

How the SPIVA U.S. Scorecard Understates the Performance of Actively Managed Mutual Funds

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This Draft: May 4, 2026

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Abstract

The SPIVA U.S. Scorecard reports that the supermajority of active mutual funds underperform their benchmark, stating, for example, that 79% of active U.S. equity funds in 2024 underperformed the S&P Composite 1500. We find that the Scorecard makes several choices that systematically understate the performance of active funds. After adjusting those choices to better reflect the actual investor experience, the results meaningfully change. We show that only 56% of assets invested in active U.S. equity funds in 2024 underperformed equivalent passive funds. For fixed income categories, the understatement is large enough to reverse the conclusion: active fixed income funds, over both short and long horizons, tend to outperform.

Executive Summary

The SPIVA U.S. Scorecard published by S&P Global (henceforth, the Scorecard) reports the percentage of active mutual funds by category and horizon that underperform their benchmark. In the 2024 Year-End edition, the Scorecard states that “over the 15-year period ending December 2024, there were no categories in which a majority of active managers outperformed.” Findings like these have motivated a monumental shift away from active management in the mutual fund industry.

The Scorecard is transparent in its calculations, which enables us to closely replicate the percentage of underperforming funds using its methodology. For example, following the Scorecard, we find that 92.04% of active funds in the average U.S. equity category underperformed over the last 20 years. The Scorecard reports 92.66%.

Our main contribution is a careful examination of the Scorecard’s methodology and the presentation of alternative results. Those results (i) use a revised methodology that more closely captures the actual experience of the average investor in active funds and (ii) show that the Scorecard understates the value of active management.

Our revised methodology implements three changes that better align the results with the investor experience. First, the Scorecard considers any active fund that exits the sample during a given horizon—regardless of its actual performance prior to exit—an underperformer; we instead consider a fund’s actual performance until its exit. Second, the Scorecard weights all active funds equally, even though most assets are in a small number of large funds; we instead weight the results by fund assets. Third, the Scorecard compares active funds against hypothetical benchmarks that do not reflect the actual returns to passive investing; we instead compare against the actual returns of equivalent passive funds.

Collectively, these changes reframe the question. The Scorecard asks: what percentage of active funds either do not survive the full horizon or underperform the category’s hypothetical benchmark? We ask: what percentage of active fund assets underperform equivalent passive funds? Our reframing stays within the Scorecard’s approach but better captures the actual investor experience.

Active management, in each asset class, fares significantly better after our changes. Averaged across the U.S. equity categories, the Scorecard indicates that 92% of active funds underperformed over the last 20 years. In contrast, we find that 55% of assets underperformed, with half of the investment categories showing a majority of their active fund assets outperforming. Put another way, rather than overwhelming underperformance, our results suggest that the probability of outperformance for a given dollar invested in the U.S. equity class over the last 20 years approximated a coin flip.

The results are even stronger among fixed income funds, where the Scorecard indicates that 71% of active funds in the average fixed income category underperformed over the last 10 years. After our changes, that result drops to only 37%, equivalent to nearly two out of three dollars invested in active fixed income funds outperforming equivalent passive funds. Therefore, for active fixed

income funds, our adjustments reverse the Scorecard's conclusion: assets in active fixed income funds tend to outperform.

We argue that evaluations of active management should focus on the actual investor experience. Our reframed question—what percentage of active fund assets underperform equivalent passive funds?—is more relevant for investors seeking to understand the historical performance record. Addressing survivorship, focusing on assets, and comparing against passive funds show that the Scorecard understates the value of active management.

Table I: Summary of Results

This table shows a summary of our key results. In Panel A, the reported value in each cell is the across-category average percentage of active funds over the listed horizon that the Scorecard method considers to have, on net, underperformed. For U.S. equity funds, the twelve cap-valuation categories are averaged. For international equity funds and fixed income funds, the averages use all categories. In Panel B, we report alternative values after making our three primary adjustments. Results are only displayed when full category coverage for both panels is available. Darker red indicates more underperformance and darker green indicates more outperformance.

Panel A: SPIVA Replication

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
U.S. Equity Funds	57.19	70.45	73.68	86.12	91.90	92.04
International Equity Funds	65.25	72.16	70.88	83.18	83.82	-
Fixed Income Funds	36.15	55.47	56.97	71.34	-	-

Panel B: Post-Adjustments

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
U.S. Equity Funds	57.87	49.24	56.15	67.18	76.44	55.31
International Equity Funds	57.98	66.23	49.74	62.52	47.63	-
Fixed Income Funds	33.29	45.00	33.58	37.09	-	-

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1. Introduction

Over the past 20 years, active mutual funds have experienced net outflows of about \$4.7 trillion. A significant portion of that capital has been reallocated to passive funds seeking to match the returns of broad indexes. In the U.S. equity class alone, active funds have had a net outflow of about \$3.4 trillion over the past 10 years, roughly matching the net inflow into passive U.S. equity funds.¹

This shift from active to passive management can be attributed, at least in part, to academic research documenting poor performance by active managers. Cremers, Fulkerson, and Riley (2019) characterize the resulting conventional wisdom: the average active fund underperforms, strong performance does not persist, and few managers have skill after costs. In his seminal paper, Carhart (1997, p. 57) writes that his results “do not support the existence of skilled or informed mutual fund portfolio managers.” This study has been cited more than 26,000 times.² Similarly, Fama and French (2010, p. 1915) write that “few funds produce benchmark-adjusted expected returns sufficient to cover their costs.” Dr. Fama was awarded a Nobel Prize in 2013 for his body of research on efficient markets, and the Prize’s website notes that his “results influenced the development of index funds.”³

However, a full survey of the body of academic research suggests active management can provide value to investors, such that the conventional wisdom is “too negative” (Cremers, Fulkerson, and Riley, 2019, p. 8). Nonetheless, Doran, Peterson, and Wright (2010, p. 174)

¹ These statistics are based on Figure 3.9 in the 2026 ICI Factbook (<https://www.icifactbook.org/pdf/2026-factbook.pdf>) and on Table 43 in the accompanying data tables (<https://www.icifactbook.org/26-fb-data-tables.html>).

² Citation count is according to Google Scholar as of April 25, 2026.

³ Dr. Fama’s website entry is available at <https://www.nobelprize.org/prizes/economic-sciences/2013/fama/facts/>.

surveyed finance professors and found “twice as many professors passively invest than actively invest.”

Industry reports evaluating active fund performance have also contributed to this shift. Notable among them is S&P Global’s SPIVA U.S. Scorecard (henceforth, the Scorecard). The Scorecard, which is regularly updated, reports the percentage of active funds in different categories that underperform a benchmark assigned by S&P over 1-year to 20-year horizons. While the results vary across editions, categories, and horizons, the Scorecard consistently shows pervasive, long-term underperformance for active funds. For example, the 2024 Year-End Scorecard (p. 1) states that “over the 15-year period ending December 2024, there were no categories in which a majority of active managers outperformed.”⁴ Editions of the Scorecard have received significant press attention, popularizing the results for a broad audience. *Financial Times*, *The Wall Street Journal*, and *The New York Times* have covered the Scorecard.⁵

S&P Global is transparent with respect to the Scorecard’s methodology, making it straightforward to recreate the results. Our replication of the 2024 Year-End Scorecard is a close match. For example, following the Scorecard’s methodology, we find that 94.05% of all U.S. equity funds underperform over the 20-year horizon of 2005 through 2024, while the Scorecard reports 94.11%.

In this paper, we closely examine the Scorecard methodology, documenting that it makes several choices that create a divergence between its results and the actual investor experience. We

⁴ The 2024 Year-End Scorecard is available at <https://www.spglobal.com/spdji/en/documents/spiva/spiva-us-year-end-2024.pdf>.

