

CONTRIBUTORS

Aye M. Soe, CFA
Managing Director
Global Research & Design
aye.soe@spglobal.com

Ryan Poirier, FRM
Senior Analyst
Global Research & Design
ryan.poirier@spglobal.com

SPIVA[®] U.S. Scorecard

SUMMARY

- The U.S. equity market ended 2017 on a strong positive note, with the [S&P 500[®]](#) posting 21.83% over the 12-month period as of Dec. 31, 2017. The [S&P MidCap 400[®]](#) and [S&P SmallCap 600[®]](#) followed, reporting gains of 16.24% and 13.23%, respectively.
- During the one-year period, the percentage of managers outperforming their respective benchmarks noticeably increased in categories like Mid-Cap Growth and Small-Cap Growth Funds, compared to results from six months prior. Over the one-year period, 63.08% of large-cap managers, 44.41% of mid-cap managers, and 47.70% of small-cap managers underperformed the S&P 500, the S&P MidCap 400, and the S&P SmallCap 600, respectively.
- While results over the short term were favorable, the majority of active equity funds underperformed over the longer-term investment horizons. Over the five-year period, 84.23% of large-cap managers, 85.06% of mid-cap managers, and 91.17% of small-cap managers lagged their respective benchmarks.
- Similarly, over the 15-year investment horizon, 92.33% of large-cap managers, 94.81% of mid-cap managers, and 95.73% of small-cap managers failed to outperform on a relative basis.
- Over the 12-month period ending Dec. 31, 2017, growth managers across all three market cap ranges fared better than their core and value counterparts. The results highlight the cyclicity of style box investing, as core managers outperformed 12 months prior with the exception of small caps, while value managers outperformed core and growth 18 months prior.

- Across nine U.S. style categories, large-cap value managers was the best performing category over the 10-year and 15-year horizons, with 29.56% and 14.29% of managers outperforming the benchmark, the [S&P 500 Value](#).
- The headline international equity and emerging market equity indices began a strong rally in November 2016 that continued through 2017. Over the one-year period ending Dec. 31, 2017, the [S&P/IFCI Composite](#) posted 37.89%; the S&P Developed Ex-U.S. Small Cap, [S&P International 700](#), and [S&P Global 1200](#) reported 32.37%, 26.64%, and 23.84%, respectively, over the same period.
- During the one-year period, with the exception of actively managed international small-cap equity funds, the majority of managers investing in global, international, and emerging market funds underperformed their respective benchmarks.
- Over the 3-, 5-, 10-, and 15-year investment horizons, managers across all international equity categories underperformed their benchmarks. Furthermore, the longer the time horizon, in general, the more funds underperformed.
- The U.S. Federal Reserve increased rates three times during 2017. However, the 10-Year U.S. Treasury yield has not moved significantly off of its year-end 2016 levels, resulting in a flatter yield curve. During the one-year period ending Dec. 31, 2017, the majority of active fixed income managers investing in long-term government and corporate credit bonds underperformed their benchmarks, marking a shift from six months prior when they vastly outperformed.
- In contrast, funds investing in short- and intermediate-term government and credit bonds outperformed their benchmarks.
- Across all time periods studied, high-yield managers struggled to outperform their benchmark. During the one-year period, over 80.95% of actively managed high-yield bonds failed to deliver higher returns than the benchmark's 7.50% return.
- The majority of municipal funds outperformed over the 12-month period, despite having mixed results over the three- and five-year investment horizons. However, over the 10- and 15-year periods, most muni funds underperformed their benchmarks. While these funds underperformed over the long term, it should be noted that municipal categories have some of the best survivorship statistics.
- Funds disappear at a meaningful rate. Over the 15-year period, 58% of domestic equity funds, 55% of international equity funds, and an average of 48% of all fixed income funds were merged or liquidated. This finding highlights the importance of addressing survivorship bias in mutual fund analysis.

A UNIQUE SCORECARD FOR THE ACTIVE VERSUS PASSIVE DEBATE

There is nothing novel about the index versus active debate. It has been a contentious subject for decades, and there are few strong believers on both sides, with the vast majority of market participants falling somewhere in between. Since its first publication 16 years ago, the SPIVA Scorecard has served as the de facto scorekeeper of the active versus passive debate. For more than a decade, we have heard passionate arguments from believers in both camps when headline numbers have deviated from their beliefs.

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

- **Survivorship Bias Correction:** Many funds might be liquidated or merged during a period of study. However, for someone making an investment decision at the beginning of the period, these funds are part of the opportunity set. Unlike other commonly available comparison reports, SPIVA Scorecards account for the entire opportunity set—not just the survivors—thereby eliminating survivorship bias.
- **Apples-to-Apples Comparison:** Fund returns are often compared to popular benchmarks such as the [S&P 500](#), regardless of size or style classification. SPIVA Scorecards avoid this pitfall by measuring a fund's returns against the returns of a benchmark appropriate for that particular investment category.
- **Asset-Weighted Returns:** Average returns for a fund group are often calculated using only equal weighting, which results in the returns of a USD 10 billion fund affecting the average in the same manner as the returns of a USD 10 million fund. An accurate representation of how market participants fared in a particular period can be ascertained by calculating weighted average returns where each fund's return is weighted by net assets. SPIVA Scorecards show both equal- and asset-weighted averages.
- **Style Consistency:** SPIVA Scorecards measure style consistency for each style category across different time horizons. Style consistency is an important metric because style drift (the tendency of funds to diverge from their initial investment categorization) can have an impact on asset allocation decisions.
- **Data Cleaning:** SPIVA Scorecards avoid double counting multiple share classes in all count-based calculations, using only the share class with greater assets. Since this is meant to be a scorecard for active managers, index funds, leveraged and inverse funds, and other index-linked products are excluded.

Equity Annual League Table

We have often written about the lack of consistency in results when viewing over a shorter horizon. The annual league table is evidence of that, and it shows the yearly match up of the active funds versus indices in the major U.S. equity and fixed income categories (see Exhibits 1 and 2).

