

SPIVA[®] U.S. Scorecard

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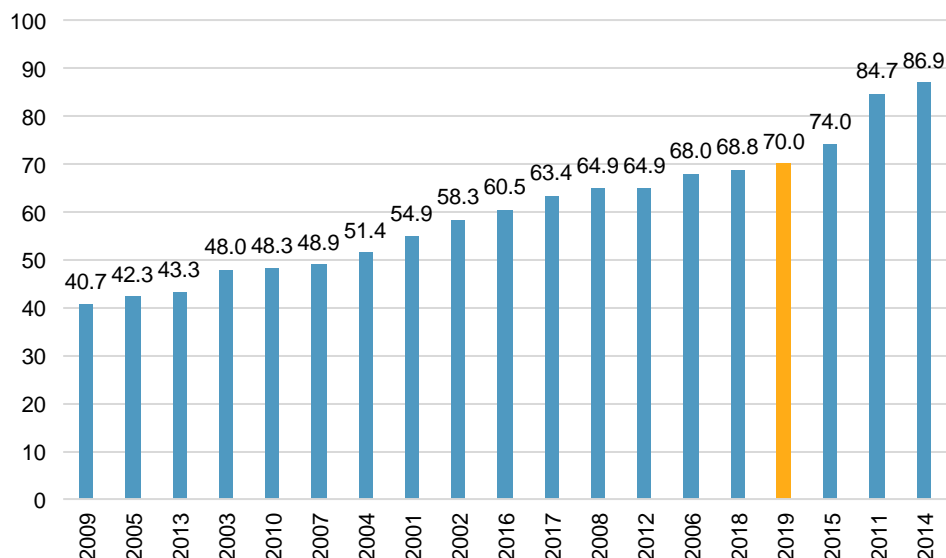
SUMMARY

2019 was a remarkable year for equity markets in the U.S. and around the world. Boosted by an accommodative Fed policy, low unemployment, low inflation, and continued global growth, risk assets across the board did well—all of the benchmarks tracked in the SPIVA U.S. Scorecard had positive returns, with the [S&P 500[®] Value](#) leading the pack at 31.9%.

The Information Technology-heavy and more internationally diversified companies of the [S&P 500](#) pushed the index to its second-highest annual return (31.5%) since 2001 and fourth-highest return in 30 years, rising in 10 of the 12 months. The [S&P MidCap 400[®]](#) (26.2%) and the [S&P SmallCap 600[®]](#) (22.8%) also had strong years.

While these tailwinds helped U.S. equity managers post excellent absolute returns, none of them translated into active managers' superior performance compared with their benchmarks. **For example, 70% of domestic equity funds lagged the [S&P Composite 1500[®]](#) during the one-year period ending Dec. 31, 2019, making for the fourth-worst performance since 2001.**

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, 2019. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Large-cap funds made it a clean sweep for the decade—for the 10th consecutive one-year period, the majority (71%) underperformed the S&P 500. Their consistency in failing to outperform when the Fed was on hold (2010-2015), raising interest rates (2015-2018), and cutting rates (2019) deserves special note, with **89% of large-cap funds underperforming the S&P 500 over the past decade.**

Mid-cap funds could be excused for some swagger when presenting to investment committees: **68% of mid-cap funds beat the S&P MidCap 400 in 2019**, the third consecutive year the majority did so. Similarly, **62% of small-cap funds beat the S&P SmallCap 600.** However, the awkward long-term statistic remains that **84% of mid-cap funds and 89% of small-cap funds underperformed over the past 10 years.**

The perennial growth versus value debate continues, with the continued pain for value funds particularly pronounced in 2019 and visible across all three market cap segments. **A staggering 97% of large-cap value funds lagged the S&P 500 Value in 2019**, joined by 65% and 80% of their mid- and small-cap peers underperforming their value benchmarks, respectively. The situation was neatly reversed on the growth side, however, with 67%, 91%, and 86% outperforming the [S&P 500 Growth](#), [S&P MidCap 400 Growth](#), and [S&P SmallCap 600 Growth](#), respectively.

There was little to debate over the full decade though, with scant difference between growth and value funds' likelihood of underperforming their benchmarks: large cap (90%, 92%), mid cap (78%, 88%), and small cap (82%, 97%) all delivered painful results.

Global equities followed the U.S., with 46 of the 50 countries in the [S&P Global BMI](#) up on the year (in USD terms). Emerging market funds had a better go of it, with 64% beating the [S&P/IFCI Composite](#). Only about 40% of global, international, and international small-cap funds beat the [S&P Global 1200](#), [S&P International 700](#), and [S&P Developed Ex-U.S. SmallCap](#), respectively.

Government funds struggled across tenors, with 98%, 69%, and 73% underperforming in the long, intermediate, and short-term buckets, respectively. 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 80% and 70% of intermediate and short-end bond funds, respectively.**

Investment-grade funds had split results: while a mere 5% of long-dated funds outperformed, a healthy 68% and 63% of intermediate- and short-term funds managed to do so, respectively. High-yield funds had little reason to celebrate, with 65% 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 half of the investment-grade intermediate and short-term funds did outperform.

Elsewhere, solid majorities of municipal debt funds and global income funds outperformed, while MBS and loan participation funds disappointed in 2019.

SPIVA's report 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. In line with 2018, roughly 5% of domestic equity funds disappeared in 2019, with ~40% having been confined to the history books over the past decade. International equity funds posted similar numbers for 2019 and the 2010s, but only ~30% of funds in most fixed income categories were merged or liquidated over the decade.

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 in 2002, 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 2005.

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: Percentage of U.S. Equity Funds Underperforming Benchmarks Each Year

FUND CATEGORY	COMPARISON INDEX	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
All Domestic Funds	S&P Composite 1500	42.3	68.0	48.9	64.9	40.7	48.3	84.6	64.9	43.3	86.9	74.0	60.5	63.4	68.8	70.0
All Large-Cap Funds	S&P 500	48.8	68.4	44.6	56.0	48.4	65.9	82.2	62.7	54.6	86.7	65.4	66.0	63.1	64.5	71.0
All Mid-Cap Funds	S&P MidCap 400	73.6	44.8	45.8	75.7	55.7	73.3	68.6	79.8	37.1	66.1	57.2	89.4	44.4	45.6	31.7
All Small-Cap Funds	S&P SmallCap 600	61.0	62.5	46.0	83.3	30.7	54.0	85.8	66.3	67.8	72.0	71.8	85.5	47.7	68.5	38.5
All Multi-Cap Funds	S&P Composite 1500	37.1	68.8	46.0	70.1	39.3	60.4	83.9	65.2	46.8	81.6	70.1	74.9	56.5	66.8	69.2
Large-Cap Growth Funds	S&P 500 Growth	38.0	93.9	27.1	90.7	36.8	51.0	95.9	45.6	41.1	95.6	47.6	89.8	32.9	60.3	33.3
Large-Cap Core Funds	S&P 500	56.2	81.1	43.5	52.3	50.5	76.6	83.2	66.6	57.7	80.4	73.7	74.6	69.0	75.8	69.5
Large-Cap Value Funds	S&P 500 Value	54.1	80.3	45.8	24.5	45.7	70.6	54.3	85.0	64.9	77.8	61.5	78.0	46.9	46.3	97.2
Mid-Cap Growth Funds	S&P MidCap 400 Growth	79.7	28.0	42.0	91.0	54.0	84.1	76.5	86.8	34.5	55.4	79.7	94.6	18.0	15.2	9.3
Mid-Cap Core Funds	S&P MidCap 400	66.3	32.0	60.8	60.2	70.7	86.5	65.7	78.6	43.0	58.6	68.2	90.6	61.7	62.2	40.5
Mid-Cap Value Funds	S&P MidCap 400 Value	69.1	36.9	57.8	68.0	47.3	57.1	67.6	73.5	40.8	71.4	34.4	96.8	43.1	72.2	65.0
Small-Cap Growth Funds	S&P SmallCap 600 Growth	78.1	50.8	40.8	94.8	31.3	62.2	94.1	62.9	55.3	64.0	87.5	96.0	15.1	61.5	13.8
Small-Cap Core Funds	S&P SmallCap 600	58.3	56.3	55.5	82.1	33.2	58.6	86.0	68.7	77.7	66.9	77.5	89.5	58.6	87.5	41.4
Small-Cap Value Funds	S&P SmallCap 600 Value	45.2	71.3	39.4	72.1	25.2	42.0	81.8	61.5	78.8	94.1	45.0	88.9	74.1	83.3	80.0
Multi-Cap Growth Funds	S&P Composite 1500 Growth	17.7	73.2	29.8	88.3	42.0	45.7	94.8	51.6	38.8	87.4	65.5	85.3	46.3	65.9	45.2
Multi-Cap Core Funds	S&P Composite 1500	38.1	77.4	45.2	65.8	39.2	66.1	82.9	68.2	53.3	84.1	83.9	74.5	68.8	81.7	74.4
Multi-Cap Value Funds	S&P Composite 1500 Value	72.0	84.0	58.1	48.4	35.8	68.2	66.7	72.6	47.9	67.3	55.6	71.2	49.6	74.8	91.8
Real Estate Funds	S&P United States REIT	43.6	68.4	45.3	72.9	38.3	66.7	66.3	62.0	64.8	67.8	43.0	84.0	36.9	88.9	26.6