⁵ The articles from the named outlets are available at <https://www.ft.com/content/7e4c0d91-8b6d-419b-9be3-80131d5cb462>, <https://www.wsj.com/articles/BL-MBB-59389>, and <https://www.nytimes.com/2015/04/05/your-money/measure-for-measure-index-funds-rule.html>.

find that those choices significantly understate the performance experienced by investors in active funds.

We focus on three impactful choices. First, the Scorecard considers any fund that exits the sample to have underperformed, regardless of fund performance prior to exit. Second, the Scorecard weights all funds equally, even though most assets are invested in a small number of large funds. Third, the Scorecard compares funds against hypothetical, zero-cost benchmarks, rather than against investable, low-cost options.

We adjust those choices to better align with the investor experience. Instead of considering exiting funds to be underperformers, we consider fund returns prior to exit; instead of giving all funds equal weight, we weight returns by fund assets; and instead of comparing against benchmarks, we compare against the returns of passive mutual funds.

In the process, we reframe the question. The Scorecard provides the percentage of active funds that either leave the sample or underperform the benchmark. Conversely, we provide the percentage of active fund assets that, while present, underperform a portfolio of equivalent passive funds. Our reframing better aligns with the investor experience and leads to significantly stronger results for active funds. The difference is large enough that, within several categories, the broad conclusion of the Scorecard reverses, with active funds tending to outperform.

Each change has a significant impact on the results. For example, the Scorecard method indicates that, over the 3-year period of 2022 through 2024, 81% of large-cap core funds underperform. Not automatically counting exiting funds as underperformers decreases that percentage to 77%. Likewise, weighting by assets decreases the underperformance to 71% and comparing against equivalent passive funds decreases it to 73%. Making all three changes

simultaneously decreases the percentage to 46%. That is, the results invert, from a supermajority of active funds underperforming to a small majority of assets outperforming.

Those results are not an isolated example. Averaging across the cap-valuation U.S. equity categories, the Scorecard method indicates that 92% of funds have underperformed over the last 20 years. Among those categories, the lowest percentage is only 86% (large-cap value). After our changes, we find an average of 55%, with half of the categories having an underperformance rate for their assets below 50%. Thus, while underperformance among U.S. equities remains the most common outcome after our changes, the likelihood approaches a coin flip.

The impact of our changes is largest for active fixed income funds. The Scorecard method suggests widespread underperformance among that group. Using the 10-year horizon (i.e., the longest horizon with full coverage), the Scorecard method indicates an across-category average underperformance rate of 71%. After our changes, that rate falls to just 37%, meaning that nearly two out of three dollars invested in active fixed income funds outperformed equivalent passive funds over the last 10 years.

For each well-populated horizon, the results after our changes indicate that more fixed income categories show typical outperformance than show typical underperformance. Among high yield funds, one of the largest fixed income categories, the 15-year horizon underperformance rate decreases from 74% to 12% after our changes. Thus, within the fixed income class, our changes fully reverse the Scorecard's conclusion: the data support the finding that active fixed income funds tend to outperform.

We conclude that the SPIVA U.S. Scorecard makes several choices that lead it to significantly understate active fund performance. Making changes to the Scorecard's methodology to better align with the actual experience of the average mutual fund investor, we find that nearly

half of the non-overlapping, available investment categories show active funds outperforming over the last 15 years. The Scorecard consistently and substantially understates active fund performance, and within the fixed income class, amending the understatement overturns the general inference. Accordingly, we recommend interpreting the Scorecard with caution.

2. Replicating the Scorecard

Our evaluation of the SPIVA U.S. Scorecard centers on Reports 1a, 6a, and 11a in the 2024 Year-End edition. Those tables show the percentage of active funds across different categories that, on net, underperform their benchmark over varying horizons. We closely replicate those results using the CRSP Survivor-Bias-Free U.S. Mutual Fund Database and benchmark returns downloaded from Bloomberg, FactSet, and Morningstar. The horizons considered are 1-year (2024), 3-year (2022–2024), 5-year (2020–2024), 10-year (2015–2024), 15-year (2010–2024), and 20-year (2005–2024). The benchmarks used for each fund category are listed in our Appendix Table 1. Here and in later sections, we discuss our results in broad terms, with the full results tabulated in the Appendix.

Appendix Table 2 provides the results as reported by the Scorecard, and Appendix Table 3 provides our replication. On average across all category-horizon combinations, the absolute difference between our estimates of the percentage of active funds that underperform and the Scorecard's is only 2.78%. The net difference is likewise small. Our estimates are, on average, only 2.34% less than those reported in the Scorecard. When making comparisons against the Scorecard in later sections, we use our replication of those results to more cleanly identify the impact of modifying choices.

3. Empirical Choices

In this section, we discuss and evaluate the impact of several choices made by the Scorecard. We concentrate on three impactful choices, briefly discussing others at the end.

3.1. Survivorship

The Scorecard considers a fund to have underperformed during a given horizon if it meets either of two conditions: (i) the fund has a lower return than its benchmark, or (ii) the fund does not survive until the end of the horizon. For example, if a 5-year horizon is used, the sample of funds is fixed at the beginning of that period. Any fund that subsequently exits the sample during the next five years is considered to have underperformed, regardless of its performance while in the sample.

While it is reasonable to expect that most funds exiting the sample have underperformed, Bessembinder, Cooper, and Zhang (2023) demonstrate that a significant portion do not. Moreover, Linnainmaa (2013) demonstrates how, in general, approaches designed to reduce the overstatement of active fund performance resulting from survivorship bias can lead to the understatement of active fund performance by generating reverse survivorship bias. In our case, funds exit for many non-performance reasons, including mergers and reorganizations, and even funds that liquidate due to poor recent performance could have outperformed over a longer horizon. As a result, by classifying all exiting funds as underperformers, the Scorecard understates active fund performance.

Our alternative approach evaluates the performance of exiting funds during their living period. For example, if we are using a 5-year horizon and a fund exits the sample after 4.5 years, we compare its performance against 4.5 years of its benchmark's performance. This alternative

does not condition on survival, instead focusing the test on relative performance. An active fund that outperforms provides value to investors, even with a partial lifespan.

Appendix Table 4 shows the results from applying our alternative approach. The impact is small over short horizons, but large over long horizons, with the variation driven by significant differences in survivorship rates. For example, using all U.S. equity funds, about 97% of funds survive the 1-year horizon, but only about 36% survive the 20-year horizon. Accordingly, among the same group of funds, the underperformance rate after applying our alternative approach decreases by only 0.5% over one year but by 16% over 20 years. The impact, though, is largest within the fixed income class. To illustrate, the underperformance rate over a 20-year horizon in the high yield category decreases from 78% to 52%. Put another way, with this change alone, the typical active high yield fund becomes about as likely to outperform as underperform.

3.2. Assets Under Management

The Scorecard gives each fund equal weight, regardless of its assets under management. However, fund assets are highly skewed, with Clifford, Jordan, and Riley (2014, p. 249) finding that “the top 5% of actively managed U.S. equity mutual funds in 2012 had greater aggregate TNA [total net assets] than the remaining 95% of funds combined.” Consequently, equal weighting is unrepresentative of the actual investor experience.

Our goal is to better align with that experience, so our alternative approach is to weight the results by fund assets at the beginning of a given horizon. With this approach, we modify the unit of analysis. Rather than consider the performance of the average fund, we consider the performance of the average dollar. The latter is more relevant for investors, as ten funds each with \$5 million underperforming are less economically important than one fund with \$5 billion outperforming.

