

SPIVA® U.S. Scorecard

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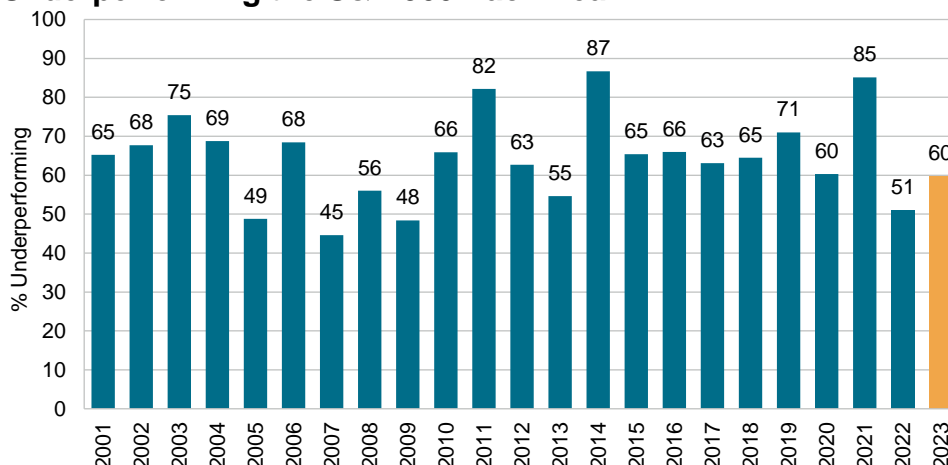
Experience the active vs. passive debate on a global scale.

Summary

After a dismal 2022, the market recovered with a vengeance in 2023 and the **S&P 500®** gained an impressive **26%**. Optimism that the U.S. Federal Reserve would be able to engineer a soft landing accompanied a broadening of the rally to the **S&P MidCap 400®** and the **S&P SmallCap 600®**, which both climbed 16%. Meanwhile, despite persistent inflation concerns and a rough start to the year for regional banks, U.S. fixed income markets also gained in 2023—albeit less materially and with a few more bumps along the way.

Over the full year, a majority of actively managed funds underperformed their assigned benchmarks in most of our reported fund categories. In our largest and most closely watched comparison, **60% of all active large-cap U.S. equity funds underperformed the S&P 500**. This figure was better than might have been expected given the dominance of the U.S. equity market's largest stocks, placing 2023's underperformance rate close to, but just below, the 64% average annual rate reported over the 23-year history of our SPIVA Scorecards.

Exhibit 1: Percentage of Large-Cap Domestic Equity Funds Underperforming the S&P 500 Each Year



Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

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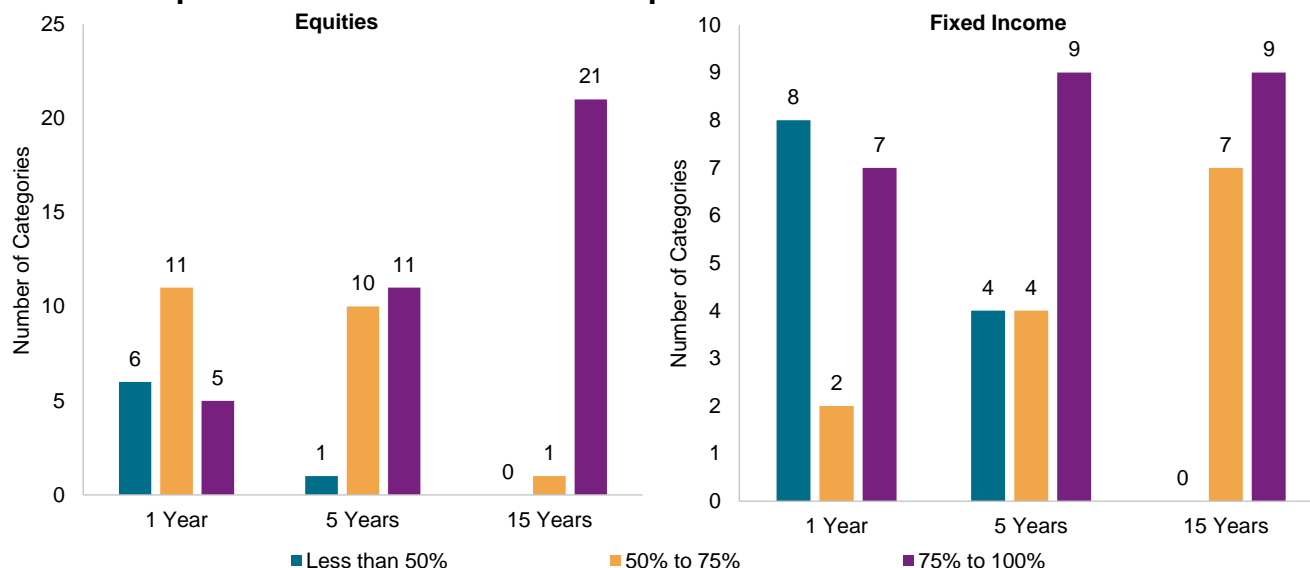
Perhaps aided by their ability to opportunistically tilt toward outperforming large caps,¹ the results were generally better for funds in smaller-capitalization U.S. equity categories: just 50% of All Mid-Cap funds lagged the S&P MidCap 400 and only 48% of All Small-Cap funds underperformed the S&P SmallCap 600. Small-Cap Value was a particular bright spot, with only 37% of funds underperforming the [S&P SmallCap 600 Value](#).

Turning to international equity categories, nearly three-quarters (74%) of funds in the Global category underperformed, but at least in relative terms, International Small-Cap Funds continued to offer more fertile grounds for actively managed funds: just 54% underperformed.

Fixed income results, with an underperformance rate of 59% across all fund categories, were more mixed, with 9 out of our 17 reported categories posting majority underperformance. At one extreme, **98% of funds in the General Investment-Grade category and 80% of High Yield funds underperformed.** Municipal and emerging debt were among the categories that saw majority outperformance.

Across all categories, **underperformance rates typically rose as time horizons lengthened.** Exhibit 2 illustrates the point. At the one-year horizon, 6 of 22 equity categories and 8 of 17 fixed income categories saw majority outperformance, falling to just 1 equity category and 4 fixed income categories over five years. At the 15-year horizon in both asset classes, there were **no** categories in which the majority of active managers outperformed.

Exhibit 2: Equities and Fixed Income Underperformance Rates Rose over Time



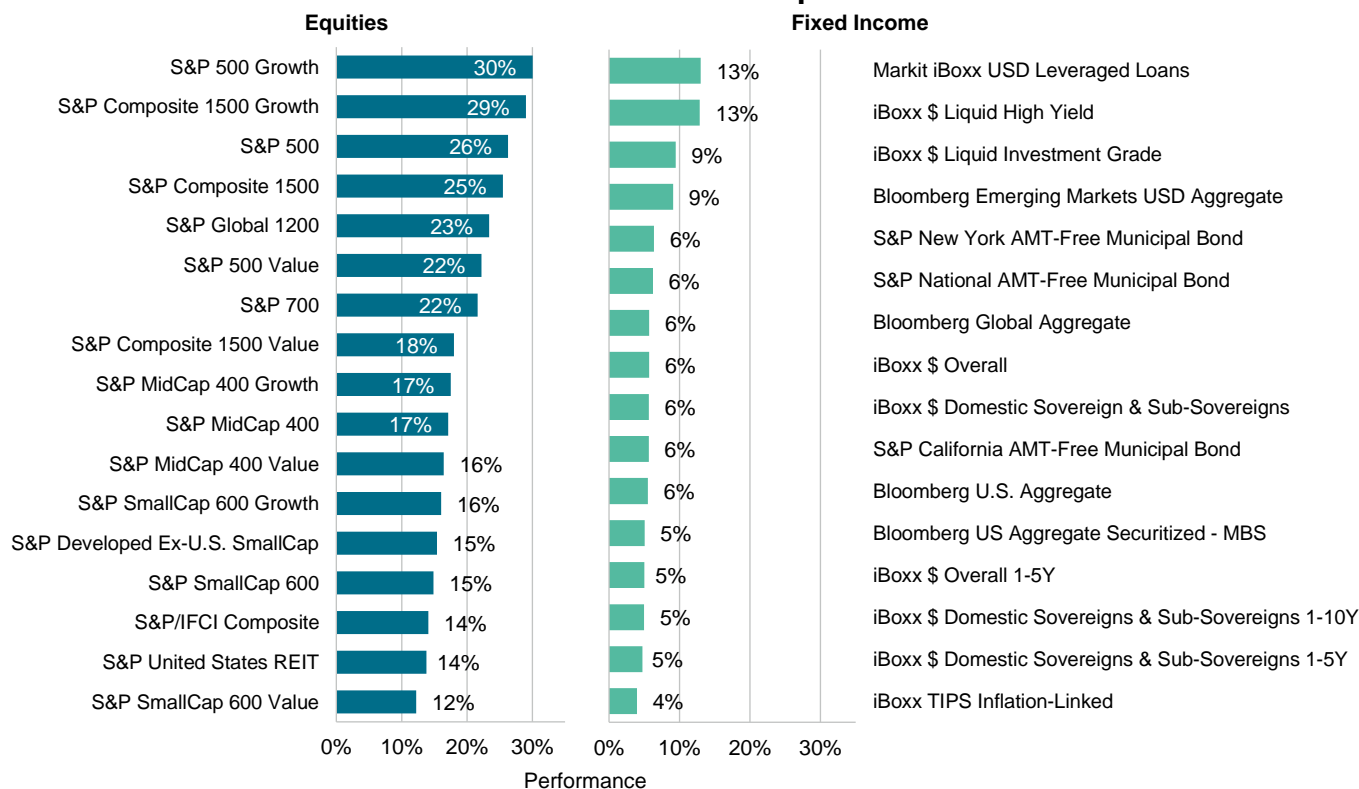
Source: S&P Dow Jones Indices LLC, CRSP, Bloomberg LLC. Data as of Dec. 31, 2023. See Reports 1a, 6a and 11a. Past performance is no guarantee of future results. Charts are provided for illustrative purposes.

¹ Ganti, Anu and Craig J. Lazzara, "[Style Bias and Active Performance](#)," S&P Dow Jones Indices, March 2021.

Market Context

Led by growth in equities and leveraged loans in fixed income, and in a strong reversal from the challenging market climate in 2022, all of our 39 category benchmarks delivered positive performance in 2023.

Exhibit 3: 2023 Performance of U.S. Scorecard Comparison Indices



Source: S&P Dow Jones Indices LLC, Bloomberg LLC. Data as of Dec. 31, 2023. Index performance based on total returns in USD. Past performance is no guarantee of future results. Charts are provided for illustrative purposes.