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Exhibit 2b: Percentage of International Equity Funds Underperforming Benchmarks Each Year

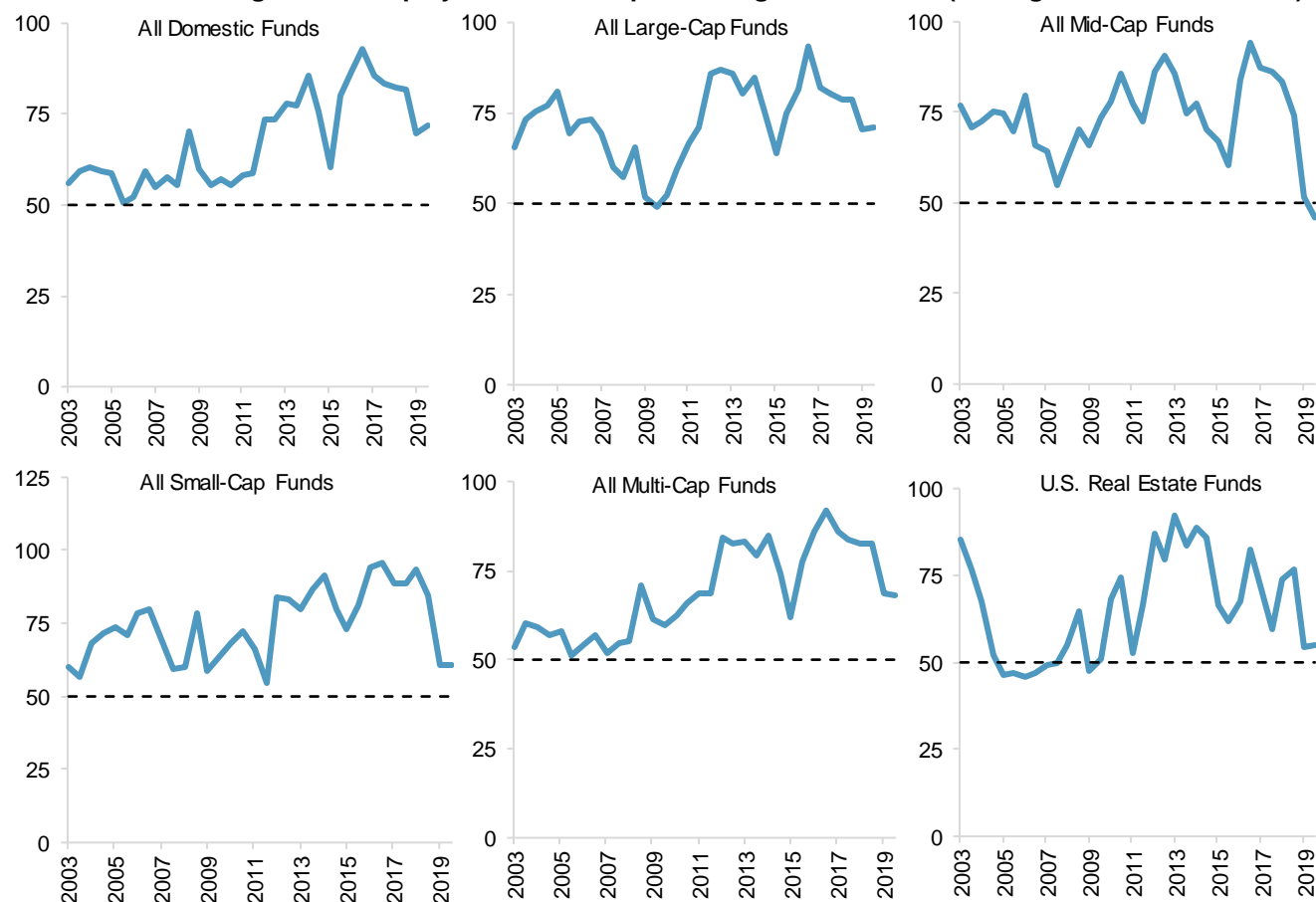
FUND CATEGORY	COMPARISON INDEX	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Global Funds	S&P Global 1200	49.5	75.3	54.2	61.6	52.3	43.8	71.8	61.8	47.5	76.5	58.2	79.7	50.2	70.6	57.1
International Funds	S&P 700	70.7	74.7	68.2	64.3	71.5	40.2	69.5	44.3	43.2	68.2	25.5	84.9	54.0	76.8	57.3
International Small Cap Funds	S&P Developed Ex-U.S. SmallCap	60.0	64.6	36.5	53.1	49.2	45.3	60.0	24.6	47.9	69.0	48.9	71.8	44.0	90.8	60.5
Emerging Markets Funds	S&P/IFCI Composite	65.2	77.6	69.9	65.3	71.2	64.9	52.6	45.6	55.0	70.7	66.0	63.9	64.9	61.9	36.1

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Exhibit 2c: Percentage of Fixed Income Funds Underperforming Benchmarks Each Year