It is unclear, a priori, how weighting by assets will affect the performance of active funds. Pastor, Stambaugh, Taylor, and Zhu (2022, p. 593) find “scale diseconomies at the fund and industry levels,” which suggests we should expect more underperformance when focusing on assets; Phillips, Pukthuanthong, and Rau (2018, p. 357) find that “fund size does not appear to affect fund performance,” which suggests we should expect no difference; and assets tend to be concentrated in relatively low expense ratio funds, which, all else equal, suggests we should expect less underperformance when focusing on assets.⁶

We apply this alternative approach in Appendix Table 5. While some category-horizons show an increase in underperformance using asset weighting, most show a decrease in underperformance. The changes tend to be largest over long horizons and within the fixed income class. For example, among active investment-grade intermediate funds (one of the largest fixed income categories), the underperformance rate over a 20-year horizon decreases from 72% to 29% after switching to asset weighting. Therefore, while most funds in that category underperform, most dollars outperform.

3.3. Benchmarking

The Scorecard compares active fund performance against the hypothetical returns of benchmarks such as the S&P 500. However, using an investable option is important for several reasons. First, the Scorecard’s benchmarks ignore costs. The average expense ratio of a traditional (exchange-traded) passive bond fund was 0.05% (0.09%) in 2025, with significantly greater costs

⁶ See Figure 6.1 in the 2026 ICI Factbook (<https://www.icifactbook.org/pdf/2026-factbook.pdf>).

in earlier periods.⁷ Not accounting for those costs will overestimate the net returns available to passive investors, and, in turn, cause the Scorecard to understate active fund performance.

Second, the benchmark returns used in the Scorecard are derived from theoretical portfolios. In practice, investors must select an actual passive fund. While Crane and Crotty (2018) find that passive equity funds' holdings closely match those of their benchmarks, Choi, Cremers, and Riley (2026) show that there are large deviations between passive fixed income funds and their benchmarks. Furthermore, regardless of asset class, the benchmarks selected by the Scorecard are not necessarily (i) the benchmarks that active funds are attempting to outperform or (ii) the benchmarks that passive funds tend to track. Mullally and Rossi (2025) show that, while the S&P 500 is the most common benchmark that U.S. equity funds self-declare, the next ten most common benchmarks are all from the Russell family. As with asset weighting, it is unclear, a priori, how any differences in holdings between the benchmarks and passive funds would impact the results.

Our alternative approach is to compare the performance of each active fund against the net return on an asset-weighted portfolio of passive funds in the same category. For consistency, we construct the sample of passive funds in the same manner as the sample of active funds, although we only use passive funds that survive the full horizon (which should bias against active funds). This approach better aligns with the idea of an investable option because it considers whether a given active fund outperformed the average dollar invested in comparable passive funds.

Appendix Table 6 shows the results from applying our alternative approach. The magnitude and direction of the changes vary significantly. For example, funds within the large-cap growth category have their underperformance rate decrease by 62% over a 1-year horizon, but funds within the small-cap growth category have their percentage increase by 49% over the same

⁷ See Figures 6.4 and 6.5 in the 2026 ICI Factbook (<https://www.icifactbook.org/pdf/2026-factbook.pdf>).

horizon. In aggregate though, there tends to be more evidence of outperformance using this alternative approach, particularly within the fixed income class. Within that class and using a 10-year horizon (the longest with full coverage), the underperformance rate decreases by an across-category average of 11%. Thus, when considered against an investable option, significantly more active funds outperform.

3.4. Combined Effect

In previous tables, we considered the impact of each change individually. In Appendix Table 7, we make all three changes simultaneously.

After making the changes, underperformance within the category of all U.S. equity funds decreases by 22% over a 1-year horizon and by 16% over a 20-year horizon. Most category-horizon combinations still have a rate of underperformance greater than 50%; however, the changes within the narrower cap-valuation categories are the most important for inferences. There, the benchmarks more closely match the funds' risk profiles. Focusing on those groupings, about 35% of the categories show an underperformance rate less than 50%. Thus, while the changes in combination do not overturn the Scorecard's general inference about the U.S. equity class, they do substantially weaken the inference's supporting evidence.

The impact is most striking within the fixed income class. After the changes, most category-horizon combinations indicate more outperformance than underperformance. For example, over a 10-year horizon, 69% of the fixed income categories indicate an underperformance rate below 50%. In comparison, the Scorecard method indicates that only one of those categories is below 50% over the same horizon. Among active investment-grade intermediate funds and active high yield funds in particular, the 10-year underperformance rates after the changes are only 24% and 19%. The corresponding Scorecard rates are 54% and 73%.

Consequently, within the fixed income class, the Scorecard's general inference is overturned: the evidence suggests that assets invested in active fixed income funds tend to outperform.

3.5. Additional Choices

There are several other choices made in the Scorecard that could be refined but do not have a significant impact on conclusions about active fund performance. We briefly discuss those choices here.

First, the Scorecard selects the share class of each fund with the greatest assets under management. To capture the experience of an investor focused on costs, Appendix Table 8 considers instead selecting the share class with the lowest expense ratio. We find that, on average across categories and horizons, the percentage of underperforming funds decreases by only 2.5% after that change.

Second, the Scorecard implicitly assumes that all funds have a level of systematic risk identical to their benchmark (i.e., that all funds have a beta of one with respect to their benchmark). Some funds have less systematic risk than their benchmark, in which case they could underperform on a simple benchmark basis but outperform after adjusting for beta. Appendix Table 9 follows the approach of Bessembinder, Cooper, and Zhang (2023) to beta-adjust the results. We find that the across category-horizon average percentage of underperforming funds decreases by only 1.7% using that approach.

Third, the Scorecard does not consider statistical significance. In Appendix Table 10, we report whether the percentage of underperforming funds within each category-horizon is statistically different from 50%. Nearly all of the results are statistically significant at conventional levels, with only those values economically close to 50% tending to be statistically insignificant.

4. Conclusion

From 2021 through 2025, active funds in the U.S. had a net outflow of about \$3.4 trillion.⁸ That allocation by investors is consistent with prominent evidence in the academic literature (e.g., Jensen, 1968) and with the results in S&P Global's SPIVA U.S. Scorecard. The latter reports that, especially over long horizons, active funds consistently underperform their benchmark. For example, the Scorecard shows that, over a 20-year horizon, about 91% of small-cap U.S. equity funds underperform.

We reconsider several key choices in the Scorecard, proposing alternative approaches designed to increase the relevance for investors by more closely aligning the results with their actual experience. We evaluate the actual returns of exiting funds instead of treating them as underperformers irrespective of their performance; we weight our results by fund assets instead of equal weighting; and we compare active fund performance against the actual performance of passive funds instead of against the performance of hypothetical benchmarks. After those changes, we find that active fund underperformance significantly decreases. For example, in our estimation, only 61% of assets invested in small-cap U.S. equity funds underperform over a 20-year horizon. Within the fixed income class, the changes are impactful enough to reverse the broad conclusion about active funds. Over a 20-year horizon, the Scorecard method indicates an underperformance rate of 72% in the investment-grade intermediate category, whereas we estimate that value is only 21%.

Broadly speaking, the SPIVA U.S. Scorecard is too negative on the value of active management. Staying with the Scorecard's framework, we identify substantially more value after better aligning the analysis with the actual investor experience. Further value can likely be

⁸ That statistic is based on Table 43 in the accompanying data tables of the 2026 ICI Factbook (<https://www.icifactbook.org/26-fb-data-tables.html>).

identified by stepping outside that framework to account for variables shown to predict active fund performance (see, for example, Cremers and Petajisto, 2009, Cremers and Pareek, 2016, and Cremers, Fulkerson, and Riley, 2022). Jones and Mo (2021) find that, on average, active fund performance predictors continue to have power out of sample and that the power is not limited to equity funds. In conclusion, we advise caution when interpreting the results reported by the Scorecard.