Exhibit 1: Equity Annual League Table																		
FUND CATEGORY	BENCHMARK INDEX	(% OF ACTIVE FUNDS OUTPERFORMED BY THEIR BENCHMARK)																
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
All Domestic Funds	S&P 1500	54.87	58.34	48.01	51.43	42.26	68.02	48.90	64.91	40.68	48.28	84.65	64.91	43.26	86.89	74.03	60.49	63.43
All Large-Cap Funds	S&P 500	65.16	67.73	75.44	68.79	48.81	68.38	44.63	55.95	48.40	65.88	82.24	62.66	54.56	86.73	65.39	66.00	63.08
All Mid-Cap Funds	S&P MidCap 400	67.64	74.43	51.70	64.56	73.63	44.77	45.77	75.73	55.69	73.29	68.59	79.85	37.11	66.05	57.18	89.37	44.41
All Small-Cap Funds	S&P SmallCap 600	53.97	67.54	34.63	83.84	60.95	62.53	45.98	83.30	30.69	53.95	85.81	66.28	67.77	71.96	71.79	85.54	47.70
All Multi-Cap Funds	S&P 1500	54.73	54.02	49.21	49.38	37.14	68.77	45.97	70.14	39.30	60.39	83.88	65.22	46.84	81.62	70.10	74.88	56.46
Large-Cap Growth Funds	S&P 500 Growth	94.80	83.13	48.36	44.08	37.96	93.93	27.14	90.67	36.81	50.98	95.90	45.62	41.08	95.61	47.55	89.79	32.92
Large-Cap Core Funds	S&P 500	77.03	66.55	85.29	82.91	56.16	81.09	43.50	52.26	50.55	76.61	83.21	66.59	57.65	80.38	73.75	74.56	68.98
Large-Cap Value Funds	S&P 500 Value	30.77	34.63	85.98	86.47	54.11	80.28	45.79	24.45	45.71	70.55	54.28	85.05	64.86	77.78	61.52	77.99	46.88
Mid-Cap Growth Funds	S&P MidCap 400 Growth	87.96	86.24	35.75	64.16	79.67	27.96	41.97	90.95	54.01	84.11	76.53	86.81	34.48	55.37	79.68	94.58	18.05
Mid-Cap Core Funds	S&P MidCap 400	80.00	70.42	54.74	57.27	66.34	32.04	60.78	60.18	70.75	86.54	65.66	78.57	42.96	58.65	68.18	90.65	61.67
Mid-Cap Value Funds	S&P MidCap 400 Value	47.42	63.64	68.42	53.09	69.14	36.90	57.83	68.00	47.33	57.14	67.61	73.47	40.85	71.43	34.38	96.77	43.14
Small-Cap Growth Funds	S&P SmallCap 600 Growth	76.64	97.14	26.88	94.71	78.06	50.75	40.80	94.84	31.34	62.25	94.12	62.91	55.25	63.98	87.50	95.96	15.08
Small-Cap Core Funds	S&P SmallCap 600	57.78	67.27	34.88	79.47	58.33	56.34	55.51	82.07	33.22	58.63	86.01	68.68	77.74	66.92	77.46	89.47	58.59
Small-Cap Value Funds	S&P SmallCap 600 Value	39.07	29.93	48.08	71.76	45.24	71.26	39.36	72.07	25.17	41.98	81.82	61.54	78.81	94.07	45.04	88.89	74.07

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Fixed Income Annual League Table

Exhibit 2: Fixed Income Annual League Table																		
FUND CATEGORY	BENCHMARK INDEX	(% OF ACTIVE FUNDS OUTPERFORMED BY THEIR BENCHMARK)																
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Government Long Funds	Barclays US Government Long	28.95	98.44	85.45	98.25	96.49	20.00	89.36	95.74	8.33	95.29	96.55	71.43	10.94	96.83	20.34	87.93	96.43
Government Intermediate Funds	Barclays US Government Intermediate	91.40	66.67	77.03	62.86	65.08	57.63	92.59	90.00	9.09	73.81	60.53	33.33	76.67	44.44	88.89	74.07	57.89
Government Short Funds	Barclays US Government (1-3 Year)	94.74	72.00	82.98	62.22	65.91	71.43	90.70	86.05	23.81	59.52	60.98	42.50	95.12	60.00	89.74	63.16	47.83
Investment-Grade Long Funds	Barclays US Government/Credit Long	38.27	99.36	68.18	95.95	99.26	9.24	84.26	95.24	7.38	78.01	99.27	62.02	7.32	98.02	12.15	75.00	96.74
Investment-Grade Intermediate Funds	Barclays US Government/Credit Intermediate	87.14	85.58	55.35	36.24	37.73	49.07	93.02	89.87	14.09	31.43	49.65	20.70	63.54	33.07	93.25	19.75	31.37
Investment-Grade Short Funds	Barclays US Government/Credit (1-3 Year)	100.00	87.27	67.21	37.50	53.42	46.91	96.34	98.84	16.67	25.00	56.58	11.11	52.56	50.00	70.87	26.61	22.22
High Yield Funds	Barclays US Corporate High Yield	74.32	41.50	83.21	80.14	54.61	83.92	44.22	39.19	90.69	75.25	80.00	72.86	68.35	74.09	34.75	94.17	80.95
Mortgage-Backed Securities Funds	Barclays US Aggregate Securitized - MBS	84.21	64.29	83.33	95.00	67.24	92.86	87.50	94.34	36.51	25.00	53.13	24.62	71.21	75.81	72.88	60.00	67.92
Global Income Funds	Barclays Global Aggregate	61.54	64.41	35.85	41.18	55.56	69.23	69.35	77.03	30.00	39.64	77.68	18.49	48.92	37.78	61.54	33.08	64.86
Emerging Markets Debt Funds	Barclays Emerging Markets	9.09	60.00	21.74	28.57	50.00	30.00	42.86	65.38	48.28	34.48	91.43	50.85	74.00	77.78	89.33	39.19	22.58
General Municipal Debt Funds	S&P National AMT-Free Municipal Bond	78.99	67.24	47.75	79.63	79.25	73.12	84.09	81.48	25.00	57.32	77.22	20.78	68.67	31.33	59.30	71.91	42.86
California Municipal Debt Funds	S&P California AMT-Free Municipal Bond	75.51	57.78	15.22	85.11	75.56	72.09	95.24	94.87	10.53	77.78	75.00	6.06	91.43	13.89	38.89	61.11	25.71
New York Municipal Debt Funds	S&P New York AMT-Free Municipal Bond	89.13	73.81	79.49	76.92	76.92	76.32	91.18	88.24	27.27	58.06	75.00	17.24	100.00	7.14	53.57	74.07	33.33
Loan Participation Funds	S&P/LSTA U.S. Leveraged Loan 100	-	-	-	-	-	-	-	-	-	55.00	14.81	77.50	36.84	56.86	13.46	81.82	52.08

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. Past performance is no guarantee of future results. Table is 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	63.43	83.40	86.72	86.65	83.74
All Large-Cap Funds	S&P 500	63.08	80.56	84.23	89.51	92.33
All Mid-Cap Funds	S&P MidCap 400	44.41	86.34	85.06	96.48	94.81
All Small-Cap Funds	S&P SmallCap 600	47.70	88.83	91.17	95.71	95.73
All Multi-Cap Funds	S&P Composite 1500	56.46	83.64	84.91	90.70	87.67
Large-Cap Growth Funds	S&P 500 Growth	32.92	67.58	80.92	93.65	93.49
Large-Cap Core Funds	S&P 500	68.98	88.45	90.99	94.95	94.67
Large-Cap Value Funds	S&P 500 Value	46.88	80.37	85.07	70.44	85.71
Mid-Cap Growth Funds	S&P MidCap 400 Growth	18.05	91.46	81.13	97.69	95.32
Mid-Cap Core Funds	S&P MidCap 400	61.67	88.24	87.90	96.15	96.51
Mid-Cap Value Funds	S&P MidCap 400 Value	43.14	75.41	81.54	88.04	88.89
Small-Cap Growth Funds	S&P SmallCap 600 Growth	15.08	86.53	86.67	95.56	98.73
Small-Cap Core Funds	S&P SmallCap 600	58.59	93.78	95.59	96.23	96.55
Small-Cap Value Funds	S&P SmallCap 600 Value	74.07	82.14	95.45	92.78	89.47
Multi-Cap Growth Funds	S&P Composite 1500 Growth	46.32	83.24	85.11	94.77	86.21
Multi-Cap Core Funds	S&P Composite 1500	68.78	92.78	90.13	90.14	90.82
Multi-Cap Value Funds	S&P Composite 1500 Value	49.57	76.47	76.24	84.21	85.96
Real Estate Funds	S&P United States REIT	36.90	59.76	73.68	84.54	81.13

