S&P Dow Jones Indices

S&P Global

CONTRIBUTOR

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SPIVA® U.S. Scorecard

SUMMARY

- The U.S. equity market ended 2015 on a rather flat note amid plunging oil prices, a strengthening U.S. dollar, and the devaluation of the Chinese renminbi, all of which contributed to market volatility. As of Dec, 31, 2015, the S&P Composite 1500® returned 1.01% while the S&P 500® posted 1.38% on a total return basis.
- During the same period, 66.11% of large-cap managers, 56.81% of mid-cap managers, and 72.2% of small-cap managers underperformed the S&P 500, the S&P MidCap 400®, and the S&P SmallCap 600®, respectively.
- The figures are equally unfavorable when viewed over longer-term investment horizons. Over the five-year period, 84.15% of large-cap managers, 76.69% of mid-cap managers, and 90.13% of small-cap managers lagged their respective benchmarks.
- Similarly, over the 10-year investment horizon, 82.14% of large-cap managers, 87.61% of mid-cap managers, and 88.42% of small-cap managers failed to outperform on a relative basis.
- Over the past 12-month period, market conditions have been highly favorable for growth-style investing, with growth indices across market-cap ranges returning higher than the value indices. During the same period, the majority of actively managed value funds in the mid- and small-cap categories fared better than their benchmarks. The opposite can be seen with the growth funds, which underperformed their benchmarks.
- The headline international equity and emerging market equity indices posted negative returns in the second half of 2015, driven largely by increasing concerns over economic slowdown in China. For the one-year period, international small-cap equity was the only category that posted positive returns.
- During the same period, the majority of actively managed funds invested in international developed and emerging markets outperformed their respective benchmarks.
- Over the 10-year investment horizon, however, managers across all international equity categories underperformed their benchmarks.
- The U.S. Federal Reserve raised the target federal funds rate by 0.25% in December 2015, its first increase in nearly a decade. Results show that over the past 12-month period, funds invested in short-term and intermediate government and investment-grade corporate bonds significantly underperformed on a relative basis.

RESEARCH

- On the other hand, the majority of actively managed funds invested in long-dated government and credit categories outperformed their respective benchmarks over the 12-month period, marking a sharp reversal of fortunes from six months prior.
- The collapse of the energy market had repercussions for the junk bond market, with all headline high-yield indices posting negative returns. During the period of volatility, approximately two-thirds of actively managed high-yield funds delivered higher returns than the benchmark.
- The high-yield bond market is often considered to be best accessed via active investing, as passive vehicles have structural constraints that limit their flexibility and ability to deal with credit risk. Nevertheless, the 10-year results for the actively managed high-yield funds category show that over 90% of funds underperformed the broad-based benchmark.
- Weakness in the high-yield bond market extended into the leveraged loan space. The S&P/LSTA U.S. Leveraged Loan 100 Index posted -2.75% for the year. Actively managed senior loan funds fared favorably over the past 12 months, with just over 13% of funds underperforming the benchmark. Similarly, over the five-year investment horizon, only 42% of the funds lagged the benchmark.
- Funds disappear at a meaningful rate. Over the past five-year period, nearly 23% of domestic equity funds, 22% of global/international equity funds, and 17% of fixed income funds have been 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 investors falling somewhere in between. Since its first publication 14 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 investors fared in a particular period can be ascertained by calculating weighted average returns where each fund's return is weighted by net assets. SPIVA Scorecards show both equal- and asset-weighted averages.
- **Style Consistency**: SPIVA Scorecards measure style consistency for each style category across different time horizons. Style consistency is an important metric because style drift (the tendency of funds to diverge from their initial investment categorization) can have an impact on asset allocation decisions.
- **Data Cleaning**: SPIVA Scorecards avoid double counting multiple share classes in all count-based calculations, using only the share class with greater assets. Since this is meant to be a scorecard for active managers, index funds, leveraged and inverse funds, and other index-linked products are excluded.