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Appendix

Table 1: Benchmarks by Fund Category

Table 2: Results as Reported in the SPIVA U.S. Scorecard

Table 3: Replication of the SPIVA U.S. Scorecard

Table 4: Results of the Scorecard After Adjusting for Survivorship

Table 5: Results of the Scorecard After Weighting on Assets

Table 6: Results of the Scorecard After Modifying the Benchmark

Table 7: Results of the Scorecard After Revisions for Survivorship, Assets, and Benchmark

Table 8: Results of the Scorecard After Using the Low-Cost Share Class

Table 9: Results of the Scorecard After Adjusting for Beta

Table 10: Results of the Scorecard After Accounting for Statistical Significance

Table 1: Benchmarks by Fund Category

This table lists the comparison index used as the benchmark for each fund category in the 2024 Year-End SPIVA U.S. Scorecard.

Panel A: U.S. Equity Funds

Fund Category	Comparison Index
All Domestic Funds	S&P Composite 1500
All Large-Cap Funds	S&P 500
All Mid-Cap Funds	S&P MidCap 400
All Small-Cap Funds	S&P SmallCap 600
All Multi-Cap Funds	S&P Composite 1500
Large-Cap Growth Funds	S&P 500 Growth
Large-Cap Core Funds	S&P 500
Large-Cap Value Funds	S&P 500 Value
Mid-Cap Growth Funds	S&P MidCap 400 Growth
Mid-Cap Core Funds	S&P MidCap 400
Mid-Cap Value Funds	S&P MidCap 400 Value
Small-Cap Growth Funds	S&P SmallCap 600 Growth
Small-Cap Core Funds	S&P SmallCap 600
Small-Cap Value Funds	S&P SmallCap 600 Value
Multi-Cap Growth Funds	S&P Composite 1500 Growth
Multi-Cap Core Funds	S&P Composite 1500
Multi-Cap Value Funds	S&P Composite 1500 Value
Real Estate Funds	S&P United States REIT

Panel B: International Equity Funds

Fund Category	Comparison Index
Global Funds	S&P World
International Funds	S&P World Ex-U.S.
International Small-Cap Funds	S&P Developed Ex-U.S. SmallCap
Emerging Markets Funds	S&P/IFCI Composite

Panel C: Fixed Income Funds

Fund Category	Comparison Index
General Government Funds	iBoxx \$ Domestic Sovereign & Sub-Sovereigns
Government Intermediate Funds	iBoxx \$ Domestic Sovereigns & Sub-Sovereigns 1-10Y
Government Short & Short-Intermediate Funds	iBoxx \$ Domestic Sovereigns & Sub-Sovereigns 1-5Y
General Investment-Grade Funds	iBoxx \$ Liquid Investment Grade
Investment-Grade Intermediate Funds	Bloomberg U.S. Aggregate
Investment-Grade Short & Intermediate Funds	iBoxx \$ Overall 1-5Y
General Bond Funds	iBoxx \$ Overall
High Yield Funds	iBoxx \$ Liquid High Yield
Mortgage-Backed Securities Funds	Bloomberg U.S. Aggregate Securitized - MBS
Inflation-Linked Funds	iBoxx TIPS Inflation-Linked
Global Income Funds	Bloomberg Global Aggregate
Emerging Market Debt Funds	Bloomberg Emerging Markets \$ Aggregate
General Municipal Debt Funds	S&P National AMT-Free Municipal Bond
California Municipal Debt Funds	S&P California AMT-Free Municipal Bond
New York Municipal Debt Funds	S&P New York AMT-Free Municipal Bond
Loan Participation Funds	Markit iBoxx \$ Leveraged Loans

Table 2: Results as Reported in the SPIVA U.S. Scorecard

This table reproduces the results in Reports 1a, 6a, and 11a in the 2024 Year-End SPIVA U.S. Scorecard. Results are reported for U.S. equity funds in Panel A, international equity funds in Panel B, and fixed income funds in Panel C. The performance horizons considered are 1-year (2024), 3-year (2022–2024), 5-year (2020–2024), 10-year (2015–2024), 15-year (2010–2024), and 20-year (2005–2024). The reported value in each cell is the percentage of active funds in the category-horizon that the Scorecard considers to have, on net, underperformed.

Panel A: U.S. Equity Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
All Domestic Funds	78.65	87.65	84.69	89.70	93.23	94.11
All Large-Cap Funds	65.24	84.96	76.26	84.34	89.50	91.99
All Mid-Cap Funds	62.00	74.64	80.00	77.32	87.50	90.93
All Small-Cap Funds	29.69	53.03	60.37	82.22	90.68	90.80
All Multi-Cap Funds	78.45	86.13	82.93	87.44	91.52	93.41
Large-Cap Growth Funds	92.03	57.02	80.18	84.84	95.91	96.90
Large-Cap Core Funds	75.89	82.30	80.37	96.62	97.07	93.27
Large-Cap Value Funds	38.58	89.89	78.91	89.61	95.08	87.78
Mid-Cap Growth Funds	63.08	85.95	74.26	65.12	82.49	88.30
Mid-Cap Core Funds	66.67	65.88	81.48	88.80	92.81	96.75
Mid-Cap Value Funds	68.00	78.57	80.36	92.75	92.16	94.19
Small-Cap Growth Funds	23.12	68.14	66.17	77.34	87.34	91.46
Small-Cap Core Funds	33.22	39.58	56.49	86.54	94.10	92.48
Small-Cap Value Funds	42.55	35.82	48.05	81.15	93.38	92.78
Multi-Cap Growth Funds	78.08	75.28	83.25	90.00	91.24	92.50
Multi-Cap Core Funds	80.00	86.22	88.16	95.53	95.50	94.69
Multi-Cap Value Funds	38.16	88.10	80.00	92.98	95.63	90.76
Real Estate Funds	80.52	85.19	82.93	82.42	88.00	90.12

Panel B: International Equity Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
Global Funds	83.94	90.64	88.28	90.00	92.50	-
International Funds	69.02	78.09	81.50	85.29	88.25	-
International Small-Cap Funds	43.42	63.75	51.72	72.50	67.35	73.17
Emerging Markets Funds	71.50	77.23	75.24	87.39	88.24	95.38

Panel C: Fixed Income Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
General Government Funds	72.50	86.11	88.89	98.31	77.91	-
Government Intermediate Funds	94.74	95.00	95.45	94.12	90.91	-
Government Short & Short-Intermediate Funds	41.38	60.71	70.59	90.24	96.36	-
General Investment-Grade Funds	30.38	34.44	57.89	81.63	90.08	95.04
Investment-Grade Intermediate Funds	24.20	53.38	42.36	61.33	59.57	78.79
Investment-Grade Short & Intermediate Funds	11.83	20.99	28.93	51.97	73.38	-
General Bond Funds	23.08	33.33	29.41	54.39	68.66	-
High Yield Funds	65.88	69.88	54.22	79.39	76.29	79.86
Mortgage-Backed Securities Funds	36.36	42.11	51.92	76.27	79.69	92.86
Inflation-Linked Funds	51.92	40.82	56.25	86.21	96.55	95.83
Global Income Funds	31.37	47.42	51.92	61.60	64.65	79.25
Emerging Market Debt Funds	41.07	40.00	59.68	85.25	100.00	88.24
General Municipal Debt Funds	13.33	83.53	70.93	66.67	59.14	-
California Municipal Debt Funds	8.57	72.73	58.33	56.10	51.16	-
New York Municipal Debt Funds	15.38	88.89	82.14	78.13	72.97	-
Loan Participation Funds	88.73	93.44	98.39	94.44	100.00	-

Table 3: Replication of the SPIVA U.S. Scorecard

This table shows our replication of the results in Reports 1a, 6a, and 11a in the 2024 Year-End SPIVA U.S. Scorecard. Results are reported for U.S. equity funds in Panel A, international equity funds in Panel B, and fixed income funds in Panel C. The performance horizons considered are 1-year (2024), 3-year (2022–2024), 5-year (2020–2024), 10-year (2015–2024), 15-year (2010–2024), and 20-year (2005–2024). The reported value in each cell is the percentage of active funds in the category-horizon that the Scorecard method considers to have, on net, underperformed.