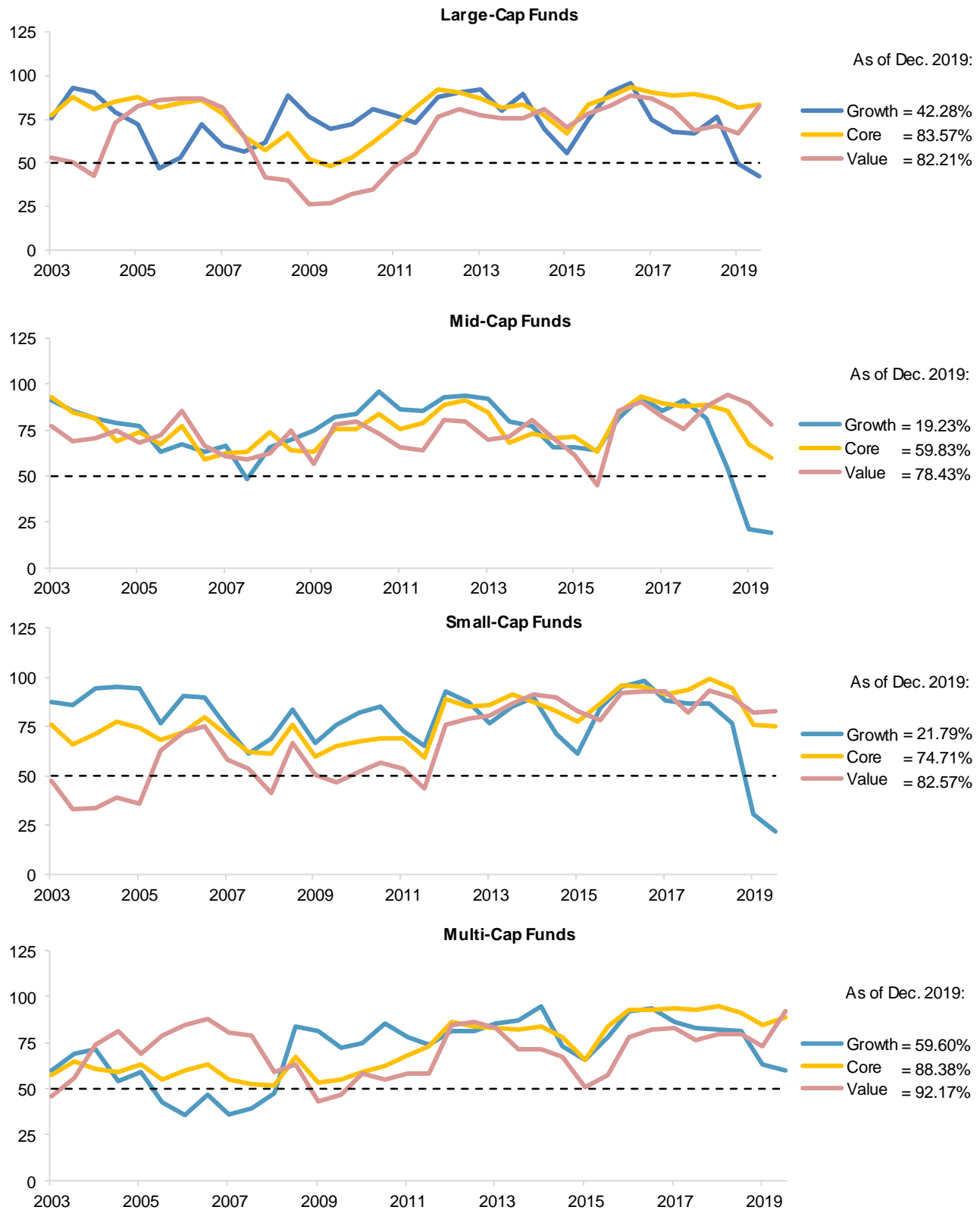
FUND CATEGORY	COMPARISON INDEX	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Government Long Funds	Barclay's US Government Long	96.5	20.0	89.4	95.7	8.3	95.3	96.6	71.4	10.9	96.8	20.3	87.9	96.4	17.0	98.0
Government Intermediate Funds	Barclay's US Government Intermediate	65.1	57.6	92.6	90.0	9.1	73.8	60.5	33.3	76.7	44.4	88.9	74.1	57.9	100.0	68.8
Government Short Funds	Barclay's US Government (1-3 Year)	65.9	71.4	90.7	86.0	23.8	59.5	61.0	42.5	95.1	60.0	89.7	63.2	47.8	87.0	73.1
Investment-Grade Long Funds	Barclay's US Government/Credit Long	99.3	9.2	84.3	95.2	7.4	78.0	99.3	62.0	7.3	98.0	12.1	75.0	96.7	9.1	95.3
Investment-Grade Intermediate Funds	Barclay's US Government/Credit Intermediate	37.7	49.1	93.0	89.9	14.1	31.4	49.6	20.7	63.5	33.1	93.2	19.8	31.4	90.8	32.2
Investment-Grade Short Funds	Barclay's US Government/Credit (1-3 Year)	53.4	46.9	96.3	98.8	16.7	25.0	56.6	11.1	52.6	50.0	70.9	26.6	22.2	92.6	37.1
High Yield Funds	Barclay's US Corporate High Yield	54.6	83.9	44.2	39.2	90.7	75.3	80.0	72.9	68.3	74.1	34.7	94.2	81.0	75.6	64.8
Mortgage-Backed Securities Funds	Barclay's US Aggregate Securitized - MBS	67.2	92.9	87.5	94.3	36.5	25.0	53.1	24.6	71.2	75.8	72.9	60.0	67.9	84.6	70.8
Global Income Funds	Barclay's Global Aggregate	55.6	69.2	69.4	77.0	30.0	39.6	77.7	18.5	48.9	37.8	61.5	33.1	64.9	61.0	38.8
Emerging Markets Debt Funds	Barclay's Emerging Markets	50.0	30.0	42.9	65.4	48.3	34.5	91.4	50.8	74.0	77.8	89.3	39.2	22.6	93.0	49.1
General Municipal Debt Funds	S&P National AMT-Free Municipal Bond	79.2	73.1	84.1	81.5	25.0	57.3	77.2	20.8	68.7	31.3	59.3	71.9	42.9	85.3	40.3
California Municipal Debt Funds	S&P California AMT-Free Municipal Bond	75.6	72.1	95.2	94.9	10.5	77.8	75.0	6.1	91.4	13.9	38.9	61.1	25.7	93.9	32.4
New York Municipal Debt Funds	S&P New York AMT-Free Municipal Bond	76.9	76.3	91.2	88.2	27.3	58.1	75.0	17.2	100.0	7.1	53.6	74.1	33.3	76.0	26.9
Loan Participation Funds	S&P/LSTA U.S. Leveraged Loan 100	-	-	-	-	-	55.0	14.8	77.5	36.8	56.9	13.5	81.8	52.1	56.9	100.0

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. 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)

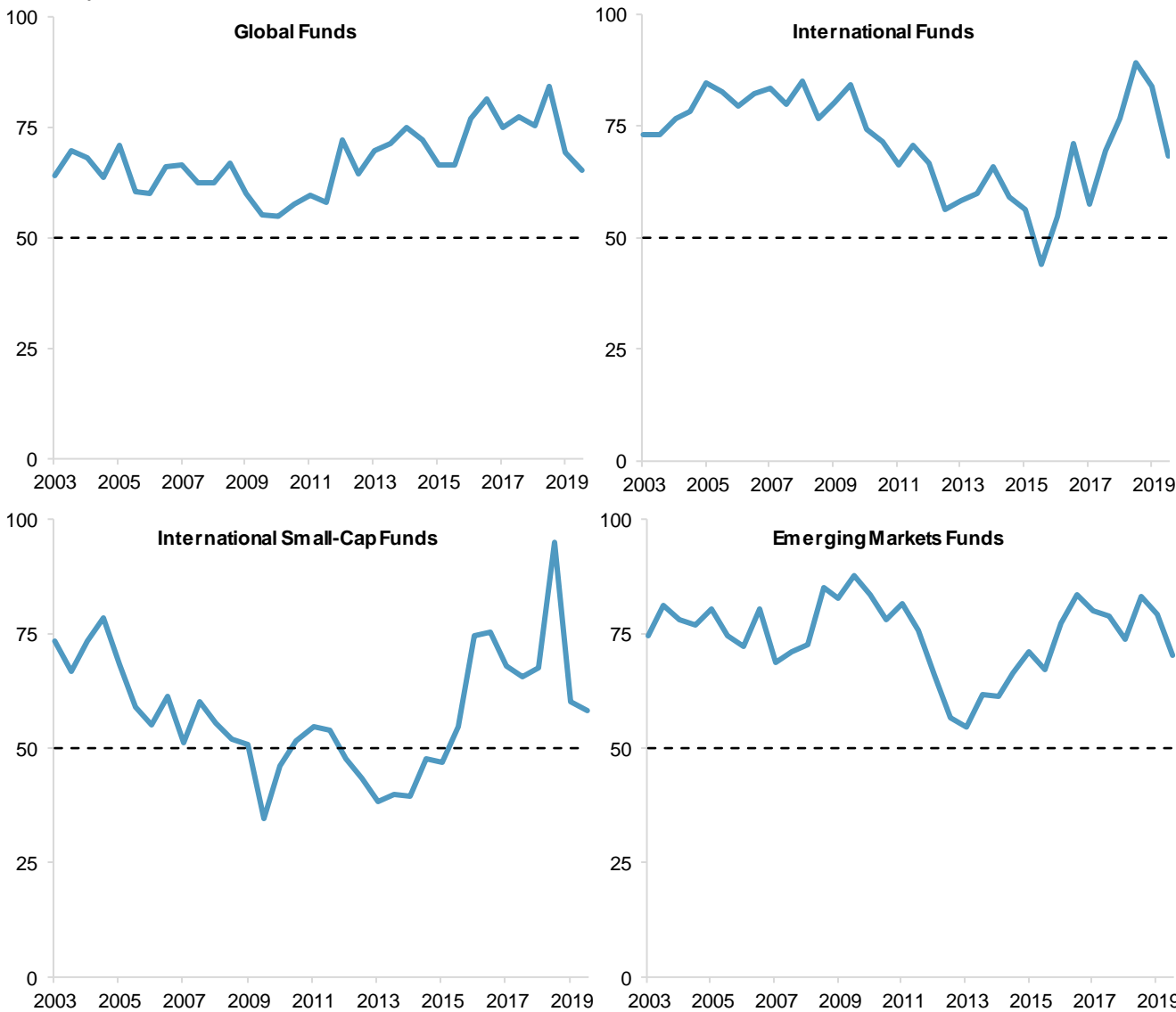
Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. Past performance is no guarantee of future results. Charts are provided for illustrative purposes.