ANNUAL LEAGUE TABLE

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

Exhibit 1: Annual League Table

Fund Category	Benchmark Index	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
All Domestic Funds	S&P Composite 1500	40.5	54.5	59.0	47.7	51.4	44.0	67.8	48.8	64.23	41.67	57.63	84.07	66.08	46.05	87.23	74.81
All Large-Cap Funds	S&P 500	36.9	57.6	61.0	64.6	61.6	44.5	69.1	44.8	54.34	50.75	61.83	81.28	63.25	55.80	86.44	66.11
All Mid-Cap Funds	S&P MidCap 400	78.9	67.3	70.3	56.4	61.8	76.0	46.7	46.4	74.74	57.60	78.19	67.36	80.45	38.97	66.23	56.81
All Small-Cap Funds	S&P SmallCap 600	70.7	66.4	73.6	38.8	85.0	60.5	63.6	45.0	83.77	32.22	63.02	85.78	66.50	68.09	72.92	72.20
Large-Cap Growth Funds	S&P 500 Growth	16.0	87.5	71.8	44.7	39.5	31.6	76.1	31.6	89.95	39.15	82.00	95.63	46.08	42.63	96.01	49.30
Large-Cap Core Funds	S&P 500	35.6	58.1	63.0	66.0	66.9	44.6	71.3	44.0	52.03	52.06	63.20	81.31	66.29	57.74	79.28	73.82
Large-Cap Value Funds	S&P 500 Value	54.5	20.6	39.4	78.5	83.2	58.8	87.7	46.3	22.17	46.24	34.67	54.26	85.06	66.56	78.59	59.16
Mid-Cap Growth Funds	S&P MidCap 400 Growth	78.4	79.0	86.9	31.7	59.6	78.5	34.8	39.3	88.95	59.60	82.14	75.39	87.22	36.72	56.25	79.89
Mid-Cap Core Funds	S&P MidCap 400	72.8	70.5	64.6	50.0	51.8	72.4	35.9	64.6	62.28	68.60	82.00	64.07	79.66	43.48	58.39	67.88
Mid-Cap Value Funds	S&P MidCap 400 Value	94.8	55.8	74.3	81.9	63.6	71.8	38.4	56.1	67.06	47.83	71.76	64.86	76.24	45.33	73.61	32.35
Small-Cap Growth Funds	S&P SmallCap 600 Growth	73.0	81.3	94.2	35.3	93.6	72.2	52.1	39.4	95.50	33.49	72.68	93.75	63.72	55.61	64.49	88.43
Small-Cap Core Funds	S&P SmallCap 600	66.8	65.6	75.2	33.3	82.9	61.4	62.8	51.9	82.46	34.45	60.21	86.10	68.44	77.70	67.92	77.62
Small-Cap Value Funds	S&P SmallCap 600 Value	74.4	48.7	37.5	49.3	77.5	46.0	76.7	39.8	72.55	26.27	51.81	83.00	61.83	78.99	94.31	46.56

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. Outperformance is based upon equal-weighted fund counts. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

REPORTS

Report 1: Percentage of U.S. Equity Funds Outperformed by Benchmarks					
Fund Category	**Comparison Index**	**One-Year (%)**	**Three-Year (%)**	**Five-Year (%)**	**Ten-Year (%)**
All Domestic Equity Funds	S&P Composite 1500	74.81	80.85	88.43	83.18
All Large-Cap Funds	S&P 500	66.11	75.81	84.15	82.14
All Mid-Cap Funds	S&P MidCap 400	56.81	61.64	76.69	87.61
All Small-Cap Funds	S&P SmallCap 600	72.20	81.73	90.13	88.42
All Multi-Cap Funds	S&P Composite 1500	73.64	79.61	88.56	88.32
Large-Cap Growth Funds	S&P 500 Growth	49.30	76.34	86.54	93.63
Large-Cap Core Funds	S&P 500	73.82	83.70	88.26	82.84
Large-Cap Value Funds	S&P 500 Value	59.16	78.70	82.17	61.00
Mid-Cap Growth Funds	S&P MidCap 400 Growth	79.89	65.91	81.48	91.23
Mid-Cap Core Funds	S&P MidCap 400	67.88	62.59	76.51	87.76
Mid-Cap Value Funds	S&P MidCap 400 Value	32.35	48.68	70.27	82.56
Small-Cap Growth Funds	S&P SmallCap 600 Growth	88.43	85.59	91.89	92.39
Small-Cap Core Funds	S&P SmallCap 600	77.62	86.62	91.44	89.16
Small-Cap Value Funds	S&P SmallCap 600 Value	46.56	79.51	92.31	86.36
Multi-Cap Growth Funds	S&P Composite 1500 Growth	68.02	79.00	90.57	90.44
Multi-Cap Core Funds	S&P Composite 1500	86.68	86.81	91.16	88.25
Multi-Cap Value Funds	S&P Composite 1500 Value	52.42	61.24	76.87	77.71
Real Estate Funds	S&P US Real Estate Investment Trust	61.90	76.22	82.64	86.08

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 2: Survivorship and Style Consistency of U.S. Equity Funds			
Fund Category	**No. of Funds at Start**	**Survivorship (%)**	**Style Consistency (%)**
One-Year			
All Domestic Funds	2823	96.07	86.75
All Large-Cap Funds	1027	96.40	89.09
All Mid-Cap Funds	389	95.12	80.21
All Small-Cap Funds	633	95.58	89.26
All Multi-Cap Funds	774	96.51	84.88
Large-Cap Growth Funds	286	95.80	88.46
Large-Cap Blend Funds	359	96.94	89.42
Large-Cap Value Funds	382	96.34	89.27
Mid-Cap Growth Funds	184	94.57	79.89
Mid-Cap Blend Funds	137	94.89	83.21
Mid-Cap Value Funds	68	97.06	75.00
Small-Cap Growth Funds	216	95.37	91.67
Small-Cap Blend Funds	286	96.15	89.86
Small-Cap Value Funds	131	94.66	83.97

