

# SPIVA<sup>®</sup> Institutional Scorecard

## Summary

### Contributors

**Tim Edwards, PhD**  
Managing Director  
Index Investment Strategy  
[tim.edwards@spglobal.com](mailto:tim.edwards@spglobal.com)

**Anu R. Ganti, CFA**  
Senior Director  
Index Investment Strategy  
[anu.ganti@spglobal.com](mailto:anu.ganti@spglobal.com)

**Craig J. Lazzara, CFA**  
Managing Director  
Index Investment Strategy  
[craig.lazzara@spglobal.com](mailto:craig.lazzara@spglobal.com)

**Davide di Gioia**  
Chief SPIVA Engineer  
Index Investment Strategy  
[davide.di.gioia@spglobal.com](mailto:davide.di.gioia@spglobal.com)

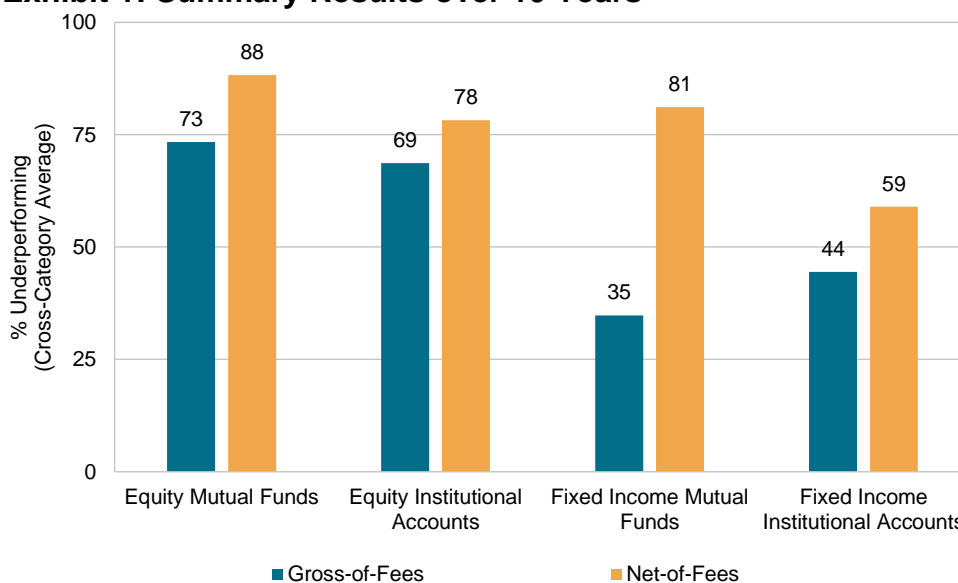
**Grace Stoddart**  
Quantitative Associate  
Index Investment Strategy  
[grace.stoddart@spglobal.com](mailto:grace.stoddart@spglobal.com)

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

In this report, we add institutional accounts to the mutual funds analyzed in the [S&P Indices versus Active \(SPIVA\) U.S. Scorecard](#). We aim to provide the institutional community with the ability to judge managers' true skill without the possible distortions that fees may create and to illustrate the similarities and differences between the performance of open-end funds and segregated institutional accounts across categories.

This edition of our scorecard shows that **underperformance rates over the long term among institutional equity accounts are generally similar to those of mutual funds, with or without fees.** However, the importance of fees in determining underperformance rates varied considerably across asset classes, with a more significant difference in fixed income categories (see Exhibit 1).

### Exhibit 1: Summary Results over 10 Years



Source: S&P Dow Jones Indices LLC, eVestment Alliance, CRSP. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Register to receive our latest research, education, and commentary at  
[on.spdji.com/SignUp](https://on.spdji.com/SignUp).

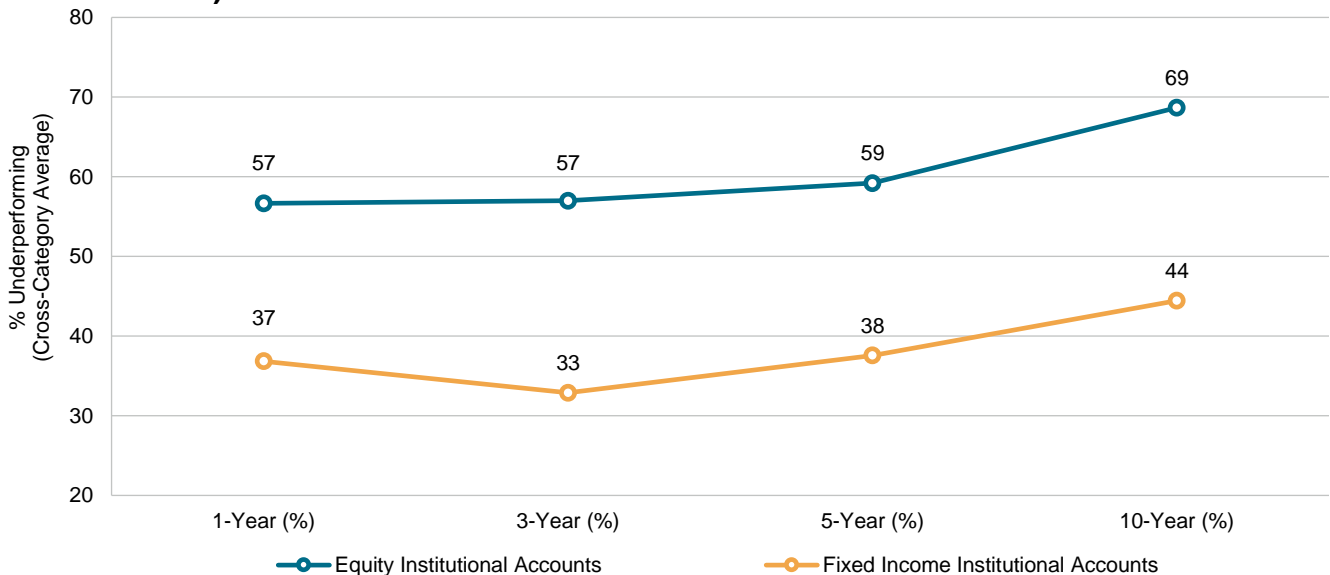
# Report Highlights

Overall, 2022 continued to demonstrate better long-term net-of-fees performance in institutional accounts than in mutual funds, with lower 10-year underperformance rates in all 21 reported equity segments (see Section I and Exhibit 3) and a significant improvement in the cross-category average across fixed income categories (see Exhibit 1).

Shorter-term horizons show a broader range of outcomes, with some pockets of admirable performance. Within U.S. equity institutional accounts, only 39% of All Large-Cap Funds underperformed the [S&P 500®](#) in 2022 on a gross-of-fees basis, the lowest underperformance rate for the category since this report’s inception in 2015 (see Report 1, Section II).<sup>1</sup> Active fixed income managers posted even stronger relative performance in 2022, with majority outperformance reported in 12 out of 17 categories. Notably, just 9% of managers in the inflation-linked category underperformed the [iBoxx TIPS Inflation-Linked Index](#) (see Report 11, Section II).

However, echoing a common theme in S&P DJI’s SPIVA Scorecards across geographies and vehicles, gross-of-fees underperformance rates in institutional accounts generally rose with the time horizon over which they were measured, as evidenced by the cross-category averages plotted in Exhibit 2.

**Exhibit 2: Cross-Category Average Institutional Account Underperformance Rates (Gross-of-Fees) Rose over Time**



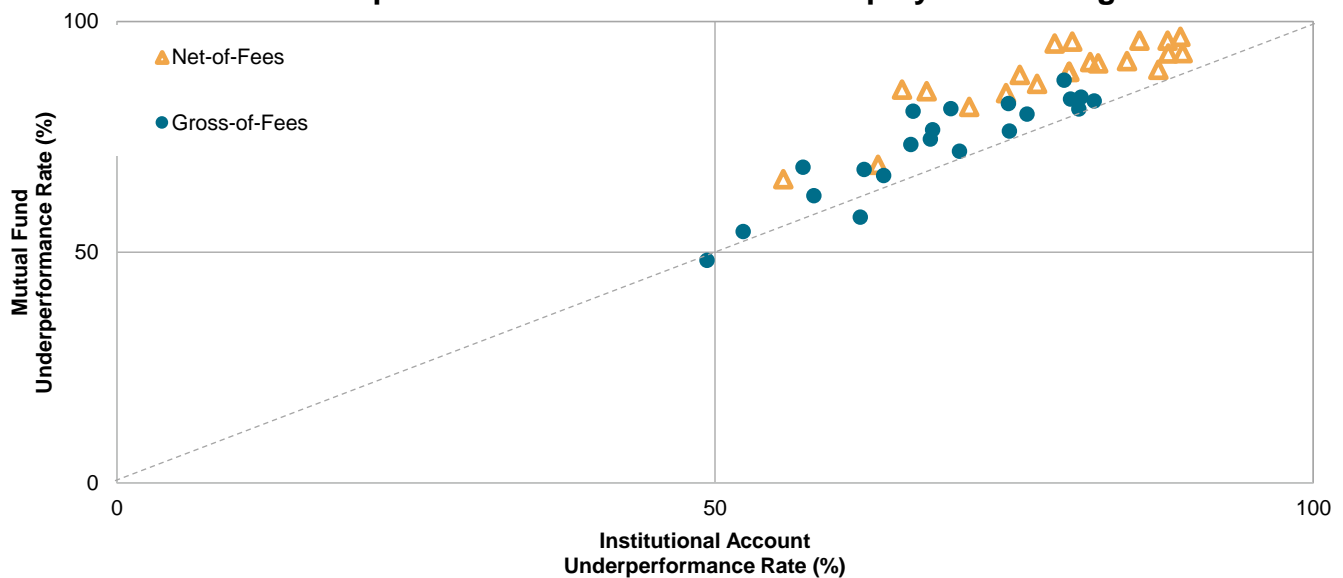
Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

<sup>1</sup> The All Large-Cap Funds category for U.S. equity mutual funds also displayed a relatively low net-of-fees 2022 underperformance rate in historical terms, although a slim majority still underperformed. For more details on mutual fund performance and for the market context framing these results, see the [SPIVA U.S. Year-End 2022 Scorecard](#).

# Cross-Vehicle and Fee-Based Comparisons in Equities

Illustrating the combined differences between investment vehicles and gross- and net-of-fees returns, Exhibit 3 offers a summary perspective on the 10-year underperformance rates observed across various equity fund categories, comparing the underperformance rates in institutional accounts (x-axis) and mutual funds (y-axis), both gross-of-fees (the blue dots) and net-of-fees (the yellow triangles). For illustrative purposes, the dashed diagonal line marks an equal underperformance rate between mutual funds and institutional accounts.

**Exhibit 3: 10-Year Underperformance Rates across All Equity Fund Categories**



Source: S&P Dow Jones Indices LLC, eVestment Alliance, CRSP. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Exhibit 3 illustrates several important observations regarding the 10-year statistics for actively managed equity mutual funds and institutional accounts.