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, 2019. 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, 2019. 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	70.01	71.92	83.27	89.33	89.10
All Large-Cap Funds	S&P 500	70.98	71.13	80.60	88.99	90.46
All Mid-Cap Funds	S&P MidCap 400	31.67	45.97	64.41	84.22	88.27
All Small-Cap Funds	S&P SmallCap 600	38.50	61.02	77.37	88.61	89.08
All Multi-Cap Funds	S&P Composite 1500	69.25	68.17	82.31	89.02	90.21
Large-Cap Growth Funds	S&P 500 Growth	33.33	42.28	60.00	89.46	92.72
Large-Cap Core Funds	S&P 500	69.53	83.57	93.83	97.38	91.95
Large-Cap Value Funds	S&P 500 Value	97.23	82.21	88.92	91.89	81.41
Mid-Cap Growth Funds	S&P MidCap 400 Growth	9.30	19.23	51.22	78.28	85.71
Mid-Cap Core Funds	S&P MidCap 400	40.54	59.83	82.46	92.09	95.24
Mid-Cap Value Funds	S&P MidCap 400 Value	65.00	78.43	88.71	88.30	93.67
Small-Cap Growth Funds	S&P SmallCap 600 Growth	13.79	21.79	67.71	82.35	93.37
Small-Cap Core Funds	S&P SmallCap 600	41.35	74.71	91.36	96.72	92.35
Small-Cap Value Funds	S&P SmallCap 600 Value	80.00	82.57	92.04	96.77	92.77
Multi-Cap Growth Funds	S&P Composite 1500 Growth	45.24	59.60	75.81	87.80	91.28
Multi-Cap Core Funds	S&P Composite 1500	74.45	88.38	94.01	93.12	91.11
Multi-Cap Value Funds	S&P Composite 1500 Value	91.80	92.17	96.04	96.38	86.96
Real Estate Funds	S&P United States REIT	26.58	54.76	63.41	81.61	83.10

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. Returns shown are annualized. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 2: Survivorship and Style Consistency of U.S. Equity Funds

FUND CATEGORY	NO. OF FUNDS AT START	SURVIVORSHIP (%)	STYLE CONSISTENCY (%)
1-YEAR			
All Domestic Funds	2141	94.86	89.12
All Large-Cap Funds	789	95.82	90.75
All Mid-Cap Funds	300	95.67	87.00
All Small-Cap Funds	535	93.08	91.59
All Multi-Cap Funds	517	94.78	85.30
Large-Cap Growth Funds	231	96.97	90.91
Large-Cap Core Funds	233	95.28	86.70
Large-Cap Value Funds	325	95.38	93.54
Mid-Cap Growth Funds	129	98.45	91.47
Mid-Cap Core Funds	111	94.59	83.78
Mid-Cap Value Funds	60	91.67	83.33
Small-Cap Growth Funds	174	96.55	97.70
Small-Cap Core Funds	266	92.11	91.35
Small-Cap Value Funds	95	89.47	81.05
Multi-Cap Growth Funds	168	95.24	89.29
Multi-Cap Core Funds	227	94.71	81.50
Multi-Cap Value Funds	122	94.26	86.89
Real Estate Funds	79	97.47	97.47
3-YEAR			
All Domestic Funds	2251	86.63	76.06
All Large-Cap Funds	852	86.97	79.58
All Mid-Cap Funds	298	87.58	75.17
All Small-Cap Funds	549	86.34	82.15
All Multi-Cap Funds	553	85.90	65.10
Large-Cap Growth Funds	246	87.80	84.55
Large-Cap Core Funds	280	86.79	69.64
Large-Cap Value Funds	326	86.50	84.36
Mid-Cap Growth Funds	130	88.46	80.77
Mid-Cap Core Funds	117	88.03	70.09
Mid-Cap Value Funds	51	84.31	72.55
Small-Cap Growth Funds	179	87.71	90.50
Small-Cap Core Funds	261	85.06	84.67
Small-Cap Value Funds	109	87.16	62.39
Multi-Cap Growth Funds	198	88.38	65.15
Multi-Cap Core Funds	241	83.82	63.49
Multi-Cap Value Funds	115	86.09	67.83
Real Estate Funds	84	86.90	97.62

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 2: Survivorship and Style Consistency of U.S. Equity Funds (cont.)			
FUND CATEGORY	NO. OF FUNDS AT START	SURVIVORSHIP (%)	STYLE CONSISTENCY (%)
5-YEAR			
All Domestic Funds	2343	77.46	67.43
All Large-Cap Funds	902	77.61	73.73
All Mid-Cap Funds	340	75.88	57.94
All Small-Cap Funds	548	78.47	75.91
All Multi-Cap Funds	554	77.26	54.69
Large-Cap Growth Funds	260	78.46	80.77
Large-Cap Core Funds	308	76.62	64.29
Large-Cap Value Funds	334	77.84	76.95
Mid-Cap Growth Funds	164	78.05	63.41
Mid-Cap Core Funds	114	69.30	55.26
Mid-Cap Value Funds	62	82.26	48.39
Small-Cap Growth Funds	192	78.65	86.46
Small-Cap Core Funds	243	77.37	76.13
Small-Cap Value Funds	113	80.53	57.52
Multi-Cap Growth Funds	186	81.18	57.53
Multi-Cap Core Funds	267	76.40	51.69
Multi-Cap Value Funds	101	72.28	57.43
Real Estate Funds	82	86.59	95.12
10-YEAR			
All Domestic Funds	2680	60.56	48.21
All Large-Cap Funds	972	59.05	60.29
All Mid-Cap Funds	431	59.16	38.75
All Small-Cap Funds	588	63.95	55.95
All Multi-Cap Funds	692	60.40	30.49
Large-Cap Growth Funds	332	56.02	64.76
Large-Cap Core Funds	344	59.01	57.56
Large-Cap Value Funds	296	62.50	58.45
Mid-Cap Growth Funds	198	56.06	52.02
Mid-Cap Core Funds	139	57.55	33.09
Mid-Cap Value Funds	94	68.09	19.15
Small-Cap Growth Funds	221	57.47	70.59
Small-Cap Core Funds	244	66.39	54.10
Small-Cap Value Funds	124	70.97	33.06
Multi-Cap Growth Funds	205	57.07	36.59
Multi-Cap Core Funds	349	62.46	28.94
Multi-Cap Value Funds	138	60.14	25.36
Real Estate Funds	87	81.61	75.86

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 2: Survivorship and Style Consistency of U.S. Equity Funds (cont.)			
FUND CATEGORY	NO. OF FUNDS AT START	SURVIVORSHIP (%)	STYLE CONSISTENCY (%)
15-YEAR			
All Domestic Funds	2138	44.53	50.98
All Large-Cap Funds	702	40.46	62.54
All Mid-Cap Funds	358	46.93	42.18
All Small-Cap Funds	458	46.94	58.73
All Multi-Cap Funds	623	46.07	37.08
Large-Cap Growth Funds	206	33.98	69.90
Large-Cap Core Funds	298	37.58	60.74
Large-Cap Value Funds	199	51.76	57.79
Mid-Cap Growth Funds	175	40.57	56.00
Mid-Cap Core Funds	105	44.76	40.00
Mid-Cap Value Funds	79	63.29	15.19
Small-Cap Growth Funds	181	39.23	76.24
Small-Cap Core Funds	196	47.45	53.06
Small-Cap Value Funds	83	63.86	32.53
Multi-Cap Growth Funds	149	36.24	46.31
Multi-Cap Core Funds	315	50.16	34.60
Multi-Cap Value Funds	161	47.20	33.54
Real Estate Funds	71	60.56	78.87

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 3: Average U.S. Equity Fund Performance (Equal-Weighted)					
CATEGORY	1-YEAR (%)	3-YEAR (%)	5-YEAR (%)	10-YEAR (%)	15-YEAR (%)
S&P Composite 1500	30.90	14.65	11.46	13.52	9.07
All Domestic Funds	27.61	11.75	8.68	10.94	7.39
S&P 500	31.49	15.27	11.70	13.56	9.00
All Large-Cap Funds	28.17	13.32	9.43	11.12	7.57
S&P MidCap 400	26.20	9.26	9.03	12.72	9.48
All Mid-Cap Funds	29.38	11.44	8.27	11.10	7.80
S&P SmallCap 600	22.78	8.36	9.56	13.35	9.20
All Small-Cap Funds	25.21	8.53	7.51	10.94	7.33
S&P Composite 1500	30.90	14.65	11.46	13.52	9.07
All Multi-Cap Funds	28.06	12.63	8.75	10.51	6.93
LARGE-CAP					
S&P 500 Grow th	31.13	18.66	13.52	14.78	10.18
Large-Cap Grow th Funds	32.43	18.84	12.32	12.56	8.67
S&P 500	31.49	15.27	11.70	13.56	9.00
Large-Cap Core Funds	29.05	12.97	9.29	11.07	7.72
S&P 500 Value	31.93	11.49	9.52	12.16	7.66
Large-Cap Value Funds	24.56	9.54	7.32	9.85	6.46
MID-CAP					
S&P MidCap 400 Grow th	26.29	10.74	9.72	13.16	9.92
Mid-Cap Grow th Funds	33.67	15.87	10.00	12.02	8.48
S&P MidCap 400	26.20	9.26	9.03	12.72	9.48
Mid-Cap Core Funds	27.11	9.17	7.04	10.48	7.24
S&P MidCap 400 Value	26.08	7.66	8.07	12.16	8.91
Mid-Cap Value Funds	24.03	5.73	6.19	10.25	7.27
SMALL-CAP					
S&P SmallCap 600 Grow th	21.13	10.08	10.87	14.20	9.93
Small-Cap Grow th Funds	29.21	14.87	10.19	12.36	7.81
S&P SmallCap 600	22.78	8.36	9.56	13.35	9.20
Small-Cap Core Funds	24.22	6.37	6.38	10.30	7.32
S&P SmallCap 600 Value	24.54	6.65	8.26	12.52	8.46
Small-Cap Value Funds	20.71	3.46	5.44	9.86	6.69
MULTI-CAP					
S&P Composite 1500 Grow th	30.56	17.88	13.21	14.69	10.02
Multi-Cap Grow th Funds	31.26	17.12	11.14	11.57	7.90
S&P Composite 1500	30.90	14.65	11.46	13.52	9.07
Multi-Cap Core Funds	27.41	11.06	7.75	10.09	6.58
S&P Composite 1500 Value	31.31	11.06	9.38	12.19	7.97
Multi-Cap Value Funds	24.74	8.24	6.93	9.89	6.53
REAL ESTATE					
S&P United States REIT	24.45	7.70	6.80	11.79	7.77
Real Estate Funds	26.30	7.52	6.18	10.16	6.10