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 2: Survivorship and Style Consistency of U.S. Equity Funds (cont.)			
Fund Category	**No. of Funds at Start**	**Survivorship (%)**	**Style Consistency (%)**
One-Year			
Multi-Cap Growth Funds	222	95.05	83.78
Multi-Cap Core Funds	428	96.96	85.51
Multi-Cap Value Funds	124	97.58	84.68
Real Estate Funds	147	97.96	97.96
Three-Year			
All Domestic Funds	2815	87.71	71.40
All Large-Cap Funds	1046	87.76	73.90
All Mid-Cap Funds	391	86.19	63.17
All Small-Cap Funds	613	88.42	76.35
All Multi-Cap Funds	765	87.84	68.24
Large-Cap Growth Funds	317	85.17	72.87
Large-Cap Blend Funds	405	86.91	68.40
Large-Cap Value Funds	324	91.36	81.79
Mid-Cap Growth Funds	176	83.52	65.91
Mid-Cap Blend Funds	139	85.61	61.87
Mid-Cap Value Funds	76	93.42	59.21
Small-Cap Growth Funds	222	85.14	79.28
Small-Cap Blend Funds	269	90.33	76.58
Small-Cap Value Funds	122	90.16	70.49
Multi-Cap Growth Funds	219	86.76	65.30
Multi-Cap Core Funds	417	88.97	72.42
Multi-Cap Value Funds	129	86.05	59.69
Real Estate Funds	143	93.71	93.71
Five-Year			
All Domestic Funds	2938	77.57	54.63
All Large-Cap Funds	1104	76.36	58.97
All Mid-Cap Funds	429	76.92	44.52
All Small-Cap Funds	618	80.74	61.65
All Multi-Cap Funds	787	77.13	48.54
Large-Cap Growth Funds	364	75.82	59.62
Large-Cap Blend Funds	426	75.12	54.46
Large-Cap Value Funds	314	78.66	64.33
Mid-Cap Growth Funds	189	74.60	50.79
Mid-Cap Blend Funds	166	76.51	42.17
Mid-Cap Value Funds	74	83.78	33.78
Small-Cap Growth Funds	222	77.93	67.57
Small-Cap Blend Funds	292	81.16	58.90
Small-Cap Value Funds	104	85.58	56.73

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 2: Survivorship and Style Consistency of U.S. Equity Funds (cont.)			
Fund Category	**No. of Funds at Start**	**Survivorship (%)**	**Style Consistency (%)**
Five-Year			
Multi-Cap Growth Funds	212	75.94	47.17
Multi-Cap Core Funds	441	78.91	53.29
Multi-Cap Value Funds	134	73.13	35.07
Real Estate Funds	144	87.50	87.50
Ten-Year			
All Domestic Funds	2110	60.00	35.92
All Large-Cap Funds	672	56.40	39.14
All Mid-Cap Funds	355	60.56	29.58
All Small-Cap Funds	475	63.16	41.89
All Multi-Cap Funds	608	61.18	31.41
Large-Cap Growth Funds	204	49.02	35.29
Large-Cap Core Funds	268	54.48	35.07
Large-Cap Value Funds	200	66.50	48.50
Mid-Cap Growth Funds	171	51.46	32.75
Mid-Cap Core Funds	98	65.31	31.63
Mid-Cap Value Funds	86	73.26	20.93
Small-Cap Growth Funds	184	54.89	44.57
Small-Cap Core Funds	203	65.52	41.87
Small-Cap Value Funds	88	75.00	36.36
Multi-Cap Growth Funds	136	55.88	27.21
Multi-Cap Core Funds	315	62.54	36.83
Multi-Cap Value Funds	157	63.06	24.20
Real Estate Funds	79	72.15	72.15

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 3: Average U.S. Equity Fund Performance (Equal-Weighted)				
Category	**One-Year (%)**	**Three-Year (Annualized %)**	**Five-Year (Annualized %)**	**Ten-Year (Annualized %)**
S&P Composite 1500	0.99	14.90	12.39	7.41
All Domestic Funds	-1.93	12.12	9.49	6.20
S&P 500	1.41	15.14	12.57	7.31
All Large-Cap Funds	-0.32	13.03	10.38	6.15
S&P MidCap 400	-2.18	12.75	10.68	8.18
All Mid-Cap Funds	-2.99	12.11	9.09	6.80
S&P SmallCap 600	-1.98	13.57	11.48	8.01
All Small-Cap Funds	-4.61	10.87	8.46	6.23
S&P Composite 1500	0.99	14.90	12.39	7.41
All Multi-Cap Funds	-1.47	11.79	9.17	5.77

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 3: Average U.S. Equity Fund Performance (Equal-Weighted) (cont.)				
Category	**One-Year (%)**	**Three-Year (Annualized %)**	**Five-Year (Annualized %)**	**Ten-Year (Annualized %)**
Large-Cap				
S&P 500 Growth	5.53	17.20	14.06	8.70
Large-Cap Growth Funds	5.29	15.76	11.87	7.00
S&P 500	1.41	15.14	12.57	7.31
Large-Cap Core Funds	-0.73	13.10	10.41	6.01
S&P 500 Value	-3.14	12.83	10.96	5.80
Large-Cap Value Funds	-3.91	10.89	9.20	5.55
Mid-Cap				
S&P MidCap 400 Growth	2.05	13.38	11.11	8.86
Mid-Cap Growth Funds	-1.23	12.58	9.14	7.00
S&P MidCap 400	-2.18	12.75	10.68	8.18
Mid-Cap Core Funds	-4.32	11.51	8.80	6.27
S&P MidCap 400 Value	-6.66	12.00	10.20	7.42
Mid-Cap Value Funds	-4.93	11.83	9.17	6.78
Small-Cap				
S&P SmallCap 600 Growth	2.79	15.07	12.59	8.81
Small-Cap Growth Funds	-2.18	12.54	9.15	6.54
S&P SmallCap 600	-1.98	13.57	11.48	8.01
Small-Cap Core Funds	-5.14	10.38	8.35	6.07
S&P SmallCap 600 Value	-6.67	12.00	10.37	7.17
Small-Cap Value Funds	-7.52	9.10	7.39	5.89
Multi-Cap				
S&P Composite 1500 Growth	5.22	16.86	13.80	8.75
Multi-Cap Growth Funds	2.14	14.19	10.29	6.58
S&P Composite 1500	0.99	14.90	12.39	7.41
Multi-Cap Core Funds	-2.33	10.74	8.63	5.53
S&P Composite 1500 Value	-3.53	12.74	10.88	5.98
Multi-Cap Value Funds	-4.92	10.93	8.87	5.07
Real Estate				
S&P BMI U.S. REIT	2.52	11.01	11.85	7.29
Real Estate Funds	1.11	7.91	9.05	5.41