- First and perhaps most importantly, **nearly all the data points in Exhibit 3 are in the top-right quadrant**. In other words, in most categories, more than 50% of actively managed mutual funds *and* more than 50% of actively managed institutional accounts underperformed, with or without fees.
- Second, the dots generally fall lower and to the left of the triangles—corresponding to the unsurprising result that **gross-of-fees performances were better than net-of-fees performances**. However, in all but one category, the dots remained above and to the right of the 50% line, indicating that **fees alone cannot explain the fact of majority underperformance in most equity categories**.

- Third and finally, nearly all the data points lie *above* the diagonal line, implying that **there were generally higher underperformance rates among mutual funds than among institutional accounts**, both before and after fees. This observation is qualified by the fact that most of the data points are still quite *close* to the diagonal, which implies that **mutual fund and institutional account underperformance rates were broadly similar across equity categories**.

## The Increased Importance of Fees in Narrower Fund Markets

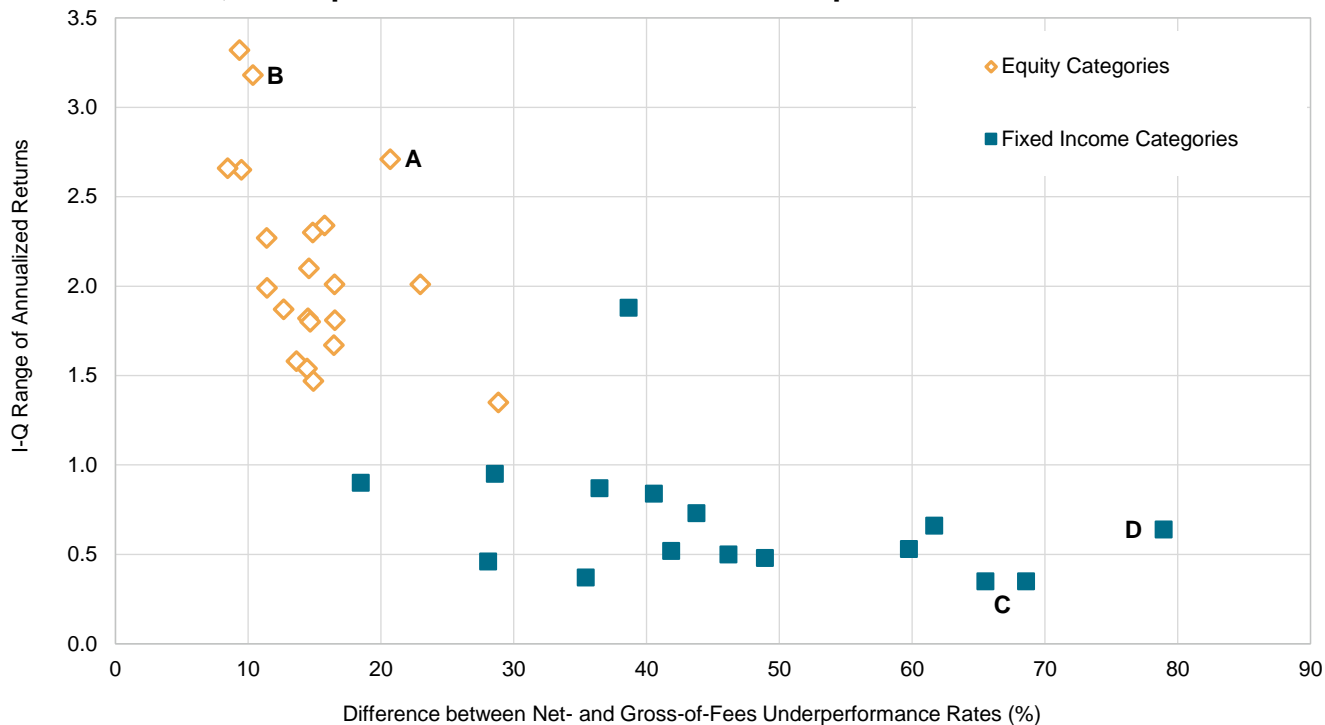
In some fund categories, the typical range of securities selected by active managers have similar returns, while in other fund categories, the range of returns is wider.<sup>2</sup> For example, the universe of short-dated U.S. Treasury bills normally has a tighter range of returns than the universe of all international equities. Intuitively, one would expect management fees to have a greater impact in categories like the former, because one then expects most active funds to perform similarly *before* the subtraction of fees, and the level of fees subtracted will hence prove more influential—especially in determining relative rankings or outperformance rates.

To some extent, given the greater dispersion of equity returns than bond returns, a partial confirmation of this intuition was already visible in Exhibit 1.

Exhibit 4 illustrates the relationship between the observed range of active mutual fund returns and the importance of fees in determining mutual fund outperformance rates across all the SPIVA Institutional Scorecard’s reported categories. More specifically, Exhibit 4 compares the *difference* in the 10-year gross- and net-of-fees underperformance rates for all our reported mutual fund categories (x-axis) to the interquartile range of 10-year annualized fund returns in each category (see Reports 5, 10 and 15). For ease of identification, data points for fixed income categories are plotted as squares, while equity categories are plotted as diamonds.

<sup>2</sup> See Edwards & Lazzara, “[Dispersion: Measuring Market Opportunity](#),” S&P DJI, December 2013. For more recent data, S&P DJI currently produces a monthly [dashboard](#) of dispersion levels across major markets, available at [www.spglobal.com/spdji](http://www.spglobal.com/spdji).

### Exhibit 4: Fees, Underperformance Rates and Fund Dispersion



Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2022. Based on 10-year statistics for U.S. mutual funds. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

The results plotted in Exhibit 4 comport reassuringly with intuition.

- The data are loosely scattered around a trendline that lies on a decreasing, albeit concave, diagonal. Fees mattered less in fund categories with wider dispersion and mattered more in narrower fund categories.
- The equity categories generally lie toward the upper left of the chart, while the fixed income categories are generally located toward the bottom right.
- Categories with a broad range of highly disperse assets, such as International Small-Cap Funds (point “A”), and broader categories, such as All Multi-Cap Funds (point “B”), exemplify a high interquartile range and a low differential between underperformance rates gross- and net-of-fees.
- The categories of California Municipal Debt Funds and New York Municipal Debt Funds (both next to the point “C”) and Loan Participation Funds (point “D”) display the potential importance of fees in such relatively narrow asset classes.

In the most extreme example, namely Loan Participation Funds, fees alone were sufficient to change the picture entirely: from a *gross* underperformance rate of just 16%, to a *net* underperformance rate of 95% of funds.

# About the SPIVA Institutional Scorecard

Fees play a major role in the active versus passive debate. After subtracting fees, returns from active management tend to be less than those from passive management, as the latter typically costs less. Within active management, it is widely understood that fees can vary meaningfully across client types, with retail investors typically paying higher advisory and management fees than institutional investors. Institutional investors have the scale to negotiate fees directly with asset managers; retail investors lack such bargaining power.

**S&P Dow Jones Indices has published the SPIVA U.S. Scorecard since 2002.**<sup>3</sup> The scorecard measures the performance of actively managed equity funds investing in domestic and international equities, as well as fixed income funds, against their respective benchmarks. The University of Chicago's Center for Research in Security Prices (CRSP) Survivor-Bias-Free US Mutual Fund Database serves as the underlying data source for the U.S. scorecard. As the CRSP database consists of publicly traded open-ended mutual funds, the fee structure primarily reflects retail products rather than institutional accounts.

This report attempts to answer three questions that are pertinent to the active versus passive debate:

1. When measured on a net- and gross-of-fees basis, do institutional asset managers outperform their respective benchmarks?
2. Similarly, do mutual funds outperform their respective benchmarks when measured on a net- and gross-of-fees basis?
3. For particular asset classes and sub-asset classes, do institutional managers fare better than their retail fund counterparts when measured on a gross-of-fees basis?

To answer these questions, **we report the relative performance of U.S. equity and fixed income asset managers** for institutional accounts using composite returns from eVestment Alliance, a provider of investment data and analytics for the institutional asset management industry. Importantly, **unlike publicly traded mutual fund performance data, data from eVestment rely on self-reporting by managers.** Not all institutional account managers report both gross-of-fees and net-of-fees returns, so it is arithmetically possible, for example, that average net-of-fees returns might *appear* to be higher than their gross-of-fees counterpart. Relative performance for retail funds on a gross-of-fees basis is computed by adding back the annual expense ratio to the net-of-fees returns. Appendix A contains the detailed mapping of various investment strategies to their groups.

In addition, **we compare the relative performance of open-end mutual funds, using net- and gross-of-fees returns, against similar peer groupings composed of institutional**

<sup>3</sup> The most recent and historical SPIVA Scorecards for the U.S. and other global fund markets may be found at [www.spglobal.com/spdji/en/research-insights/spiva/](http://www.spglobal.com/spdji/en/research-insights/spiva/).

**accounts.** We report the figures for domestic equity, international equity and fixed income categories.

This report aims to provide the institutional community with the ability to judge managers' true skill without the possible distortions that fees may create on performance comparisons. Including mutual funds—on both net- and gross-of-fees performance bases—with institutional accounts also allows readers to see if fees make any meaningful difference in a particular asset class for a certain type of market participant.

We also aim to address the notion that benchmarks are not directly investable and do not incur costs, thereby making any performance comparison of active funds against their benchmarks not “apples-to-apples.” **By comparing retail mutual funds and institutional accounts on a gross-of-fees basis against their respective benchmarks, we eliminate any possibility that fees are the sole contributor to a given manager's underperformance.**

**This report is organized as follows:** In Section I, we highlight the relative performance of retail funds and institutional accounts against their respective benchmarks for the equity and fixed income categories. Section II replicates the headline SPIVA U.S. Scorecard using only gross-of-fees returns among institutional accounts, detailing related metrics such as survivorship, asset-weighted versus equal-weighted performance figures and quartile breakpoints.

# Section I: Percentage of Mutual Funds and Institutional Accounts Underperforming Their Benchmarks

## Equity – Institutional Accounts

Institutional account data rely on self-reporting by active managers, and typically, fewer institutional managers report net-of-fees returns compared with gross-of-fees returns. Although the underlying universes of institutional accounts differ on net- and gross-of-fees bases, **overall findings suggest that U.S. equities pose meaningful challenges for active managers to overcome.** Exhibit 5 shows that the majority of domestically focused institutional equity managers lagged in each category.