Panel A: U.S. Equity Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
All Domestic Funds	78.53	86.80	84.64	89.82	93.16	94.05
All Large-Cap Funds	65.22	83.46	76.15	84.48	89.18	91.43
All Mid-Cap Funds	61.45	75.48	79.40	75.13	87.30	91.09
All Small-Cap Funds	29.46	52.18	57.19	81.45	89.75	90.20
All Multi-Cap Funds	78.14	84.73	82.55	87.02	91.68	93.32
Large-Cap Growth Funds	90.60	55.98	77.96	83.89	94.71	95.80
Large-Cap Core Funds	75.89	80.88	81.12	95.70	97.52	91.82
Large-Cap Value Funds	35.71	89.80	78.01	89.22	93.52	86.28
Mid-Cap Growth Funds	65.00	87.22	73.15	65.80	80.43	88.83
Mid-Cap Core Funds	63.97	67.62	80.49	86.67	93.53	95.76
Mid-Cap Value Funds	67.86	77.63	80.95	90.00	91.35	92.13
Small-Cap Growth Funds	23.44	66.96	63.93	74.77	86.09	90.70
Small-Cap Core Funds	31.90	39.85	54.21	86.96	93.46	93.56
Small-Cap Value Funds	38.98	32.50	46.07	81.54	90.71	91.40
Multi-Cap Growth Funds	75.78	74.49	81.04	88.64	90.34	92.45
Multi-Cap Core Funds	80.48	84.74	87.20	96.51	95.43	94.90
Multi-Cap Value Funds	36.72	87.71	80.00	93.75	95.71	90.86
Real Estate Funds	80.00	85.06	78.65	74.49	87.16	89.89

Panel B: International Equity Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
Global Funds	84.83	90.07	90.56	91.07	94.25	-
International Funds	68.94	62.76	64.63	81.39	81.07	-
International Small-Cap Funds	35.87	62.50	53.92	72.53	71.93	77.55
Emerging Markets Funds	71.37	73.31	74.42	87.74	88.05	96.00

Panel C: Fixed Income Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
General Government Funds	70.73	83.33	85.00	98.39	77.89	-
Government Intermediate Funds	95.00	95.24	95.45	94.74	91.67	-
Government Short & Short-Intermediate Funds	38.89	48.57	58.54	88.68	92.65	-
General Investment-Grade Funds	32.67	33.94	53.45	76.36	89.26	93.59
Investment-Grade Intermediate Funds	18.86	47.13	37.65	54.34	56.82	71.81
Investment-Grade Short & Intermediate Funds	13.78	23.32	31.02	47.73	65.85	-
General Bond Funds	17.54	26.67	34.04	50.72	68.49	-
High Yield Funds	59.16	67.91	51.09	73.36	74.43	77.91
Mortgage-Backed Securities Funds	30.26	36.92	43.33	71.19	71.01	87.69
Inflation-Linked Funds	40.32	37.70	48.39	74.65	90.00	91.30
Global Income Funds	25.44	40.74	46.15	60.00	64.00	77.61
Emerging Market Debt Funds	38.81	36.71	57.69	81.82	93.75	87.50
General Municipal Debt Funds	12.26	69.70	55.79	62.11	58.24	-
California Municipal Debt Funds	8.33	66.67	52.78	50.00	50.00	-
New York Municipal Debt Funds	11.54	88.89	75.00	71.88	69.44	-
Loan Participation Funds	64.86	84.13	86.15	85.45	95.00	-

Table 4: Results of the Scorecard After Adjusting for Survivorship

This table shows our replication of the results in Reports 1a, 6a, and 11a in the 2024 Year-End SPIVA U.S. Scorecard. Results are reported for U.S. equity funds in Panel A, international equity funds in Panel B, and fixed income funds in Panel C. The performance horizons considered are 1-year (2024), 3-year (2022–2024), 5-year (2020–2024), 10-year (2015–2024), 15-year (2010–2024), and 20-year (2005–2024). The reported value in each cell is the percentage of active funds in the category-horizon that the Scorecard method considers to have, on net, underperformed, except that we modify the treatment of funds that exit the sample during a given horizon. Instead of considering all exiting funds as underperforming, we compare funds against their benchmark over the period the fund is available.

Panel A: U.S. Equity Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
All Domestic Funds	77.99	84.27	80.72	83.58	83.44	78.16
All Large-Cap Funds	64.49	79.98	72.76	77.11	82.25	73.40
All Mid-Cap Funds	61.14	73.25	73.13	67.09	78.77	82.92
All Small-Cap Funds	27.78	49.04	49.75	75.89	83.99	83.18
All Multi-Cap Funds	77.54	81.79	78.46	80.83	85.07	79.51
Large-Cap Growth Funds	90.60	52.51	74.69	74.16	85.64	78.99
Large-Cap Core Funds	74.47	76.89	78.71	91.40	93.80	72.33
Large-Cap Value Funds	34.64	88.10	72.29	84.37	89.58	67.70
Mid-Cap Growth Funds	65.00	87.22	63.09	58.55	73.04	78.68
Mid-Cap Core Funds	63.24	65.71	77.24	80.74	91.18	89.83
Mid-Cap Value Funds	66.07	76.32	76.19	81.43	78.85	85.39
Small-Cap Growth Funds	22.01	64.76	54.79	67.43	80.83	82.33
Small-Cap Core Funds	30.06	35.34	46.80	83.95	89.54	87.12
Small-Cap Value Funds	37.29	30.00	42.70	73.85	82.86	84.95
Multi-Cap Growth Funds	75.78	71.43	76.30	82.27	83.19	72.33
Multi-Cap Core Funds	78.88	81.12	84.80	92.70	90.87	83.76
Multi-Cap Value Funds	35.55	86.02	71.43	89.29	87.73	78.49
Real Estate Funds	75.00	78.16	70.79	65.31	82.57	77.53

Panel B: International Equity Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
Global Funds	84.48	88.30	85.66	83.57	78.74	-
International Funds	66.46	56.28	60.21	70.35	69.33	-
International Small-Cap Funds	35.87	56.25	46.08	65.93	64.91	61.22
Emerging Markets Funds	69.85	68.92	66.28	79.69	81.13	89.33

Panel C: Fixed Income Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
General Government Funds	70.73	77.78	77.50	93.55	63.16	-
Government Intermediate Funds	95.00	95.24	81.82	94.74	62.50	-
Government Short & Short-Intermediate Funds	38.89	48.57	56.10	88.68	83.82	-
General Investment-Grade Funds	26.73	16.51	38.79	71.82	83.89	70.51
Investment-Grade Intermediate Funds	18.29	41.38	27.65	40.46	29.55	63.30
Investment-Grade Short & Intermediate Funds	9.18	11.40	20.32	38.64	40.24	-
General Bond Funds	14.04	16.67	34.04	36.23	42.47	-
High Yield Funds	57.59	64.71	40.76	64.75	63.47	52.15
Mortgage-Backed Securities Funds	28.95	35.38	41.67	61.02	53.62	83.08
Inflation-Linked Funds	40.32	32.79	46.77	61.97	80.00	86.96
Global Income Funds	23.68	26.85	32.48	40.00	38.40	49.25
Emerging Market Debt Funds	34.33	25.32	51.28	70.13	93.75	75.00
General Municipal Debt Funds	11.32	68.69	53.68	57.89	48.35	-
California Municipal Debt Funds	8.33	66.67	52.78	42.50	42.86	-
New York Municipal Debt Funds	7.69	85.19	67.86	65.63	61.11	-
Loan Participation Funds	63.51	84.13	84.62	85.45	95.00	-

Table 5: Results of the Scorecard After Weighting on Assets

This table shows our replication of the results in Reports 1a, 6a, and 11a in the 2024 Year-End SPIVA U.S. Scorecard. Results are reported for U.S. equity funds in Panel A, international equity funds in Panel B, and fixed income funds in Panel C. The performance horizons considered are 1-year (2024), 3-year (2022–2024), 5-year (2020–2024), 10-year (2015–2024), 15-year (2010–2024), and 20-year (2005–2024). The reported value in each cell is the percentage of active funds in the category-horizon that the Scorecard method considers to have, on net, underperformed, except that we modify the weighting of funds. Instead of giving all funds equal weight in the reported values, we weight the funds based on their assets at the beginning of a given horizon.