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. Returns shown are annualized. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 4: Average U.S. Equity Fund Performance (Asset-Weighted)					
CATEGORY	1-YEAR (%)	3-YEAR (%)	5-YEAR (%)	10-YEAR (%)	15-YEAR (%)
S&P Composite 1500	30.90	14.65	11.46	13.52	9.07
All Domestic Funds	28.71	13.87	10.22	11.93	8.03
S&P 500	31.49	15.27	11.70	13.56	9.00
All Large-Cap Funds	28.45	14.50	10.70	12.06	7.94
S&P MidCap 400	26.20	9.26	9.03	12.72	9.48
All Mid-Cap Funds	30.24	12.40	9.18	11.57	8.12
S&P SmallCap 600	22.78	8.36	9.56	13.35	9.20
All Small-Cap Funds	27.48	11.01	9.08	11.85	8.26
S&P Composite 1500	30.90	14.65	11.46	13.52	9.07
All Multi-Cap Funds	29.27	13.87	9.82	11.85	8.07
LARGE-CAP					
S&P 500 Grow th	31.13	18.66	13.52	14.78	10.18
Large-Cap Grow th Funds	31.37	19.21	13.27	13.65	9.45
S&P 500	31.49	15.27	11.70	13.56	9.00
Large-Cap Core Funds	27.36	13.40	10.30	11.45	7.56
S&P 500 Value	31.93	11.49	9.52	12.16	7.66
Large-Cap Value Funds	26.45	10.98	8.61	11.31	7.51
MID-CAP					
S&P MidCap 400 Grow th	26.29	10.74	9.72	13.16	9.92
Mid-Cap Grow th Funds	34.12	16.53	10.91	13.03	9.07
S&P MidCap 400	26.20	9.26	9.03	12.72	9.48
Mid-Cap Core Funds	27.04	9.49	7.32	10.70	7.39
S&P MidCap 400 Value	26.08	7.66	8.07	12.16	8.91
Mid-Cap Value Funds	24.44	6.06	6.84	10.23	7.53
SMALL-CAP					
S&P SmallCap 600 Grow th	21.13	10.08	10.87	14.20	9.93
Small-Cap Grow th Funds	31.14	17.07	11.65	13.96	9.24
S&P SmallCap 600	22.78	8.36	9.56	13.35	9.20
Small-Cap Core Funds	25.60	7.46	7.00	10.82	7.79
S&P SmallCap 600 Value	24.54	6.65	8.26	12.52	8.46
Small-Cap Value Funds	22.25	4.35	6.21	10.05	7.21
MULTI-CAP					
S&P Composite 1500 Grow th	30.56	17.88	13.21	14.69	10.02
Multi-Cap Grow th Funds	31.94	18.33	12.32	13.27	9.57
S&P Composite 1500	30.90	14.65	11.46	13.52	9.07
Multi-Cap Core Funds	27.41	12.32	8.51	11.28	7.53
S&P Composite 1500 Value	31.31	11.06	9.38	12.19	7.97
Multi-Cap Value Funds	26.31	7.81	6.76	10.50	7.21
REAL ESTATE					
S&P United States REIT	24.45	7.70	6.80	11.79	7.77
Real Estate Funds	25.39	7.93	6.65	10.47	6.69

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. 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			
FUND CATEGORY	THIRD QUARTILE (%)	SECOND QUARTILE (%)	FIRST QUARTILE (%)
1-YEAR			
All Domestic Funds	24.01	28.03	31.95
All Large-Cap Funds	25.24	29.11	32.03
All Mid-Cap Funds	25.72	30.11	34.10
All Small-Cap Funds	21.51	25.04	28.97
All Multi-Cap Funds	24.53	28.49	32.33
Large-Cap Growth Funds	30.39	32.59	35.32
Large-Cap Core Funds	27.10	30.03	31.92
Large-Cap Value Funds	22.89	25.49	27.60
Mid-Cap Growth Funds	31.02	34.10	37.66
Mid-Cap Core Funds	25.28	28.00	30.32
Mid-Cap Value Funds	21.35	24.62	27.37
Small-Cap Growth Funds	24.99	29.16	35.26
Small-Cap Core Funds	21.47	24.33	27.08
Small-Cap Value Funds	19.20	21.39	23.96
Multi-Cap Growth Funds	28.25	32.07	36.37
Multi-Cap Core Funds	24.90	27.96	31.14
Multi-Cap Value Funds	22.54	24.91	28.72
Real Estate Funds	24.56	27.03	29.66
3-YEAR			
All Domestic Funds	8.13	11.66	16.09
All Large-Cap Funds	9.95	13.04	17.09
All Mid-Cap Funds	7.84	10.68	16.32
All Small-Cap Funds	4.66	7.73	13.04
All Multi-Cap Funds	8.99	12.78	16.60
Large-Cap Growth Funds	17.95	19.85	21.66
Large-Cap Core Funds	11.87	13.71	14.81
Large-Cap Value Funds	8.32	9.74	11.20
Mid-Cap Growth Funds	14.66	16.63	18.61
Mid-Cap Core Funds	7.27	9.04	10.59
Mid-Cap Value Funds	3.80	5.87	7.59
Small-Cap Growth Funds	12.20	15.40	18.50
Small-Cap Core Funds	4.79	6.49	8.72
Small-Cap Value Funds	1.98	3.69	5.47
Multi-Cap Growth Funds	15.28	17.62	20.17
Multi-Cap Core Funds	9.31	11.77	13.68
Multi-Cap Value Funds	7.37	8.00	9.61
Real Estate Funds	6.93	7.80	9.34

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. 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 QUARTILE (%)	SECOND QUARTILE (%)	FIRST QUARTILE (%)
5-YEAR			
All Domestic Funds	6.99	8.98	11.11
All Large-Cap Funds	7.91	9.72	11.70
All Mid-Cap Funds	6.67	8.75	10.91
All Small-Cap Funds	5.83	7.71	10.03
All Multi-Cap Funds	6.90	9.08	11.26
Large-Cap Growth Funds	11.72	13.58	14.39
Large-Cap Core Funds	8.90	9.98	10.97
Large-Cap Value Funds	6.91	7.83	8.74
Mid-Cap Growth Funds	9.08	10.67	12.24
Mid-Cap Core Funds	5.31	6.95	8.90
Mid-Cap Value Funds	4.97	6.47	7.48
Small-Cap Growth Funds	8.93	10.43	11.77
Small-Cap Core Funds	5.44	7.05	8.47
Small-Cap Value Funds	4.48	5.88	6.99
Multi-Cap Growth Funds	9.88	11.79	13.36
Multi-Cap Core Funds	6.37	8.36	9.91
Multi-Cap Value Funds	6.44	7.44	8.41
Real Estate Funds	5.69	6.41	7.54
10-YEAR			
All Domestic Funds	10.30	11.59	12.97
All Large-Cap Funds	10.59	11.91	13.08
All Mid-Cap Funds	10.47	11.68	12.91
All Small-Cap Funds	10.38	11.46	12.73
All Multi-Cap Funds	9.72	11.13	12.93
Large-Cap Growth Funds	12.49	13.63	14.47
Large-Cap Core Funds	10.75	11.91	12.59
Large-Cap Value Funds	9.90	10.66	11.51
Mid-Cap Growth Funds	11.82	12.71	13.88
Mid-Cap Core Funds	10.20	10.94	12.07
Mid-Cap Value Funds	9.58	10.67	11.53
Small-Cap Growth Funds	11.87	13.25	14.39
Small-Cap Core Funds	10.02	11.19	12.09
Small-Cap Value Funds	9.88	10.58	11.43
Multi-Cap Growth Funds	11.23	13.15	14.50
Multi-Cap Core Funds	9.14	10.85	12.31
Multi-Cap Value Funds	8.95	10.34	11.24
Real Estate Funds	8.78	10.94	11.67