**We find similar challenges for institutional equity managers focused on the non-U.S. equity space.** Only International Small-Cap Funds, gross-of-fees, were able to outperform over the 10-year horizon. **Unsurprisingly, relative performance among institutional equity managers was always worse on a net-of-fees return basis.**

### Exhibit 5: Equity – Percentage of Institutional Managers Underperforming over 10 Years

Category	Benchmark	Institutional Accounts (%)		Number of Funds at Start	
		Net-of-Fees	Gross-of-Fees	Net-of-Fees	Gross-of-Fees
All Domestic Funds	S&P Composite 1500	87.90	80.61	2809	3295
All Large-Cap Funds	S&P 500	84.44	76.08	1202	1430
All Mid-Cap Funds	S&P MidCap 400	71.25	64.09	327	362
All Small-Cap Funds	S&P SmallCap 600	79.55	68.00	895	1022
All Multi-Cap Funds	S&P Composite 1500	89.09	81.70	385	481
Large-Cap Growth Funds	S&P 500 Growth	87.82	79.71	386	419
Large-Cap Core Funds	S&P 500	85.47	74.52	358	467
Large-Cap Value Funds	S&P 500 Value	67.69	57.35	458	544
Mid-Cap Growth Funds	S&P MidCap 400 Growth	55.71	52.35	140	149
Mid-Cap Core Funds	S&P MidCap 400	75.47	70.42	53	71
Mid-Cap Value Funds	S&P MidCap 400 Value	79.85	69.72	134	142
Small-Cap Growth Funds	S&P SmallCap 600 Growth	74.33	62.46	300	341
Small-Cap Core Funds	S&P SmallCap 600	78.38	66.54	222	263
Small-Cap Value Funds	S&P SmallCap 600 Value	82.04	68.18	373	418
Multi-Cap Growth Funds	S&P Composite 1500 Growth	87.07	80.41	116	148
Multi-Cap Core Funds	S&P Composite 1500	88.89	79.17	108	144
Multi-Cap Value Funds	S&P Composite 1500 Value	81.37	74.60	161	189
Emerging Markets Funds	S&P/IFCI Composite	65.63	58.27	160	369
Global Funds	S&P Global 1200	79.62	66.37	157	339
International Funds	S&P International 700	76.92	62.15	117	214
International Small-Cap Funds	S&P Developed Ex-U.S. SmallCap	63.64	49.32	33	73

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.



## Equity – Mutual Funds

Mutual fund analysis is based on CRSP data, so the same fund universe is used for net-of-fees and gross-of-fees comparisons. Exhibit 6 shows that **the majority of active U.S. equity mutual funds underperformed their benchmarks over the 10-year period, even before accounting for fees.** This underperformance included those areas that are perceived to be more suited to active management, such as Emerging Markets and International Small-Cap Funds. In other words, **Exhibit 6 highlights how challenging it can be to outperform benchmarks.**

### Exhibit 6: Equity – Percentage of Mutual Funds Underperforming over 10 Years

Category	Benchmark	Mutual Funds (%)		Number of Funds at Start	
		Net-of-Fees	Gross-of-Fees	Net-of-Fees	Gross-of-Fees
All Domestic Funds	S&P Composite 1500	93.14	83.66	2491	2491
All Large-Cap Funds	S&P 500	91.41	80.00	955	955
All Mid-Cap Funds	S&P MidCap 400	81.51	66.67	357	357
All Small-Cap Funds	S&P SmallCap 600	89.11	74.54	542	542
All Multi-Cap Funds	S&P Composite 1500	93.20	82.84	647	647
Large-Cap Growth Funds	S&P 500 Growth	95.89	83.22	292	292
Large-Cap Core Funds	S&P 500	95.91	82.29	367	367
Large-Cap Value Funds	S&P 500 Value	84.90	68.46	298	298
Mid-Cap Growth Funds	S&P MidCap 400 Growth	65.87	54.49	167	167
Mid-Cap Core Funds	S&P MidCap 400	88.43	71.90	121	121
Mid-Cap Value Funds	S&P MidCap 400 Value	95.65	81.16	69	69
Small-Cap Growth Funds	S&P SmallCap 600 Growth	84.50	68.00	200	200
Small-Cap Core Funds	S&P SmallCap 600	95.26	80.60	232	232
Small-Cap Value Funds	S&P SmallCap 600 Value	90.99	76.58	111	111
Multi-Cap Growth Funds	S&P Composite 1500 Growth	89.55	81.09	201	201
Multi-Cap Core Funds	S&P Composite 1500	96.69	87.35	332	332
Multi-Cap Value Funds	S&P Composite 1500 Value	91.23	76.32	114	114
Emerging Markets Funds	S&P/IFCI Composite	85.25	62.30	183	183
Global Funds	S&P Global 1200	89.13	73.37	184	184
International Funds	S&P International 700	86.50	57.66	274	274
International Small-Cap Funds	S&P Developed Ex-U.S. SmallCap	68.97	48.28	58	58

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

## Fixed Income – Mutual Funds

For fixed income, we present the performance of retail funds separately from institutional accounts due to classification nuances. Our source for mutual fund data, the CRSP Survivor-Bias-Free US Mutual Funds Database, adopted style and objective codes from the Lipper objective codes after 1998. Lipper objective codes classify funds by sector, maturity and credit quality. Our source for institutional SMA data, the eVestment Universe, groups fixed income strategies mostly by sector.

While it is reasonably straightforward to map sector funds between CRSP and eVestment, a degree of subjectivity is required in mapping them for composites and composites with various maturity slices. In some sectors, such as government and investment grade, it is challenging to make a direct comparison between the performance of mutual funds and institutional accounts due to maturity slices.

### Exhibit 7: Fixed Income – Percentage of Mutual Fund Managers Underperforming over 10 Years

Category	Benchmark	Mutual Funds (%)		Number of Funds at Start	
		Net-of-Fees	Gross-of-Fees	Net-of-Fees	Gross-of-Fees
General Government Funds	iBoxx \$ Domestic Sovereigns & Sub-Sovereigns	98.25	70.18	57	57
Government Intermediate Funds	iBoxx \$ Domestic Sovereigns & Sub-Sovereigns 1-10Y	93.75	50.00	16	16
Government Short & Short-Intermediate Funds	iBoxx \$ Domestic Sovereigns & Sub-Sovereigns 1-5Y	94.87	48.72	39	39
General Investment-Grade Funds	iBoxx USD Liquid Investment Grade	84.82	56.25	112	112
Investment-Grade Intermediate Funds	Bloomberg U.S. Aggregate	64.13	22.28	184	184
Investment-Grade Short & Intermediate Funds	iBoxx \$ Overall 1-5Y	72.66	23.74	139	139
General Bond Funds	iBoxx \$ Overall	61.54	43.08	65	65
High-Yield Funds	iBoxx USD Liquid High Yield	73.40	36.95	203	203
Mortgage-Backed Securities Funds	Bloomberg U.S. MBS	78.33	16.67	60	60
Inflation-Linked Funds	iBoxx TIPS Inflation-Linked	89.58	54.17	48	48
Global Income Funds	Bloomberg Global Aggregate	59.66	21.01	119	119
Emerging Market Debt Funds	Bloomberg Emerging Markets USD Aggregate	94.59	54.05	37	37
General Municipal Debt Funds	S&P National AMT-Free Municipal Bond	76.83	17.07	82	82
California Municipal Debt Funds	S&P California AMT-Free Municipal Bond	74.29	5.71	35	35
New York Municipal Debt Funds	S&P New York AMT-Free Municipal Bond	86.21	20.69	29	29
Loan Participation Funds	Markit iBoxx USD Leveraged Loan	94.74	15.79	38	38

Source: S&P Dow Jones Indices LLC, CRSP. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

## Fixed Income – Institutional Accounts

### Exhibit 8: Fixed Income – Percentage of Institutional Managers Underperforming over 10 Years

Category	Benchmark	Institutional Accounts (%)		Number of Funds at Start	
		Net-of-Fees	Gross-of-Fees	Net-of-Fees	Gross-of-Fees
U.S. Aggregate / (Government + Credit) Funds	Bloomberg U.S. Aggregate	50.56	36.02	447	930
Core Funds	Bloomberg U.S. Aggregate	54.52	37.80	420	746
Core Plus Funds	Bloomberg U.S. Aggregate	31.15	29.38	122	194
Cash Funds	Bloomberg U.S. Short Treasury	50.63	41.21	79	165
Government Funds	Bloomberg U.S. Government	67.39	33.33	46	87
Inflation-Linked Funds	iBoxx TIPS Inflation-Linked	78.05	44.44	41	63
Investment-Grade Corporate Funds	iBoxx \$ Corporates	34.62	37.84	52	111
High-Yield Corporate Funds	iBoxx \$ High Yield Developed Markets	72.55	37.43	102	171
Agency MBS Funds	Bloomberg U.S. MBS	60.00	35.48	35	62
Municipal Funds	S&P National AMT-Free Municipal Bond	71.24	60.95	153	274
Emerging Market Hard Currency Funds	Bloomberg Emerging Markets USD Aggregate	78.38	58.06	37	93
Emerging Market Blended Currency Funds	50% Bloomberg EM USD Agg + 50% Bloomberg EM Local Currency Gov	85.19	63.79	27	58
Emerging Market Local Currency Funds	Bloomberg Emerging Markets Local Currency Government	100.00	94.20	21	69
Global Government Funds	iBoxx Global Government Overall USD	40.00	53.33	15	60
Global Aggregate Funds	Bloomberg Global Aggregate Bond	46.15	40.95	52	105
Global Corporate Investment-Grade Funds	Bloomberg Global Aggregate Corporate	38.46	25.81	13	31
Global Corporate High-Yield Funds	Bloomberg Global High Yield	43.48	25.53	23	47

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

## Section II: Institutional Accounts – SPIVA U.S. Scorecard (Gross-of-Fees)

### Report 1: Percentage of U.S. Equity Institutional Accounts Underperforming Benchmarks

Fund Category	Comparison Index	1-Year (%)	3-Year (%)	5-Year (%)	10-Year (%)
All Domestic Funds	S&P Composite 1500	45.60	63.07	74.08	80.61
All Large-Cap Funds	S&P 500	39.43	57.72	68.39	76.08
All Mid-Cap Funds	S&P MidCap 400	58.61	64.52	47.76	64.09
All Small-Cap Funds	S&P SmallCap 600	51.74	47.32	50.00	68.00
All Multi-Cap Funds	S&P Composite 1500	58.10	70.70	76.16	81.70
Large-Cap Growth Funds	S&P 500 Growth	46.79	68.33	66.30	79.71
Large-Cap Core Funds	S&P 500	35.33	54.19	65.48	74.52
Large-Cap Value Funds	S&P 500 Value	55.07	30.44	51.81	57.35
Mid-Cap Growth Funds	S&P MidCap 400 Growth	88.12	60.71	31.40	52.35
Mid-Cap Core Funds	S&P MidCap 400	63.41	66.04	55.56	70.42
Mid-Cap Value Funds	S&P MidCap 400 Value	65.69	61.40	62.50	69.72
Small-Cap Growth Funds	S&P SmallCap 600 Growth	84.38	50.18	39.26	62.46
Small-Cap Core Funds	S&P SmallCap 600	49.17	40.77	44.88	66.54
Small-Cap Value Funds	S&P SmallCap 600 Value	51.94	46.30	53.62	68.18
Multi-Cap Growth Funds	S&P Composite 1500 Growth	52.78	78.33	79.03	80.41
Multi-Cap Core Funds	S&P Composite 1500	59.69	63.04	70.14	79.17
Multi-Cap Value Funds	S&P Composite 1500 Value	75.66	62.79	69.19	74.60