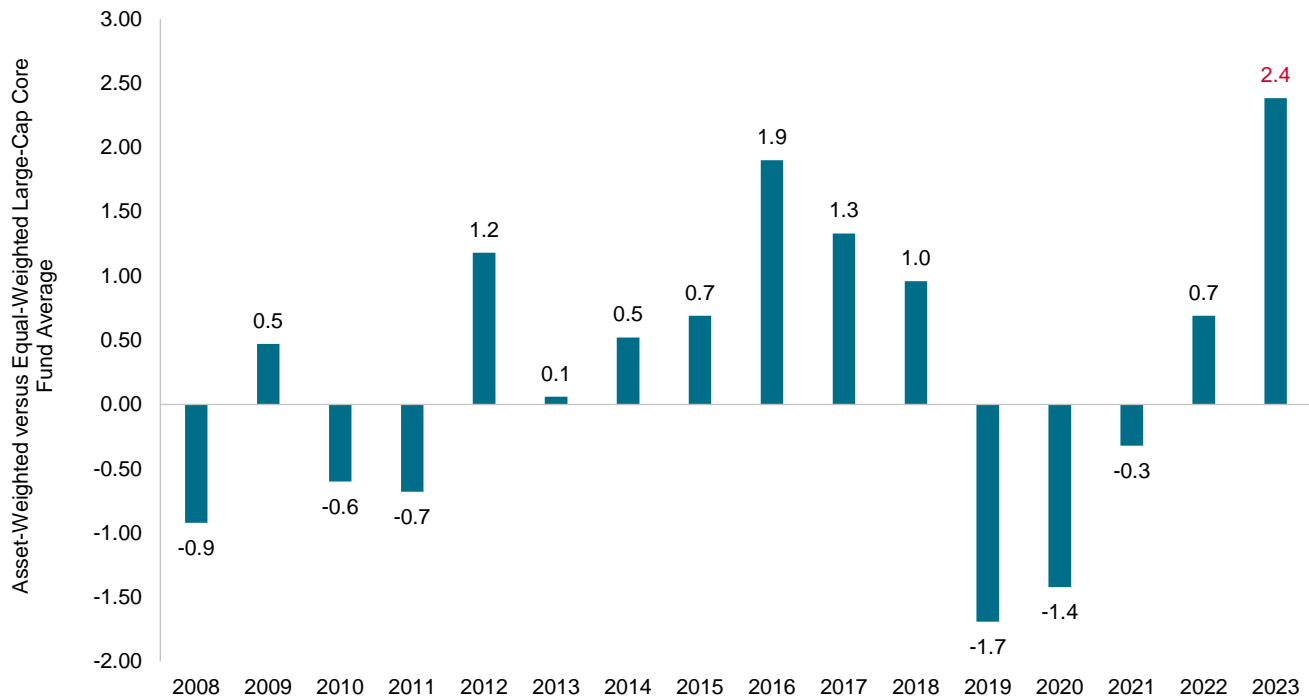
Mega-cap outperformance was a pervasive force: the [S&P 500 Top 50](#) was up a substantial 38% in 2023, while the [S&P 500 Equal Weight Index](#), which has a natural tilt toward smaller capitalizations, underperformed the S&P 500 by 12.4%. **Still, 40% of All Large-Cap funds and 27% of Large-Cap Core funds managed to outperform the S&P 500.** This is particularly surprising given the relatively strong performance of the very largest stocks—which are often underweighted by active managers in comparison to their benchmark weights.² Equal weight underperformance has typically been a headwind for large-cap active fund relative performance,³ as when the largest companies lead, the ability of active managers to keep up with market-capitalization weightings is challenged.

² Ganti, Anu, “[Mutual Fund Portfolios: Equal Weight or Cap Weight?](#),” S&P Dow Jones Indices, July 2017.

³ Lazzara, Craig J., and Fei Mei Chan, “[Degrees of Difficulty: Indications of Active Success](#),” S&P Dow Jones Indices, January 2022.

To offer perspective on *which* U.S. equity funds fared better than others, Exhibit 4 compares the asset-weighted to the equal-weighted average Large-Cap Core fund performance. While it is typical for larger funds to perform better, perhaps because of natural economies of scale and greater access to information, the difference in 2023 of 2.4% between Large-Cap Core's asset-weighted average return of 25% and the corresponding equal-weighted average return of 22.6% was the highest since 2008.

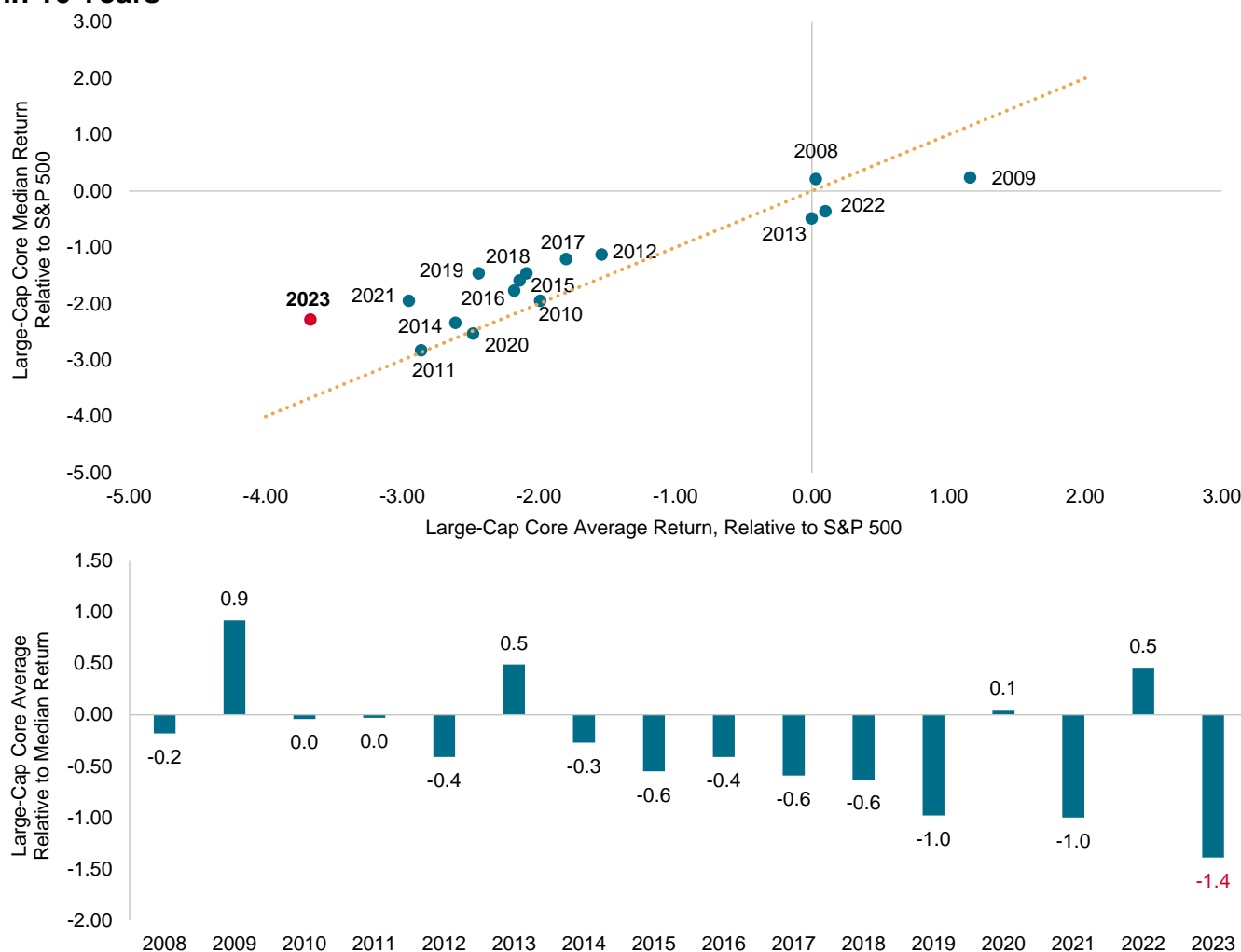
Exhibit 4: Large-Cap Core Asset-Weighted versus Equal-Weighted Average Fund Return Was the Highest in 16 Years



Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

While *larger* funds were among the winners, a markedly negative skew accompanied the cross section of fund returns. **In other words, when fund performances differed significantly from the median, they were more likely to be significant underperformers.** Exhibit 5 shows one measure of the historical skewness of fund excess returns for the Large-Cap Core category—specifically comparing the *average* return to the *median* return. As the exhibit makes clear, 2023 saw a noticeable difference from the typical relationship, with the average return far lower than would have been expected given historical norms.

Exhibit 5: Large-Cap Core Fund Average versus Median Return Was the Most Negative in 16 Years



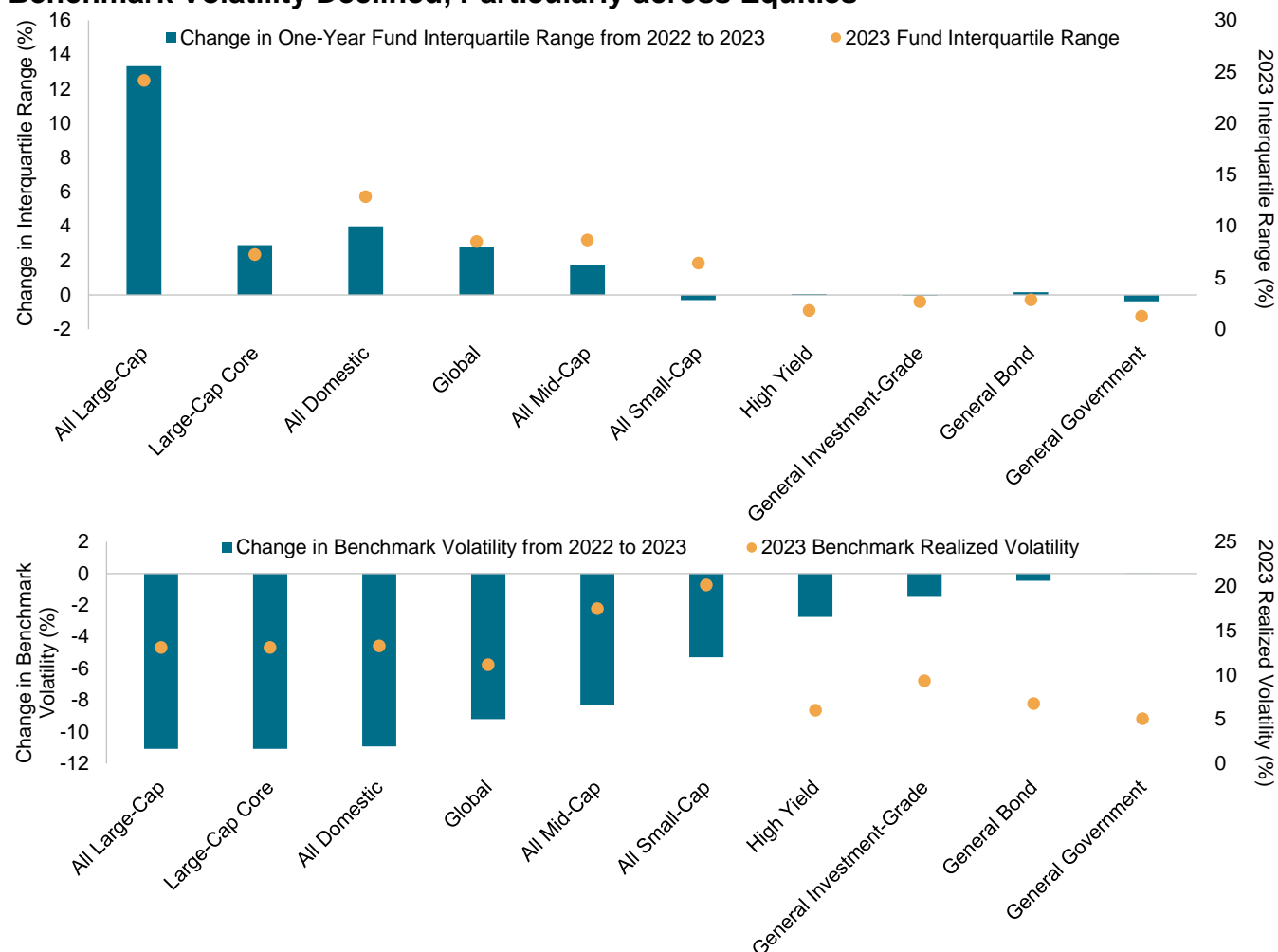
Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Past performance is no guarantee of future results. Charts are provided for illustrative purposes.

Consequently, the range of performances delivered by active equity funds was drastically higher compared to 2022. The 2023 interquartile range (the difference in performance separating those funds in the top 25% from those in the bottom 25% of annual returns) approximately *doubled* in the All Large-Cap category. The substantial spread already noted between larger versus smaller funds is consistent with the wide range of performances shown in Exhibit 6. Meanwhile, fixed income fund dispersion was much narrower than that of equities, as is typical of the asset class.⁴

Contrary to intuition, while fund dispersion was high, market volatility was low, with realized volatility declining across most equity benchmarks from the previous year. In particular, S&P 500 volatility declined by roughly one-half from its 2022 levels (see Exhibit 6).

⁴ Edwards, Tim, Davide Di Gioia, Anu R. Ganti, Craig J. Lazzara and Grace Stoddart, "[SPIVA Institutional Scorecard Year-End 2022](#)," S&P Dow Jones Indices, July 2023.

Exhibit 6: Dispersion among Selected Active Fund Performances Widened and Benchmark Volatility Declined, Particularly across Equities



Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Past performance is no guarantee of future results. Charts are provided for illustrative purposes.