Panel A: U.S. Equity Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
All Domestic Funds	65.35	77.83	71.89	78.46	85.48	80.69
All Large-Cap Funds	54.45	75.97	64.97	71.98	81.48	84.40
All Mid-Cap Funds	65.17	69.96	82.47	64.26	84.06	90.30
All Small-Cap Funds	22.33	54.19	49.92	74.34	86.02	81.00
All Multi-Cap Funds	82.31	77.94	78.88	79.11	84.02	65.46
Large-Cap Growth Funds	82.57	52.04	64.51	77.97	91.32	93.16
Large-Cap Core Funds	70.14	70.97	85.59	94.60	98.67	84.16
Large-Cap Value Funds	23.93	91.64	64.69	68.77	71.82	49.23
Mid-Cap Growth Funds	79.05	91.32	85.38	48.08	68.74	76.76
Mid-Cap Core Funds	63.43	45.20	68.27	83.50	94.71	98.60
Mid-Cap Value Funds	65.61	75.02	77.23	86.41	95.47	98.22
Small-Cap Growth Funds	21.67	62.86	66.50	57.60	69.00	81.39
Small-Cap Core Funds	24.71	37.07	44.55	86.52	95.79	88.79
Small-Cap Value Funds	17.62	17.59	25.93	78.71	91.69	85.18
Multi-Cap Growth Funds	76.97	60.09	70.16	72.74	70.91	62.34
Multi-Cap Core Funds	92.09	74.88	81.72	96.54	92.84	75.76
Multi-Cap Value Funds	33.49	90.21	72.06	97.92	95.33	66.82
Real Estate Funds	93.25	91.07	69.39	61.64	84.69	82.23

Panel B: International Equity Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
Global Funds	80.47	96.93	95.99	82.76	78.30	-
International Funds	65.63	64.20	47.06	66.83	61.15	-
International Small-Cap Funds	20.45	42.17	32.08	63.63	74.57	73.91
Emerging Markets Funds	78.26	70.76	60.82	83.79	74.36	88.81

Panel C: Fixed Income Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
General Government Funds	91.38	94.42	71.17	98.81	62.05	-
Government Intermediate Funds	99.95	99.95	99.92	99.73	43.06	-
Government Short & Short-Intermediate Funds	8.48	49.94	54.13	69.45	78.39	-
General Investment-Grade Funds	29.80	36.53	45.30	76.13	79.50	88.18
Investment-Grade Intermediate Funds	6.51	25.28	14.26	28.21	17.60	29.05
Investment-Grade Short & Intermediate Funds	21.35	20.55	18.05	26.31	43.69	-
General Bond Funds	3.32	4.67	8.46	20.10	34.61	-
High Yield Funds	50.55	55.56	43.98	57.08	44.31	47.76
Mortgage-Backed Securities Funds	23.53	12.27	16.64	37.17	39.67	55.66
Inflation-Linked Funds	41.41	27.46	17.69	67.58	78.03	74.89
Global Income Funds	17.49	30.22	37.21	45.63	46.68	61.65
Emerging Market Debt Funds	24.31	14.64	51.09	77.22	90.10	55.77
General Municipal Debt Funds	2.00	62.95	36.50	52.46	22.72	-
California Municipal Debt Funds	3.13	62.40	52.03	18.19	15.81	-
New York Municipal Debt Funds	8.38	93.93	52.54	53.10	50.82	-
Loan Participation Funds	72.58	79.35	78.61	77.09	92.35	-

Table 6: Results of the Scorecard After Modifying the Benchmark

This table shows our replication of the results in Reports 1a, 6a, and 11a in the 2024 Year-End SPIVA U.S. Scorecard. Results are reported for U.S. equity funds in Panel A, international equity funds in Panel B, and fixed income funds in Panel C. The performance horizons considered are 1-year (2024), 3-year (2022–2024), 5-year (2020–2024), 10-year (2015–2024), 15-year (2010–2024), and 20-year (2005–2024). The reported value in each cell is the percentage of active funds in the category-horizon that the Scorecard method considers to have, on net, underperformed, except that we modify the comparison index. Instead of comparing funds against the benchmarks listed in Appendix Table 1, we compare funds against an asset-weighted portfolio of within-category passive funds.

Panel A: U.S. Equity Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
All Domestic Funds	73.08	71.88	75.44	83.51	90.68	94.34
All Large-Cap Funds	65.46	83.83	74.94	84.48	87.97	90.28
All Mid-Cap Funds	74.40	61.46	69.55	72.11	85.12	85.40
All Small-Cap Funds	50.51	50.44	58.84	72.02	80.76	82.81
All Multi-Cap Funds	76.20	76.80	71.38	83.00	94.37	97.88
Large-Cap Growth Funds	28.95	85.71	95.51	98.66	98.49	94.54
Large-Cap Core Funds	75.89	72.51	67.47	86.53	94.04	91.19
Large-Cap Value Funds	50.36	73.47	65.66	84.10	89.30	82.74
Mid-Cap Growth Funds	68.57	80.45	87.25	77.72	90.87	74.62
Mid-Cap Core Funds	78.68	50.48	70.73	84.44	91.76	93.22
Mid-Cap Value Funds	60.71	28.95	50.79	72.86	81.73	59.55
Small-Cap Growth Funds	72.25	85.90	70.32	63.30	75.56	79.53
Small-Cap Core Funds	45.71	35.71	55.89	77.59	82.35	86.70
Small-Cap Value Funds	22.03	8.75	41.57	70.77	68.57	69.89
Multi-Cap Growth Funds	60.25	75.51	66.82	62.73	99.58	98.74
Multi-Cap Core Funds	79.28	75.50	75.20	93.65	93.51	93.63
Multi-Cap Value Funds	59.77	51.69	49.14	86.61	90.80	83.33
Real Estate Funds	37.50	55.17	48.31	65.31	75.23	91.01

Panel B: International Equity Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
Global Funds	79.66	79.79	73.08	81.79	87.93	-
International Funds	48.03	65.27	62.95	73.38	70.93	-
International Small-Cap Funds	46.74	63.54	53.92	70.33	59.65	-
Emerging Markets Funds	77.48	72.91	69.38	77.01	69.18	77.33