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

**Report 2: Survivorship of U.S. Equity Institutional Accounts**

<b>Fund Category</b>	<b>Number at Start</b>	<b>Survivorship (%)</b>
<b>1-Year</b>		
All Domestic Funds	2524	98.22
All Large-Cap Funds	1060	98.68
All Mid-Cap Funds	244	99.59
All Small-Cap Funds	831	97.59
All Multi-Cap Funds	389	97.43
Large-Cap Growth Funds	312	98.08
Large-Cap Core Funds	334	99.40
Large-Cap Value Funds	414	98.55
Mid-Cap Growth Funds	101	99.01
Mid-Cap Core Funds	41	100.00
Mid-Cap Value Funds	102	100.00
Small-Cap Growth Funds	256	98.05
Small-Cap Core Funds	240	97.50
Small-Cap Value Funds	335	97.31
Multi-Cap Growth Funds	108	96.30
Multi-Cap Core Funds	129	97.67
Multi-Cap Value Funds	152	98.03
<b>3-Year</b>		
All Domestic Funds	2797	87.88
All Large-Cap Funds	1173	88.24
All Mid-Cap Funds	279	87.81
All Small-Cap Funds	915	87.87
All Multi-Cap Funds	430	86.98
Large-Cap Growth Funds	341	90.32
Large-Cap Core Funds	382	86.65
Large-Cap Value Funds	450	88.00
Mid-Cap Growth Funds	112	89.29
Mid-Cap Core Funds	53	81.13
Mid-Cap Value Funds	114	89.47
Small-Cap Growth Funds	277	89.17
Small-Cap Core Funds	260	89.23
Small-Cap Value Funds	378	85.98
Multi-Cap Growth Funds	120	88.33
Multi-Cap Core Funds	138	86.23
Multi-Cap Value Funds	172	86.63

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

**Report 2: Survivorship of U.S. Equity Institutional Accounts (cont.)**

<b>Fund Category</b>	<b>Number at Start</b>	<b>Survivorship (%)</b>
<b>5-Year</b>		
All Domestic Funds	3025	77.55
All Large-Cap Funds	1278	78.01
All Mid-Cap Funds	312	75.96
All Small-Cap Funds	982	77.39
All Multi-Cap Funds	453	77.70
Large-Cap Growth Funds	362	80.94
Large-Cap Core Funds	420	75.71
Large-Cap Value Funds	496	77.82
Mid-Cap Growth Funds	121	78.51
Mid-Cap Core Funds	63	66.67
Mid-Cap Value Funds	128	78.13
Small-Cap Growth Funds	298	79.53
Small-Cap Core Funds	283	75.62
Small-Cap Value Funds	401	77.06
Multi-Cap Growth Funds	124	81.45
Multi-Cap Core Funds	144	76.39
Multi-Cap Value Funds	185	76.22
<b>10-Year</b>		
All Domestic Funds	3295	59.27
All Large-Cap Funds	1430	59.23
All Mid-Cap Funds	362	55.80
All Small-Cap Funds	1022	59.30
All Multi-Cap Funds	481	61.95
Large-Cap Growth Funds	419	60.38
Large-Cap Core Funds	467	52.68
Large-Cap Value Funds	544	63.97
Mid-Cap Growth Funds	149	54.36
Mid-Cap Core Funds	71	47.89
Mid-Cap Value Funds	142	61.27
Small-Cap Growth Funds	341	54.84
Small-Cap Core Funds	263	57.03
Small-Cap Value Funds	418	64.35
Multi-Cap Growth Funds	148	62.84
Multi-Cap Core Funds	144	57.64
Multi-Cap Value Funds	189	64.55

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

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

Category	1-Year (%)	3-Year (Annualized, %)	5-Year (Annualized, %)	10-Year (Annualized, %)
S&P Composite 1500	-17.78	7.59	9.15	12.40
All Domestic Funds	-17.40	6.84	7.79	11.26
S&P 500	-18.11	7.66	9.42	12.56
All Large-Cap Funds	-16.10	7.36	8.75	11.95
S&P MidCap 400	-13.06	7.23	6.71	10.78
All Mid-Cap Funds	-18.10	6.22	7.38	10.91
S&P SmallCap 600	-16.10	5.80	5.88	10.82
All Small-Cap Funds	-17.85	6.65	6.77	10.68
S&P Composite 1500	-17.78	7.59	9.15	12.40
All Multi-Cap Funds	-19.47	5.93	7.53	10.79
<b>Large-Cap</b>				
S&P 500 Growth	-29.41	7.54	10.28	13.59
Large-Cap Growth Funds	-27.77	6.11	9.44	12.78
S&P 500	-18.11	7.66	9.42	12.56
Large-Cap Core Funds	-15.46	7.66	8.97	12.05
S&P 500 Value	-5.22	6.26	7.58	10.86
Large-Cap Value Funds	-6.60	7.96	7.97	11.20
<b>Mid-Cap</b>				
S&P MidCap 400 Growth	-18.96	5.76	6.02	10.39
Mid-Cap Growth Funds	-27.96	4.68	8.08	11.26
S&P MidCap 400	-13.06	7.23	6.71	10.78
Mid-Cap Core Funds	-15.98	6.46	7.25	10.55
S&P MidCap 400 Value	-6.93	8.05	6.98	10.84
Mid-Cap Value Funds	-8.52	7.35	6.67	10.68
<b>Small-Cap</b>				
S&P SmallCap 600 Growth	-21.08	4.99	6.11	11.13
Small-Cap Growth Funds	-27.52	5.46	7.85	11.47
S&P SmallCap 600	-16.10	5.80	5.88	10.82
Small-Cap Core Funds	-16.73	7.05	6.83	10.85
S&P SmallCap 600 Value	-11.04	6.10	5.38	10.33
Small-Cap Value Funds	-10.86	7.29	5.97	9.98

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. 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.)**

Category	1-Year (%)	3-Year (Annualized, %)	5-Year (Annualized, %)	10-Year (Annualized, %)
<b>Multi-Cap</b>				
S&P Composite 1500 Growth	-28.66	7.41	9.92	13.33
Multi-Cap Growth Funds	-29.47	4.99	8.46	11.89
S&P Composite 1500	-17.78	7.59	9.15	12.40
Multi-Cap Core Funds	-17.86	7.02	8.30	11.22
S&P Composite 1500 Value	-5.47	6.39	7.48	10.85
Multi-Cap Value Funds	-13.14	5.80	6.32	9.71

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

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

Category	1-Year (%)	3-Year (Annualized, %)	5-Year (Annualized, %)	10-Year (Annualized, %)
S&P Composite 1500	-17.78	7.59	9.15	12.40
All Domestic Funds	-20.21	6.02	7.85	11.44
S&P 500	-18.11	7.66	9.42	12.56
All Large-Cap Funds	-20.29	6.31	8.35	11.85
S&P MidCap 400	-13.06	7.23	6.71	10.78
All Mid-Cap Funds	-19.41	5.11	7.01	10.94
S&P SmallCap 600	-16.10	5.80	5.88	10.82
All Small-Cap Funds	-18.71	5.05	6.02	10.29
S&P Composite 1500	-17.78	7.59	9.15	12.40
All Multi-Cap Funds	-22.17	4.97	7.24	10.68
<b>Large-Cap</b>				
S&P 500 Growth	-29.41	7.54	10.28	13.59
Large-Cap Growth Funds	-32.39	4.49	8.70	12.76
S&P 500	-18.11	7.66	9.42	12.56
Large-Cap Core Funds	-15.43	7.75	9.07	12.08
S&P 500 Value	-5.22	6.26	7.58	10.86
Large-Cap Value Funds	-6.56	8.06	8.17	11.35

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. 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.)**

Category	1-Year (%)	3-Year (Annualized, %)	5-Year (Annualized, %)	10-Year (Annualized, %)
<b>Mid-Cap</b>				
S&P MidCap 400 Growth	-18.96	5.76	6.02	10.39
Mid-Cap Growth Funds	-27.06	3.95	8.10	11.45
S&P MidCap 400	-13.06	7.23	6.71	10.78
Mid-Cap Core Funds	-20.82	4.40	6.71	11.43
S&P MidCap 400 Value	-6.93	8.05	6.98	10.84
Mid-Cap Value Funds	-7.78	7.11	6.52	10.57
<b>Small-Cap</b>				
S&P SmallCap 600 Growth	-21.08	4.99	6.11	11.13
Small-Cap Growth Funds	-28.50	3.02	6.93	10.99
S&P SmallCap 600	-16.10	5.80	5.88	10.82
Small-Cap Core Funds	-15.13	5.89	6.26	10.51
S&P SmallCap 600 Value	-11.04	6.10	5.38	10.33
Small-Cap Value Funds	-11.09	7.06	5.67	9.72
<b>Multi-Cap</b>				
S&P Composite 1500 Growth	-28.66	7.41	9.92	13.33
Multi-Cap Growth Funds	-30.68	3.50	7.18	11.11
S&P Composite 1500	-17.78	7.59	9.15	12.40
Multi-Cap Core Funds	-16.60	7.24	8.48	11.38
S&P Composite 1500 Value	-5.47	6.39	7.48	10.85
Multi-Cap Value Funds	-14.64	5.17	6.41	9.67