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. 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 QUARTILE (%)	SECOND QUARTILE (%)	FIRST QUARTILE (%)
15-YEAR			
All Domestic Funds	6.83	7.92	9.03
All Large-Cap Funds	7.05	8.02	8.92
All Mid-Cap Funds	7.21	8.22	9.46
All Small-Cap Funds	7.03	7.99	9.15
All Multi-Cap Funds	6.42	7.48	8.75
Large-Cap Growth Funds	8.20	9.10	9.84
Large-Cap Core Funds	7.33	8.21	8.89
Large-Cap Value Funds	6.50	7.24	8.05
Mid-Cap Growth Funds	8.17	9.45	10.38
Mid-Cap Core Funds	6.87	8.00	8.57
Mid-Cap Value Funds	6.79	7.71	8.17
Small-Cap Growth Funds	8.18	9.10	9.72
Small-Cap Core Funds	7.07	7.84	8.81
Small-Cap Value Funds	6.36	7.03	7.88
Multi-Cap Growth Funds	7.79	9.12	9.90
Multi-Cap Core Funds	6.25	7.27	8.57
Multi-Cap Value Funds	6.31	6.93	8.01
Real Estate Funds	5.67	6.88	7.79

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. 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	57.14	65.13	75.31	82.61	83.16
International Funds	S&P 700	57.34	68.46	77.69	77.78	90.39
International Small-Cap Funds	S&P Developed Ex-U.S. SmallCap	60.49	58.33	73.97	62.79	68.42
Emerging Markets Funds	S&P/IFCI Composite	36.11	70.22	78.92	77.05	90.57

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. Returns shown are annualized. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 7: Survivorship and Style Consistency of International Equity Funds

FUND CATEGORY	NO. OF FUNDS AT START	SURVIVORSHIP (%)	STYLE CONSISTENCY (%)
1-YEAR			
Global Funds	224	95.98	86.16
International Funds	361	96.95	83.38
International Small-Cap Funds	81	92.59	91.36
Emerging Markets Funds	216	92.59	93.52
3-YEAR			
Global Funds	238	84.87	63.87
International Funds	371	87.87	66.31
International Small-Cap Funds	84	80.95	75.00
Emerging Markets Funds	225	82.67	92.89
5-YEAR			
Global Funds	239	76.57	47.70
International Funds	372	79.84	53.49
International Small-Cap Funds	73	73.97	68.49
Emerging Markets Funds	223	72.65	93.27
10-YEAR			
Global Funds	138	58.70	20.29
International Funds	279	61.65	27.96
International Small-Cap Funds	43	74.42	48.84
Emerging Markets Funds	122	69.67	90.16
15-YEAR			
Global Funds	95	52.63	22.11
International Funds	229	48.47	29.69
International Small-Cap Funds	38	63.16	42.11
Emerging Markets Funds	53	67.92	94.34

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

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

CATEGORY	1-YEAR (%)	3-YEAR (%)	5-YEAR (%)	10-YEAR (%)	15-YEAR (%)
S&P Global 1200	28.22	13.40	9.50	9.99	7.64
Global Funds	26.08	11.91	7.64	7.97	6.14
S&P 700	23.47	10.71	6.48	5.94	5.93
International Funds	22.84	9.55	5.36	4.97	4.45
S&P Developed Ex-U.S. SmallCap	24.66	10.42	8.16	8.34	7.28
International Small-Cap Funds	24.07	9.92	6.96	7.72	6.71
S&P/IFCI Composite	18.09	11.78	6.28	4.47	8.33
Emerging Markets Funds	20.41	10.21	4.53	3.08	6.31

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. 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	28.22	13.40	9.50	9.99	7.64
Global Funds	26.51	12.06	8.08	8.76	7.10
S&P 700	23.47	10.71	6.48	5.94	5.93
International Funds	24.51	9.99	5.70	5.85	5.41
S&P Developed Ex-U.S. SmallCap	24.66	10.42	8.16	8.34	7.28
International Small-Cap Funds	25.05	11.32	7.58	7.97	7.00
S&P/IFCI Composite	18.09	11.78	6.28	4.47	8.33
Emerging Markets Funds	24.95	12.61	6.24	4.64	7.44

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. 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 (%)
1-YEAR			
Global Funds	22.45	27.18	30.90
International Funds	19.02	22.62	27.23
International Small-Cap Funds	21.10	23.90	28.73
Emerging Markets Funds	17.38	20.70	24.99
3-YEAR			
Global Funds	9.10	11.88	15.37
International Funds	7.27	9.26	11.77
International Small-Cap Funds	8.63	10.57	12.94
Emerging Markets Funds	8.82	10.51	12.94
5-YEAR			
Global Funds	6.11	7.89	10.12
International Funds	4.02	5.18	6.69
International Small-Cap Funds	6.30	7.30	8.95
Emerging Markets Funds	3.77	5.12	6.67
10-YEAR			
Global Funds	7.26	8.91	10.31
International Funds	4.49	5.31	6.31
International Small-Cap Funds	7.24	8.45	9.64
Emerging Markets Funds	2.53	3.61	4.92
15-YEAR			
Global Funds	5.68	6.95	7.81
International Funds	3.78	4.85	5.78
International Small-Cap Funds	5.98	7.13	8.12
Emerging Markets Funds	5.72	6.68	7.90

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. 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	97.96	98.21	100.00	98.73	98.15
Government Intermediate Funds	Barclays US Government Intermediate	68.75	84.21	100.00	80.00	89.09
Government Short Funds	Barclays US Government (1-3 Year)	73.08	84.00	82.76	69.70	83.33
Investment-Grade Long Funds	Barclays US Government/Credit Long	95.35	97.80	97.85	97.58	96.77
Investment-Grade Intermediate Funds	Barclays US Government/Credit Intermediate	32.16	42.51	48.50	53.39	68.69
Investment-Grade Short Funds	Barclays US Government/Credit (1-3 Year)	37.11	48.39	50.57	45.16	70.77
High Yield Funds	Barclays US Corporate High Yield	64.82	89.20	94.34	97.13	99.21
Mortgage-Backed Securities Funds	Barclays US Aggregate Securitized - MBS	70.83	73.58	81.48	78.57	93.75
Global Income Funds	Barclays Global Aggregate	38.83	63.39	61.26	55.81	60.00
Emerging Markets Debt Funds	Barclays Emerging Markets	49.09	75.81	86.21	100.00	93.33
General Municipal Debt Funds	S&P National AMT-Free Municipal Bond	40.28	53.25	63.75	52.44	81.13
California Municipal Debt Funds	S&P California AMT-Free Municipal Bond	32.35	42.86	47.22	44.44	84.09
New York Municipal Debt Funds	S&P New York AMT-Free Municipal Bond	26.92	37.04	53.57	54.84	84.21
Loan Participation Funds	S&P/LSTA U.S. Leveraged Loan 100	100.00	97.92	87.50	78.95	90.00

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of Dec. 31, 2019. 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 (%)
1-YEAR			
Government Long Funds	49	97.96	75.51
Government Intermediate Funds	16	100.00	100.00
Government Short Funds	26	88.46	100.00
Investment-Grade Long Funds	86	98.84	95.35
Investment-Grade Intermediate Funds	199	96.98	97.99
Investment-Grade Short Funds	97	96.91	94.85
High-Yield Funds	199	97.49	74.37
Mortgage-Backed Securities Funds	48	95.83	100.00
Global Income Funds	103	99.03	88.35
Emerging Markets Debt Funds	55	92.73	98.18
General Municipal Debt Funds	72	98.61	98.61
California Municipal Debt Funds	34	97.06	100.00
New York Municipal Debt Funds	26	100.00	100.00
Loan Participation Funds	52	100.00	100.00