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 4: Average U.S. Equity Fund Performance (Asset-Weighted)				
Category	**One-Year (%)**	**Three-Year (Annualized %)**	**Five-Year (Annualized %)**	**Ten-Year Annualized (%)**
S&P Composite 1500	0.99	14.90	12.39	7.41
All Domestic Funds	0.03	13.22	10.47	6.67
S&P 500	1.41	15.14	12.57	7.31
All Large-Cap Funds	0.89	13.72	11.02	6.48
S&P MidCap 400	-2.18	12.75	10.68	8.18
All Mid-Cap Funds	-1.67	12.93	9.89	7.41
S&P SmallCap 600	-1.98	13.57	11.48	8.01
All Small-Cap Funds	-3.89	11.10	8.86	6.72
S&P Composite 1500	0.99	14.90	12.39	7.41
All Multi-Cap Funds	-0.01	12.81	9.96	6.45
Large-Cap				
S&P 500 Growth	5.53	17.20	14.06	8.70
Large-Cap Growth Funds	6.65	16.51	12.54	7.07
S&P 500	1.41	15.14	12.57	7.31
Large-Cap Core Funds	-0.04	13.89	10.95	5.94
S&P 500 Value	-3.14	12.83	10.96	5.8
Large-Cap Value Funds	-3.06	11.07	9.63	5.9
Mid-Cap				
S&P MidCap 400 Growth	2.05	13.38	11.11	8.86
Mid-Cap Growth Funds	-0.02	13.24	9.82	7.77
S&P MidCap 400	-2.18	12.75	10.68	8.18
Mid-Cap Core Funds	-2.82	12.73	9.81	7.28
S&P MidCap 400 Value	-6.66	12.00	10.20	7.42
Mid-Cap Value Funds	-5.06	11.67	9.52	6.72
Small-Cap				
S&P SmallCap 600 Growth	2.79	15.07	12.59	8.81
Small-Cap Growth Funds	-1.53	12.87	10.03	7.43
S&P SmallCap 600	-1.98	13.57	11.48	8.01
Small-Cap Core Funds	-4.81	10.22	8.34	6.38
S&P SmallCap 600 Value	-6.67	12.00	10.37	7.17
Small-Cap Value Funds	-6.63	9.58	7.74	6.08
Multi-Cap				
S&P Composite 1500 Growth	5.22	16.86	13.80	8.75
Multi-Cap Growth Funds	3.96	16.39	12.33	7.98
S&P Composite 1500	0.99	14.90	12.39	7.41
Multi-Cap Core Funds	-1.60	10.95	8.83	5.93
S&P Composite 1500 Value	-3.53	12.74	10.88	5.98
Multi-Cap Value Funds	-2.61	12.10	9.46	5.32
Real Estate				
S&P BMI U.S. REIT	2.52	11.01	11.85	7.29
Real Estate Funds	2.08	8.89	9.80	6.10

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. All index returns used are total returns. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 5: Quartile Breakpoints of U.S. Equity Funds			
Fund Category	**Third Quartile**	**Second Quartile**	**First Quartile**
One-Year			
Large-Cap Growth Funds	3.00	6.08	8.62
Large-Cap Core Funds	-2.56	-0.18	1.51
Large-Cap Value Funds	-5.71	-3.63	-1.86
Mid-Cap Growth Funds	-3.81	-0.82	1.61
Mid-Cap Core Funds	-6.45	-3.52	-1.19
Mid-Cap Value Funds	-7.48	-5.26	-2.67
Small-Cap Growth Funds	-4.62	-2.11	0.60
Small-Cap Core Funds	-7.00	-4.54	-2.28
Small-Cap Value Funds	-8.73	-6.27	-3.98
Multi-Cap Growth Funds	-0.19	2.81	5.89
Multi-Cap Core Funds	-3.83	-1.76	-0.22
Multi-Cap Value Funds	-6.36	-3.75	-1.56
Real Estate Funds	-1.13	1.71	3.57
Three-Year			
Large-Cap Growth Funds	14.52	16.15	17.38
Large-Cap Core Funds	12.11	13.64	14.79
Large-Cap Value Funds	9.52	11.65	12.73
Mid-Cap Growth Funds	11.01	12.81	14.75
Mid-Cap Core Funds	10.67	12.04	13.70
Mid-Cap Value Funds	10.03	12.24	13.12
Small-Cap Growth Funds	10.89	12.75	14.34
Small-Cap Core Funds	9.30	11.44	12.69
Small-Cap Value Funds	7.81	10.09	11.86
Multi-Cap Growth Funds	12.02	14.77	16.76
Multi-Cap Core Funds	8.28	11.02	13.93
Multi-Cap Value Funds	9.56	12.59	14.06
Real Estate Funds	5.65	8.73	11.05
Five-Year			
Large-Cap Growth Funds	10.83	12.13	13.49
Large-Cap Core Funds	9.43	10.96	11.96
Large-Cap Value Funds	8.63	9.73	10.84