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

**Report 5: Quartile Breakpoints of U.S. Institutional Accounts**

Fund Category	Third Quartile	Second Quartile	First Quartile
<b>1-Year</b>			
All Domestic Funds	-23.96	-16.01	-9.00
All Large-Cap Funds	-22.05	-14.74	-6.27
All Mid-Cap Funds	-26.43	-14.96	-8.78
All Small-Cap Funds	-23.58	-16.04	-11.23
All Multi-Cap Funds	-25.56	-18.77	-11.27
Large-Cap Growth Funds	-32.06	-28.82	-21.79
Large-Cap Core Funds	-18.79	-16.01	-11.57
Large-Cap Value Funds	-9.20	-5.65	-2.62
Mid-Cap Growth Funds	-31.95	-27.38	-23.23
Mid-Cap Core Funds	-20.43	-13.98	-12.00
Mid-Cap Value Funds	-12.11	-8.48	-5.04
Small-Cap Growth Funds	-30.96	-26.65	-22.72
Small-Cap Core Funds	-19.11	-15.90	-13.12
Small-Cap Value Funds	-14.65	-10.99	-7.77
Multi-Cap Growth Funds	-34.68	-28.44	-22.35
Multi-Cap Core Funds	-22.18	-18.58	-13.73
Multi-Cap Value Funds	-19.50	-12.44	-5.41
<b>3-Year</b>			
All Domestic Funds	5.19	7.18	8.96
All Large-Cap Funds	6.18	7.66	9.04
All Mid-Cap Funds	4.61	6.66	8.44
All Small-Cap Funds	4.73	6.78	9.09
All Multi-Cap Funds	3.92	6.54	8.75
Large-Cap Growth Funds	4.47	6.61	8.34
Large-Cap Core Funds	6.72	7.92	9.01
Large-Cap Value Funds	6.69	8.10	9.60
Mid-Cap Growth Funds	3.28	5.35	7.36
Mid-Cap Core Funds	5.58	7.06	8.40
Mid-Cap Value Funds	5.80	7.64	9.38
Small-Cap Growth Funds	3.24	5.63	8.38
Small-Cap Core Funds	5.50	7.13	9.10
Small-Cap Value Funds	5.22	7.08	9.52
Multi-Cap Growth Funds	2.78	4.50	7.72
Multi-Cap Core Funds	6.00	7.48	9.02
Multi-Cap Value Funds	3.75	6.04	8.92

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

**Report 5: Quartile Breakpoints of U.S. Institutional Accounts (cont.)**

<b>Fund Category</b>	<b>Third Quartile</b>	<b>Second Quartile</b>	<b>First Quartile</b>
<b>5-Year</b>			
All Domestic Funds	6.44	8.24	9.83
All Large-Cap Funds	7.75	9.10	10.40
All Mid-Cap Funds	6.41	7.88	9.40
All Small-Cap Funds	5.30	6.88	8.69
All Multi-Cap Funds	6.01	8.20	9.77
Large-Cap Growth Funds	8.52	9.93	11.11
Large-Cap Core Funds	8.12	9.39	10.70
Large-Cap Value Funds	7.07	8.38	9.38
Mid-Cap Growth Funds	7.37	8.86	10.43
Mid-Cap Core Funds	6.41	7.96	9.50
Mid-Cap Value Funds	5.76	7.01	8.46
Small-Cap Growth Funds	6.43	8.29	10.17
Small-Cap Core Funds	5.91	7.09	8.59
Small-Cap Value Funds	4.74	5.84	7.71
Multi-Cap Growth Funds	6.69	8.61	10.60
Multi-Cap Core Funds	7.58	8.81	10.02
Multi-Cap Value Funds	5.23	7.03	8.61
<b>10-Year</b>			
All Domestic Funds	10.49	11.69	12.84
All Large-Cap Funds	11.21	12.25	13.18
All Mid-Cap Funds	10.53	11.48	12.57
All Small-Cap Funds	9.81	10.96	12.22
All Multi-Cap Funds	9.83	11.30	12.81
Large-Cap Growth Funds	12.25	13.17	13.93
Large-Cap Core Funds	11.91	12.62	13.19
Large-Cap Value Funds	10.60	11.44	12.21
Mid-Cap Growth Funds	11.18	12.09	12.93
Mid-Cap Core Funds	10.59	11.77	12.76
Mid-Cap Value Funds	10.10	10.88	11.99
Small-Cap Growth Funds	10.85	11.95	12.85
Small-Cap Core Funds	10.18	11.05	12.10
Small-Cap Value Funds	9.33	10.38	11.34
Multi-Cap Growth Funds	10.94	12.25	13.95
Multi-Cap Core Funds	10.66	11.66	12.85
Multi-Cap Value Funds	8.53	10.50	11.67

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

## Report 6: Percentage of International Institutional Accounts Underperforming Benchmarks

Fund Category	Comparison Index	1-Year (%)	3-Year (%)	5-Year (%)	10-Year (%)
Emerging Markets Funds	S&P/IFCI Composite	51.79	53.56	53.13	58.27
Global Funds	S&P Global 1200	54.52	60.82	65.39	66.37
International Funds	S&P International 700	52.66	44.95	59.05	62.15
International Small-Cap Funds	S&P Developed Ex-U.S. SmallCap	49.43	51.61	59.79	49.32

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

## Report 7: Survivorship of International Institutional Accounts

Fund Category	Number of Funds at Start	Survivorship (%)
<b>1-Year</b>		
Emerging Markets Funds	446	95.52
Global Funds	409	98.53
International Funds	188	97.34
International Small-Cap Funds	87	96.55
<b>3-Year</b>		
Emerging Markets Funds	478	83.26
Global Funds	416	90.14
International Funds	198	89.90
International Small-Cap Funds	93	82.80
<b>5-Year</b>		
Emerging Markets Funds	463	74.73
Global Funds	419	79.47
International Funds	210	79.52
International Small-Cap Funds	97	71.13
<b>10-Year</b>		
Emerging Markets Funds	369	63.69
Global Funds	339	63.42
International Funds	214	58.88
International Small-Cap Funds	73	57.53

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

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

Category	1-Year (%)	3-Year (Annualized, %)	5-Year (Annualized, %)	10-Year (Annualized, %)
S&P/IFCI Composite	-19.39	-1.62	-0.72	2.41
Emerging Markets Funds	-18.57	-0.73	0.11	2.95
S&P Global 1200	-16.83	5.32	6.59	9.33
Global Funds	-17.99	4.51	6.05	9.19
S&P International 700	-14.40	1.52	2.31	5.08
International Funds	-14.57	1.84	2.22	5.46
S&P Developed Ex-U.S. SmallCap	-21.41	-0.54	0.01	5.89
International Small-Cap Funds	-21.07	0.08	0.34	7.15

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

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

Category	1-Year (%)	3-Year (Annualized, %)	5-Year (Annualized, %)	10-Year (Annualized, %)
S&P/IFCI Composite	-19.39	-1.62	-0.72	2.41
Emerging Markets Funds	-21.29	-2.26	-0.61	2.32
S&P Global 1200	-16.83	5.32	6.59	9.33
Global Funds	-19.43	4.16	5.84	9.12
S&P International 700	-14.40	1.52	2.31	5.08
International Funds	-15.70	1.10	1.63	5.03
S&P Developed Ex-U.S. SmallCap	-21.41	-0.54	0.01	5.89
International Small-Cap Funds	-19.75	-0.17	-0.32	6.37

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

**Report 10: Quartile Breakpoints of International Equity Institutional Accounts**

Fund Category	Third Quartile	Second Quartile	First Quartile
<b>1-Year</b>			
Emerging Markets Funds	-23.45	-19.28	-14.11
Global Funds	-22.37	-17.26	-12.50
International Funds	-17.69	-14.65	-10.17
International Small-Cap Funds	-25.54	-20.55	-16.14
<b>3-Year</b>			
Emerging Markets Funds	-2.96	-1.06	1.63
Global Funds	3.46	5.10	6.38
International Funds	0.75	2.01	3.21
International Small-Cap Funds	-1.75	0.18	2.64

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

**Report 10: Quartile Breakpoints of International Equity Institutional Accounts (cont.)**

Fund Category	Third Quartile	Second Quartile	First Quartile
<b>5-Year</b>			
Emerging Markets Funds	-1.37	-0.10	1.58
Global Funds	5.08	6.37	7.94
International Funds	1.14	2.36	3.32
International Small-Cap Funds	-0.88	0.55	1.98
<b>10-Year</b>			
Emerging Markets Funds	1.95	2.80	4.08
Global Funds	8.43	9.40	10.41
International Funds	4.88	5.46	6.38
International Small-Cap Funds	6.41	7.09	7.84

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

**Report 11: Percentage of Fixed Income Institutional Accounts Underperforming Benchmarks**

Fund Category	Comparison Index	1-Year (%)	3-Year (%)	5-Year (%)	10-Year (%)
U.S. Aggregate / (Government + Credit) Funds	Bloomberg U.S. Aggregate	29.32	17.03	22.55	36.02
Core Funds	Bloomberg U.S. Aggregate	23.87	17.28	23.56	37.80
Core Plus Funds	Bloomberg U.S. Aggregate	47.37	17.50	19.51	29.38
Cash Funds	Bloomberg U.S. Short Treasury	53.52	40.00	34.18	41.21
Government Funds	Bloomberg U.S. Government	22.97	27.27	28.40	33.33
Inflation-Linked Funds	iBoxx TIPS Inflation-Linked	9.09	15.56	24.00	44.44
Investment-Grade Corporate Funds	iBoxx \$ Corporates	62.50	37.90	42.86	37.84
High-Yield Corporate Funds	iBoxx \$ High Yield Developed Markets	22.78	27.27	29.67	37.43
Agency MBS Funds	Bloomberg U.S. MBS	31.37	11.54	22.95	35.48
Municipal Funds	S&P National AMT-Free Municipal Bond	31.27	27.11	45.16	60.95
Emerging Market Hard Currency Funds	Bloomberg Emerging Markets USD Aggregate	63.20	56.69	60.83	58.06
Emerging Market Blended Currency Funds	50% Bloomberg EM USD Agg + 50% Bloomberg EM Local Currency Gov	71.58	71.29	72.73	63.79
Emerging Market Local Currency Funds	Bloomberg Emerging Markets Local Currency Government	57.14	93.06	93.15	94.20
Global Government Funds	iBoxx Global Government Overall USD	30.43	32.65	42.31	53.33
Global Aggregate Funds	Bloomberg Global Aggregate Bond	31.37	28.83	32.41	40.95
Global Corporate Investment-Grade Funds	Bloomberg Global Aggregate Corporate	23.68	27.78	30.77	25.81
Global Corporate High-Yield Funds	Bloomberg Global High Yield	14.93	10.29	13.43	25.53

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

**Report 12: Survivorship of Fixed Income Institutional Accounts**

Fund Category	Number of Funds at Start	Survivorship (%)
<b>1-Year</b>		
U.S. Aggregate / (Government + Credit) Funds	798	97.24
Core Funds	620	96.94
Core Plus Funds	190	98.42
Cash Funds	142	93.66
Government Funds	74	100.00
Inflation-Linked Funds	44	100.00
Investment-Grade Corporate Funds	120	96.67
High-Yield Corporate Funds	158	97.47
Agency MBS Funds	51	98.04
Municipal Funds	259	93.44
Emerging Market Hard Currency Funds	125	96.80
Emerging Market Blended Currency Funds	95	91.58
Emerging Market Local Currency Funds	70	98.57
Global Government Funds	46	93.48
Global Aggregate Funds	102	98.04
Global Corporate Investment-Grade Funds	38	97.37
Global Corporate High-Yield Funds	67	97.01
<b>3-Year</b>		
U.S. Aggregate / (Government + Credit) Funds	834	92.09
Core Funds	648	92.28
Core Plus Funds	200	90.50
Cash Funds	155	84.52
Government Funds	77	96.10
Inflation-Linked Funds	45	95.56
Investment-Grade Corporate Funds	124	89.52
High-Yield Corporate Funds	176	87.50
Agency MBS Funds	52	94.23
Municipal Funds	273	88.64
Emerging Market Hard Currency Funds	127	90.55
Emerging Market Blended Currency Funds	101	86.14
Emerging Market Local Currency Funds	72	93.06
Global Government Funds	49	91.84
Global Aggregate Funds	111	91.89
Global Corporate Investment-Grade Funds	36	86.11
Global Corporate High-Yield Funds	68	91.18