Panel C: Fixed Income Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
General Government Funds	24.39	36.11	47.50	56.45	85.26	-
Government Intermediate Funds	70.00	80.95	77.27	89.47	91.67	-
Government Short & Short-Intermediate Funds	63.89	82.86	87.80	83.02	67.65	-
General Investment-Grade Funds	49.50	53.21	56.03	64.55	83.22	91.03
Investment-Grade Intermediate Funds	21.14	50.57	37.65	56.07	53.18	70.21
Investment-Grade Short & Intermediate Funds	23.47	31.61	48.66	67.61	65.85	-
General Bond Funds	17.54	21.67	29.79	50.72	68.49	-
High Yield Funds	59.16	67.91	41.30	53.28	53.42	-
Mortgage-Backed Securities Funds	32.89	38.46	45.00	64.41	65.22	-
Inflation-Linked Funds	74.19	72.13	69.35	71.83	80.00	86.96
Global Income Funds	65.79	72.22	61.54	72.59	56.00	-
Emerging Market Debt Funds	26.87	30.38	39.74	63.64	78.13	-
General Municipal Debt Funds	9.43	57.58	43.16	51.58	57.14	-
California Municipal Debt Funds	5.56	51.52	44.44	47.50	45.24	-
New York Municipal Debt Funds	7.69	70.37	50.00	53.13	55.56	-
Loan Participation Funds	37.84	42.86	27.69	25.45	-	-

Table 7: Results of the Scorecard After Revisions for Survivorship, Assets, and Benchmark

This table shows our replication of the results in Reports 1a, 6a, and 11a in the 2024 Year-End SPIVA U.S. Scorecard. Results are reported for U.S. equity funds in Panel A, international equity funds in Panel B, and fixed income funds in Panel C. The performance horizons considered are 1-year (2024), 3-year (2022–2024), 5-year (2020–2024), 10-year (2015–2024), 15-year (2010–2024), and 20-year (2005–2024). The reported value in each cell is the percentage of active funds in the category-horizon that the Scorecard method considers to have, on net, underperformed, except that we simultaneously implement the modifications discussed in Appendix Tables 4, 5, and 6.

Panel A: U.S. Equity Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
All Domestic Funds	56.49	52.15	56.85	62.85	75.87	77.56
All Large-Cap Funds	52.25	73.54	63.27	69.51	76.95	76.09
All Mid-Cap Funds	81.26	60.35	68.80	55.14	80.10	71.67
All Small-Cap Funds	56.32	47.37	47.33	51.10	65.23	60.54
All Multi-Cap Funds	81.67	65.28	59.86	68.00	86.05	84.12
Large-Cap Growth Funds	13.87	71.94	90.31	95.31	93.34	76.17
Large-Cap Core Funds	62.82	45.60	65.29	82.44	93.34	78.29
Large-Cap Value Funds	41.84	64.61	46.65	65.28	60.91	41.73
Mid-Cap Growth Funds	79.81	88.83	91.91	68.93	73.30	9.93
Mid-Cap Core Funds	83.61	32.03	52.12	81.88	93.70	91.68
Mid-Cap Value Funds	64.18	27.69	49.02	42.84	76.74	13.98
Small-Cap Growth Funds	77.94	86.14	72.31	39.47	45.74	44.56
Small-Cap Core Funds	39.46	24.85	39.10	63.51	75.87	72.00
Small-Cap Value Funds	8.47	0.72	21.82	60.50	54.08	44.34
Multi-Cap Growth Funds	56.92	60.50	59.67	36.14	85.80	82.21
Multi-Cap Core Funds	91.19	51.87	57.91	89.53	80.86	69.22
Multi-Cap Value Funds	74.32	36.15	27.68	80.38	83.54	39.60
Real Estate Funds	9.37	30.44	23.61	46.69	61.19	82.14

Panel B: International Equity Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
Global Funds	77.14	88.23	66.05	69.22	68.36	-
International Funds	35.25	64.51	44.61	55.32	35.26	-
International Small-Cap Funds	30.05	41.67	31.58	54.01	50.94	-
Emerging Markets Funds	89.47	70.51	56.72	71.54	35.97	67.55

Panel C: Fixed Income Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
General Government Funds	14.87	12.63	41.90	33.65	78.25	-
Government Intermediate Funds	94.79	96.11	54.17	93.95	36.82	-
Government Short & Short-Intermediate Funds	62.70	96.66	90.18	53.99	25.00	-
General Investment-Grade Funds	54.37	47.16	56.59	62.08	71.54	74.31
Investment-Grade Intermediate Funds	11.72	23.94	12.65	23.91	5.49	21.18
Investment-Grade Short & Intermediate Funds	22.79	23.16	31.60	44.66	32.93	-
General Bond Funds	3.29	3.68	8.02	15.70	26.01	-
High Yield Funds	50.48	54.73	13.91	18.86	12.35	-
Mortgage-Backed Securities Funds	24.08	12.32	16.90	27.04	34.28	-
Inflation-Linked Funds	79.72	81.02	71.44	57.85	60.48	67.98
Global Income Funds	58.81	51.60	43.13	51.58	12.68	-
Emerging Market Debt Funds	19.11	5.54	11.65	18.05	49.72	-
General Municipal Debt Funds	0.31	45.71	26.00	34.42	17.05	-
California Municipal Debt Funds	1.38	57.32	16.07	11.43	9.82	-
New York Municipal Debt Funds	3.13	66.86	36.83	39.31	35.04	-
Loan Participation Funds	31.10	41.55	6.15	6.89	-	-

Table 8: Results of the Scorecard After Using the Low-Cost Share Class

This table shows our replication of the results in Reports 1a, 6a, and 11a in the 2024 Year-End SPIVA U.S. Scorecard. Results are reported for U.S. equity funds in Panel A, international equity funds in Panel B, and fixed income funds in Panel C. The performance horizons considered are 1-year (2024), 3-year (2022–2024), 5-year (2020–2024), 10-year (2015–2024), 15-year (2010–2024), and 20-year (2005–2024). The reported value in each cell is the percentage of active funds in the category-horizon that the Scorecard method considers to have, on net, underperformed, except that we modify the process of share class selection. Instead of selecting the share class with the greatest assets, we select the share class with the lowest expense ratio.

Panel A: U.S. Equity Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
All Domestic Funds	78.43	84.78	83.82	90.59	93.33	93.00
All Large-Cap Funds	65.30	79.89	74.91	86.00	89.74	89.74
All Mid-Cap Funds	63.37	73.50	75.20	74.91	86.49	89.90
All Small-Cap Funds	27.80	49.45	51.61	79.96	87.15	87.60
All Multi-Cap Funds	76.16	82.82	80.71	87.09	91.77	92.48
Large-Cap Growth Funds	86.36	49.12	77.85	80.75	93.73	94.06
Large-Cap Core Funds	71.65	78.33	78.86	95.02	96.34	89.42
Large-Cap Value Funds	32.56	87.50	72.49	87.13	90.48	84.93
Mid-Cap Growth Funds	66.67	89.80	68.22	65.41	79.19	86.32
Mid-Cap Core Funds	62.86	65.48	76.84	85.71	92.91	94.50
Mid-Cap Value Funds	61.54	73.08	77.27	87.76	90.28	91.95
Small-Cap Growth Funds	21.25	61.33	56.44	70.37	83.08	90.00
Small-Cap Core Funds	30.59	36.06	50.22	87.30	90.30	91.15
Small-Cap Value Funds	38.78	28.79	39.44	80.00	87.62	91.11
Multi-Cap Growth Funds	73.60	71.14	77.36	88.33	90.17	89.73
Multi-Cap Core Funds	79.40	82.65	84.90	96.41	94.81	94.37
Multi-Cap Value Funds	34.90	86.03	77.10	93.18	95.04	89.83
Real Estate Funds	80.70	82.26	79.37	74.32	88.89	86.75

Panel B: International Equity Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
Global Funds	81.78	89.78	88.24	89.67	93.41	-
International Funds	64.44	61.28	61.41	78.11	80.45	-
International Small-Cap Funds	34.12	63.64	51.72	67.95	68.42	74.47
Emerging Markets Funds	68.95	71.09	72.43	85.98	86.99	94.37