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	2243	95.85	95.76
All Large-Cap Funds	845	95.38	91.12
All Mid-Cap Funds	305	95.74	89.51
All Small-Cap Funds	546	96.89	95.97
All Multi-Cap Funds	547	95.61	87.39
Large-Cap Growth Funds	243	94.24	88.48
Large-Cap Core Funds	278	95.68	86.69
Large-Cap Value Funds	324	95.99	91.05
Mid-Cap Growth Funds	134	95.52	87.31
Mid-Cap Core Funds	120	96.67	85.00
Mid-Cap Value Funds	51	94.12	82.35
Small-Cap Growth Funds	180	95.56	93.33
Small-Cap Core Funds	258	98.06	94.96
Small-Cap Value Funds	108	96.30	77.78
Multi-Cap Growth Funds	191	94.24	81.68
Multi-Cap Core Funds	240	96.67	85.42
Multi-Cap Value Funds	116	95.69	79.31
Real Estate Funds	84	96.43	97.62
3-YEAR			
All Domestic Funds	2335	85.78	85.14
All Large-Cap Funds	892	85.76	76.57
All Mid-Cap Funds	346	84.68	68.50
All Small-Cap Funds	549	87.25	85.61
All Multi-Cap Funds	548	85.04	66.61
Large-Cap Growth Funds	256	84.38	73.44
Large-Cap Core Funds	307	86.64	69.38
Large-Cap Value Funds	329	86.02	74.77
Mid-Cap Growth Funds	166	84.34	63.86
Mid-Cap Core Funds	119	82.35	52.10
Mid-Cap Value Funds	61	90.16	54.10
Small-Cap Growth Funds	194	85.57	78.35
Small-Cap Core Funds	243	89.30	79.01
Small-Cap Value Funds	112	85.71	57.14
Multi-Cap Growth Funds	180	86.67	62.78
Multi-Cap Core Funds	265	84.53	57.36
Multi-Cap Value Funds	103	83.50	60.19
Real Estate Funds	82	93.90	92.68

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	2429	80.16	76.53
All Large-Cap Funds	936	78.95	65.81
All Mid-Cap Funds	350	79.14	62.00
All Small-Cap Funds	535	82.99	80.75
All Multi-Cap Funds	608	80.10	50.66
Large-Cap Growth Funds	284	75.70	62.68
Large-Cap Core Funds	360	79.44	52.50
Large-Cap Value Funds	292	81.51	68.84
Mid-Cap Growth Funds	161	77.02	58.39
Mid-Cap Core Funds	124	78.23	46.77
Mid-Cap Value Funds	65	86.15	47.69
Small-Cap Growth Funds	196	77.55	70.41
Small-Cap Core Funds	229	86.90	72.49
Small-Cap Value Funds	110	84.55	50.00
Multi-Cap Growth Funds	188	79.26	50.00
Multi-Cap Core Funds	318	81.13	39.62
Multi-Cap Value Funds	102	78.43	44.12
Real Estate Funds	76	90.79	92.11
10-YEAR			
All Domestic Funds	2039	55.03	51.84
All Large-Cap Funds	611	55.48	42.39
All Mid-Cap Funds	369	54.47	32.52
All Small-Cap Funds	489	56.03	52.35
All Multi-Cap Funds	570	54.04	28.42
Large-Cap Growth Funds	190	49.47	35.79
Large-Cap Core Funds	218	55.96	32.11
Large-Cap Value Funds	203	60.59	46.31
Mid-Cap Growth Funds	173	45.09	24.86
Mid-Cap Core Funds	104	58.65	26.92
Mid-Cap Value Funds	92	67.39	20.65
Small-Cap Growth Funds	180	50.00	38.89
Small-Cap Core Funds	212	56.13	38.68
Small-Cap Value Funds	97	67.01	26.80
Multi-Cap Growth Funds	153	51.63	22.88
Multi-Cap Core Funds	284	55.99	15.14
Multi-Cap Value Funds	133	52.63	22.56
Real Estate Funds	97	68.04	40.21

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	1970	41.47	38.93
All Large-Cap Funds	706	35.41	26.63
All Mid-Cap Funds	347	46.69	24.78
All Small-Cap Funds	398	48.74	42.96
All Multi-Cap Funds	519	40.66	19.27
Large-Cap Growth Funds	216	26.85	18.06
Large-Cap Core Funds	300	35.67	19.00
Large-Cap Value Funds	190	44.74	30.00
Mid-Cap Growth Funds	171	33.33	19.30
Mid-Cap Core Funds	86	53.49	15.12
Mid-Cap Value Funds	90	65.56	12.22
Small-Cap Growth Funds	158	39.24	27.85
Small-Cap Core Funds	145	50.34	31.72
Small-Cap Value Funds	95	62.11	20.00
Multi-Cap Growth Funds	145	31.72	13.10
Multi-Cap Core Funds	196	42.35	9.69
Multi-Cap Value Funds	178	46.07	10.67
Real Estate Funds	53	64.15	52.83