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. All index returns used are total returns. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 5: Quartile Breakpoints of U.S. Equity Funds (cont.)			
Fund Category	**Third Quartile**	**Second Quartile**	**First Quartile**
Five-Year			
Mid-Cap Growth Funds	7.59	9.55	11.05
Mid-Cap Core Funds	8.55	9.52	11.22
Mid-Cap Value Funds	7.78	9.18	10.88
Small-Cap Growth Funds	8.11	9.66	11.11
Small-Cap Core Funds	7.56	9.02	10.36
Small-Cap Value Funds	6.37	8.00	9.26
Multi-Cap Growth Funds	8.45	10.79	12.53
Multi-Cap Core Funds	6.74	8.65	10.85
Multi-Cap Value Funds	7.28	9.81	11.35
Real Estate Funds	6.94	10.19	11.73
Ten-Year			
Large-Cap Growth Funds	6.24	7.31	8.19
Large-Cap Core Funds	5.76	6.52	7.47
Large-Cap Value Funds	5.04	6.12	7.06
Mid-Cap Growth Funds	5.89	7.31	8.23
Mid-Cap Core Funds	5.76	6.90	8.02
Mid-Cap Value Funds	5.13	6.19	7.35
Small-Cap Growth Funds	6.09	7.19	8.20
Small-Cap Core Funds	5.66	6.52	7.57
Small-Cap Value Funds	5.27	6.28	6.91
Multi-Cap Growth Funds	5.67	6.78	8.21
Multi-Cap Core Funds	4.52	5.69	6.87
Multi-Cap Value Funds	4.34	5.53	6.36
Real Estate Funds	4.81	6.60	7.21

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. All index returns used are total returns. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 6: Percentage of International Equity Funds Outperformed by Benchmarks					
Fund Category	**Comparison Index**	**One-Year (%)**	**Three-Year (%)**	**Five-Year (%)**	**Ten-Year (%)**
Global Funds	S&P Global 1200	59.46	70.66	78.97	80.39
International Funds	S&P 700	27.16	45.40	55.37	79.17
International Small Cap Funds	S&P Developed Ex-U.S. SmallCap	47.25	56.76	47.37	62.5
Emerging Market Funds	S&P/IFCI Composite	64.07	65.73	69.94	91.43

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. Outperformance is based upon equal weighted fund counts. All index returns used are total returns. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 7: Survivorship and Style Consistency of International Equity Funds			
Fund Category	**No. of Funds at Start**	**Survivorship (%)**	**Style Consistency (%)**
One-Year			
Global Funds	333	92.19	90.69
International Funds	464	96.34	95.04
International Small-Cap Funds	91	98.9	96.7
Emerging Market Funds	270	95.19	94.81
Three-Year			
Global Funds	259	81.47	76.06
International Funds	348	87.93	86.21
International Small-Cap Funds	74	91.89	89.19
Emerging Market Funds	213	88.73	88.26
Five-Year			
Global Funds	195	69.23	67.69
International Funds	354	77.4	75.71
International Small-Cap Funds	57	92.98	89.47
Emerging Market Funds	163	83.44	82.82
Ten-Year			
Global Funds	102	59.8	55.88
International Funds	264	62.88	60.98
International Small-Cap Funds	48	81.25	66.67
Emerging Market Funds	70	78.57	77.14

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 8: Average International Equity Fund Performance (Equal-Weighted)				
Category	**One-Year (%)**	**Three-Year (Annualized %)**	**Five-Year (Annualized %)**	**Ten-Year (Annualized %)**
S&P Global 1200	-0.85	9.55	7.83	5.60
Global Funds	-1.36	8.02	5.93	4.83
S&P 700	-3.74	3.34	2.76	3.66
International Funds	-1.39	3.81	2.71	2.91
S&P World Ex-U.S. SmallCap	5.91	8.84	5.50	5.33
International Small Cap Funds	5.38	7.93	5.19	5.54
S&P/IFCI Composite	-12.38	-4.84	-3.68	4.73
Emerging Market Funds	-13.08	-5.36	-4.26	3.06