Fixed income volatility changes were mixed and more muted compared to their equity counterparts, but there may have been some opportunities for active fixed income managers to generate outperformance⁵ by taking on greater credit risk. Exhibit 7 illustrates that more funds in the Investment Grade Short-Intermediate category tended to historically outperform when higher-yielding bonds outperformed—as they did in 2023.

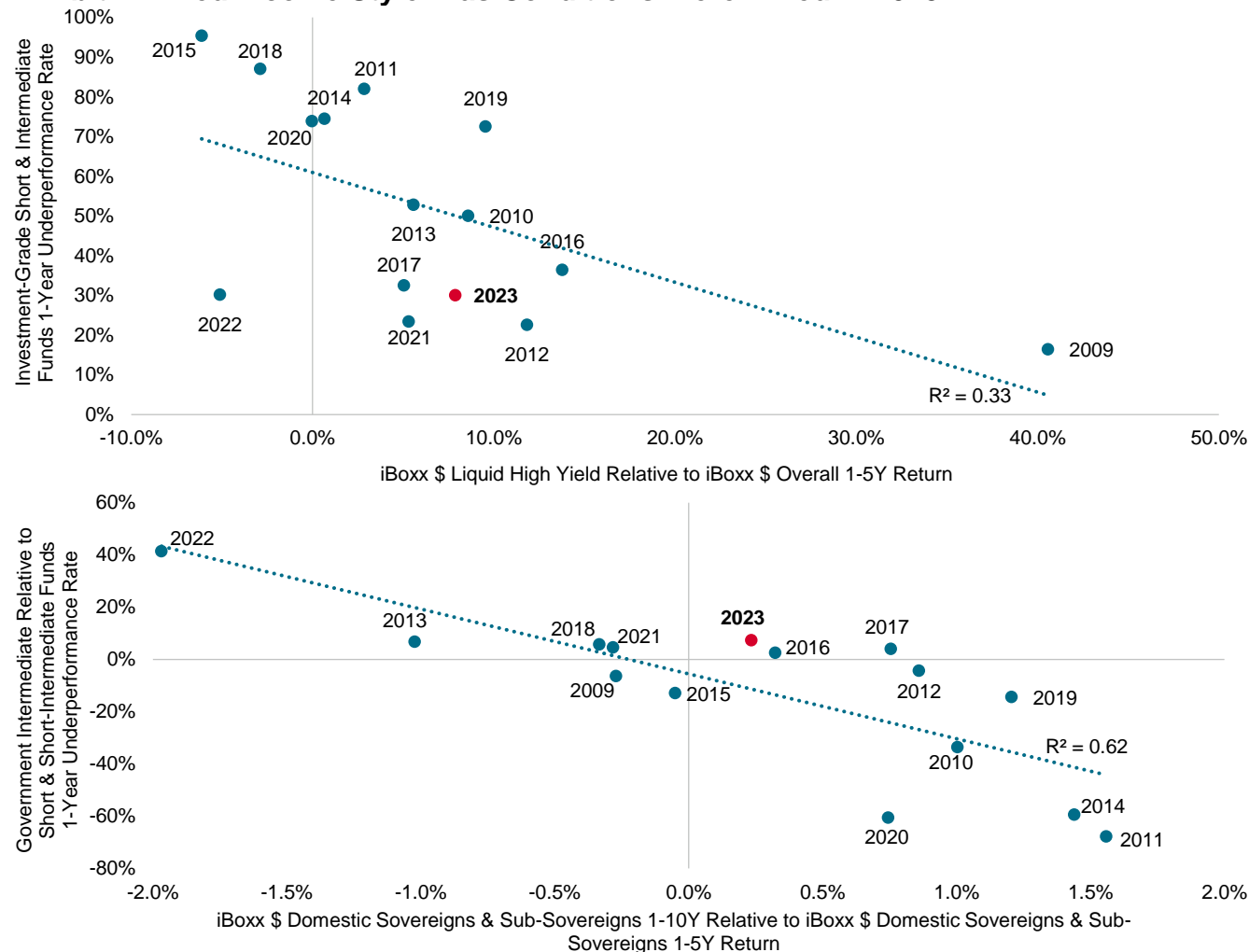
Offering a complementary perspective, the bottom half of Exhibit 7 shows that underperformance rates in the Government Intermediate category were typically higher than in the shorter-maturity category⁶ when longer-dated government bonds outperformed shorter-dated government bonds. In 2023, perhaps due to limited opportunities to benefit from

⁵ Edwards, Tim, Anu R. Ganti and Agatha Malinowski, "[The Hare and the Tortoise – Assessing Passive's Potential in Bonds](#)," S&P Dow Jones Indices, February 2024.

⁶ Refers to the Government Short & Short-Intermediate funds category, which is benchmarked to the iBoxx \$ Domestic Sovereigns & Sub-Sovereigns 1-5Y. Government Intermediate Funds are benchmarked to the iBoxx \$ Domestic Sovereigns & Sub-Sovereigns 1-10Y.

duration tilts, all government categories posted majority underperformance, with reported underperformance rates of 89% and 82%, respectively, for the Government Intermediate and Government Short & Short-Intermediate categories.

Exhibit 7: Fixed Income Style Bias Conditions Were Mixed in 2023



Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Past performance is no guarantee of future results. Charts are provided for illustrative purposes.

Conditions for active management success can be contingent upon various factors, including market volatility, market direction and the relative performance of large and small caps in equities, and credit and duration in fixed income. 2022 was the best year for large-cap active equity performance since 2009,⁷ with high market volatility, a down market and the underperformance of mega caps. 2023, however, was lacking in these very aspects, with low volatility, a robust market and significant mega-cap outperformance. Despite these headwinds, the fact that 40% of large-cap equity funds still outperformed might be viewed as a relatively benign result.

⁷ Edwards, Tim, Anu R. Ganti, Craig J. Lazzara, Joe Nelesen and Davide Di Gioia, "SPIVA U.S. Scorecard Year-End 2022," S&P Dow Jones Indices, March 2023.

A Unique Scorecard for the Active Versus Passive Debate

Since its first publication in 2002, the SPIVA Scorecard has served as the de facto scorekeeper of the long-standing active versus passive debate. Beyond the SPIVA Scorecard's widely cited headline numbers is a rich data set that addresses issues—often far more fascinating though far less discussed—about measurement techniques, universe composition and fund survivorship. These data sets are rooted in the following fundamental principles of the SPIVA Scorecard, with which regular readers will be familiar.

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

Historical View

To provide context for the relative performance of active funds, we compile annual league tables across the U.S. and international equity categories. The tables show how active funds performed against their benchmarks in each calendar year. Owing to the 2022 change in fixed income categories and benchmarks (see Appendix C), equivalent year-over-year comparisons for fixed income funds would not provide “apples-to-apples” comparisons.⁸

Exhibit 8: Percentage of U.S. Equity and International Funds Underperforming Benchmarks Each Year

Fund Category	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Domestic Equity Funds (%)																						
All Domestic Funds	58	48	51	42	68	49	65	41	48	85	65	43	87	74	61	63	69	70	57	80	50	75
All Large-Cap Funds	68	75	69	49	68	45	56	48	66	82	63	55	87	65	66	63	65	71	60	85	51	60
All Mid-Cap Funds	74	52	65	74	45	46	76	56	73	69	80	37	66	57	89	44	46	32	51	62	63	50
All Small-Cap Funds	68	35	84	61	63	46	83	31	54	86	66	68	72	72	86	48	69	39	46	71	57	48
All Multi-Cap Funds	54	49	49	37	69	46	70	39	60	84	65	47	82	70	75	57	67	69	56	80	51	72
Large-Cap Growth Funds	83	48	44	38	94	27	91	37	51	96	46	41	96	48	90	33	60	33	38	99	74	10
Large-Cap Core Funds	67	85	83	56	81	44	52	51	77	83	67	58	80	74	75	69	76	70	66	79	54	73
Large-Cap Value Funds	35	86	87	54	80	46	25	46	71	54	85	65	78	62	78	47	46	97	33	39	59	91
Mid-Cap Growth Funds	86	36	64	80	28	42	91	54	84	77	87	35	55	80	95	18	15	9	17	83	91	24
Mid-Cap Core Funds	70	55	57	66	32	61	60	71	87	66	79	43	59	68	91	62	62	41	80	45	54	12
Mid-Cap Value Funds	64	68	53	69	37	58	68	47	57	68	74	41	71	34	97	43	72	65	53	63	73	75
Small-Cap Growth Funds	97	27	95	78	51	41	95	31	62	94	63	55	64	88	96	15	62	14	14	87	80	55
Small-Cap Core Funds	67	35	80	58	56	56	82	33	59	86	69	78	67	78	90	59	88	41	62	61	40	52
Small-Cap Value Funds	30	48	72	45	71	39	72	25	42	82	62	79	94	45	89	74	83	80	44	51	41	37
Multi-Cap Growth Funds	62	34	51	18	73	30	88	42	46	95	52	39	87	66	85	46	66	45	47	93	56	42
Multi-Cap Core Funds	49	55	61	38	77	45	66	39	66	83	68	53	84	84	75	69	82	74	62	80	58	76
Multi-Cap Value Funds	61	57	79	72	84	58	48	36	68	67	73	48	67	56	71	50	75	92	50	51	58	91
Real Estate Funds	48	57	43	44	68	45	73	38	67	66	62	65	68	43	84	37	89	27	25	70	88	87
International Equity Funds (%)																						
Global Funds	58	59	59	50	75	54	62	52	44	72	62	48	77	58	80	50	71	57	54	84	69	74
International Funds	61	81	73	71	75	68	64	72	40	70	44	43	68	26	85	54	77	57	55	50	68	68
International Small-Cap Funds	68	56	56	60	65	37	53	49	45	60	25	48	69	49	72	44	91	61	52	31	60	54
Emerging Markets Funds	63	65	79	65	78	70	65	71	65	53	46	55	71	66	64	65	62	36	52	65	76	63

Sources: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. See reports 1a and 6a for the indices used as benchmarks for each category. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

⁸ The interested reader may find the as-reported historical outperformance rates for fixed income categories in prior scorecards, available at www.spglobal.com/spiva.

Reports

Report 1a: Percentage of U.S. Equity Funds Underperforming Their Benchmarks (Based on Absolute Return)

Fund Category	Comparison Index	1-Year (%)	3-Year (%)	5-Year (%)	10-Year (%)	15-Year (%)	20-Year (%)
All Domestic Funds	S&P Composite 1500®	75.32	78.97	84.82	91.44	90.84	93.97
All Large-Cap Funds	S&P 500	59.68	79.78	78.68	87.42	87.98	93.03
All Mid-Cap Funds	S&P MidCap 400	49.66	69.97	65.92	80.38	88.20	92.75
All Small-Cap Funds	S&P SmallCap 600	48.31	64.24	61.10	88.29	86.91	95.71
All Multi-Cap Funds	S&P Composite 1500	71.98	77.85	82.57	90.70	89.18	93.63
Large-Cap Growth Funds	S&P 500 Growth	9.76	72.10	58.55	84.12	87.47	94.09
Large-Cap Core Funds	S&P 500	72.57	79.28	80.65	96.45	94.57	94.31
Large-Cap Value Funds	S&P 500 Value	90.77	93.86	92.92	92.77	93.77	90.70
Mid-Cap Growth Funds	S&P MidCap 400 Growth	24.41	87.50	44.70	63.31	82.77	90.11
Mid-Cap Core Funds	S&P MidCap 400	72.07	58.82	78.33	89.31	93.75	92.91
Mid-Cap Value Funds	S&P MidCap 400 Value	75.00	70.91	77.42	94.44	91.08	95.60
Small-Cap Growth Funds	S&P SmallCap 600 Growth	54.72	87.00	53.85	84.00	84.77	97.91
Small-Cap Core Funds	S&P SmallCap 600	51.71	52.40	60.07	92.55	93.38	96.52
Small-Cap Value Funds	S&P SmallCap 600 Value	36.84	49.32	62.14	88.03	84.87	93.81
Multi-Cap Growth Funds	S&P Composite 1500 Growth	42.38	76.09	73.22	90.45	88.98	94.08
Multi-Cap Core Funds	S&P Composite 1500	76.21	82.19	87.65	96.97	94.43	93.81
Multi-Cap Value Funds	S&P Composite 1500 Value	91.28	88.59	88.06	96.55	92.15	91.54
Real Estate Funds	S&P United States REIT	87.34	94.87	60.00	76.40	86.54	90.54