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of Dec. 31, 2019. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 12: Survivorship and Style Consistency of Fixed Income Funds (cont.)			
FUND CATEGORY	NO. OF FUNDS AT START	SURVIVORSHIP (%)	STYLE CONSISTENCY (%)
3-YEAR			
Government Long Funds	56	87.50	76.79
Government Intermediate Funds	19	89.47	94.74
Government Short Funds	25	88.00	96.00
Investment-Grade Long Funds	91	89.01	92.31
Investment-Grade Intermediate Funds	207	89.37	95.65
Investment-Grade Short Funds	93	91.40	93.55
High-Yield Funds	213	88.26	75.59
Mortgage-Backed Securities Funds	53	84.91	96.23
Global Income Funds	112	85.71	84.82
Emerging Markets Debt Funds	62	74.19	95.16
General Municipal Debt Funds	77	92.21	96.10
California Municipal Debt Funds	35	94.29	97.14
New York Municipal Debt Funds	27	96.30	96.30
Loan Participation Funds	48	95.83	100.00
5-YEAR			
Government Long Funds	58	77.59	81.03
Government Intermediate Funds	22	72.73	95.45
Government Short Funds	29	75.86	93.10
Investment-Grade Long Funds	93	87.10	83.87
Investment-Grade Intermediate Funds	200	83.00	91.50
Investment-Grade Short Funds	87	86.21	94.25
High-Yield Funds	212	83.49	77.36
Mortgage-Backed Securities Funds	54	85.19	88.89
Global Income Funds	111	76.58	82.88
Emerging Markets Debt Funds	58	70.69	91.38
General Municipal Debt Funds	80	87.50	91.25
California Municipal Debt Funds	36	91.67	97.22
New York Municipal Debt Funds	28	92.86	96.43
Loan Participation Funds	48	95.83	97.92

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of Dec. 31, 2019. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 12: Survivorship and Style Consistency of Fixed Income Funds (cont.)			
FUND CATEGORY	NO. OF FUNDS AT START	SURVIVORSHIP (%)	STYLE CONSISTENCY (%)
10-YEAR			
Government Long Funds	79	68.35	63.29
Government Intermediate Funds	35	54.29	77.14
Government Short Funds	33	57.58	81.82
Investment-Grade Long Funds	124	74.19	59.68
Investment-Grade Intermediate Funds	236	67.37	68.22
Investment-Grade Short Funds	62	67.74	83.87
High-Yield Funds	174	72.99	84.48
Mortgage-Backed Securities Funds	56	69.64	87.50
Global Income Funds	86	69.77	70.93
Emerging Markets Debt Funds	21	71.43	61.90
General Municipal Debt Funds	82	71.95	85.37
California Municipal Debt Funds	36	80.56	94.44
New York Municipal Debt Funds	31	74.19	93.55
Loan Participation Funds	19	94.74	94.74
15-YEAR			
Government Long Funds	54	44.44	81.48
Government Intermediate Funds	55	40.00	70.91
Government Short Funds	36	41.67	77.78
Investment-Grade Long Funds	124	41.94	62.90
Investment-Grade Intermediate Funds	198	46.46	74.24
Investment-Grade Short Funds	65	52.31	86.15
High-Yield Funds	126	57.94	83.33
Mortgage-Backed Securities Funds	48	52.08	81.25
Global Income Funds	40	62.50	75.00
Emerging Markets Debt Funds	15	73.33	86.67
General Municipal Debt Funds	106	48.11	90.57
California Municipal Debt Funds	44	63.64	95.45
New York Municipal Debt Funds	38	63.16	89.47
Loan Participation Funds	10	90.00	90.00

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of Dec. 31, 2019. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 13: Average Fixed Income Fund Performance (Equal-Weighted)					
CATEGORY	1-YEAR (%)	3-YEAR (%)	5-YEAR (%)	10-YEAR (%)	15-YEAR (%)
Barclays US Government Long	14.75	6.95	4.16	6.97	6.36
Government Long Funds	6.77	3.01	1.91	2.90	3.34
Barclays US Government Intermediate	5.20	2.57	1.99	2.38	3.16
Government Intermediate Funds	4.48	1.89	1.26	1.72	2.49
Barclays US Government (1-3 Year)	3.59	1.86	1.40	1.25	2.22
Government Short Funds	3.00	1.49	1.03	1.07	1.57
Barclays US Government/Credit Long	19.59	8.07	5.42	7.59	6.71
Investment-Grade Long Funds	12.05	4.75	3.49	4.29	3.98
Barclays US Government/Credit Intermediate	6.80	3.24	2.57	3.05	3.59
Investment-Grade Intermediate Funds	7.62	3.34	2.61	3.25	3.25
Barclays US Government/Credit (1-3 Year)	4.03	2.15	1.67	1.54	2.46
Investment-Grade Short Funds	4.02	1.95	1.54	1.91	1.97
Barclays US Corporate High Yield	14.32	6.37	6.13	7.57	7.20
High Yield Funds	12.64	4.91	4.53	5.96	5.10
Barclays US Aggregate Securitized - MBS	6.35	3.25	2.58	3.15	4.02
Mortgage-Backed Securities Funds	6.00	2.83	2.18	2.97	3.31
Barclays Global Aggregate	6.84	4.27	2.31	2.48	3.17
Global Income Funds	7.83	4.02	2.28	2.75	3.22
Barclays Emerging Markets	13.11	6.07	5.84	6.62	7.16
Emerging Markets Debt Funds	12.52	4.95	4.35	3.85	4.85
S&P National AMT-Free Municipal Bond	7.42	4.47	3.40	4.17	4.17
General Municipal Debt Funds	7.31	4.22	3.03	3.78	3.46
S&P California AMT-Free Municipal Bond	7.32	4.44	3.36	4.74	4.47
California Municipal Debt Funds	7.58	4.42	3.32	4.70	3.97
S&P New York AMT-Free Municipal Bond	6.99	4.06	3.21	4.08	4.18
New York Municipal Debt Funds	7.27	4.07	3.11	3.87	3.58
S&P/LSTA U.S. Leveraged Loan 100	10.65	4.35	4.14	4.71	4.63
Loan Participation Funds	6.96	3.13	3.35	4.09	3.65

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of Dec. 31, 2019. Returns shown are annualized. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 14: Average Fixed Income Fund Performance (Asset-Weighted)					
CATEGORY	1-YEAR (%)	3-YEAR (%)	5-YEAR (%)	10-YEAR (%)	15-YEAR (%)
Barclays US Government Long	14.75	6.95	4.16	6.97	6.36
Government Long Funds	7.79	3.47	2.31	3.09	3.54
Barclays US Government Intermediate	5.20	2.57	1.99	2.38	3.16
Government Intermediate Funds	4.84	2.24	1.61	2.63	3.39
Barclays US Government (1-3 Year)	3.59	1.86	1.40	1.25	2.22
Government Short Funds	3.54	1.75	1.39	1.38	2.20
Barclays US Government/Credit Long	19.59	8.07	5.42	7.59	6.71
Investment-Grade Long Funds	13.91	5.45	3.92	4.46	4.14
Barclays US Government/Credit Intermediate	6.80	3.24	2.57	3.05	3.59
Investment-Grade Intermediate Funds	8.89	3.99	3.15	3.87	4.06
Barclays US Government/Credit (1-3 Year)	4.03	2.15	1.67	1.54	2.46
Investment-Grade Short Funds	5.09	2.55	2.09	2.25	2.70
Barclays US Corporate High Yield	14.32	6.37	6.13	7.57	7.20
High Yield Funds	14.12	5.67	5.11	6.57	5.74
Barclays US Aggregate Securitized - MBS	6.35	3.25	2.58	3.15	4.02
Mortgage-Backed Securities Funds	6.08	2.99	2.36	3.21	3.83
Barclays Global Aggregate	6.84	4.27	2.31	2.48	3.17
Global Income Funds	6.08	3.57	2.04	3.08	3.87
Barclays Emerging Markets	13.11	6.07	5.84	6.62	7.16
Emerging Markets Debt Funds	12.85	4.82	5.34	5.22	6.43
S&P National AMT-Free Municipal Bond	7.42	4.47	3.40	4.17	4.17
General Municipal Debt Funds	8.02	4.76	3.55	4.56	4.10
S&P California AMT-Free Municipal Bond	7.32	4.44	3.36	4.74	4.47
California Municipal Debt Funds	8.64	4.99	3.80	5.12	4.41
S&P New York AMT-Free Municipal Bond	6.99	4.06	3.21	4.08	4.18
New York Municipal Debt Funds	8.68	5.01	3.91	4.49	4.05
S&P/LSTA U.S. Leveraged Loan 100	10.65	4.35	4.14	4.71	4.63
Loan Participation Funds	6.71	3.16	3.55	4.18	3.66