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. All index returns used are total returns. Funds are equal-weighted, but indices are not. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 9: Average International Equity Fund Performance (Asset-Weighted)				
Category	**One-Year (%)**	**Three-Year (Annualized %)**	**Five-Year (Annualized %)**	**Ten-Year Annualized (%)**
S&P Global 1200	-0.85	9.55	7.83	5.60
Global Funds	-0.79	8.51	6.87	5.61
S&P 700	-3.74	3.34	2.76	3.66
International Funds	-1.73	4.43	3.30	3.58
S&P Developed Ex-U.S. SmallCap	5.91	8.84	5.50	5.33
International Small Cap Funds	5.56	8.49	5.59	5.97
S&P/IFCI Composite	-12.38	-4.84	-3.68	4.73
Emerging Market Funds	-13.42	-5.39	-3.73	3.82

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 10: Quartile Breakpoints of International Equity Funds			
Fund Category	**Third Quartile**	**Second Quartile**	**First Quartile**
One-Year			
Global Funds	-3.58	-1.29	1.77
International Funds	-3.57	-0.83	1.32
International Small Cap Funds	1.78	6.13	9.84
Emerging Market Funds	-16.64	-13.76	-10.09
Three-Year			
Global Funds	6.16	8.76	10.49
International Funds	2.55	4.14	5.57
International Small Cap Funds	5.62	8.44	10.66
Emerging Market Funds	-8.14	-6.44	-3.21
Five-Year			
Global Funds	5.12	6.88	8.19
International Funds	1.76	3.04	4.21
International Small Cap Funds	3.66	5.71	7.28
Emerging Market Funds	-5.99	-4.66	-2.64
Ten-Year			
Global Funds	3.96	5.11	5.90
International Funds	2.22	2.98	3.96
International Small Cap Funds	4.37	5.18	6.54
Emerging Market Funds	1.57	3.08	3.78

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 11: Percentage of Fixed Income Funds Outperformed by Benchmarks					
Fund Category	**Comparison Index**	**One-Year (%)**	**Three-Year (%)**	**Five-Year (%)**	**Ten-Year (%)**
Government Long Funds	Barclays Long Government	41.46	100.00	98.89	95.56
Government Intermediate Funds	Barclays Intermediate Government	93.10	85.29	68.29	77.08
Government Short Funds	Barclays 1-3 Year Government	90.70	86.36	63.64	74.36
Investment-Grade Long Funds	Barclays Long Government/Credit	12.90	68.50	96.27	93.94
Investment-Grade Intermediate Funds	Barclays Intermediate Government/Credit	93.90	54.17	42.11	54.24
Investment-Grade Short Funds	Barclays 1-3 Year Government/Credit	74.78	63.64	29.63	60.81
High Yield Funds	Barclays High Yield	33.61	57.99	79.23	93.97
Mortgage-Backed Securities Funds	Barclays Mortgage-Backed Securities	73.02	80.00	64.52	81.25
Global Income Funds	Barclays Global Aggregate	56.07	49.34	51.24	60.42
Emerging Markets Debt Funds	Barclays Emerging Markets	89.90	92.96	94.29	81.25
Loan Participation Funds[1]	S&P/LSTA U.S Leveraged Loan 100	13.04	25.00	41.67	N/A
General Municipal Debt Funds	S&P National AMT-Free Municipal Bond	62.62	47.06	43.48	70.00
California Municipal Debt Funds	S&P California AMT-Free Municipal Bond	42.11	54.05	42.11	87.50
New York Municipal Debt Funds	S&P New York AMT-Free Municipal Bond	58.06	75.00	61.76	91.43

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. Outperformance is based upon equal-weighted fund counts. All index returns used are total returns. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

[1] Due to the limited sample size of loan participation funds 10 years ago, we have not calculated the outperformance and the related figures.

Report 12: Survivorship and Style Consistency of Fixed Income Funds			
Fund Category	**No. of Funds at Start**	**Survivorship (%)**	**Style Consistency (%)**
One-Year			
Government Long Funds	82	96.34	96.34
Government Intermediate Funds	29	96.55	96.55
Government Short Funds	43	95.35	95.35
Investment-Grade Long Funds	124	99.19	97.58
Investment-Grade Intermediate Funds	295	96.95	96.61
Investment-Grade Short Funds	115	93.91	92.17
High Yield Funds	241	95.44	95.44
Mortgage-Backed Securities Funds	63	98.41	92.06
Global Income Funds	173	93.06	92.49
Emerging Market Debt Funds	99	91.92	90.91
Loan Participation Funds	46	100.00	100.00
General Municipal Debt Funds	107	98.13	98.13
California Municipal Debt Funds	38	100.00	100.00
New York Municipal Debt Funds	31	96.77	96.77
Three-Year			
Government Long Funds	89	92.13	86.52
Government Intermediate Funds	34	82.35	79.41
Government Short Funds	44	88.64	86.36
Investment-Grade Long Funds	127	95.28	82.68
Investment-Grade Intermediate Funds	288	89.24	84.38
Investment-Grade Short Funds	88	87.50	85.23
High Yield Funds	219	90.41	89.50
Mortgage-Backed Securities Funds	65	86.15	78.46
Global Income Funds	152	88.82	88.16
Emerging Market Debt Funds	71	91.55	91.55
Loan Participation Funds	36	100.00	100.00
General Municipal Debt Funds	102	94.12	93.14
California Municipal Debt Funds	37	100.00	100.00
New York Municipal Debt Funds	32	93.75	93.75