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	21.13	11.41	15.74	8.69	10.18	
All Domestic Funds	19.20	9.04	13.34	7.05	9.14	
S&P 500	21.83	11.41	15.79	8.50	9.92	
All Large-Cap Funds	20.69	9.38	13.66	6.83	8.38	
S&P MidCap 400	16.24	11.14	15.01	9.97	12.00	
All Mid-Cap Funds	18.84	8.35	13.08	7.27	9.99	
S&P SmallCap 600	13.23	12.00	15.99	10.43	12.27	
All Small-Cap Funds	15.28	8.85	12.90	7.61	10.03	
S&P Composite 1500	21.13	11.41	15.74	8.69	10.18	
All Multi-Cap Funds	20.78	8.81	13.12	6.54	8.83	
LARGE-CAP						
S&P 500 Growth	27.44	12.86	17.00	9.99	10.30	
Large-Cap Growth Funds	29.57	11.45	15.27	7.71	8.99	
S&P 500	21.83	11.41	15.79	8.50	9.92	
Large-Cap Core Funds	20.03	9.28	13.71	6.77	8.09	
S&P 500 Value	15.36	9.47	14.24	6.80	9.38	
Large-Cap Value Funds	15.18	7.87	12.35	6.10	8.19	
MID-CAP						
S&P MidCap 400 Growth	19.92	11.98	14.93	10.35	11.97	
Mid-Cap Growth Funds	24.76	8.94	13.30	7.00	9.84	
S&P MidCap 400	16.24	11.14	15.01	9.97	12.00	
Mid-Cap Core Funds	15.12	7.80	12.59	7.35	9.80	
S&P MidCap 400 Value	12.32	9.88	14.83	9.46	11.90	
Mid-Cap Value Funds	12.37	7.97	13.25	7.76	10.46	
SMALL-CAP						
S&P SmallCap 600 Growth	14.79	12.96	16.39	10.82	12.64	
Small-Cap Growth Funds	23.44	9.59	13.79	7.52	9.89	
S&P SmallCap 600	13.23	12.00	15.99	10.43	12.27	
Small-Cap Core Funds	12.23	8.36	12.40	7.49	10.09	
S&P SmallCap 600 Value	11.51	10.97	15.52	9.99	11.85	
Small-Cap Value Funds	9.11	8.51	12.33	7.89	10.17	
MULTI-CAP						
S&P Composite 1500 Growth	26.49	12.82	16.84	10.07	10.65	
Multi-Cap Growth Funds	27.18	10.09	14.38	7.09	9.54	
S&P Composite 1500	21.13	11.41	15.74	8.69	10.18	
Multi-Cap Core Funds	18.60	8.12	12.39	6.27	8.42	
S&P Composite 1500 Value	14.99	9.54	14.32	7.13	9.80	
Multi-Cap Value Funds	14.68	8.06	12.71	6.17	8.44	
REAL ESTATE						
S&P United States REIT	4.33	5.09	9.13	7.28	10.74	
Real Estate Funds	5.41	5.21	8.57	6.15	9.87	

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	21.13	11.41	15.74	8.69	10.18	
All Domestic Funds	21.93	10.35	14.47	7.54	9.56	
S&P 500	21.83	11.41	15.79	8.50	9.92	
All Large-Cap Funds	22.77	10.85	14.89	7.43	8.93	
S&P MidCap 400	16.24	11.14	15.01	9.97	12.00	
All Mid-Cap Funds	20.10	9.39	13.86	7.84	10.78	
S&P SmallCap 600	13.23	12.00	15.99	10.43	12.27	
All Small-Cap Funds	17.12	9.53	13.25	8.17	10.66	
S&P Composite 1500	21.13	11.41	15.74	8.69	10.18	
All Multi-Cap Funds	22.34	9.63	14.05	7.20	9.69	
LARGE-CAP						
S&P 500 Growth	27.44	12.86	17.00	9.99	10.30	
Large-Cap Growth Funds	30.84	13.01	16.39	8.23	9.55	
S&P 500	21.83	11.41	15.79	8.50	9.92	
Large-Cap Core Funds	21.36	10.65	14.89	7.16	8.45	
S&P 500 Value	15.36	9.47	14.24	6.80	9.38	
Large-Cap Value Funds	16.63	8.99	13.45	6.83	8.80	
MID-CAP						
S&P MidCap 400 Growth	19.92	11.98	14.93	10.35	11.97	
Mid-Cap Growth Funds	25.36	10.06	14.19	7.71	10.91	
S&P MidCap 400	16.24	11.14	15.01	9.97	12.00	
Mid-Cap Core Funds	16.60	8.63	13.44	7.97	10.73	
S&P MidCap 400 Value	12.32	9.88	14.83	9.46	11.90	
Mid-Cap Value Funds	13.01	8.86	13.50	7.77	10.69	
SMALL-CAP						
S&P SmallCap 600 Growth	14.79	12.96	16.39	10.82	12.64	
Small-Cap Growth Funds	25.09	10.64	14.67	8.69	11.03	
S&P SmallCap 600	13.23	12.00	15.99	10.43	12.27	
Small-Cap Core Funds	12.99	8.80	12.39	7.80	10.47	
S&P SmallCap 600 Value	11.51	10.97	15.52	9.99	11.85	
Small-Cap Value Funds	9.74	8.75	12.30	8.03	10.38	
MULTI-CAP						
S&P Composite 1500 Growth	26.49	12.82	16.84	10.07	10.65	
Multi-Cap Growth Funds	29.42	11.54	16.12	8.46	10.93	
S&P Composite 1500	21.13	11.41	15.74	8.69	10.18	
Multi-Cap Core Funds	19.36	8.53	12.78	6.84	9.18	
S&P Composite 1500 Value	14.99	9.54	14.32	7.13	9.80	
Multi-Cap Value Funds	14.99	8.00	12.67	5.94	8.35	
REAL ESTATE						
S&P United States REIT	4.33	5.09	9.13	7.28	10.74	
Real Estate Funds	6.40	5.73	9.02	6.42	10.25	

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	13.83	18.77	24.67
All Large-Cap Funds	16.20	20.19	26.11
All Mid-Cap Funds	13.56	18.63	24.74
All Small-Cap Funds	9.77	13.77	20.57
All Multi-Cap Funds	15.81	20.40	25.25
Large-Cap Growth Funds	26.83	29.74	33.37
Large-Cap Core Funds	18.24	20.62	22.22
Large-Cap Value Funds	13.39	15.86	17.78
Mid-Cap Growth Funds	22.13	24.86	27.45
Mid-Cap Core Funds	12.91	15.24	18.54
Mid-Cap Value Funds	10.46	12.63	14.52
Small-Cap Growth Funds	19.18	23.98	27.46
Small-Cap Core Funds	9.67	12.20	14.90
Small-Cap Value Funds	5.80	8.68	11.84
Multi-Cap Growth Funds	23.80	27.44	31.24
Multi-Cap Core Funds	15.62	18.87	22.03
Multi-Cap Value Funds	11.73	15.13	17.56
Real Estate Funds	3.72	5.84	7.30
3-YEAR			
All Domestic Funds	7.70	9.39	11.00
All Large-Cap Funds	8.23	9.79	11.14
All Mid-Cap Funds	7.26	8.63	10.29
All Small-Cap Funds	7.56	9.31	11.02
All Multi-Cap Funds	7.49	9.16	10.80
Large-Cap Growth Funds	10.64	12.06	13.76
Large-Cap Core Funds	8.61	10.06	10.75
Large-Cap Value Funds	7.19	8.69	9.41
Mid-Cap Growth Funds	7.54	9.35	10.92
Mid-Cap Core Funds	6.60	8.15	9.33
Mid-Cap Value Funds	7.92	8.52	9.94
Small-Cap Growth Funds	7.93	10.09	11.88
Small-Cap Core Funds	7.28	8.87	10.28
Small-Cap Value Funds	7.44	9.13	10.39
Multi-Cap Growth Funds	8.99	10.77	12.53
Multi-Cap Core Funds	7.04	8.79	10.14
Multi-Cap Value Funds	7.50	8.16	9.75
Real Estate Funds	4.16	5.04	5.99