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 1b: Percentage of U.S. Equity Funds Underperforming Their Benchmarks (Based on Risk-Adjusted Return)

Fund Category	Comparison Index	3-Year (%)	5-Year (%)	10-Year (%)	15-Year (%)	20-Year (%)
All Domestic Funds	S&P Composite 1500	78.64	90.25	95.01	96.19	96.83
All Large-Cap Funds	S&P 500	73.50	87.21	94.06	95.46	96.39
All Mid-Cap Funds	S&P MidCap 400	65.19	61.15	80.11	87.15	90.00
All Small-Cap Funds	S&P SmallCap 600	62.91	61.63	86.19	85.47	93.46
All Multi-Cap Funds	S&P Composite 1500	76.15	89.61	95.19	94.71	95.96
Large-Cap Growth Funds	S&P 500 Growth	71.24	64.10	91.55	98.09	98.64
Large-Cap Core Funds	S&P 500	72.07	79.84	94.81	96.38	97.02
Large-Cap Value Funds	S&P 500 Value	93.86	89.68	91.87	88.35	85.58
Mid-Cap Growth Funds	S&P MidCap 400 Growth	86.76	53.79	73.37	87.64	91.76
Mid-Cap Core Funds	S&P MidCap 400	48.04	67.50	84.73	92.36	90.55
Mid-Cap Value Funds	S&P MidCap 400 Value	63.64	54.84	84.72	81.53	85.71
Small-Cap Growth Funds	S&P SmallCap 600 Growth	87.00	64.29	85.00	89.84	96.34
Small-Cap Core Funds	S&P SmallCap 600	51.20	60.43	87.06	88.85	93.03
Small-Cap Value Funds	S&P SmallCap 600 Value	35.62	51.46	82.91	71.71	84.54
Multi-Cap Growth Funds	S&P Composite 1500 Growth	76.63	77.05	90.95	95.92	96.71
Multi-Cap Core Funds	S&P Composite 1500	81.74	91.24	97.88	96.29	95.53
Multi-Cap Value Funds	S&P Composite 1500 Value	96.20	97.01	95.69	91.10	91.04
Real Estate Funds	S&P United States REIT	94.87	52.94	67.42	77.88	82.43

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. 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	Number of Funds at Start	Survivorship (%)	Style Consistency
1-Year			
All Domestic Funds	2176	96.51	92.74
All Large-Cap Funds	754	96.15	93.63
All Mid-Cap Funds	294	96.26	90.48
All Small-Cap Funds	532	97.37	93.42
All Multi-Cap Funds	596	96.31	92.11
Large-Cap Growth Funds	246	97.56	93.90
Large-Cap Core Funds	237	93.25	94.94
Large-Cap Value Funds	271	97.42	92.25
Mid-Cap Growth Funds	127	96.85	93.70
Mid-Cap Core Funds	111	95.50	90.99
Mid-Cap Value Funds	56	96.43	82.14
Small-Cap Growth Funds	212	97.64	90.09
Small-Cap Core Funds	263	96.58	98.86
Small-Cap Value Funds	57	100.00	80.70
Multi-Cap Growth Funds	151	97.35	88.74
Multi-Cap Core Funds	227	94.27	91.63
Multi-Cap Value Funds	218	97.71	94.95
Real Estate Funds	79	94.94	100.00
3-Year			
All Domestic Funds	2135	90.40	77.28
All Large-Cap Funds	732	92.35	80.19
All Mid-Cap Funds	293	89.76	67.92
All Small-Cap Funds	523	90.44	86.23
All Multi-Cap Funds	587	88.25	70.36
Large-Cap Growth Funds	233	93.13	87.98
Large-Cap Core Funds	222	91.44	76.13
Large-Cap Value Funds	277	92.42	76.90
Mid-Cap Growth Funds	136	88.24	75.00
Mid-Cap Core Funds	102	92.16	63.73
Mid-Cap Value Funds	55	89.09	58.18
Small-Cap Growth Funds	200	91.00	89.00
Small-Cap Core Funds	250	90.40	91.60
Small-Cap Value Funds	73	89.04	60.27
Multi-Cap Growth Funds	184	89.67	59.24
Multi-Cap Core Funds	219	86.30	70.78
Multi-Cap Value Funds	184	89.13	80.98
Real Estate Funds	78	87.18	100.00

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. 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	Number of Funds at Start	Survivorship (%)	Style Consistency
5-Year			
All Domestic Funds	2266	81.16	67.43
All Large-Cap Funds	821	85.02	69.31
All Mid-Cap Funds	314	79.30	61.15
All Small-Cap Funds	563	78.15	78.33
All Multi-Cap Funds	568	79.58	57.39
Large-Cap Growth Funds	234	89.74	80.77
Large-Cap Core Funds	248	85.08	62.50
Large-Cap Value Funds	339	81.71	66.37
Mid-Cap Growth Funds	132	82.58	71.97
Mid-Cap Core Funds	120	75.83	53.33
Mid-Cap Value Funds	62	79.03	53.23
Small-Cap Growth Funds	182	84.07	89.56
Small-Cap Core Funds	278	75.18	80.94
Small-Cap Value Funds	103	75.73	51.46
Multi-Cap Growth Funds	183	81.42	53.01
Multi-Cap Core Funds	251	80.08	54.98
Multi-Cap Value Funds	134	76.12	67.91
Real Estate Funds	85	80.00	97.65
10-Year			
All Domestic Funds	2583	64.19	53.97
All Large-Cap Funds	994	64.59	61.07
All Mid-Cap Funds	372	59.41	47.04
All Small-Cap Funds	572	65.03	66.26
All Multi-Cap Funds	645	65.58	36.12
Large-Cap Growth Funds	296	63.18	72.64
Large-Cap Core Funds	366	64.48	52.19
Large-Cap Value Funds	332	65.96	60.54
Mid-Cap Growth Funds	169	63.31	56.80
Mid-Cap Core Funds	131	51.15	42.75
Mid-Cap Value Funds	72	65.28	31.94
Small-Cap Growth Funds	200	65.00	83.00
Small-Cap Core Funds	255	65.10	66.67
Small-Cap Value Funds	117	64.96	36.75
Multi-Cap Growth Funds	199	65.83	38.69
Multi-Cap Core Funds	330	67.58	31.52
Multi-Cap Value Funds	116	59.48	44.83
Real Estate Funds	89	65.17	96.63

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. 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	Number of Funds at Start	Survivorship (%)	Style Consistency
20-Year			
All Domestic Funds	2337	34.40	45.66
All Large-Cap Funds	804	30.35	55.47
All Mid-Cap Funds	400	36.75	38.25
All Small-Cap Funds	489	37.42	51.94
All Multi-Cap Funds	644	35.71	33.23
Large-Cap Growth Funds	220	23.18	65.45
Large-Cap Core Funds	369	28.73	53.66
Large-Cap Value Funds	215	40.47	48.37
Mid-Cap Growth Funds	182	31.32	51.10
Mid-Cap Core Funds	127	35.43	32.28
Mid-Cap Value Funds	91	49.45	20.88
Small-Cap Growth Funds	191	35.60	71.20
Small-Cap Core Funds	201	35.32	48.26
Small-Cap Value Funds	97	45.36	21.65
Multi-Cap Growth Funds	152	31.58	42.11
Multi-Cap Core Funds	291	35.05	32.65
Multi-Cap Value Funds	201	39.80	27.36
Real Estate Funds	74	40.54	82.43

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 3: Average U.S. Equity Fund Performance (Equal-Weighted)

Index/Fund Category	1-Year (%)	3-Year (%)	5-Year (%)	10-Year (%)	20-Year (%)
S&P Composite 1500	25.47	9.83	15.39	11.76	9.75
All Domestic Funds	20.35	5.91	12.33	8.54	7.85
S&P 500	26.29	10.00	15.69	12.03	9.69
All Large-Cap Funds	24.20	7.48	13.07	9.47	7.98
S&P MidCap 400	16.44	8.09	12.62	9.27	9.81
All Mid-Cap Funds	16.99	4.44	11.94	8.14	8.22
S&P SmallCap 600	16.05	7.28	11.03	8.66	9.65
All Small-Cap Funds	15.92	3.88	10.87	6.91	7.67
S&P Composite 1500	25.47	9.83	15.39	11.76	9.75
All Multi-Cap Funds	20.84	6.15	12.52	8.57	7.51
Large-Cap					
S&P 500 Growth	30.03	6.61	16.23	13.35	10.49
Large-Cap Growth Funds	40.45	4.41	15.36	11.52	8.94
S&P 500	26.29	10.00	15.69	12.03	9.69
Large-Cap Core Funds	22.62	8.09	13.37	9.49	8.15
S&P 500 Value	22.23	13.11	14.11	10.01	8.52
Large-Cap Value Funds	12.16	9.23	11.00	7.74	7.04
Mid-Cap					
S&P MidCap 400 Growth	17.49	4.22	11.91	9.04	9.85
Mid-Cap Growth Funds	20.71	-0.31	12.42	9.03	8.56
S&P MidCap 400	16.44	8.09	12.62	9.27	9.81
Mid-Cap Core Funds	14.72	7.39	11.44	7.65	8.11
S&P MidCap 400 Value	15.39	11.95	12.91	9.17	9.58
Mid-Cap Value Funds	12.89	10.44	11.35	7.16	7.85

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Returns shown are annualized for periods greater than one year. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 3: Average U.S. Equity Fund Performance (Equal-Weighted) (cont.)

Index/Fund Category	1-Year (%)	3-Year (%)	5-Year (%)	10-Year (%)	20-Year (%)
Small-Cap					
S&P SmallCap 600 Growth	17.10	4.26	10.42	8.96	10.09
Small-Cap Growth Funds	16.35	-2.69	10.65	7.64	7.72
S&P SmallCap 600	16.05	7.28	11.03	8.66	9.65
Small-Cap Core Funds	15.36	6.96	10.67	6.46	7.65
S&P SmallCap 600 Value	14.89	10.20	11.31	8.17	9.11
Small-Cap Value Funds	16.64	11.28	11.36	6.50	7.62
Multi-Cap					
S&P Composite 1500 Growth	29.01	6.47	15.85	12.97	10.41
Multi-Cap Growth Funds	32.25	1.71	13.44	10.15	8.42
S&P Composite 1500	25.47	9.83	15.39	11.76	9.75
Multi-Cap Core Funds	20.79	6.85	12.15	7.91	7.16
S&P Composite 1500 Value	21.64	12.97	13.98	9.91	8.74
Multi-Cap Value Funds	13.24	9.51	11.66	7.63	7.15
Real Estate					
S&P United States REIT	13.77	7.17	7.22	7.50	7.94
Real Estate Funds	11.62	4.38	6.73	6.44	6.28

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Returns shown are annualized for periods greater than one year. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 4: Average U.S. Equity Fund Performance (Asset-Weighted)

Index/Fund Category	1-Year (%)	3-Year (%)	5-Year (%)	10-Year (%)	20-Year (%)
S&P Composite 1500	25.47	9.83	15.39	11.76	9.75
All Domestic Funds	24.80	6.59	13.71	10.04	8.56
S&P 500	26.29	10.00	15.69	12.03	9.69
All Large-Cap Funds	26.97	7.37	14.14	10.63	8.50
S&P MidCap 400	16.44	8.09	12.62	9.27	9.81
All Mid-Cap Funds	17.08	2.76	12.14	8.49	8.52
S&P SmallCap 600	16.05	7.28	11.03	8.66	9.65
All Small-Cap Funds	17.49	3.22	11.30	7.84	8.50
S&P Composite 1500	25.47	9.83	15.39	11.76	9.75
All Multi-Cap Funds	24.18	6.86	13.76	9.90	8.68
Large-Cap					
S&P 500 Growth	30.03	6.61	16.23	13.35	10.49
Large-Cap Growth Funds	40.78	4.69	15.88	12.28	9.40
S&P 500	26.29	10.00	15.69	12.03	9.69
Large-Cap Core Funds	25.00	9.39	13.86	10.53	8.76
S&P 500 Value	22.23	13.11	14.11	10.01	8.52
Large-Cap Value Funds	12.73	9.60	12.27	8.98	8.00
Mid-Cap					
S&P MidCap 400 Growth	17.49	4.22	11.91	9.04	9.85
Mid-Cap Growth Funds	20.35	-1.34	12.33	9.36	9.18
S&P MidCap 400	16.44	8.09	12.62	9.27	9.81
Mid-Cap Core Funds	14.79	7.54	11.92	7.85	7.71
S&P MidCap 400 Value	15.39	11.95	12.91	9.17	9.58
Mid-Cap Value Funds	14.95	10.46	11.66	7.45	8.49
Small-Cap					
S&P SmallCap 600 Growth	17.10	4.26	10.42	8.96	10.09
Small-Cap Growth Funds	17.63	-1.38	10.90	8.75	8.91
S&P SmallCap 600	16.05	7.28	11.03	8.66	9.65
Small-Cap Core Funds	17.18	7.67	11.52	7.17	8.23
S&P SmallCap 600 Value	14.89	10.20	11.31	8.17	9.11
Small-Cap Value Funds	17.87	11.71	12.00	7.18	8.18

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Returns shown are annualized for periods greater than one year. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 4: Average U.S. Equity Fund Performance (Asset-Weighted) (cont.)