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 12: Survivorship and Style Consistency of Fixed Income Funds (cont.)			
Fund Category	**No. of Funds at Start**	**Survivorship (%)**	**Style Consistency (%)**
Five-Year			
Government Long Funds	90	78.89	73.33
Government Intermediate Funds	41	73.17	63.41
Government Short Funds	44	77.27	70.45
Investment-Grade Long Funds	134	86.57	67.91
Investment-Grade Intermediate Funds	285	81.4	74.39
Investment-Grade Short Funds	81	80.25	77.78
High Yield Funds	207	84.54	83.09
Mortgage-Backed Securities Funds	62	83.87	74.19
Global Income Funds	121	81.82	80.17
Emerging Market Debt Funds	35	91.43	91.43
Loan Participation Funds	24	95.83	95.83
General Municipal Debt Funds	92	88.04	88.04
California Municipal Debt Funds	38	89.47	89.47
New York Municipal Debt Funds	34	82.35	82.35
Ten-Year			
Government Long Funds	45	71.11	60.00
Government Intermediate Funds	48	68.75	52.08
Government Short Funds	39	76.92	71.79
Investment-Grade Long Funds	99	69.70	47.47
Investment-Grade Intermediate Funds	177	70.06	67.80
Investment-Grade Short Funds	74	68.92	66.22
High Yield Funds	116	82.76	79.31
Mortgage-Backed Securities Funds	48	81.25	68.75
Global Income Funds	48	72.92	66.67
Emerging Market Debt Funds	16	93.75	87.50
Loan Participation Funds	N/A	N/A	N/A
General Municipal Debt Funds	80	80.00	80.00
California Municipal Debt Funds	40	80.00	80.00
New York Municipal Debt Funds	35	74.29	74.29

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 13: Average Fixed Income Fund Performance (Equal-Weighted)				
Category	**One-Year (%)**	**Three-Year (Annualized %)**	**Five-Year (Annualized %)**	**Ten-Year (Annualized %)**
Barclays Long Government	-1.16	2.55	7.65	6.67
Government Long Funds	-0.69	-0.16	2.36	3.78
Barclays Intermediate Government	1.18	0.8	2.02	3.7
Government Intermediate Funds	0.43	0.38	1.87	3.41
Barclays 1-3 Year Government	0.57	0.53	0.73	2.51
Government Short Funds	0.05	0.01	0.64	2.21
Barclays Long Government/Credit	-3.31	1.7	6.99	6.45
Investment-Grade Long Funds	-1.03	1.72	4.11	4.75
Barclays Intermediate Government/Credit	1.06	1.09	2.57	4.04
Investment-Grade Intermediate Funds	0.04	1.12	2.86	3.97
Barclays 1-3 Year Government/Credit	0.66	0.68	0.97	2.74
Investment-Grade Short Funds	0.37	0.79	1.54	2.52
Barclays High Yield	-4.46	1.7	5.04	6.96
High Yield Funds	-3.66	1.4	4.19	5.55
Barclays Mortgage-Backed Securities	1.51	2.01	2.96	4.63
Mortgage-Backed Securities Funds	1.19	1.59	2.87	3.93
Barclays Global Aggregate	-3.17	-1.74	0.89	3.74
Global Income Funds	-3.39	-1.02	1.51	3.82
Barclays Emerging Markets	1.27	0.56	5.11	6.71
Emerging Market Debt Funds	-5.7	-4.25	0.74	4.4
S&P/LSTA U.S. Leveraged Loan 100 Index	-2.76	1.04	2.78	N/A
Loan Participation Funds	-0.86	1.84	3.30	N/A
S&P National AMT-Free Municipal Bond	3.26	2.84	5.2	4.5
General Municipal Debt Funds	3.02	2.84	5.19	4.07
S&P California AMT-Free Municipal Bond	3.56	3.86	6.26	4.96
California Municipal Debt Funds	3.82	3.9	6.62	4.6
S&P New York AMT-Free Municipal Bond	3.55	3.23	5.26	4.63
New York Municipal Debt Funds	3.29	2.73	5.07	4.15

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. All index returns used are total returns. Funds are equal weighted, but indices are not. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 14: Average Fixed Income Fund Performance (Asset-Weighted)				
Category	**One-Year (%)**	**Three-Year (Annualized %)**	**Five-Year (Annualized %)**	**Ten-Year (Annualized %)**
Barclays Long Government	-1.16	2.55	7.65	6.67
Government Long Funds	-0.06	-0.07	2.58	3.87
Barclays Intermediate Government	1.18	0.8	2.02	3.7
Government Intermediate Funds	0.92	0.67	2.48	3.68
Barclays 1-3 Year Government	0.57	0.53	0.73	2.51
Government Short Funds	-0.26	-0.69	1.37	2.9
Barclays Long Government/Credit	-3.31	1.7	6.99	6.45
Investment-Grade Long Funds	-1.62	1.81	4.35	4.7
Barclays Intermediate Government/Credit	1.06	1.09	2.57	4.04
Investment-Grade Intermediate Funds	0.13	1.14	3.28	4.7
Barclays 1-3 Year Government/Credit	0.66	0.68	0.97	2.74
Investment-Grade Short Funds	0.61	0.91	1.84	2.84
Barclays High Yield	-4.46	1.7	5.04	6.96
High Yield Funds	-3.76	1.61	4.35	5.48
Barclays Mortgage-Backed Securities	1.51	2.01	2.96	4.63
Mortgage-Backed Securities Funds	1.55	2.04	3.42	4.55
Barclays Global Aggregate	-3.17	-1.74	0.89	3.74
Global Income Funds	-2.52	-0.15	2.19	4.76
Barclays Emerging Markets	1.27	0.56	5.11	6.71
Emerging Market Debt Funds	-5.07	-4.17	0.88	4.51
S&P/LSTA Leveraged Loan 100 Total Return Index	-2.76	1.04	2.78	N/A
Loan Participation Funds	-1.42	1.42	2.87	N/A
S&P National Municipal Bond	3.26	2.84	5.20	4.50
General Municipal Debt Funds	3.25	3.18	5.80	4.34
S&P California Municipal Bond	3.56	3.86	6.26	4.96
California Municipal Debt Funds	3.83	4.11	6.80	4.71
S&P New York Municipal Bond	3.55	3.23	5.26	4.63
New York Municipal Debt Funds	2.78	2.32	5.03	3.96