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of Dec. 31, 2019. Returns shown are annualized. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 15: Quartile Breakpoints of Fixed Income Funds			
FUND CATEGORY	THIRD QUARTILE	SECOND QUARTILE	FIRST QUARTILE
1-YEAR			
Government Long Funds	5.21	6.23	6.70
Government Intermediate Funds	3.71	4.66	5.49
Government Short Funds	2.65	3.23	3.85
Investment-Grade Long Funds	9.16	12.18	14.46
Investment-Grade Intermediate Funds	6.12	8.39	9.44
Investment-Grade Short Funds	3.75	4.28	4.71
High-Yield Funds	11.87	13.60	14.74
Mortgage-Backed Securities Funds	5.74	6.01	6.40
Global Income Funds	6.16	7.52	9.55
Emerging Markets Debt Funds	11.80	13.56	14.71
General Municipal Debt Funds	7.11	7.68	8.23
California Municipal Debt Funds	7.29	7.71	8.33
New York Municipal Debt Funds	7.01	7.45	7.70
Loan Participation Funds	6.67	7.66	8.45
3-YEAR			
Government Long Funds	2.28	2.75	3.11
Government Intermediate Funds	1.63	2.12	2.51
Government Short Funds	1.29	1.62	1.76
Investment-Grade Long Funds	3.95	4.77	5.60
Investment-Grade Intermediate Funds	2.78	3.63	4.05
Investment-Grade Short Funds	1.93	2.22	2.49
High-Yield Funds	4.78	5.42	5.91
Mortgage-Backed Securities Funds	2.49	2.83	3.41
Global Income Funds	3.25	4.03	4.65
Emerging Markets Debt Funds	4.96	5.62	6.44
General Municipal Debt Funds	4.08	4.50	5.06
California Municipal Debt Funds	4.22	4.56	5.21
New York Municipal Debt Funds	3.96	4.21	4.45
Loan Participation Funds	3.06	3.31	3.64

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of Dec. 31, 2019. Returns shown are annualized. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 15: Quartile Breakpoints of Fixed Income Funds (cont.)			
FUND CATEGORY	THIRD QUARTILE	SECOND QUARTILE	FIRST QUARTILE
5-YEAR			
Government Long Funds	1.71	2.01	2.28
Government Intermediate Funds	1.22	1.51	1.91
Government Short Funds	0.85	1.23	1.40
Investment-Grade Long Funds	3.03	3.60	4.28
Investment-Grade Intermediate Funds	2.34	2.76	3.16
Investment-Grade Short Funds	1.46	1.74	2.07
High-Yield Funds	4.39	5.02	5.51
Mortgage-Backed Securities Funds	1.98	2.15	2.49
Global Income Funds	1.41	2.31	3.13
Emerging Markets Debt Funds	4.09	4.94	5.55
General Municipal Debt Funds	2.96	3.33	3.62
California Municipal Debt Funds	3.13	3.43	3.95
New York Municipal Debt Funds	3.05	3.27	3.46
Loan Participation Funds	3.15	3.52	4.01
10-YEAR			
Government Long Funds	2.42	2.87	3.34
Government Intermediate Funds	1.47	1.93	2.54
Government Short Funds	0.81	1.27	1.57
Investment-Grade Long Funds	3.73	4.25	5.36
Investment-Grade Intermediate Funds	2.85	3.78	4.28
Investment-Grade Short Funds	1.73	1.89	2.33
High-Yield Funds	6.21	6.62	6.98
Mortgage-Backed Securities Funds	2.66	2.96	3.28
Global Income Funds	2.10	2.71	3.53
Emerging Markets Debt Funds	3.58	5.67	5.94
General Municipal Debt Funds	3.95	4.40	4.78
California Municipal Debt Funds	4.67	4.98	5.19
New York Municipal Debt Funds	3.82	4.21	4.48
Loan Participation Funds	3.81	4.07	4.68

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of Dec. 31, 2019. Returns shown are annualized. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 15: Quartile Breakpoints of Fixed Income Funds (cont.)			
FUND CATEGORY	THIRD QUARTILE	SECOND QUARTILE	FIRST QUARTILE
15-YEAR			
Government Long Funds	2.99	3.53	4.35
Government Intermediate Funds	2.49	2.83	3.34
Government Short Funds	1.82	2.10	2.31
Investment-Grade Long Funds	3.76	4.20	4.92
Investment-Grade Intermediate Funds	3.38	3.92	4.30
Investment-Grade Short Funds	2.24	2.55	2.77
High-Yield Funds	5.50	5.84	6.25
Mortgage-Backed Securities Funds	3.13	3.48	3.94
Global Income Funds	2.67	3.58	4.41
Emerging Markets Debt Funds	6.33	6.76	7.00
General Municipal Debt Funds	3.73	4.05	4.26
California Municipal Debt Funds	4.13	4.28	4.45
New York Municipal Debt Funds	3.71	3.97	4.17
Loan Participation Funds	3.30	3.46	3.79

Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of Dec. 31, 2019. 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 Grow th Funds	Large-Cap Grow th Funds
Large-Cap Core Funds	Large-Cap Core Funds
Large-Cap Value Funds	Large-Cap Value Funds
	Equity Income Funds
Mid-Cap Grow th Funds	Mid-Cap Grow th Funds
Mid-Cap Core Funds	Mid-Cap Core Funds
Mid-Cap Value Funds	Mid-Cap Value Funds
Small-Cap Grow th Funds	Small-Cap Grow th Funds
Small-Cap Core Funds	Small-Cap Core Funds
Small-Cap Value Funds	Small-Cap Value Funds
Multi-Cap Grow th Funds	Multi-Cap Grow th 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 Grow th Funds
	Global Large-Cap Core Funds
	Global Large-Cap Value Funds
	Global Multi-Cap Grow th Funds
	Global Multi-Cap Core Funds
	Global Multi-Cap Value Funds
International Funds	International Large-Cap Grow th Funds
	International Large-Cap Core Funds
	International Large-Cap Value Funds
	International Multi-Cap Grow th Funds
	International Multi-Cap Core Funds
	International Multi-Cap Value Funds
International Small-Cap Funds	International Small-/Mid-Cap Grow th Funds
	International Small-/Mid-Cap Core Funds
	International Small-/Mid-Cap Value Funds
Emerging Market Funds	Emerging Markets Funds

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

Fixed Income

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

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

Exhibit A3: Fixed Income Category Mappings	
SPIVA CATEGORY	LIPPER FUND CLASSIFICATION
Government Long Funds	General U.S. Government Funds
	General U.S. Treasury Funds
Government Intermediate Funds	Intermediate U.S. Government
	Short-Intermediate U.S. Government
Government Short Funds	Short U.S. Government Funds
	Short U.S. Treasury
Investment-Grade Long Funds	Corporate Debt Funds A-Rated
	Corporate Debt Funds BBB-Rated
Investment-Grade Intermediate Funds	Intermediate Investment-Grade Debt Funds
	Short-Intermediate Investment-Grade Debt Funds
Investment-Grade Short Funds	Short Investment-Grade Debt Funds
High-Yield Funds	High Current Yield Funds
Mortgage-Backed Securities Funds	U.S. Mortgage Funds
	GNMA Funds
Global Income Funds	Global Income Funds
	International Income Funds
Emerging Market Debt Funds	Emerging Market Debt Funds
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^{th} percentile for a set of data is the value that is greater than or equal to $p\%$ of the data, but is less than or equal to $(100 - p)\%$ of the data. In other words, it is a value that divides the data into two parts: the lower $p\%$ of the values and the upper $(100-p)\%$ of the values. The first quartile is the 75th percentile, the value separating the elements of a population into the lower 75% and the upper 25%. The second quartile is the 50th percentile and the third quartile is the 25th percentile. For fund category quartiles in a particular time horizon, the data used is the return of the largest share class of the fund net of fees, excluding loads.

Survivorship Bias

Many funds might liquidate or merge during a period of study. This usually occurs due to continued poor performance by the fund. Therefore, if index returns were compared to fund returns using only surviving funds, the comparison would be biased in favor of the fund category. These reports remove this bias by (a) using the entire investment opportunity set, made up of all funds in that particular category at the outset of the period, as the denominator for outperformance calculations, (b) explicitly showing the survivorship rate in each category, and (c) constructing peer average return series for each category based on all available funds at the outset of the period.

Fees

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

INDICES¹

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.

¹ For more information on S&P Dow Jones Indices, please visit www.spdji.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 Income²

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.

² 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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