Index/Fund Category	1-Year (%)	3-Year (%)	5-Year (%)	10-Year (%)	20-Year (%)
Multi-Cap					
S&P Composite 1500 Growth	29.01	6.47	15.85	12.97	10.41
Multi-Cap Growth Funds	35.24	2.48	15.33	12.14	10.20
S&P Composite 1500	25.47	9.83	15.39	11.76	9.75
Multi-Cap Core Funds	23.15	7.30	12.70	8.58	8.06
S&P Composite 1500 Value	21.64	12.97	13.98	9.91	8.74
Multi-Cap Value Funds	16.02	11.15	12.57	7.88	7.88
Real-Estate					
S&P United States REIT	13.77	7.17	7.22	7.50	7.94
Real Estate Funds	11.96	5.04	6.52	6.67	6.80

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Returns shown are annualized for periods greater than one year. 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	12.82	18.54	25.69
All Large-Cap Funds	13.39	24.00	37.55
All Mid-Cap Funds	12.38	16.93	21.05
All Small-Cap Funds	12.79	16.39	19.21
All Multi-Cap Funds	13.13	20.85	26.58
Large-Cap Growth Funds	37.57	41.22	46.00
Large-Cap Core Funds	19.45	24.01	26.71
Large-Cap Value Funds	7.99	11.93	16.33
Mid-Cap Growth Funds	17.81	20.16	23.56
Mid-Cap Core Funds	11.39	13.43	17.13
Mid-Cap Value Funds	10.04	12.19	15.68
Small-Cap Growth Funds	13.10	16.73	19.92
Small-Cap Core Funds	12.63	16.04	18.51
Small-Cap Value Funds	12.83	16.59	20.15
Multi-Cap Growth Funds	24.00	32.67	39.55
Multi-Cap Core Funds	17.73	22.78	25.52
Multi-Cap Value Funds	9.15	12.22	16.39
Real Estate Funds	10.63	11.89	13.23
3-Year			
All Domestic Funds	3.25	7.46	9.71
All Large-Cap Funds	5.74	8.12	9.78
All Mid-Cap Funds	-0.42	5.58	9.38
All Small-Cap Funds	-1.09	5.77	9.43
All Multi-Cap Funds	4.20	7.73	9.83
Large-Cap Growth Funds	2.81	5.33	7.17
Large-Cap Core Funds	7.64	8.70	9.91
Large-Cap Value Funds	7.86	9.31	10.72
Mid-Cap Growth Funds	-4.03	-0.74	2.11
Mid-Cap Core Funds	6.00	7.74	9.51
Mid-Cap Value Funds	9.39	10.15	12.20
Small-Cap Growth Funds	-6.77	-2.22	1.68
Small-Cap Core Funds	5.03	7.66	9.86
Small-Cap Value Funds	8.92	10.95	13.47
Multi-Cap Growth Funds	-0.92	3.52	6.56
Multi-Cap Core Funds	4.93	7.88	9.40
Multi-Cap Value Funds	8.36	9.76	11.11
Real Estate Funds	3.74	5.14	6.08

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Returns shown are annualized for periods greater than one year. 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	10.51	12.50	14.68
All Large-Cap Funds	11.26	13.51	15.70
All Mid-Cap Funds	10.83	12.37	13.32
All Small-Cap Funds	9.46	11.01	12.43
All Multi-Cap Funds	10.82	13.18	15.14
Large-Cap Growth Funds	14.49	16.07	17.37
Large-Cap Core Funds	12.91	14.22	15.52
Large-Cap Value Funds	9.76	11.32	12.64
Mid-Cap Growth Funds	11.39	12.98	13.82
Mid-Cap Core Funds	10.61	11.49	12.82
Mid-Cap Value Funds	10.57	12.26	12.97
Small-Cap Growth Funds	8.93	10.59	12.35
Small-Cap Core Funds	9.73	11.11	12.32
Small-Cap Value Funds	10.13	11.22	13.09
Multi-Cap Growth Funds	12.56	14.57	16.28
Multi-Cap Core Funds	10.58	13.24	14.88
Multi-Cap Value Funds	10.23	11.34	12.83
Real Estate Funds	5.83	7.25	8.24
10-Year			
All Domestic Funds	7.20	8.67	10.62
All Large-Cap Funds	8.37	10.15	11.66
All Mid-Cap Funds	7.17	8.40	9.61
All Small-Cap Funds	6.22	7.28	8.26
All Multi-Cap Funds	7.14	8.72	10.70
Large-Cap Growth Funds	11.34	12.49	13.36
Large-Cap Core Funds	9.14	10.43	11.13
Large-Cap Value Funds	7.38	8.23	8.93
Mid-Cap Growth Funds	8.25	9.28	10.32
Mid-Cap Core Funds	6.94	7.88	8.98
Mid-Cap Value Funds	6.72	7.44	8.26
Small-Cap Growth Funds	6.76	7.79	8.92
Small-Cap Core Funds	6.00	7.06	8.00
Small-Cap Value Funds	5.66	6.90	7.71
Multi-Cap Growth Funds	9.43	10.99	12.47
Multi-Cap Core Funds	6.95	8.00	9.99
Multi-Cap Value Funds	6.88	7.98	8.78
Real Estate Funds	6.08	7.17	7.76

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Returns shown are annualized for periods greater than one year. 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 (%)
20-Year			
All Domestic Funds	7.47	8.48	9.36
All Large-Cap Funds	7.62	8.60	9.55
All Mid-Cap Funds	7.84	8.76	9.40
All Small-Cap Funds	7.70	8.35	9.11
All Multi-Cap Funds	7.00	8.17	9.36
Large-Cap Growth Funds	8.80	9.96	10.51
Large-Cap Core Funds	8.14	8.79	9.47
Large-Cap Value Funds	7.03	7.67	8.43
Mid-Cap Growth Funds	8.25	9.09	10.22
Mid-Cap Core Funds	7.60	8.80	9.35
Mid-Cap Value Funds	7.20	8.30	8.91
Small-Cap Growth Funds	8.05	8.82	9.45
Small-Cap Core Funds	7.58	8.19	9.02
Small-Cap Value Funds	7.54	8.09	8.75
Multi-Cap Growth Funds	9.05	9.57	10.11
Multi-Cap Core Funds	7.00	8.00	9.09
Multi-Cap Value Funds	6.40	7.46	8.44
Real Estate Funds	6.19	7.17	7.84

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Returns shown are annualized for periods greater than one year. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 6a: Percentage of International Equity Funds Underperforming Their Benchmarks (Based on Absolute Return)

Fund Category	Comparison Index	1-Year (%)	3-Year (%)	5-Year (%)	10-Year (%)	15-Year (%)	20-Year (%)
Global Funds	S&P Global 1200	73.60	87.93	83.33	90.95	89.31	91.27
International Funds	S&P 700	68.07	69.98	77.97	87.80	87.05	93.38
International Small-Cap Funds	S&P Developed Ex-U.S. SmallCap	54.22	62.82	59.30	70.49	70.18	78.13
Emerging Markets Funds	S&P/IFCI Composite	63.30	73.50	74.67	89.20	88.15	95.24

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 6b: Percentage of International Equity Funds Underperforming Their Benchmarks (Based on Risk-Adjusted Return)

Fund Category	Comparison Index	3-Year (%)	5-Year (%)	10-Year (%)	15-Year (%)	20-Year (%)
Global Funds	S&P Global 1200	83.19	92.92	94.97	92.45	93.65
International Funds	S&P 700	71.71	84.30	88.47	88.55	94.08
International Small-Cap Funds	S&P Developed Ex-U.S. SmallCap	-	60.47	68.85	73.68	84.38
Emerging Markets Funds	S&P/IFCI Composite	-	77.29	91.08	91.11	95.24

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 7: Survivorship of International Equity Funds

Fund Category	Number of Funds at Start	Survivorship (%)	Style Consistency (%)
1-Year			
Global Funds	250	93.20	88.00
International Funds	404	96.78	84.90
International Small-Cap Funds	83	92.77	83.13
Emerging Markets Funds	218	93.12	99.08
3-Year			
Global Funds	232	87.50	70.26
International Funds	403	88.59	65.26
International Small-Cap Funds	78	84.62	76.92
Emerging Markets Funds	200	85.00	100.00
5-Year			
Global Funds	240	77.92	57.08
International Funds	395	82.03	50.89
International Small-Cap Funds	86	73.26	68.60
Emerging Markets Funds	229	70.31	93.01
10-Year			
Global Funds	199	58.29	34.67
International Funds	295	61.02	42.71
International Small-Cap Funds	61	62.30	67.21
Emerging Markets Funds	213	56.81	91.55
20-Year			
Global Funds	126	37.30	9.52
International Funds	287	36.59	7.67
International Small-Cap Funds	32	46.88	0.00
Emerging Markets Funds	63	50.79	93.65

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Returns shown are annualized for periods greater than one year. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

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

Index/Fund Category	1-Year (%)	3-Year (%)	5-Year (%)	10-Year (%)	20-Year (%)
S&P Global 1200	23.38	7.64	13.07	9.11	8.37
Global Funds	20.32	3.48	10.65	6.51	6.52
S&P 700	18.01	3.55	8.80	4.97	6.50
International Funds	16.34	1.38	7.37	3.98	5.18
S&P Developed Ex-U.S. SmallCap	14.07	-0.60	6.95	4.84	7.37
International Small-Cap Funds	14.12	-1.27	6.76	4.04	6.86
S&P/IFCI Composite	12.22	-3.15	4.76	3.66	7.87
Emerging Markets Funds	12.94	-5.01	4.18	2.00	6.03

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Returns shown are annualized for periods greater than one year. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 9: Average International Equity Fund Performance (Asset-Weighted)

Index/Fund Category	1-Year (%)	3-Year (%)	5-Year (%)	10-Year (%)	20-Year (%)
S&P Global 1200	23.38	7.64	13.07	9.11	8.37
Global Funds	22.80	3.68	11.16	7.55	7.56
S&P 700	18.01	3.55	8.80	4.97	6.50
International Funds	16.66	0.41	7.99	4.17	5.90
S&P Developed Ex-U.S. SmallCap	14.07	-0.60	6.95	4.84	7.37
International Small-Cap Funds	15.48	-1.35	7.62	4.97	7.49
S&P/IFCI Composite	12.22	-3.15	4.76	3.66	7.87
Emerging Markets Funds	13.33	-5.25	5.18	2.98	6.99

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Returns shown are annualized for periods greater than one year. 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	15.70	20.14	24.23
International Funds	14.54	16.56	18.80
International Small-Cap Funds	11.48	13.95	16.99
Emerging Markets Funds	8.08	11.06	15.14
3-Year			
Global Funds	1.68	4.03	6.40
International Funds	-0.63	2.04	4.31
International Small-Cap Funds	-5.18	-1.51	2.31
Emerging Markets Funds	-8.98	-5.67	-1.69
5-Year			
Global Funds	9.67	11.36	12.69
International Funds	6.40	7.65	8.82
International Small-Cap Funds	5.89	7.21	8.49
Emerging Markets Funds	2.84	3.95	6.12
10-Year			
Global Funds	5.63	6.96	8.73
International Funds	3.33	4.00	4.75
International Small-Cap Funds	3.62	4.76	5.52
Emerging Markets Funds	1.46	2.20	3.26
20-Year			
Global Funds	6.01	6.98	8.31
International Funds	4.60	5.49	6.27
International Small-Cap Funds	6.73	7.18	8.35
Emerging Markets Funds	5.64	6.18	7.25