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	12.23	13.79	15.17
All Large-Cap Funds	12.71	14.25	15.48
All Mid-Cap Funds	12.18	13.47	14.68
All Small-Cap Funds	11.85	13.45	14.75
All Multi-Cap Funds	11.57	13.46	15.19
Large-Cap Growth Funds	14.85	15.80	16.99
Large-Cap Core Funds	12.82	14.36	15.15
Large-Cap Value Funds	12.05	12.87	13.96
Mid-Cap Growth Funds	12.57	13.60	14.92
Mid-Cap Core Funds	11.40	13.07	14.48
Mid-Cap Value Funds	12.16	13.71	14.45
Small-Cap Growth Funds	12.78	14.46	15.68
Small-Cap Core Funds	11.81	13.15	14.29
Small-Cap Value Funds	11.45	12.90	14.08
Multi-Cap Growth Funds	13.02	14.60	16.51
Multi-Cap Core Funds	10.83	12.82	14.68
Multi-Cap Value Funds	12.02	13.39	14.51
Real Estate Funds	8.08	8.58	9.39
10-YEAR			
All Domestic Funds	6.26	7.51	8.64
All Large-Cap Funds	6.29	7.34	8.18
All Mid-Cap Funds	6.71	7.66	8.86
All Small-Cap Funds	7.17	8.25	9.32
All Multi-Cap Funds	5.54	6.88	8.18
Large-Cap Growth Funds	7.12	8.32	9.10
Large-Cap Core Funds	6.29	7.19	7.91
Large-Cap Value Funds	5.87	6.79	7.78
Mid-Cap Growth Funds	6.61	7.56	8.60
Mid-Cap Core Funds	7.01	7.73	8.84
Mid-Cap Value Funds	6.38	7.71	9.02
Small-Cap Growth Funds	7.21	8.31	9.35
Small-Cap Core Funds	7.17	8.26	9.37
Small-Cap Value Funds	7.12	8.21	9.20
Multi-Cap Growth Funds	5.94	7.68	8.86
Multi-Cap Core Funds	5.38	6.79	8.03
Multi-Cap Value Funds	5.37	6.43	7.40
Real Estate Funds	3.67	5.75	7.10

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	8.71	9.76	10.85
All Large-Cap Funds	8.26	9.16	9.75
All Mid-Cap Funds	9.32	10.40	11.33
All Small-Cap Funds	10.03	10.83	11.52
All Multi-Cap Funds	8.23	9.37	10.39
Large-Cap Growth Funds	8.82	9.59	10.29
Large-Cap Core Funds	8.20	9.16	9.63
Large-Cap Value Funds	8.10	8.94	9.60
Mid-Cap Growth Funds	9.49	10.69	11.39
Mid-Cap Core Funds	9.38	10.24	10.81
Mid-Cap Value Funds	9.15	10.38	11.34
Small-Cap Growth Funds	10.22	10.96	11.61
Small-Cap Core Funds	10.00	10.70	11.45
Small-Cap Value Funds	9.94	10.88	11.59
Multi-Cap Growth Funds	9.53	10.45	11.78
Multi-Cap Core Funds	8.00	8.90	10.00
Multi-Cap Value Funds	7.93	9.17	10.12
Real Estate Funds	8.97	9.99	10.93

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	50.21	77.45	77.71	81.98	82.47
International Funds	S&P International 700	53.95	69.40	70.93	81.68	91.63
International Small-Cap Funds	S&P Developed Ex-U.S. Small Cap	44.05	65.75	65.52	72.55	78.13
Emerging Markets Funds	S&P/IFCI Composite	64.89	78.92	77.78	85.14	94.83

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	237	93.67	91.14
International Funds	368	95.38	95.11
International Small Cap Funds	84	97.62	94.05
Emerging Markets Funds	226	91.59	91.15
3-YEAR			
Global Funds	236	83.47	75.85
International Funds	368	88.04	85.33
International Small Cap Funds	73	89.04	86.30
Emerging Markets Funds	224	80.36	79.46
5-YEAR			
Global Funds	175	73.14	58.86
International Funds	258	78.29	75.19
International Small Cap Funds	58	86.21	84.48
Emerging Markets Funds	171	80.12	78.95
10-YEAR			
Global Funds	111	61.26	49.55
International Funds	262	61.45	58.40
International Small Cap Funds	51	76.47	64.71
Emerging Markets Funds	74	66.22	60.81
15-YEAR			
Global Funds	97	43.30	31.96
International Funds	251	45.02	41.83
International Small Cap Funds	32	62.50	56.25
Emerging Markets Funds	58	58.62	55.17

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	23.84	10.16	12.14	5.67	9.52
Global Funds	24.02	8.57	10.34	4.15	8.24
S&P International 700	26.64	8.50	7.93	2.64	9.21
International Funds	26.60	7.58	6.96	1.33	7.19
S&P Developed Ex-U.S. Small Cap	32.37	13.32	12.12	5.22	12.15
International Small-Cap Funds	32.68	11.54	10.39	4.43	11.24
S&P/IFCI Composite	37.89	10.21	5.65	2.50	13.41
Emerging Markets Funds	34.36	7.65	3.74	0.25	10.80

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	23.84	10.16	12.14	5.67	9.52
Global Funds	23.46	9.05	11.10	5.11	9.35
S&P International 700	26.64	8.50	7.93	2.64	9.21
International Funds	26.87	7.85	7.77	2.31	8.38
S&P Developed Ex-U.S. Small Cap	32.37	13.32	12.12	5.22	12.15
International Small-Cap Funds	34.27	11.99	10.78	5.23	11.98
S&P/IFCI Composite	37.89	10.21	5.65	2.50	13.41
Emerging Markets Funds	35.65	8.75	5.01	1.61	11.89

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	20.19	24.12	28.20
International Funds	23.39	26.51	29.65
International Small-Cap Funds	29.96	33.20	36.44
Emerging Markets Funds	28.75	35.04	40.77
3-YEAR			
Global Funds	7.22	8.95	10.57
International Funds	6.54	7.90	9.03
International Small-Cap Funds	10.63	12.33	13.77
Emerging Markets Funds	6.67	8.48	10.38
5-YEAR			
Global Funds	9.06	10.99	12.62
International Funds	6.37	7.49	8.40
International Small-Cap Funds	9.36	11.18	12.85
Emerging Markets Funds	2.87	4.01	5.82
10-YEAR			
Global Funds	3.78	4.91	5.92
International Funds	0.91	1.91	2.93
International Small-Cap Funds	3.76	4.85	6.02
Emerging Markets Funds	0.22	1.12	2.43
15-YEAR			
Global Funds	8.27	8.89	10.22
International Funds	6.79	7.96	8.92
International Small-Cap Funds	10.43	11.05	13.39
Emerging Markets Funds	10.19	11.44	12.49