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. All index returns used are total returns. Funds are equal weighted, but indices are not. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 15: Quartile Breakpoints of Fixed Income Funds			
Fund Category	**Third Quartile**	**Second Quartile**	**First Quartile**
One-Year			
Government Long Funds	-1.98	-0.04	0.47
Government Intermediate Funds	0.17	0.36	0.73
Government Short Funds	-0.15	0.13	0.40
Investment-Grade Long Funds	-1.71	-0.67	0.19
Investment-Grade Intermediate Funds	-0.42	0.22	0.60
Investment-Grade Short Funds	0.18	0.36	0.68
High Yield Funds	-4.77	-3.39	-1.64
Mortgage-Backed Securities Funds	0.80	1.23	1.56
Global Income Funds	-5.03	-3.39	-0.68
Emerging Market Debt Funds	-8.76	-3.08	-0.76
Loan Participation Funds	-2.02	-0.78	0.49
General Municipal Debt Funds	2.58	3.04	3.69
California Municipal Debt Funds	3.20	3.64	4.43
New York Municipal Debt Funds	2.87	3.29	3.81
Three-Year			
Government Long Funds	-1.40	0.46	0.93
Government Intermediate Funds	0.11	0.51	0.67
Government Short Funds	-0.20	0.18	0.39
Investment-Grade Long Funds	0.90	1.38	1.90
Investment-Grade Intermediate Funds	0.68	1.10	1.53
Investment-Grade Short Funds	0.42	0.55	0.88
High Yield Funds	0.89	1.58	2.35
Mortgage-Backed Securities Funds	1.16	1.53	1.97
Global Income Funds	-2.67	-0.85	1.09
Emerging Market Debt Funds	-9.02	-2.83	-0.86
Loan Participation Funds	1.14	1.67	2.14
General Municipal Debt Funds	2.38	2.92	3.55
California Municipal Debt Funds	3.45	3.81	4.27
New York Municipal Debt Funds	2.37	2.64	3.25

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 15: Quartile Breakpoints of Fixed Income Funds (cont.)			
Fund Category	**Third Quartile**	**Second Quartile**	**First Quartile**
Five-Year			
Government Long Funds	1.80	2.22	2.75
Government Intermediate Funds	1.22	1.80	2.24
Government Short Funds	0.31	0.67	1.13
Investment-Grade Long Funds	3.07	3.63	4.38
Investment-Grade Intermediate Funds	2.44	3.24	3.70
Investment-Grade Short Funds	1.18	1.36	1.80
High Yield Funds	3.87	4.46	5.04
Mortgage-Backed Securities Funds	2.37	2.73	3.16
Global Income Funds	0.25	1.11	2.81
Emerging Market Debt Funds	-2.77	2.30	3.80
Loan Participation Funds	2.39	3.01	3.12
General Municipal Debt Funds	4.63	5.59	6.30
California Municipal Debt Funds	6.14	6.66	7.01
New York Municipal Debt Funds	4.78	5.11	5.73
Ten-Year			
Government Long Funds	3.50	3.88	4.96
Government Intermediate Funds	3.06	3.58	3.93
Government Short Funds	1.85	2.11	2.71
Investment-Grade Long Funds	3.53	4.52	5.22
Investment-Grade Intermediate Funds	3.83	4.36	4.92
Investment-Grade Short Funds	2.32	2.81	3.06
High Yield Funds	5.23	5.69	6.38
Mortgage-Backed Securities Funds	3.86	4.06	4.61
Global Income Funds	3.03	4.05	4.88
Emerging Market Debt Funds	5.17	5.87	6.55
Loan Participation Funds	N/A	N/A	N/A
General Municipal Debt Funds	3.84	4.29	4.65
California Municipal Debt Funds	4.36	4.65	4.84
New York Municipal Debt Funds	3.94	4.18	4.49

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2015. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

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 2: 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 3: 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 4: Fixed Income Category Mappings	
SPIVA Category	**Lipper Fund Classification**
Government Long Funds	General U.S. GovernmentFunds
	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 pth percentile for a set of data is the value that is greater than or equal top% 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.

Indices[2]

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.

[2] 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 investors.

Fixed Income[3]

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.

[3] 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.

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