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

**Report 12: Survivorship of Fixed Income Institutional Accounts (cont.)**

<b>Fund Category</b>	<b>Number of Funds at Start</b>	<b>Survivorship (%)</b>
<b>5-Year</b>		
U.S. Aggregate / (Government + Credit) Funds	887	84.67
Core Funds	696	84.48
Core Plus Funds	205	83.90
Cash Funds	158	80.38
Government Funds	81	87.65
Inflation-Linked Funds	50	84.00
Investment-Grade Corporate Funds	133	78.95
High-Yield Corporate Funds	182	82.42
Agency MBS Funds	61	80.33
Municipal Funds	279	83.87
Emerging Market Hard Currency Funds	120	88.33
Emerging Market Blended Currency Funds	99	77.78
Emerging Market Local Currency Funds	73	86.30
Global Government Funds	52	80.77
Global Aggregate Funds	108	86.11
Global Corporate Investment-Grade Funds	39	79.49
Global Corporate High-Yield Funds	67	86.57
<b>10-Year</b>		
U.S. Aggregate / (Government + Credit) Funds	930	71.18
Core Funds	746	70.51
Core Plus Funds	194	72.68
Cash Funds	165	67.88
Government Funds	87	71.26
Inflation-Linked Funds	63	63.49
Investment-Grade Corporate Funds	111	71.17
High-Yield Corporate Funds	171	72.51
Agency MBS Funds	62	66.13
Municipal Funds	274	75.91
Emerging Market Hard Currency Funds	93	83.87
Emerging Market Blended Currency Funds	58	68.97
Emerging Market Local Currency Funds	69	69.57
Global Government Funds	60	58.33
Global Aggregate Funds	105	70.48
Global Corporate Investment-Grade Funds	31	80.65
Global Corporate High-Yield Funds	47	76.60

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.



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

Category	1-Year (%)	3-Year (Annualized, %)	5-Year (Annualized, %)	10-Year (Annualized, %)
Bloomberg U.S. Aggregate	-13.01	-2.71	0.02	1.06
U.S. Aggregate / (Government + Credit) Funds	-10.20	-1.33	0.85	1.63
Bloomberg U.S. Aggregate	-13.01	-2.71	0.02	1.06
Core Funds	-9.65	-1.31	0.81	1.52
Bloomberg U.S. Aggregate	-13.01	-2.71	0.02	1.06
Core Plus Funds	-12.18	-1.43	1.02	2.08
Bloomberg U.S. Short Treasury	0.98	0.66	1.26	0.80
Cash Funds	0.52	0.76	1.45	1.14
Bloomberg Barclays U.S. Government	-12.32	-2.57	-0.06	0.60
Government Funds	-13.54	-2.64	-0.07	0.79
iBoxx TIPS Inflation-Linked	-12.67	1.04	2.02	1.09
Inflation-Linked Funds	-10.62	1.64	2.40	1.33
iBoxx \$ Corporates	-15.04	-2.66	0.55	1.92
Investment-Grade Corporate Funds	-15.08	-2.15	0.97	2.56
iBoxx \$ High Yield Developed Markets	-11.07	-0.29	2.10	3.73
High-Yield Corporate Funds	-8.90	0.73	2.71	4.18
Bloomberg U.S. MBS	-11.81	-3.22	-0.53	0.74
Agency MBS Funds	-10.16	-2.16	0.21	1.48
S&P National AMT-Free Municipal Bond	-8.10	-0.68	1.23	2.01
Municipal Funds	-6.63	-0.31	1.36	1.99
Bloomberg Emerging Markets USD Aggregate	-15.26	-3.89	-0.42	1.71
Emerging Market Hard Currency Funds	-15.57	-3.74	-0.36	2.06
50% Bloomberg EM USD Agg + 50% Bloomberg EM Local Currency Gov	-11.87	-2.78	-0.13	1.00
Emerging Market Blended Currency Funds	-12.38	-3.34	-0.62	1.23
Bloomberg Emerging Markets Local Currency Government	-8.44	-1.73	0.07	0.21
Emerging Market Local Currency Funds	-8.32	-4.15	-1.42	-1.13
iBoxx Global Government Overall USD	-17.21	-5.35	-2.27	-1.04
Global Government Funds	-13.23	-3.72	-1.11	-0.02
Bloomberg Global Aggregate Bond	-16.25	-4.48	-1.66	-0.44
Global Aggregate Funds	-13.26	-2.83	-0.26	0.87
Bloomberg Global Aggregate Corporate	-16.72	-3.72	-0.82	0.86
Global Corporate Investment-Grade Funds	-15.17	-2.35	0.66	2.42
Bloomberg Barclays Global High Yield	-12.71	-1.92	0.38	2.99
Global Corporate High-Yield Funds	-10.29	-0.12	2.20	4.04

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

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

Category	1-Year (%)	3-Year (Annualized, %)	5-Year (Annualized, %)	10-Year (Annualized, %)
Bloomberg U.S. Aggregate	-13.01	-2.71	0.02	1.06
U.S. Aggregate / (Government + Credit) Funds	-11.52	-1.58	0.81	1.67
Bloomberg U.S. Aggregate	-13.01	-2.71	0.02	1.06
Core Funds	-10.88	-1.49	0.80	1.62
Bloomberg U.S. Aggregate	-13.01	-2.71	0.02	1.06
Core Plus Funds	-12.82	-1.75	0.86	1.81
Bloomberg U.S. Short Treasury	0.98	0.66	1.26	0.80
Cash Funds	1.43	0.80	1.39	0.99
Bloomberg Barclays U.S. Government	-12.32	-2.57	-0.06	0.60
Government Funds	-29.77	-7.76	-3.01	-0.65
iBoxx TIPS Inflation-Linked	-12.67	1.04	2.02	1.09
Inflation-Linked Funds	-10.26	1.70	2.41	1.27
iBoxx \$ Corporates	-15.04	-2.66	0.55	1.92
Investment-Grade Corporate Funds	-18.11	-2.93	0.73	2.53
iBoxx \$ High Yield Developed Markets	-11.07	-0.29	2.10	3.73
High-Yield Corporate Funds	-9.80	0.56	2.69	4.24
Bloomberg U.S. MBS	-11.81	-3.22	-0.53	0.74
Agency MBS Funds	-11.65	-2.65	-0.09	1.19
S&P National AMT-Free Municipal Bond	-8.10	-0.68	1.23	2.01
Municipal Funds	-8.04	-0.27	1.68	2.22
Bloomberg Emerging Markets USD Aggregate	-15.26	-3.89	-0.42	1.71
Emerging Market Hard Currency Funds	-16.37	-4.19	-0.65	1.92
50% Bloomberg EM USD Agg + 50% Bloomberg EM Local Currency Gov	-11.87	-2.78	-0.13	1.00
Emerging Market Blended Currency Funds	-12.82	-3.81	-0.92	0.81
Bloomberg Emerging Markets Local Currency Government	-8.44	-1.73	0.07	0.21
Emerging Market Local Currency Funds	-8.66	-4.34	-1.54	-1.39
iBoxx Global Government Overall USD	-17.21	-5.35	-2.27	-1.04
Global Government Funds	-13.33	-4.25	-1.42	-0.06
Bloomberg Global Aggregate Bond	-16.25	-4.48	-1.66	-0.44
Global Aggregate Funds	-14.06	-3.26	-0.60	0.69
Bloomberg Global Aggregate Corporate	-16.72	-3.72	-0.82	0.86
Global Corporate Investment-Grade Funds	-14.64	-2.40	0.79	2.44
Bloomberg Barclays Global High Yield	-12.71	-1.92	0.38	2.99
Global Corporate High-Yield Funds	-11.08	-0.83	1.56	3.61

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

**Report 15: Quartile Breakpoints of Fixed Income Institutional Accounts**

Fund Category	Third Quartile	Second Quartile	First Quartile
<b>1-Year</b>			
U.S. Aggregate / (Government + Credit) Funds	-13.06	-10.53	-5.48
Core Funds	-12.83	-8.52	-4.81
Core Plus Funds	-13.79	-12.86	-11.16
Cash Funds	-0.25	0.93	1.64
Government Funds	-11.97	-7.69	-4.76
Inflation-Linked Funds	-11.81	-11.35	-7.36
Investment-Grade Corporate Funds	-16.37	-15.49	-9.21
High-Yield Corporate Funds	-10.84	-9.67	-8.39
Agency MBS Funds	-11.87	-11.48	-9.06
Municipal Funds	-8.69	-5.81	-3.88
Emerging Market Hard Currency Funds	-18.25	-16.07	-14.14
Emerging Market Blended Currency Funds	-15.08	-12.77	-11.24
Emerging Market Local Currency Funds	-10.49	-8.97	-6.95
Global Government Funds	-16.87	-13.33	-9.91
Global Aggregate Funds	-16.43	-13.67	-11.10
Global Corporate Investment-Grade Funds	-16.18	-14.69	-14.12
Global Corporate High-Yield Funds	-11.91	-10.44	-9.00
<b>3-Year</b>			
U.S. Aggregate / (Government + Credit) Funds	-2.14	-1.30	-0.37
Core Funds	-2.12	-1.11	-0.31
Core Plus Funds	-2.19	-1.62	-0.65
Cash Funds	0.63	0.80	0.93
Government Funds	-2.38	-1.26	-0.50
Inflation-Linked Funds	1.22	1.48	2.23
Investment-Grade Corporate Funds	-2.75	-2.14	-0.83
High-Yield Corporate Funds	-0.02	0.60	1.39
Agency MBS Funds	-2.95	-2.65	-1.48
Municipal Funds	-0.57	-0.23	0.09
Emerging Market Hard Currency Funds	-4.91	-3.94	-2.87
Emerging Market Blended Currency Funds	-4.51	-3.45	-2.13
Emerging Market Local Currency Funds	-5.16	-4.39	-3.46
Global Government Funds	-5.18	-3.92	-2.50
Global Aggregate Funds	-4.18	-2.99	-1.67
Global Corporate Investment-Grade Funds	-2.94	-2.36	-1.80
Global Corporate High-Yield Funds	-0.97	-0.16	0.56