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	96.43	100.00	98.31	95.24	98.00
Government Intermediate Funds	Barclays US Government Intermediate	57.89	90.91	80.00	78.05	90.48
Government Short Funds	Barclays US Government (1-3 Year)	47.83	69.23	79.31	76.47	88.24
Investment-Grade Long Funds	Barclays US Government/Credit Long	96.74	94.68	95.45	95.40	97.73
Investment-Grade Intermediate Funds	Barclays US Government/Credit Intermediate	31.37	35.53	40.94	51.06	73.53
Investment-Grade Short Funds	Barclays US Government/Credit (1-3 Year)	22.22	41.67	43.33	57.81	68.89
High Yield Funds	Barclays US Corporate High Yield	80.95	90.87	93.81	98.37	98.23
Mortgage-Backed Securities Funds	Barclays US Aggregate Securitized - MBS	67.92	73.08	79.31	81.40	93.88
Global Income Funds	Barclays Global Aggregate	64.86	60.55	52.59	58.33	69.44
Emerging Markets Debt Funds	Barclays Emerging Markets	22.58	70.69	85.71	73.68	66.67
General Municipal Debt Funds	S&P National AMT-Free Municipal Bond	42.86	58.75	47.50	63.29	82.88
California Municipal Debt Funds	S&P California AMT-Free Municipal Bond	25.71	30.56	37.14	66.67	84.44
New York Municipal Debt Funds	S&P New York AMT-Free Municipal Bond	33.33	57.14	73.33	85.29	89.47
Loan Participation Funds	S&P/LSTA U.S. Leveraged Loan 100	52.08	56.25	52.78	100.00	-

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	57	94.74	94.74
Government Intermediate Funds	19	94.74	100.00
Government Short Funds	23	95.65	100.00
Investment-Grade Long Funds	95	93.68	94.74
Investment-Grade Intermediate Funds	204	97.55	96.08
Investment-Grade Short Funds	91	98.90	97.80
High Yield Funds	213	97.18	96.24
Mortgage-Backed Securities Funds	53	98.11	96.23
Global Income Funds	111	91.89	90.99
Emerging Markets Debt Funds	62	88.71	88.71
General Municipal Debt Funds	77	98.70	97.40
California Municipal Debt Funds	35	97.14	94.29
New York Municipal Debt Funds	27	96.30	96.30
Loan Participation Funds	48	93.75	93.75

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	58	86.21	86.21
Government Intermediate Funds	22	77.27	81.82
Government Short Funds	26	84.62	84.62
Investment-Grade Long Funds	98	91.84	84.69
Investment-Grade Intermediate Funds	197	90.36	84.26
Investment-Grade Short Funds	86	90.70	86.05
High Yield Funds	212	90.09	88.21
Mortgage-Backed Securities Funds	53	98.11	88.68
Global Income Funds	110	81.82	80.00
Emerging Markets Debt Funds	58	81.03	79.31
General Municipal Debt Funds	80	93.75	87.50
California Municipal Debt Funds	36	94.44	91.67
New York Municipal Debt Funds	28	92.86	92.86
Loan Participation Funds	48	93.75	91.67
5-YEAR			
Government Long Funds	60	85.00	80.00
Government Intermediate Funds	25	72.00	72.00
Government Short Funds	29	79.31	72.41
Investment-Grade Long Funds	113	88.50	68.14
Investment-Grade Intermediate Funds	255	83.53	55.69
Investment-Grade Short Funds	61	88.52	78.69
High Yield Funds	197	84.26	81.73
Mortgage-Backed Securities Funds	59	88.14	72.88
Global Income Funds	117	81.20	68.38
Emerging Markets Debt Funds	35	85.71	82.86
General Municipal Debt Funds	80	91.25	82.50
California Municipal Debt Funds	35	94.29	91.43
New York Municipal Debt Funds	30	86.67	86.67
Loan Participation Funds	36	97.22	97.22

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	43	60.47	53.49
Government Intermediate Funds	41	56.10	41.46
Government Short Funds	34	55.88	47.06
Investment-Grade Long Funds	87	63.22	41.38
Investment-Grade Intermediate Funds	188	62.23	43.09
Investment-Grade Short Funds	65	63.08	55.38
High Yield Funds	124	69.35	66.13
Mortgage-Backed Securities Funds	43	81.40	72.09
Global Income Funds	49	69.39	53.06
Emerging Markets Debt Funds	19	89.47	68.42
General Municipal Debt Funds	79	70.89	65.82
California Municipal Debt Funds	39	76.92	76.92
New York Municipal Debt Funds	34	67.65	67.65
Loan Participation Funds	17	82.35	76.47
15-YEAR			
Government Long Funds	51	47.06	37.25
Government Intermediate Funds	63	36.51	26.98
Government Short Funds	34	38.24	32.35
Investment-Grade Long Funds	132	41.67	20.45
Investment-Grade Intermediate Funds	170	44.71	32.35
Investment-Grade Short Funds	45	53.33	51.11
High Yield Funds	113	53.98	51.33
Mortgage-Backed Securities Funds	49	57.14	48.98
Global Income Funds	37	62.16	54.05
Emerging Markets Debt Funds	15	73.33	66.67
General Municipal Debt Funds	111	47.75	44.14
California Municipal Debt Funds	45	62.22	60.00
New York Municipal Debt Funds	38	60.53	57.89
Loan Participation Funds	-	-	-

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	8.53	2.85	3.49	6.49	6.24
Government Long Funds	2.22	0.97	0.91	2.92	2.95
Barclays US Government Intermediate	1.14	1.12	0.92	2.70	3.03
Government Intermediate Funds	0.91	0.54	0.38	2.04	2.28
Barclays US Government (1-3 Year)	0.45	0.63	0.58	1.53	2.08
Government Short Funds	0.55	0.37	0.15	1.10	1.52
Barclays US Government/Credit Long	10.71	4.52	4.43	7.26	6.77
Investment-Grade Long Funds	5.11	2.95	2.78	4.43	4.32
Barclays US Government/Credit Intermediate	2.14	1.76	1.50	3.32	3.57
Investment-Grade Intermediate Funds	2.94	1.83	1.52	3.18	3.23
Barclays US Government/Credit (1-3 Year)	0.84	0.93	0.84	1.85	2.36
Investment-Grade Short Funds	1.51	1.10	0.85	1.36	1.76
Barclays US Corporate High Yield	7.50	6.35	5.78	8.03	8.98
High Yield Funds	6.11	4.81	4.36	5.66	6.80
Barclays US Aggregate Securitized - MBS	2.47	1.88	2.04	3.84	4.05
Mortgage-Backed Securities Funds	2.08	1.45	1.49	3.21	3.23
Barclays Global Aggregate	7.39	2.02	0.79	3.09	4.22
Global Income Funds	6.64	1.88	0.77	3.19	4.24
Barclays Emerging Markets	8.17	6.38	3.87	7.01	8.98
Emerging Markets Debt Funds	10.00	5.49	2.10	4.80	7.55
S&P National AMT-Free Municipal Bond	5.09	2.89	2.79	4.22	4.26
General Municipal Debt Funds	5.04	2.59	2.60	3.84	3.67
S&P California AMT-Free Municipal Bond	5.15	2.88	3.33	4.64	4.57
California Municipal Debt Funds	5.62	2.97	3.26	4.27	3.99
S&P New York AMT-Free Municipal Bond	4.64	2.84	2.94	4.30	4.34
New York Municipal Debt Funds	4.31	2.54	2.38	3.73	3.62
S&P/LSTA U.S. Leveraged Loan 100	3.31	3.66	3.39	4.65	-
Loan Participation Funds	3.16	3.42	3.16	3.63	-