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Returns shown are annualized for periods greater than one year. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 11a: Percentage of Fixed Income Funds Underperforming Their Benchmarks (Based on Absolute Return)

Fund Category	Comparison Index	1-Year (%)	3-Year (%)	5-Year (%)	10-Year (%)	15-Year (%)
General Government Funds	iBoxx \$ Domestic Sovereign & Sub-Sovereigns	95.00	91.43	93.88	93.65	81.82
Government Intermediate Funds	iBoxx \$ Domestic Sovereigns & Sub-Sovereigns 1-10Y	89.47	95.24	90.00	93.75	83.33
Government Short & Short-Intermediate Funds	iBoxx \$ Domestic Sovereigns & Sub-Sovereigns 1-5Y	82.14	65.52	86.11	93.33	94.55
General Investment-Grade Funds	iBoxx \$ Liquid Investment Grade	97.62	38.46	86.67	90.82	82.27
Investment-Grade Intermediate Funds	Bloomberg U.S. Aggregate	44.30	62.07	46.62	71.34	59.09
Investment-Grade Short & Intermediate Funds	iBoxx \$ Overall 1-5Y	30.06	24.03	40.63	64.23	61.64
General Bond Funds	iBoxx \$ Overall	31.25	32.50	45.45	64.29	59.32
High Yield Funds	iBoxx \$ Liquid High Yield	80.46	59.04	63.51	77.52	78.00
Mortgage-Backed Securities Funds	Bloomberg US Aggregate Securitized - MBS	67.24	58.00	68.00	84.75	75.81
Core Plus Bond Funds	iBoxx \$ Liquid Investment Grade	100.00	18.18	98.85	-	-
Inflation-Linked Funds	iBoxx TIPS Inflation-Linked	63.46	48.94	78.43	96.23	96.55
Global Income Funds	Bloomberg Global Aggregate	37.27	42.42	45.95	63.08	58.06
Emerging Market Debt Funds	Bloomberg Emerging Markets USD Aggregate	28.57	56.45	64.41	91.23	96.43
General Municipal Debt Funds	S&P National AMT-Free Municipal Bond	38.82	91.57	80.95	66.67	58.33
California Municipal Debt Funds	S&P California AMT-Free Municipal Bond	30.30	75.00	71.43	53.66	53.33
New York Municipal Debt Funds	S&P New York AMT-Free Municipal Bond	19.23	92.31	81.48	75.00	69.23
Loan Participation Funds	Markit iBoxx USD Leveraged Loans	87.88	93.65	93.10	100.00	95.65

Source: S&P Dow Jones Indices LLC, CRSP, Bloomberg LLC. Data as of Dec. 31, 2023. Results not shown for the Core Plus Bond Funds category for periods beginning prior to the category's inception in 2017. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 11b: Percentage of Fixed Income Funds Underperforming Their Benchmarks (Based on Risk-Adjusted Return)

Fund Category	Comparison Index	3-Year (%)	5-Year (%)	10-Year (%)	15-Year (%)
General Government Funds	iBoxx \$ Domestic Sovereign & Sub-Sovereigns	-	93.88	96.83	90.91
Government Intermediate Funds	iBoxx \$ Domestic Sovereigns & Sub-Sovereigns 1-10Y	-	90.00	93.75	100.00
Government Short & Short-Intermediate Funds	iBoxx \$ Domestic Sovereigns & Sub-Sovereigns 1-5Y	-	77.78	91.11	89.09
General Investment-Grade Funds	iBoxx \$ Liquid Investment Grade	-	68.89	69.39	60.28
Investment-Grade Intermediate Funds	Bloomberg U.S. Aggregate	-	56.76	77.07	62.63
Investment-Grade Short & Intermediate Funds	iBoxx \$ Overall 1-5Y	-	55.00	70.80	70.55
General Bond Funds	iBoxx \$ Overall	-	43.18	66.07	64.41
High Yield Funds	iBoxx \$ Liquid High Yield	52.41	54.98	68.35	63.50
Mortgage-Backed Securities Funds	Bloomberg US Aggregate Securitized - MBS	-	68.00	79.66	70.97
Core Plus Bond Funds	iBoxx \$ Liquid Investment Grade	-	74.71	-	-
Inflation-Linked Funds	iBoxx TIPS Inflation-Linked	-	58.82	83.02	89.66
Global Income Funds	Bloomberg Global Aggregate	-	-	66.15	62.37
Emerging Market Debt Funds	Bloomberg Emerging Markets USD Aggregate	-	77.97	96.49	100.00
General Municipal Debt Funds	S&P National AMT-Free Municipal Bond	-	92.86	86.67	75.00
California Municipal Debt Funds	S&P California AMT-Free Municipal Bond	-	97.14	92.68	82.22
New York Municipal Debt Funds	S&P New York AMT-Free Municipal Bond	-	100.00	96.88	100.00
Loan Participation Funds	Markit iBoxx USD Leveraged Loans	92.06	77.59	86.79	91.30

Source: S&P Dow Jones Indices LLC, CRSP, Bloomberg LLC. Data as of Dec. 31, 2023. Results not shown for the Core Plus Bond Funds category for periods beginning prior to the category's inception in 2017. Results not shown for periods in which the benchmark return was negative. 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	Number of Funds at Start	Survivorship (%)	Style Consistency (%)
1-Year			
General Government Funds	40	95.00	100.00
Government Intermediate Funds	19	94.74	100.00
Government Short & Short-Intermediate Funds	28	92.86	100.00
General Investment-Grade Funds	84	94.05	96.43
Investment-Grade Intermediate Funds	149	96.64	99.33
Investment-Grade Short & Intermediate Funds	163	98.16	99.39
General Bond Funds	32	90.63	96.88
High Yield Funds	174	96.55	98.28
Mortgage-Backed Securities Funds	58	96.55	100.00
Core Plus Bond Funds	100	98.00	99.00
Inflation-Linked Funds	52	100.00	100.00
Global Income Funds	110	90.91	95.45
Emerging Market Debt Funds	63	87.30	100.00
General Municipal Debt Funds	85	97.65	100.00
California Municipal Debt Funds	33	100.00	100.00
New York Municipal Debt Funds	26	100.00	100.00
Loan Participation Funds	66	96.97	100.00
3-Year			
General Government Funds	35	85.71	100.00
Government Intermediate Funds	21	90.48	95.24
Government Short & Short-Intermediate Funds	29	93.10	93.10
General Investment-Grade Funds	91	79.12	94.51
Investment-Grade Intermediate Funds	145	91.03	97.93
Investment-Grade Short & Intermediate Funds	154	89.61	99.35
General Bond Funds	40	85.00	75.00
High Yield Funds	166	93.37	97.59
Mortgage-Backed Securities Funds	50	96.00	100.00
Core Plus Bond Funds	88	94.32	95.45
Inflation-Linked Funds	47	95.74	97.87
Global Income Funds	99	80.81	93.94
Emerging Market Debt Funds	62	79.03	100.00
General Municipal Debt Funds	83	92.77	100.00
California Municipal Debt Funds	32	100.00	100.00
New York Municipal Debt Funds	26	96.15	100.00
Loan Participation Funds	63	88.89	98.41

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Results not shown for the Core Plus Bond Funds category for periods beginning prior to the category's inception in 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	Number of Funds at Start	Survivorship (%)	Style Consistency (%)
5-Year			
General Government Funds	49	81.63	73.47
Government Intermediate Funds	10	80.00	90.00
Government Short & Short-Intermediate Funds	36	77.78	88.89
General Investment-Grade Funds	90	80.00	87.78
Investment-Grade Intermediate Funds	148	82.43	94.59
Investment-Grade Short & Intermediate Funds	160	85.63	94.38
General Bond Funds	44	75.00	59.09
High Yield Funds	211	85.78	72.99
Mortgage-Backed Securities Funds	50	90.00	98.00
Core Plus Bond Funds	87	90.80	88.51
Inflation-Linked Funds	51	84.31	96.08
Global Income Funds	111	76.58	84.68
Emerging Market Debt Funds	59	69.49	98.31
General Municipal Debt Funds	84	83.33	96.43
California Municipal Debt Funds	35	88.57	97.14
New York Municipal Debt Funds	27	88.89	100.00
Loan Participation Funds	58	91.38	100.00
10-Year			
General Government Funds	63	58.73	77.78
Government Intermediate Funds	16	50.00	87.50
Government Short & Short-Intermediate Funds	45	57.78	86.67
General Investment-Grade Funds	98	74.49	73.47
Investment-Grade Intermediate Funds	157	64.97	86.62
Investment-Grade Short & Intermediate Funds	137	74.45	79.56
General Bond Funds	56	53.57	35.71
High Yield Funds	218	71.10	78.90
Mortgage-Backed Securities Funds	59	69.49	86.44
Inflation-Linked Funds	53	66.04	96.23
Global Income Funds	130	56.15	77.69
Emerging Market Debt Funds	57	52.63	89.47
General Municipal Debt Funds	90	71.11	87.78
California Municipal Debt Funds	41	73.17	95.12
New York Municipal Debt Funds	32	71.88	96.88
Loan Participation Funds	53	86.79	96.23

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Results not shown for the Core Plus Bond Funds category for periods beginning prior to the category's inception in 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	Number of Funds at Start	Survivorship (%)	Style Consistency (%)
15-Year			
General Government Funds	88	52.27	67.05
Government Intermediate Funds	24	45.83	70.83
Government Short & Short-Intermediate Funds	55	45.45	76.36
General Investment-Grade Funds	141	56.74	59.57
Investment-Grade Intermediate Funds	198	48.48	68.69
Investment-Grade Short & Intermediate Funds	146	50.00	78.08
General Bond Funds	59	45.76	42.37
High Yield Funds	200	59.00	86.50
Mortgage-Backed Securities Funds	62	53.23	87.10
Inflation-Linked Funds	29	48.28	89.66
Global Income Funds	93	52.69	67.74
Emerging Market Debt Funds	28	57.14	60.71
General Municipal Debt Funds	84	60.71	86.90
California Municipal Debt Funds	45	62.22	93.33
New York Municipal Debt Funds	39	56.41	92.31
Loan Participation Funds	23	78.26	95.65

Source: S&P Dow Jones Indices LLC, CRSP, Bloomberg LLC. Data as of Dec. 31, 2023. Results not shown for the Core Plus Bond Funds category for periods beginning prior to the category's inception in 2017. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 13: Average Fixed Income Fund Performance (Equal-Weighted)

