
Emerging Markets Debt Funds	5.66	6.18	6.27
General Municipal Debt Funds	3.63	3.86	4.11
California Municipal Debt Funds	3.86	4.12	4.28
New York Municipal Debt Funds	3.64	3.84	3.99
Loan Participation Funds	3.15	3.29	3.55

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of June 30, 2020. 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.

<b>Exhibit A1: U.S. Equity Category Mappings</b>	
<b>SPIVA CATEGORY</b>	<b>LIPPER FUND CLASSIFICATION</b>
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.

<b>Exhibit A2: Global Equity Category Mappings</b>	
<b>SPIVA CATEGORY</b>	<b>LIPPER FUND CLASSIFICATION</b>
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 <https://www.spglobal.com/spdji/en/>.

## 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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