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	8.53	2.85	3.49	6.49	6.24
Government Long Funds	2.65	1.34	1.26	3.39	3.49
Barclays US Government Intermediate	1.14	1.12	0.92	2.70	3.03
Government Intermediate Funds	1.17	0.85	0.72	2.64	2.78
Barclays US Government (1-3 Year)	0.45	0.63	0.58	1.53	2.08
Government Short Funds	0.51	0.69	0.55	1.59	2.02
Barclays US Government/Credit Long	10.71	4.52	4.43	7.26	6.77
Investment-Grade Long Funds	6.52	3.45	3.42	4.64	4.76
Barclays US Government/Credit Intermediate	2.14	1.76	1.50	3.32	3.57
Investment-Grade Intermediate Funds	3.66	2.46	2.09	4.06	4.04
Barclays US Government/Credit (1-3 Year)	0.84	0.93	0.84	1.85	2.36
Investment-Grade Short Funds	1.71	1.57	1.36	2.40	2.69
Barclays US Corporate High Yield	7.50	6.35	5.78	8.03	8.98
High Yield Funds	6.99	5.18	4.86	6.17	7.38
Barclays US Aggregate Securitized - MBS	2.47	1.88	2.04	3.84	4.05
Mortgage-Backed Securities Funds	2.18	1.69	1.86	3.84	3.85
Barclays Global Aggregate	7.39	2.02	0.79	3.09	4.22
Global Income Funds	5.06	1.54	1.01	3.83	5.20
Barclays Emerging Markets	8.17	6.38	3.87	7.01	8.98
Emerging Markets Debt Funds	9.70	7.29	3.52	6.23	8.69
S&P National AMT-Free Municipal Bond	5.09	2.89	2.79	4.22	4.26
General Municipal Debt Funds	5.63	3.07	3.15	4.31	4.21
S&P California AMT-Free Municipal Bond	5.15	2.88	3.33	4.64	4.57
California Municipal Debt Funds	6.03	3.35	3.71	4.65	4.45
S&P New York AMT-Free Municipal Bond	4.64	2.84	2.94	4.30	4.34
New York Municipal Debt Funds	4.21	2.89	2.57	3.82	3.98
S&P/LSTA U.S. Leveraged Loan 100	3.31	3.66	3.39	4.65	-
Loan Participation Funds	3.38	3.87	3.39	3.70	-

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	1.34	1.82	2.36
Government Intermediate Funds	0.80	0.97	1.27
Government Short Funds	0.16	0.55	0.81
Investment-Grade Long Funds	3.81	4.71	6.34
Investment-Grade Intermediate Funds	2.02	3.23	3.92
Investment-Grade Short Funds	0.93	1.33	1.94
High Yield Funds	5.70	6.60	7.26
Mortgage-Backed Securities Funds	1.34	1.90	2.85
Global Income Funds	3.76	6.81	9.20
Emerging Markets Debt Funds	8.67	10.36	12.24
General Municipal Debt Funds	4.65	5.43	6.02
California Municipal Debt Funds	5.28	5.63	6.44
New York Municipal Debt Funds	4.43	4.92	5.24
Loan Participation Funds	2.79	3.32	3.81
3-YEAR			
Government Long Funds	0.84	1.17	1.45
Government Intermediate Funds	0.55	0.68	0.99
Government Short Funds	0.26	0.51	0.75
Investment-Grade Long Funds	2.29	3.03	3.71
Investment-Grade Intermediate Funds	1.70	2.09	2.52
Investment-Grade Short Funds	0.76	1.12	1.58
High Yield Funds	4.41	5.12	5.70
Mortgage-Backed Securities Funds	1.19	1.49	1.99
Global Income Funds	1.17	1.97	3.01
Emerging Markets Debt Funds	4.63	6.00	7.04
General Municipal Debt Funds	2.39	2.83	3.21
California Municipal Debt Funds	2.87	3.04	3.69
New York Municipal Debt Funds	2.66	2.82	3.09
Loan Participation Funds	3.24	3.51	4.23

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	0.83	1.03	1.31
Government Intermediate Funds	0.44	0.56	0.98
Government Short Funds	0.14	0.44	0.59
Investment-Grade Long Funds	1.98	2.59	3.27
Investment-Grade Intermediate Funds	1.32	1.91	2.46
Investment-Grade Short Funds	0.70	0.96	1.33
High Yield Funds	4.12	4.83	5.30
Mortgage-Backed Securities Funds	1.19	1.62	2.01
Global Income Funds	0.16	1.11	2.31
Emerging Markets Debt Funds	1.84	2.97	3.68
General Municipal Debt Funds	2.46	2.93	3.34
California Municipal Debt Funds	3.16	3.50	3.74
New York Municipal Debt Funds	2.50	2.73	2.98
Loan Participation Funds	3.10	3.26	3.83
10-YEAR			
Government Long Funds	2.67	3.19	3.68
Government Intermediate Funds	2.14	2.55	2.91
Government Short Funds	1.12	1.46	1.76
Investment-Grade Long Funds	3.47	4.25	5.27
Investment-Grade Intermediate Funds	3.44	4.02	4.50
Investment-Grade Short Funds	1.61	2.11	2.44
High Yield Funds	5.92	6.39	6.83
Mortgage-Backed Securities Funds	3.09	3.33	3.83
Global Income Funds	2.26	3.22	4.17
Emerging Markets Debt Funds	3.97	6.44	7.15
General Municipal Debt Funds	3.79	4.22	4.61
California Municipal Debt Funds	4.31	4.60	4.83
New York Municipal Debt Funds	3.88	4.12	4.25
Loan Participation Funds	3.28	3.70	3.96

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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	2.97	3.19	4.31
Government Intermediate Funds	2.24	2.55	3.04
Government Short Funds	1.64	1.87	2.08
Investment-Grade Long Funds	3.70	4.16	4.89
Investment-Grade Intermediate Funds	3.10	3.82	4.40
Investment-Grade Short Funds	1.94	2.43	2.83
High Yield Funds	6.92	7.38	7.73
Mortgage-Backed Securities Funds	3.19	3.51	3.96
Global Income Funds	3.73	4.33	5.38
Emerging Markets Debt Funds	8.41	8.94	9.30
General Municipal Debt Funds	3.70	4.08	4.37
California Municipal Debt Funds	4.19	4.35	4.53
New York Municipal Debt Funds	3.77	4.01	4.27
Loan Participation Funds	-	-	-