Index/Fund Category	1-Year (%)	3-Year (%)	5-Year (%)	10-Year (%)	15-Year (%)
iBoxx \$ Domestic Sovereign & Sub-Sovereigns	5.66	-2.21	1.36	1.80	2.11
General Government Funds	3.08	-5.13	-0.30	0.63	1.79
iBoxx \$ Domestic Sovereigns & Sub-Sovereigns 1-10Y	4.99	-1.28	1.34	1.51	1.89
Government Intermediate Funds	4.03	-3.06	0.50	0.81	1.29
iBoxx \$ Domestic Sovereigns & Sub-Sovereigns 1-5Y	4.76	-0.57	1.40	1.33	1.64
Government Short & Short-Intermediate Funds	4.04	-0.89	0.81	0.76	1.07
iBoxx \$ Liquid Investment Grade	9.45	-3.99	2.92	3.19	4.77
General Investment-Grade Funds	6.93	-1.70	3.09	2.73	3.94
Bloomberg U.S. Aggregate	5.53	-3.31	1.10	1.81	2.68
Investment-Grade Intermediate Funds	5.53	-3.47	1.08	1.64	3.10
iBoxx \$ Overall 1-5Y	5.01	-0.58	1.58	1.46	1.88
Investment-Grade Short & Intermediate Funds	5.61	0.13	1.75	1.41	2.29
iBoxx \$ Overall	5.70	-3.57	1.30	1.91	2.55
General Bond Funds	6.99	-1.97	1.67	1.88	3.48
iBoxx \$ Liquid High Yield	12.89	1.73	4.79	4.00	7.80
High Yield Funds	11.46	1.48	4.36	3.31	7.15
Bloomberg US Aggregate Securitized - MBS	5.05	-2.86	0.25	1.38	2.15
Mortgage-Backed Securities Funds	4.99	-2.90	0.20	1.17	2.23
iBoxx \$ Liquid Investment Grade	9.45	-3.99	2.92	3.19	4.77
Core Plus Bond Funds	6.21	-3.12	1.56	-	-
iBoxx TIPS Inflation-Linked	3.96	-1.30	3.13	2.46	3.43
Inflation-Linked Funds	3.39	-0.53	2.98	1.98	2.76
Bloomberg Global Aggregate	5.72	-5.51	-0.32	0.38	1.54
Global Income Funds	6.30	-3.76	0.64	0.88	2.46
Bloomberg Emerging Markets USD Aggregate	9.09	-3.13	1.84	3.03	6.21
Emerging Market Debt Funds	10.57	-3.20	1.37	1.67	3.96
S&P National AMT-Free Municipal Bond	6.24	-0.27	2.26	2.97	3.83
General Municipal Debt Funds	6.21	-1.18	1.68	2.58	3.67
S&P California AMT-Free Municipal Bond	5.64	-0.51	2.10	3.00	4.05
California Municipal Debt Funds	5.94	-1.22	1.55	2.81	4.26
S&P New York AMT-Free Municipal Bond	6.40	-0.06	2.17	2.87	3.81
New York Municipal Debt Funds	6.80	-0.87	1.66	2.68	3.80
Markit iBoxx USD Leveraged Loans	13.00	5.46	5.29	4.01	7.47
Loan Participation Funds	11.01	4.00	3.98	3.01	5.94

Source: S&P Dow Jones Indices LLC, CRSP, Bloomberg LLC. Data as of Dec. 31, 2023. Results not shown for the Core Plus Bond Funds category for periods beginning prior to the category's inception in 2017. Returns shown are annualized for periods greater than one year. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 14: Average Fixed Income Fund Performance (Asset-Weighted)

Index/Fund Category	1-Year (%)	3-Year (%)	5-Year (%)	10-Year (%)	15-Year (%)
iBoxx \$ Domestic Sovereign & Sub-Sovereigns	5.66	-2.21	1.36	1.08	2.11
General Government Funds	3.77	-4.65	0.35	1.13	2.07
iBoxx \$ Domestic Sovereigns & Sub-Sovereigns 1-10Y	4.99	-1.28	1.34	1.51	1.89
Government Intermediate Funds	3.96	-3.37	0.48	0.79	2.10
iBoxx \$ Domestic Sovereigns & Sub-Sovereigns 1-5Y	4.76	-0.57	1.40	1.33	1.64
Government Short & Short-Intermediate Funds	3.59	-0.65	1.11	0.99	1.27
iBoxx \$ Liquid Investment Grade	9.45	-3.99	2.92	3.19	4.77
General Investment-Grade Funds	7.10	-4.31	2.19	2.58	3.91
Bloomberg U.S. Aggregate	5.53	-3.31	1.1	1.81	2.68
Investment-Grade Intermediate Funds	6.53	-2.77	1.87	2.25	3.80
iBoxx \$ Overall 1-5Y	5.01	-0.58	1.58	1.46	1.88
Investment-Grade Short & Intermediate Funds	5.54	-0.05	1.80	1.60	2.60
iBoxx \$ Overall	-13.61	-2.69	0.13	1.08	2.63
General Bond Funds	8.11	-0.38	2.8	2.13	3.70
iBoxx \$ Liquid High Yield	12.89	1.73	4.79	4.00	7.80
High Yield Funds	11.70	2.09	5.03	3.92	7.87
Bloomberg US Aggregate Securitized – MBS	5.05	-2.86	0.25	1.38	2.15
Mortgage-Backed Securities Funds	5.04	-2.55	0.39	1.38	2.35
iBoxx \$ Liquid Investment Grade	9.45	-3.99	2.92	3.19	4.77
Core Plus Bond Funds	5.90	-3.67	1.23	-	-
iBoxx TIPS Inflation-Linked	3.96	-1.30	3.13	2.46	3.43
Inflation-Linked Funds	3.40	-1.15	2.61	2.07	3.14
Bloomberg Global Aggregate	5.72	-5.51	-0.32	0.38	1.54
Global Income Funds	6.58	-4.27	-0.42	0.42	2.53
Bloomberg Emerging Markets USD Aggregate	9.09	-3.13	1.84	3.03	6.21
Emerging Market Debt Funds	12.22	-2.74	1.45	2.38	5.16
S&P National AMT-Free Municipal Bond	6.24	-0.27	2.26	2.97	3.83
General Municipal Debt Funds	6.89	-0.77	2.08	3.08	4.37
S&P California AMT-Free Municipal Bond	5.64	-0.51	2.10	3.00	4.05
California Municipal Debt Funds	6.31	-0.95	2.05	3.29	4.63
S&P New York AMT-Free Municipal Bond	6.40	-0.06	2.17	2.87	3.81
New York Municipal Debt Funds	7.60	-0.58	2.26	3.27	4.55
Markit iBoxx USD Leveraged Loans	13.00	5.46	5.29	4.01	7.47
Loan Participation Funds	11.14	4.54	4.18	3.21	6.05

Source: S&P Dow Jones Indices LLC, CRSP, Bloomberg LLC. Data as of Dec. 31, 2023. Results not shown for the Core Plus Bond Funds category for periods beginning prior to the category's inception in 2017. Returns shown are annualized for periods greater than one year. 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			
General Government Funds	3.07	3.79	4.33
Government Intermediate Funds	3.74	4.14	4.44
Government Short & Short-Intermediate Funds	3.64	3.91	4.17
General Investment-Grade Funds	5.83	7.35	8.51
Investment-Grade Intermediate Funds	5.22	5.67	6.21
Investment-Grade Short & Intermediate Funds	4.89	5.55	6.18
General Bond Funds	5.99	6.99	8.84
High Yield Funds	10.87	11.96	12.71
Mortgage-Backed Securities Funds	4.32	4.83	5.58
Core Plus Bond Funds	5.82	6.22	6.85
Inflation-Linked Funds	3.12	3.75	4.09
Global Income Funds	5.15	6.62	8.17
Emerging Market Debt Funds	9.34	11.07	12.57
General Municipal Debt Funds	5.80	6.49	6.98
California Municipal Debt Funds	5.33	6.26	6.65
New York Municipal Debt Funds	6.80	6.80	7.67
Loan Participation Funds	10.56	11.28	12.46
3-Year			
General Government Funds	-4.71	-3.78	-3.07
Government Intermediate Funds	-3.73	-3.08	-2.56
Government Short & Short-Intermediate Funds	-1.28	-1.00	-0.36
General Investment-Grade Funds	-3.92	-3.53	-2.94
Investment-Grade Intermediate Funds	-3.80	-3.47	-3.08
Investment-Grade Short & Intermediate Funds	-0.29	0.19	0.63
General Bond Funds	-2.93	-1.98	0.05
High Yield Funds	0.85	1.58	2.24
Mortgage-Backed Securities Funds	-3.45	-2.91	-2.39
Core Plus Bond Funds	-3.67	-3.21	-2.82
Inflation-Linked Funds	-1.65	-1.21	0.02
Global Income Funds	-5.77	-3.16	-1.55
Emerging Market Debt Funds	-3.48	-2.66	-1.87
General Municipal Debt Funds	-1.21	-0.80	-0.63
California Municipal Debt Funds	-1.28	-0.88	-0.53
New York Municipal Debt Funds	-1.04	-0.70	-0.42
Loan Participation Funds	3.72	4.32	4.91

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. 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			
General Government Funds	-0.18	0.24	0.71
Government Intermediate Funds	0.18	0.51	0.85
Government Short & Short-Intermediate Funds	0.55	0.90	1.14
General Investment-Grade Funds	1.22	2.05	2.67
Investment-Grade Intermediate Funds	0.88	1.22	1.57
Investment-Grade Short & Intermediate Funds	1.46	1.76	2.06
General Bond Funds	1.09	2.37	3.16
High Yield Funds	3.94	4.54	5.17
Mortgage-Backed Securities Funds	-0.01	0.17	0.45
Core Plus Bond Funds	1.08	1.54	2.07
Inflation-Linked Funds	2.61	2.87	3.12
Global Income Funds	-0.47	0.82	1.88
Emerging Market Debt Funds	1.15	1.86	2.46
General Municipal Debt Funds	1.65	1.89	2.22
California Municipal Debt Funds	1.51	1.86	2.16
New York Municipal Debt Funds	1.55	1.83	2.06
Loan Participation Funds	4.01	4.39	4.89
10-Year			
General Government Funds	0.73	1.08	1.33
Government Intermediate Funds	0.70	0.91	1.04
Government Short & Short-Intermediate Funds	0.58	0.89	1.02
General Investment-Grade Funds	1.70	2.24	2.85
Investment-Grade Intermediate Funds	1.54	1.77	1.94
Investment-Grade Short & Intermediate Funds	1.21	1.43	1.73
General Bond Funds	1.63	2.36	3.00
High Yield Funds	3.23	3.64	4.05
Mortgage-Backed Securities Funds	0.92	1.12	1.33
Inflation-Linked Funds	1.77	1.98	2.19
Global Income Funds	0.20	1.15	2.22
Emerging Market Debt Funds	1.45	2.19	2.86
General Municipal Debt Funds	2.66	2.94	3.14
California Municipal Debt Funds	2.78	3.17	3.38
New York Municipal Debt Funds	2.59	2.81	3.01
Loan Participation Funds	2.96	3.32	3.58

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. 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			
General Government Funds	1.54	1.76	2.64
Government Intermediate Funds	1.24	1.50	2.04
Government Short & Short-Intermediate Funds	0.93	1.14	1.36
General Investment-Grade Funds	2.97	3.86	5.07
Investment-Grade Intermediate Funds	2.99	3.51	3.96
Investment-Grade Short & Intermediate Funds	1.90	2.19	2.83
General Bond Funds	2.95	3.79	5.36
High Yield Funds	7.32	7.70	8.09
Mortgage-Backed Securities Funds	1.87	2.05	2.57
Inflation-Linked Funds	2.55	2.92	2.96
Global Income Funds	1.71	2.49	3.81
Emerging Market Debt Funds	3.45	5.29	5.75
General Municipal Debt Funds	3.72	4.17	4.61
California Municipal Debt Funds	4.11	4.55	4.81
New York Municipal Debt Funds	3.53	3.92	4.14
Loan Participation Funds	5.57	5.86	6.44

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2023. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Appendix A: Mapping

SPIVA Styles and Fund Classifications

The SPIVA Scorecard covers domestic equity, global equity and global fixed income categories. Fund returns are sourced from the CRSP Survivor-Bias-Free US Mutual Fund Database, a complete database of both active and liquidated or merged mutual funds and ETFs⁹ created in 1995 and containing fund data from December 1961. Fund classifications are based upon the Lipper fund classification system.

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 relies on 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, confirms secondary characteristics (price-to-sales and price-to-operating cash flow).

In some cases, S&P Dow Jones Indices combines closely related Lipper fund classifications in one SPIVA category. Exhibit A1 maps the SPIVA U.S. Equity fund categories to Lipper classifications.

⁹ The dataset encompasses retail mutual funds and all ETFs that are domiciled in the U.S.

Exhibit A1: U.S. Equity Category Mappings

SPIVA Category	Lipper Fund Classification
Large-Cap Growth Equity	Large-Cap Growth Funds
Large-Cap Core Equity	Large-Cap Core Funds
Large-Cap Value Equity	Large-Cap Value Funds
	Equity Income Funds
Mid-Cap Growth Equity	Mid-Cap Growth Funds
Mid-Cap Core Equity	Mid-Cap Core Funds
Mid-Cap Value Equity	Mid-Cap Value Funds
Small-Cap Growth Equity	Small-Cap Growth Funds
Small-Cap Core Equity	Small-Cap Core Funds
Small-Cap Value Equity	Small-Cap Value Funds
Multi-Cap Growth Equity	Multi-Cap Growth Funds
Multi-Cap Core Equity	Multi-Cap Core Funds
Multi-Cap Value Equity	Multi-Cap Value 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) of interest to global asset allocators. These categories also include multiple Lipper capitalization and style classifications.