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

**Report 15: Quartile Breakpoints of Fixed Income Institutional Accounts (cont.)**

<b>Fund Category</b>	<b>Third Quartile</b>	<b>Second Quartile</b>	<b>First Quartile</b>
<b>5-Year</b>			
U.S. Aggregate / (Government + Credit) Funds	0.51	0.89	1.18
Core Funds	0.49	0.90	1.16
Core Plus Funds	0.57	0.86	1.36
Cash Funds	1.29	1.44	1.54
Government Funds	0.10	0.62	0.87
Inflation-Linked Funds	2.14	2.41	2.69
Investment-Grade Corporate Funds	0.59	1.06	1.41
High-Yield Corporate Funds	2.32	2.70	3.11
Agency MBS Funds	-0.30	-0.08	0.42
Municipal Funds	1.13	1.34	1.54
Emerging Market Hard Currency Funds	-1.37	-0.57	0.32
Emerging Market Blended Currency Funds	-1.62	-0.63	0.36
Emerging Market Local Currency Funds	-2.14	-1.56	-0.94
Global Government Funds	-2.12	-1.33	-0.08
Global Aggregate Funds	-1.18	-0.29	0.75
Global Corporate Investment-Grade Funds	0.34	0.89	1.19
Global Corporate High-Yield Funds	1.72	2.33	2.70
<b>10-Year</b>			
U.S. Aggregate / (Government + Credit) Funds	1.30	1.52	1.83
Core Funds	1.26	1.44	1.69
Core Plus Funds	1.66	1.99	2.36
Cash Funds	0.90	1.03	1.17
Government Funds	0.75	0.89	1.03
Inflation-Linked Funds	1.16	1.30	1.54
Investment-Grade Corporate Funds	2.23	2.45	2.72
High-Yield Corporate Funds	3.90	4.25	4.59
Agency MBS Funds	0.93	1.17	1.64
Municipal Funds	1.38	2.03	2.56
Emerging Market Hard Currency Funds	1.47	1.91	2.19
Emerging Market Blended Currency Funds	0.42	1.08	1.93
Emerging Market Local Currency Funds	-1.70	-1.20	-0.79
Global Government Funds	-0.76	-0.30	0.52
Global Aggregate Funds	-0.11	0.54	1.94
Global Corporate Investment-Grade Funds	1.72	2.61	2.89
Global Corporate High-Yield Funds	3.75	4.22	4.67

Source: S&P Dow Jones Indices LLC, eVestment Alliance. Data as of Dec. 31, 2022. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

# Appendix A: Mapping

## U.S. Equity

The SPIVA U.S. Scorecard reports on the nine traditional style boxes, as well as multi-cap core, growth and value funds. Style classifications are based on fundamental characteristics such as the P/E ratio, return on equity (ROE) and earnings growth expectation. Growth and value characteristics are assigned based on a subjective method, with a large weighting on the median of the three statistics and the preferred benchmark. Market capitalization is subjective and based on the distribution of holdings as well as the preferred benchmark.

### Exhibit A1: U.S. Equity Category Mappings

SPIVA Institutional Category	eVestment Classification	
	Market Capitalization	Style Emphasis
Large-Cap Growth Funds	Mega Cap Large Cap Mid-Large Cap	Growth GARP
Large-Cap Core Funds	Mega Cap Large Cap Mid-Large Cap	Core
Large-Cap Value Funds	Mega Cap Large Cap Mid-Large Cap	Value Relative Value Deep Value
Mid-Cap Growth Funds	Mid Cap	Growth GARP
Mid-Cap Core Funds	Mid Cap	Core
Mid-Cap Value Funds	Mid Cap	Value Relative Value Deep Value
Small-Cap Growth Funds	Small-Mid Cap Small Cap	Growth GARP
Small-Cap Core Funds	Small-Mid Cap Small Cap	Core
Small-Cap Value Funds	Small-Mid Cap Small Cap	Value Relative Value Deep Value
Multi-Cap Growth Funds	All Cap	Growth GARP
Multi-Cap Core Funds	All Cap	Core
Multi-Cap Value Funds	All Cap	Value Relative Value Deep Value

Source: S&P Dow Jones Indices LLC, eVestment Alliance. 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 eVestment market capitalization and style classifications.

### Exhibit A2: International Equity Category Mappings

SPIVA Institutional Category	eVestment Classification			
	eVestment Category	Region	Market Capitalization	Style Emphasis
Global Funds	Global Large Cap Value	Global	Mega Cap Large Cap Mid-Large Cap	Value Relative Value Deep Value
	Global Large Cap Growth	Global	Mega Cap Large Cap Mid-Large Cap	Growth GARP
	Global Large Cap Core	Global	Mega Cap Large Cap Mid-Large Cap	Core
International Funds	EAFE Large Cap Value	EAFA	Mega Cap Large Cap Mid-Large Cap	Value Relative Value Deep Value
	EAFE Large Cap Growth	EAFA	Mega Cap Large Cap Mid-Large Cap	Growth GARP
	EAFE Large Cap Core	EAFA	Mega Cap Large Cap Mid-Large Cap	Core
International Small-Cap Funds	EAFE Small Cap Value	EAFA	Small-Mid Cap Small Cap	Value Relative Value Deep Value
	EAFE Small Cap Growth	EAFA	Small-Mid Cap Small Cap	Growth GARP
	EAFE Small Cap Core	EAFA	Small-Mid Cap Small Cap	Core

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

**Exhibit A2: International Equity Category Mappings (cont.)**

SPIVA Institutional Category	eVestment Classification			
	eVestment Category	Region	Market Capitalization	Style Emphasis
Emerging Markets Funds	Brazil Large-Cap Value	Brazil	Mega Cap Large Cap Mid-Large Cap	Value Relative Value Deep Value
	Brazil All-Cap Value	Brazil	All Cap	Value Relative Value Deep Value
	Brazil All-Cap Growth	Brazil	All Cap	Growth GARP
	Brazil All-Cap Core	Brazil	All Cap	Core
	Mexico All-Cap Value	Mexico	All Cap	Value Relative Value Deep Value
	Mexico All-Cap Growth	Mexico	All Cap	Growth GARP
	Latin America Small-Cap Value	Latin America	Small-Mid Cap Small Cap	Value Relative Value Deep Value
	Latin America Mid-Cap Value	Latin America	Mid Cap	Value Relative Value Deep Value
	Latin America Large-Cap Growth	Latin America	Mega Cap Large Cap Mid-Large Cap	Growth GARP
	Latin America Large- Cap Core	Latin America	Mega Cap Large Cap Mid-Large Cap	Core
	Latin America All-Cap Value	Latin America	All Cap	Value Relative Value Deep Value
	Latin America All-Cap Growth	Latin America	All Cap	Growth GARP
	Latin America All-Cap Core	Latin America	All Cap	Core
	Global Emerging Markets Small-Cap Value	Global Emerging Markets	Small-Mid Cap Small Cap	Value Relative Value Deep Value
	Global Emerging Markets Small-Cap Growth	Global Emerging Markets	Small-Mid Cap Small Cap	Growth GARP
	Global Emerging Markets Small-Cap Core	Global Emerging Markets	Small-Mid Cap Small Cap	Core
	Global Emerging Markets Mid-Cap Value	Global Emerging Markets	Mid Cap	Value Relative Value Deep Value
	Global Emerging Markets Mid-Cap Growth	Global Emerging Markets	Mid Cap	Growth GARP
	Global Emerging Markets Mid-Cap Core	Global Emerging Markets	Mid Cap	Core
	Global Emerging Markets Large-Cap Value	Global Emerging Markets	Mega Cap Large Cap Mid-Large Cap	Value Relative Value Deep Value
	Global Emerging Markets Large-Cap Growth	Global Emerging Markets	Mega Cap Large Cap Mid-Large Cap	Growth GARP
	Global Emerging Markets Large-Cap Core	Global Emerging Markets	Mega Cap Large Cap Mid-Large Cap	Core
	Global Emerging Markets All-Cap Value	Global Emerging Markets	All Cap	Value Relative Value Deep Value
	Global Emerging Markets All-Cap Growth	Global Emerging Markets	All Cap	Growth GARP
	Global Emerging Markets All-Cap Core	Global Emerging Markets	All Cap	Core

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

## Fixed Income

SPIVA reports include 10 domestic and 8 global fixed income classifications. Global fixed income institutional accounts are split into emerging and global markets.

### Exhibit A3: Fixed Income Category Mappings

SPIVA Institutional Category	eVestment Alliance Classification			
	Region	Investment Focus	Style Emphasis	Credit Quality/Approach
<b>U.S. Funds</b>				
U.S. Aggregate / (Government + Credit) Funds	U.S.	Aggregate	Aggregate Government/Credit	-
Core Funds	U.S.	-	-	Core
Core Plus Funds	U.S.	-	-	Core Plus
Cash Funds	U.S.	Cash Management	Cash Pure Cash Enhanced	-
Government Funds	U.S.	Government	-	-
Inflation-Linked Funds	U.S.	Inflation Linked	-	-
Investment-Grade Corp Funds	U.S.	Credit	Corporate	Investment Grade
High-Yield Corporate Funds	U.S.	Credit	Corporate	High Yield
Agency MBS Funds	U.S.	Securitized/Collateralized	Agency Mortgage Backed Securities (MBS)	-
Municipal Funds	U.S.	Municipals	Tax Exempt Municipals	-
<b>Global/Emerging Market Funds</b>				
Emerging Market Hard Currency Funds	Global	Emerging Markets Debts	Hard Currency	-
Emerging Market Blended Currency Funds	Global	Emerging Markets Debts	Blended Currency	-
Emerging Market Local Currency Funds	Global	Emerging Markets Debts	Local Currency	-
Global Cash Funds	Global	Cash Management	Cash Pure Cash Enhanced	-
Global Government Funds	Global	Government	-	-
Global Aggregate Funds	Global	Aggregate	Aggregate Government/Credit	-
Global Corporate Investment-Grade Funds	Global	Credit	Corporate	Investment Grade
Global Corporate High-Yield Funds	Global	Credit	Corporate	High Yield

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



## Appendix B: Glossary

### Percentage of Managers 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 products 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.

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

### Quartile Breakpoints

The  $p^{\text{th}}$  percentile for a set of data is the value that is greater than or equal to  $p\%$  of the data but is less than or equal to  $(100-p)\%$  of the data. In other words, it is a value that divides the data into two parts: the lower  $p\%$  of the values and the upper  $(100-p)\%$  of the values. The first quartile is the 75<sup>th</sup> percentile, the value separating the elements of a population into the lower 75% and the upper 25%. The second quartile is the 50<sup>th</sup> percentile and the third quartile is the 25<sup>th</sup> percentile.

### 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 coverage of over 80% of U.S. equities.

### S&P MidCap 400

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

### S&P SmallCap 600

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

### S&P Composite 1500

This is a broad, market-capitalization-weighted index of 1500 stocks. The index is comprised of three size-based indices: the S&P 500, S&P MidCap 400 and S&P SmallCap 600, which are designed to measure the performance of large-, mid- and small-cap stocks, respectively. 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.