Source: S&P Dow Jones Indices LLC. Data as of Dec. 29, 2017. 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 1: U.S. Equity Category Mappings	
SPIVA CATEGORY	LIPPER FUND CLASSIFICATION
Large-Cap Growth Funds	Large-Cap Growth Funds
Large-Cap Core Funds	Large-Cap Core Funds
Large-Cap Value Funds	Large-Cap Value Funds
	Equity Income Funds
Mid-Cap Growth Funds	Mid-Cap Growth Funds
Mid-Cap Core Funds	Mid-Cap Core Funds
Mid-Cap Value Funds	Mid-Cap Value Funds
Small-Cap Growth Funds	Small-Cap Growth Funds
Small-Cap Core Funds	Small-Cap Core Funds
Small-Cap Value Funds	Small-Cap Value Funds
Multi-Cap Growth Funds	Multi-Cap Growth Funds
Multi-Cap Core Funds	Multi-Cap Core Funds
Multi-Cap Value Funds	Multi-Cap Value Funds
Real Estate Funds	Real Estate Funds

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

International Equity

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

Exhibit 2: Global Equity Category Mappings	
SPIVA CATEGORY	LIPPER FUND CLASSIFICATION
Global Funds	Global Large-Cap Growth Funds
	Global Large-Cap Core Funds
	Global Large-Cap Value Funds
	Global Multi-Cap Growth Funds
	Global Multi-Cap Core Funds
	Global Multi-Cap Value Funds
International Funds	International Large-Cap Growth Funds
	International Large-Cap Core Funds
	International Large-Cap Value Funds
	International Multi-Cap Growth Funds
	International Multi-Cap Core Funds
	International Multi-Cap Value Funds
International Small-Cap Funds	International Small-/Mid-Cap Growth Funds
	International Small-/Mid-Cap Core Funds
	International Small-/Mid-Cap Value Funds
Emerging Market Funds	Emerging Markets Funds

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

Fixed Income

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

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

Exhibit 3: Fixed Income Category Mappings	
SPIVA CATEGORY	LIPPER FUND CLASSIFICATION
Government Long Funds	General U.S. Government Funds
	General U.S. Treasury Funds
Government Intermediate Funds	Intermediate U.S. Government
	Short-Intermediate U.S. Government
Government Short Funds	Short U.S. Government Funds
	Short U.S. Treasury
Investment-Grade Long Funds	Corporate Debt Funds A-Rated
	Corporate Debt Funds BBB-Rated
Investment-Grade Intermediate Funds	Intermediate Investment-Grade Debt Funds
	Short-Intermediate Investment-Grade Debt Funds
Investment-Grade Short Funds	Short Investment-Grade Debt Funds
High-Yield Funds	High Current Yield Funds
Mortgage-Backed Securities Funds	U.S. Mortgage Funds
	GNMA Funds
Global Income Funds	Global Income Funds
	International Income Funds
Emerging Market Debt Funds	Emerging Market Debt Funds
Loan Participation Funds	Loan Participation Funds
General Municipal Debt Funds	General Municipal Debt Funds
California Municipal Debt Funds	California Municipal Debt Funds
New York Municipal Debt Funds	New York Municipal Debt Funds

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

APPENDIX B: GLOSSARY

Percentage of Funds Outperformed by the Index

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

Survivorship (%)

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

Style Consistency (%)

This calculation shows the percentage of funds that had the same style classification at the end of the time period as at the beginning of the time period.

Equal-Weighted Fund Performance

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

Asset-Weighted Fund Performance

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

Quartiles Breakpoints

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

Survivorship Bias

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

Fees

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

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.

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

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.

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 INDEX

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

International Equity

S&P GLOBAL 1200

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

S&P 700

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

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

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

S&P/IFCI COMPOSITE INDEX

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.

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.

² Barclays Capital Fixed Income Indices were formerly the Lehman Brothers Indices.

BARCLAYS CAPITAL BROTHERS MORTGAGE-BACKED SECURITIES INDEX

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

BARCLAYS CAPITAL GLOBAL AGGREGATE BOND INDEX

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

BARCLAYS CAPITAL EMERGING MARKETS INDEX

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

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

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

S&P NATIONAL AMT-FREE MUNICIPAL BOND INDEX

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

S&P CALIFORNIA AMT-FREE MUNICIPAL BOND INDEX

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

S&P NEW YORK AMT-FREE MUNICIPAL BOND INDEX

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

S&P DJI RESEARCH CONTRIBUTORS		
Charles Mounts	Global Head	charles.mounts@spglobal.com
Jake Vukelic	Business Manager	jake.vukelic@spglobal.com
GLOBAL RESEARCH & DESIGN		
AMERICAS		
Aye M. Soe, CFA	Americas Head	aye.soe@spglobal.com
Dennis Badlyans	Associate Director	dennis.badlyans@spglobal.com
Phillip Brzenk, CFA	Director	phillip.brzenk@spglobal.com
Smita Chirputkar	Director	smita.chirputkar@spglobal.com
Rachel Du	Senior Analyst	rachel.du@spglobal.com
Bill Hao	Director	wenli.hao@spglobal.com
Qing Li	Associate Director	qing.li@spglobal.com
Berlinda Liu, CFA	Director	berlinda.liu@spglobal.com
Ryan Poirier, FRM	Senior Analyst	ryan.poirier@spglobal.com
Maria Sanchez	Associate Director	maria.sanchez@spglobal.com
Kelly Tang, CFA	Director	kelly.tang@spglobal.com
Peter Tsui	Director	peter.tsui@spglobal.com
Hong Xie, CFA	Director	hong.xie@spglobal.com
APAC		
Priscilla Luk	APAC Head	priscilla.luk@spglobal.com
Utkarsh Agrawal, CFA	Associate Director	utkarsh.agrawal@spglobal.com
Liyu Zeng, CFA	Director	liyu.zeng@spglobal.com
Akash Jain	Associate Director	akash.jain@spglobal.com
EMEA		
Sunjiv Mainie, CFA, CQF	EMEA Head	sunjiv.mainie@spglobal.com
Leonardo Cabrer	Senior Analyst	leonardo.cabrer@spglobal.com
Andrew Innes	Senior Analyst	andrew.innes@spglobal.com
INDEX INVESTMENT STRATEGY		
Craig J. Lazzara, CFA	Global Head	craig.lazzara@spglobal.com
Fei Mei Chan	Director	feimei.chan@spglobal.com
Tim Edwards, PhD	Senior Director	tim.edwards@spglobal.com
Anu R. Ganti, CFA	Director	anu.ganti@spglobal.com
Hamish Preston	Senior Associate	hamish.preston@spglobal.com
Howard Silverblatt	Senior Index Analyst	howard.silverblatt@spglobal.com

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