Exhibit A2: International Equity Category Mappings

SPIVA Category	Lipper Funds 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 12 domestic, 2 global and 3 municipal fixed income categories. The Lipper domestic fixed income classifications are based on maturity and credit quality. For maturity, long is over 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 Government National Mortgage Association (GNMA) classifications.

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

Exhibit A3: Fixed Income Category Mappings

SPIVA Category	Lipper Funds Classification
General Government Funds	General U.S. Government Funds
Government Intermediate Funds	General U.S. Treasury Funds
	Intermediate U.S. Government Funds
Government Short & Short-Intermediate Funds	Short-Intermediate U.S. Government Funds
	Short U.S. Government Funds
General Investment-Grade Funds	Short U.S. Treasury Funds
	Corporate Debt Funds A Rated
Investment-Grade Intermediate Funds	Corporate Debt Funds BBB-Rated
	Intermediate Investment Grade Debt Funds
Investment-Grade Short & Intermediate Funds	Short-Intermediate Investment Grade Debt Funds
	Short Investment Grade Debt Funds
General Bond Funds	General Bond Funds
High Yield Funds	High Current Yield Funds
Mortgage-Backed Securities Funds	U.S. Mortgage Funds
	GNMA Funds
Core Plus Bond Funds	Core Plus Bond Funds
Inflation-Linked Funds	Inflation Protected Bond Funds
Global Income Funds	Global Income Funds
	International Income Funds
Emerging Market Debt Funds	Emerging Markets Debt Funds
General Municipal Debt Funds	General & Insured Municipal Debt Funds
California Municipal Debt Funds	California Municipal Debt Funds
New York Municipal Debt Funds	New York Municipal Debt Funds
Loan Participation Funds	Loan Participation Funds

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

Appendix B: Glossary

Percentage of Funds Underperforming 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 products 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 Performance

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

Asset-Weighted 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.

Quartile 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.

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

A benchmark index provides an investment vehicle against which fund performance can be measured.

U.S. Equity

S&P 500

Widely regarded as the best single gauge of the U.S. equities market, this market-capitalization-weighted index includes a representative sample of 500 leading companies in the foremost industries of the U.S. economy and provides over 80% coverage of U.S. equities.

S&P Midcap 400

This index consists of 400 mid-sized companies and covers approximately 7% of the U.S. equities market.

S&P SmallCap 600

This index consists of 600 small-cap companies and covers approximately 3% of the U.S. equities market.

S&P Composite 1500

This is a broad, market-capitalization-weighted index of 1500 companies formed by combining the S&P 500, S&P MidCap 400 and S&P SmallCap 600. The index represents approximately 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

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 by market capitalization, 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 International 700

This index is designed to measure the non-U.S. component of the global equity markets, covering all the regions included in the S&P Global 1200, excluding the U.S. (S&P 500).

S&P Developed Ex-U.S. SmallCap

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

S&P/IFCI Composite

This index is widely recognized as a comprehensive and reliable measure of the world's emerging markets. It is designed to measure the returns of stocks that are legally and practically available to foreign investors.

Fixed Income

iBoxx \$ Liquid High Yield Index

This index consists of USD-denominated corporate high yield debt from developed markets with maturities greater than 1 year and less than 15 years.

iBoxx \$ Liquid Investment Grade Index

This index consists of USD-denominated corporate investment grade debt from developed markets with maturities greater than three years.

iBoxx TIPS Inflation Linked Index

This index measures the performance of the U.S. Treasury Inflation Protected Securities (TIPS) market across all maturities.

iBoxx \$ Domestic Sovereigns & Sub-Sovereigns Index

This index comprises USD-denominated sovereign and sub-sovereign bonds that have an investment grade rating and are SEC registered. Eligible bonds must have maturities greater than one year.

iBoxx \$ Domestic Sovereigns & Sub-Sovereigns 1-10Y Index

This index comprises USD-denominated sovereign and sub-sovereign bonds that have an investment grade rating and are SEC registered. Eligible bonds must have maturities greater than 1 year and less than 10 years.

iBoxx \$ Domestic Sovereigns & Sub-Sovereigns 1-5Y Index

This index comprises USD-denominated sovereign and sub-sovereign bonds that are SEC registered. Eligible bonds must have maturities greater than one year and less than five years.

iBoxx \$ Overall Index

This index is a broad set of USD-denominated bonds, comprising U.S. treasuries, sovereigns, sub-sovereigns, corporates and covered bonds with an investment grade rating. It includes bonds from developed markets and emerging markets. Eligible bonds must have maturities greater than one year.

iBoxx \$ Overall 1-5Y Index

This index is a broad set of USD-denominated bonds, comprising U.S. treasuries, sovereigns, sub-sovereigns, corporates and covered bonds with an investment grade rating. It includes bonds from developed markets and emerging markets. Eligible bonds must have maturities greater than one year and less than five years.

Markit iBoxx USD Leveraged Loans Index

This index represents the main sections of the USD leveraged loan market. It comprises rated, non-rated and defaulted loans. Eligible rated loans must have a non-investment grade rating. The minimum initial time to maturity for loans is one year and the minimum amount outstanding is USD 100 million.

Bloomberg US Aggregate Bond Index

This is a broad-based index covering investment grade, USD-denominated bonds, including treasuries, government-related and corporate securities, mortgage-backed securities (MBS) and asset-backed securities (ABS).

Bloomberg 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).

Bloomberg 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.

Bloomberg Emerging Markets USD Aggregate Index

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

S&P National AMT-Free Municipal Bond Index

This index is a broad, comprehensive, market-value-weighted index designed to measure the performance of 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 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 investment grade New York bonds that are exempt from the alternative minimum tax.

Appendix C: Change of Categories and Benchmarks in Fixed Income

Since the inaugural SPIVA U.S. Scorecard was published in 2002, the landscape of actively managed fixed income funds and the availability of benchmarks to measure them have changed appreciably. Despite the evolution of indices and active fund marketplaces over the past two decades, until 2022, the SPIVA Scorecards largely retained the original assignments of categories and benchmarks—primarily in order to facilitate year-over-year comparisons. In the mid-year 2022 edition, we made several changes.

February 2022 brought an opportunity to review the fixed income fund categories and their associated benchmarks via the merger of S&P Global and IHS Markit, which resulted in a material expansion in the range of fixed income indices available to S&P DJI for use in the production of SPIVA reports. Accordingly, scorecards published since 2022 incorporate several changes in fixed income reports, including the addition of several previously unreported categories and an updated assignment of benchmarks. **The previous assignments of SPIVA categories and benchmarks are summarized in Exhibit C1, and the new assignments are summarized in Exhibit C2 for purposes of comparison.**

To form the new assignments, funds were first grouped into appropriate SPIVA categories, and benchmarks for each category were assigned through a combination of quantitative and qualitative considerations. These included:

- All else equal, the organization of the historical U.S. scorecards was followed or approximated where possible;
- Where sensible, smaller fund categories were grouped with similar categories to provide broader sample sizes, with size measured both on the number of funds and their aggregate assets under management;
- Lipper category and benchmark definitions were reviewed for similarities and differences;
- The benchmarks reported by the various active funds in each category were reviewed in comparison to potential category benchmarks; and
- The correlations and tracking errors between fund category returns (both asset weighted and equal weighted) and potential category benchmarks were examined over various time horizons.

Although the new assignments seek a degree of continuity, the mid-year 2022 scorecard incorporates a methodological “break” with prior editions for some fixed income fund categories. The updated categorization scheme generally improves the correspondence

between category and benchmark performance and expands the fund universe to include several previously excluded categories.

Exhibit C1: Previous Fixed Income SPIVA Assignments

Lipper Category	Previous SPIVA Category	Previous Comparison Index
General U.S. Government Funds	Government Long Funds	Bloomberg US Aggregate Government – Long
General U.S. Treasury Funds		
Intermediate U.S. Government Funds	Government Intermediate Funds	Bloomberg US Aggregate Government – Intermediate
Short-Intermediate U.S. Government Funds		
Short U.S. Government Funds	Government Short Funds	Bloomberg US 1-3 Year Government
Short U.S. Treasury Funds		
Corporate Debt Funds A Rated	Investment-Grade Long Funds	Bloomberg US Aggregate Government & Credit – Long
Corporate Debt Funds BBB-Rated		
Intermediate Investment Grade Debt Funds	Investment-Grade Intermediate Funds	Bloomberg US Intermediate Government/Credit
Short-Intermediate Investment Grade Debt Funds		
Short Investment Grade Debt Funds	Short Investment-Grade Funds	Bloomberg US Aggregate Government & Credit (1-3 Y)
High Current Yield Funds	High Yield Funds	Bloomberg US High Yield – Corporate
U.S. Mortgage Funds	Mortgage-Backed Securities Funds	Bloomberg US Aggregate Securitized – MBS
GNMA Funds		
Global Income Funds	Global Income Funds	Bloomberg Global Aggregate
International Income Funds		
Emerging Markets Debt Funds	Emerging Market Debt Funds	Bloomberg Emerging Markets USD Aggregate
General & Insured Municipal Debt Funds	General Municipal Debt Funds	S&P National AMT-Free Municipal Bond
California Municipal Debt Funds	California Municipal Debt Funds	S&P California AMT-Free Municipal Bond Index
New York Municipal Debt Funds	New York Municipal Debt Funds	S&P New York AMT-Free Municipal Bond Index
Loan Participation Funds	Loan Participation Funds	S&P/LSTA U.S. Leveraged Loan 100 Index
Inflation Protected Bond Funds	Not previously included	Not previously included
Core Plus Bond Funds	Not previously included	Not previously included
General Bond Funds	Not previously included	Not previously included

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

Exhibit C2: New Fixed Income SPIVA Assignments

Lipper Category	New SPIVA Category	New Comparison Index
General U.S. Government Funds	General Government Funds	iBoxx \$ Domestic Sovereign & Sub-Sovereigns
General U.S. Treasury Funds		
Intermediate U.S. Government Funds	Government Intermediate Funds	iBoxx \$ Domestic Sovereign & Sub-Sovereigns 1-10Y
Short-Intermediate U.S. Government Funds	Government Short & Short-Intermediate Funds	iBoxx \$ Domestic Sovereign & Sub-Sovereigns 1-5Y
Short U.S. Government Funds		
Short U.S. Treasury Funds		
Corporate Debt Funds A Rated	General Investment-Grade Funds	iBoxx \$ Liquid Investment Grade
Corporate Debt Funds BBB-Rated		
Intermediate Investment Grade Debt Funds	Investment-Grade Intermediate Funds	Bloomberg U.S. Aggregate
Short-Intermediate Investment Grade Debt Funds	Investment-Grade Short & Intermediate Funds	iBoxx \$ Overall 1-5Y
Short Investment Grade Debt Funds		
High Current Yield Funds	High Yield Funds	iBoxx USD Liquid High Yield
U.S. Mortgage Funds	Mortgage-Backed Securities Funds	Bloomberg US Aggregate Securitized – MBS
GNMA Funds		
Global Income Funds	Global Income Funds	Bloomberg Global Aggregate
International Income Funds		
Emerging Markets Debt Funds	Emerging Market Debt Funds	Bloomberg Emerging Markets USD Aggregate
General & Insured Municipal Debt Funds	General Municipal Debt Funds	S&P National AMT-Free Municipal Bond
California Municipal Debt Funds	California Municipal Debt Funds	S&P California AMT-Free Municipal Bond
New York Municipal Debt Funds	New York Municipal Debt Funds	S&P New York AMT-Free Municipal Bond
Loan Participation Funds	Loan Participation Funds	Markit iBoxx USD Leveraged Loans
Inflation Protected Bond Funds	Inflation-Linked Funds	iBoxx TIPS Inflation-Linked
Core Plus Bond Funds	Core Plus Bond Funds	iBoxx \$ Liquid Investment Grade
General Bond Funds	General Bond Funds	iBoxx \$ Overall

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

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