## 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<sup>®</sup>](#) (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

### Bloomberg Emerging Markets Local Currency Government Index

This index provides a broad measure of the performance of local currency emerging markets government debt.

### Bloomberg Emerging Markets USD Aggregate Bond Index

This index is a flagship hard currency emerging markets debt benchmark that includes U.S. dollar-denominated debt from sovereign, quasi-sovereign and corporate emerging markets issuers.

### Bloomberg Global Aggregate Bond Index

This index is a flagship measure of global investment grade debt from 24 local currency markets. This multi-currency benchmark includes treasury, government-related, corporate and securitized fixed-rate bonds from developed and emerging markets issuers.

## Bloomberg Global Aggregate Corporate Index

This index is a flagship measure of global investment grade, fixed-rate corporate debt. This multi-currency benchmark includes bonds from developed and emerging markets issuers within the industrial, utility and financial sectors.

## Bloomberg Global High Yield Index

This index is a multi-currency flagship measure of the global high yield debt market. The index represents the union of the Bloomberg U.S. High Yield, Pan-European High Yield and Emerging Markets Hard Currency High Yield Indices.

## Bloomberg Mortgage-Backed Securities (MBS) Index

This index tracks agency mortgage pass-through securities (no longer incorporates hybrid ARM) guaranteed by Ginnie Mae (GNMA), Mae (FNMA) and Freddie Mac (FHLMC). The index is constructed by grouping individual TBA-deliverable MBS pools into aggregates or generics based on program, coupon and vintage.

## Bloomberg U.S. Aggregate Index

This index is a broad-based flagship benchmark that measures the investment grade, U.S. dollar-denominated, fixed-rate taxable bond market.

## Bloomberg U.S. Government Index

This index is comprised of the Bloomberg U.S. Treasury and U.S. Agency Indices. The index includes U.S. dollar-denominated, fixed-rate, nominal U.S. Treasuries and U.S. agency debentures (securities issued by U.S. government-owned or U.S. government-sponsored entities, and the debt explicitly guaranteed by the U.S. government).

## Bloomberg U.S. Short Treasury Index

This index tracks the market for treasury bills issued by the U.S. government. U.S. Treasury bills are issued in fixed maturity terms of 4-, 13-, 26- and 52-weeks.

## iBoxx \$ Corporates Index

The iBoxx \$ Corporates Index is a fixed income index that is designed to represent the market for U.S. dollar-denominated investment grade corporate bonds. Eligible bonds have fixed coupons and a minimum notional of USD 500 million.

## iBoxx \$ Domestic Sovereigns & Sub-Sovereigns Index

This index comprises U.S. dollar-denominated sovereign and sub-sovereign bonds that are SEC registered. Eligible bonds must have maturities greater than one year.

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

This index comprises U.S. dollar-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 \$ Domestic Sovereigns & Sub-Sovereigns 1-10Y Index

This index comprises U.S. dollar-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 \$ High Yield Developed Markets

This index is designed to reflect the performance of U.S. dollar-denominated high yield corporate debt from developed countries. The index rules aim to offer a broad coverage of the USD high yield liquid bond universe.

### iBoxx \$ Overall

This index is a broad set of U.S. dollar-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.

### iBoxx \$ Overall 1-5Y

This index comprises a broad set of U.S. dollar-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.

### iBoxx Global Government Overall USD Index

The iBoxx Global Government Overall USD Index is designed to reflect the performance of global local currency-denominated investment grade sovereign debt. The index rules aim to offer a broad coverage of the investment grade global sovereign bond universe while upholding minimum standards of investability and liquidity.

### iBoxx TIPS Inflation-Linked Index

The iBoxx TIPS Inflation-Linked Index is designed to reflect the performance of the U.S. Treasury Inflation-Protected Securities (TIPS) market.

### iBoxx USD Liquid High Yield Index

The iBoxx USD Liquid High Yield Index is designed to reflect the performance of U.S. dollar-denominated high yield corporate debt. The index rules aim to offer a broad coverage of the USD high yield liquid bond universe.

### iBoxx USD Liquid Investment Grade Index

The iBoxx USD Liquid Investment Grade Index is designed to reflect the performance of U.S. dollar-denominated investment grade corporate debt. The index rules aim to offer a broad coverage of the USD investment grade liquid bond universe.

### Markit iBoxx USD Leveraged Loan 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.

### S&P California AMT-Free Municipal Bond

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 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 New York AMT-Free Municipal Bond

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

## General Disclaimer

© 2023 S&P Dow Jones Indices. All rights reserved. S&P, S&P 500, SPX, SPY, The 500, US500, US 30, S&P 100, S&P COMPOSITE 1500, S&P 400, S&P MIDCAP 400, S&P 600, S&P SMALLCAP 600, S&P GIVI, GLOBAL TITANS, DIVIDEND ARISTOCRATS, Select Sector, S&P MAESTRO, S&P PRISM, S&P STRIDE, GICS, SPIVA, SPDR, INDEXOLOGY, iTraxx, iBoxx, ABX, ADBI, CDX, CMBX, MBX, MCDX, PRIMEX, HHPI and SOVX are trademarks of S&P Global, Inc. ("S&P Global") or its affiliates. DOW JONES, DJIA, THE DOW and DOW JONES INDUSTRIAL AVERAGE are trademarks of Dow Jones Trademark Holdings LLC ("Dow Jones"). These trademarks together with others have been licensed to S&P Dow Jones Indices LLC. Redistribution or reproduction in whole or in part are prohibited without written permission of S&P Dow Jones Indices LLC. This document does not constitute an offer of services in jurisdictions where S&P Dow Jones Indices LLC, S&P Global, Dow Jones or their respective affiliates (collectively "S&P Dow Jones Indices") do not have the necessary licenses. Except for certain custom index calculation services, all information provided by S&P Dow Jones Indices is impersonal and not tailored to the needs of any person, entity or group of persons. S&P Dow Jones Indices receives compensation in connection with licensing its indices to third parties and providing custom calculation services. Past performance of an index is not an indication or guarantee of future results.

It is not possible to invest directly in an index. Exposure to an asset class represented by an index may be available through investable instruments based on that index. S&P Dow Jones Indices does not sponsor, endorse, sell, promote or manage any investment fund or other investment vehicle that is offered by third parties and that seeks to provide an investment return based on the performance of any index. S&P Dow Jones Indices makes no assurance that investment products based on the index will accurately track index performance or provide positive investment returns. S&P Dow Jones Indices LLC is not an investment advisor, and S&P Dow Jones Indices makes no representation regarding the advisability of investing in any such investment fund or other investment vehicle. A decision to invest in any such investment fund or other investment vehicle should not be made in reliance on any of the statements set forth in this document. S&P Dow Jones Indices is not an investment adviser, commodity trading advisor, commodity pool operator, broker dealer, fiduciary, promoter" (as defined in the Investment Company Act of 1940, as amended), "expert" as enumerated within 15 U.S.C. § 77k(a) or tax advisor. Inclusion of a security, commodity, crypto currency or other asset within an index is not a recommendation by S&P Dow Jones Indices to buy, sell, or hold such security, commodity, crypto currency or other asset, nor is it considered to be investment advice or commodity trading advice. Closing prices for S&P Dow Jones Indices' US benchmark indices are calculated by S&P Dow Jones Indices based on the closing price of the individual constituents of the index as set by their primary exchange. Closing prices are received by S&P Dow Jones Indices from one of its third party vendors and verified by comparing them with prices from an alternative vendor. The vendors receive the closing price from the primary exchanges. Real-time intraday prices are calculated similarly without a second verification.

These materials have been prepared solely for informational purposes based upon information generally available to the public and from sources believed to be reliable. No content contained in these materials (including index data, ratings, credit-related analyses and data, research, valuations, model, software or other application or output therefrom) or any part thereof ("Content") may be modified, reverse-engineered, reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of S&P Dow Jones Indices. The Content shall not be used for any unlawful or unauthorized purposes. S&P Dow Jones Indices and its third-party data providers and licensors (collectively "S&P Dow Jones Indices Parties") do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Dow Jones Indices Parties are not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content. THE CONTENT IS PROVIDED ON AN "AS IS" BASIS. S&P DOW JONES INDICES PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Dow Jones Indices Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs) in connection with any use of the Content even if advised of the possibility of such damages.

Credit-related information and other analyses, including ratings, research and valuations are generally provided by licensors and/or affiliates of S&P Dow Jones Indices, including but not limited to S&P Global's other divisions such as S&P Global Market Intelligence.] Any credit-related information and other related analyses and statements in the Content are statements of opinion as of the date they are expressed and not statements of fact. Any opinion, analyses and rating acknowledgement decisions are not recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security. S&P Dow Jones Indices does not assume any obligation to update the Content following publication in any form or format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. S&P Dow Jones Indices LLC does not act as a fiduciary or an investment advisor. While S&P Dow Jones Indices has obtained information from sources they believe to be reliable, S&P Dow Jones Indices does not perform an audit or undertake any duty of due diligence or independent verification of any information it receives.

To the extent that regulatory authorities allow a rating agency to acknowledge in one jurisdiction a rating issued in another jurisdiction for certain regulatory purposes, S&P Global Ratings reserves the right to assign, withdraw or suspend such acknowledgement at any time and in its sole discretion. S&P Dow Jones Indices, including S&P Global Ratings, disclaim any duty whatsoever arising out of the assignment, withdrawal or suspension of an acknowledgement as well as any liability for any damage alleged to have been suffered on account thereof.] Affiliates of S&P Dow Jones Indices LLC, including S&P Global Ratings, may receive compensation for its ratings and certain credit-related analyses, normally from issuers or underwriters of securities or from obligors. Such affiliates of S&P Dow Jones Indices LLC, including S&P Global Ratings, reserve the right to disseminate its opinions and analyses. Public ratings and analyses from S&P Global Ratings are made available on its Web sites, [www.standardandpoors.com](http://www.standardandpoors.com) (free of charge), and [www.ratingsdirect.com](http://www.ratingsdirect.com) and [www.globalcreditportal.com](http://www.globalcreditportal.com) (subscription), and may be distributed through other means, including via S&P Global Ratings publications and third-party redistributors. Additional information about our ratings fees is available at [www.standardandpoors.com/usratingsfees](http://www.standardandpoors.com/usratingsfees).

S&P Global keeps certain activities of its various divisions and business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain divisions and business units of S&P Global may have information that is not available to other business units. S&P Global has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.

In addition, S&P Dow Jones Indices provides a wide range of services to, or relating to, many organizations, including issuers of securities, investment advisers, broker-dealers, investment banks, other financial institutions and financial intermediaries, and accordingly may receive fees or other economic benefits from those organizations, including organizations whose securities or services they may recommend, rate, include in model portfolios, evaluate or otherwise address.

IFCI and IFCG are trademarks of International Finance Corporation and have been licensed for use by S&P Dow Jones Indices.