Panel C: Fixed Income Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
General Government Funds	72.41	86.96	83.33	100.00	83.67	-
Government Intermediate Funds	91.67	92.31	92.86	94.74	87.50	-
Government Short & Short-Intermediate Funds	36.11	48.57	56.41	88.00	89.06	-
General Investment-Grade Funds	29.11	30.86	45.12	70.37	83.67	90.85
Investment-Grade Intermediate Funds	16.54	42.40	34.17	51.56	53.11	68.97
Investment-Grade Short & Intermediate Funds	11.59	20.75	31.17	44.29	60.61	-
General Bond Funds	17.02	27.27	46.43	43.33	72.41	-
High Yield Funds	48.53	63.43	44.09	70.95	72.08	70.70
Mortgage-Backed Securities Funds	25.00	37.93	34.00	64.15	67.24	85.71
Inflation-Linked Funds	34.09	30.00	37.21	69.23	86.49	91.30
Global Income Funds	22.35	41.18	42.53	55.06	62.77	73.85
Emerging Market Debt Funds	35.09	35.71	56.72	79.45	93.75	81.82
General Municipal Debt Funds	9.71	65.98	50.55	55.43	54.65	-
California Municipal Debt Funds	8.33	59.38	50.00	47.50	45.24	-
New York Municipal Debt Funds	4.00	85.19	55.56	58.06	63.89	-
Loan Participation Funds	62.16	79.37	87.50	83.64	80.95	-

Table 9: Results of the Scorecard After Adjusting for Beta

This table shows our replication of the results in Reports 1a, 6a, and 11a in the 2024 Year-End SPIVA U.S. Scorecard. Results are reported for U.S. equity funds in Panel A, international equity funds in Panel B, and fixed income funds in Panel C. The performance horizons considered are 1-year (2024), 3-year (2022–2024), 5-year (2020–2024), 10-year (2015–2024), 15-year (2010–2024), and 20-year (2005–2024). The reported value in each cell is the percentage of active funds in the category-horizon that the Scorecard method considers to have, on net, underperformed, except that we relax the implicit assumption related to fund beta. Instead of assuming that all funds have a beta of one relative to their benchmark, we follow the approach of Bessembinder, Cooper, and Zhang (2023) to beta-adjust the results.

Panel A: U.S. Equity Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
All Domestic Funds	79.00	86.02	84.91	89.93	94.32	93.93
All Large-Cap Funds	65.69	81.88	78.10	85.53	93.19	90.55
All Mid-Cap Funds	56.80	75.80	72.29	71.11	77.02	87.75
All Small-Cap Funds	27.70	55.42	52.75	74.03	80.52	85.82
All Multi-Cap Funds	81.17	82.96	83.17	87.87	92.48	93.15
Large-Cap Growth Funds	94.70	56.59	79.51	87.88	97.95	99.14
Large-Cap Core Funds	74.82	75.70	77.82	92.82	98.26	91.53
Large-Cap Value Funds	30.36	88.32	71.82	86.25	88.07	81.61
Mid-Cap Growth Funds	54.29	88.72	69.59	64.77	76.55	86.67
Mid-Cap Core Funds	58.52	67.62	72.73	82.96	84.52	91.45
Mid-Cap Value Funds	62.50	77.63	66.67	74.29	72.55	82.95
Small-Cap Growth Funds	20.67	71.37	57.60	72.02	83.85	87.26
Small-Cap Core Funds	29.85	42.64	52.20	80.34	83.77	90.04
Small-Cap Value Funds	38.98	33.75	42.70	75.38	79.41	80.65
Multi-Cap Growth Funds	86.96	74.74	77.40	87.16	93.22	93.71
Multi-Cap Core Funds	81.05	82.66	86.69	96.81	95.63	93.93
Multi-Cap Value Funds	34.12	86.27	81.61	91.96	92.64	87.03
Real Estate Funds	78.75	89.66	78.41	73.47	80.56	87.50

Panel B: International Equity Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
Global Funds	85.21	89.72	90.21	90.22	94.80	-
International Funds	68.49	59.96	63.83	80.74	80.00	-
International Small-Cap Funds	38.46	62.50	51.52	72.22	66.67	73.47
Emerging Markets Funds	64.98	73.71	74.12	86.97	87.97	95.83

Panel C: Fixed Income Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
General Government Funds	60.00	94.44	92.50	98.36	84.95	-
Government Intermediate Funds	85.00	66.67	80.95	94.74	91.67	-
Government Short & Short-Intermediate Funds	55.56	77.14	80.49	88.46	89.55	-
General Investment-Grade Funds	45.92	94.12	71.55	73.64	73.29	75.16
Investment-Grade Intermediate Funds	17.24	46.51	37.06	52.63	56.16	68.68
Investment-Grade Short & Intermediate Funds	17.44	37.70	33.69	47.73	61.11	-
General Bond Funds	12.50	23.73	38.30	50.72	66.67	-
High Yield Funds	44.97	75.40	51.09	62.14	61.19	63.19
Mortgage-Backed Securities Funds	38.16	63.08	52.54	71.19	68.66	83.08
Inflation-Linked Funds	49.18	42.62	50.00	73.24	87.50	91.30
Global Income Funds	23.42	42.59	49.57	59.54	64.00	76.92
Emerging Market Debt Funds	32.31	35.44	42.86	85.33	93.75	91.67
General Municipal Debt Funds	16.35	53.54	45.26	68.42	70.45	-
California Municipal Debt Funds	13.89	33.33	36.11	57.50	83.33	-
New York Municipal Debt Funds	7.69	33.33	32.14	77.42	86.11	-
Loan Participation Funds	33.78	77.78	73.85	76.36	80.00	-

Table 10: Results of the Scorecard After Accounting for Statistical Significance

This table shows our replication of the results in Reports 1a, 6a, and 11a in the 2024 Year-End SPIVA U.S. Scorecard. Results are reported for U.S. equity funds in Panel A, international equity funds in Panel B, and fixed income funds in Panel C. The performance horizons considered are 1-year (2024), 3-year (2022–2024), 5-year (2020–2024), 10-year (2015–2024), 15-year (2010–2024), and 20-year (2005–2024). The reported value in each cell is the percentage of active funds in the category-horizon that the Scorecard method considers to have, on net, underperformed, except that we account for statistical significance. Instead of relying strictly on point estimates within each category-horizon, we report whether the point estimate is statistically different from 50%. *** represents that the value is statistically different from 50% at the 1% level, with ** and * representing statistical differences at the 5% and 10% levels, respectively.

Panel A: U.S. Equity Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
All Domestic Funds	78.53***	86.80***	84.64***	89.82***	93.16***	94.05***
All Large-Cap Funds	65.22***	83.46***	76.15***	84.48***	89.18***	91.43***
All Mid-Cap Funds	61.45***	75.48***	79.40***	75.13***	87.30***	91.09***
All Small-Cap Funds	29.46***	52.18	57.19***	81.45***	89.75***	90.20***
All Multi-Cap Funds	78.14***	84.73***	82.55***	87.02***	91.68***	93.32***
Large-Cap Growth Funds	90.60***	55.98*	77.96***	83.89***	94.71***	95.80***
Large-Cap Core Funds	75.89***	80.88***	81.12***	95.70***	97.52***	91.82***
Large-Cap Value Funds	35.71***	89.80***	78.01***	89.22***	93.52***	86.28***
Mid-Cap Growth Funds	65.00***	87.22***	73.15***	65.80***	80.43***	88.83***
Mid-Cap Core Funds	63.97***	67.62***	80.49***	86.67***	93.53***	95.76***
Mid-Cap Value Funds	67.86***	77.63***	80.95***	90.00***	91.35***	92.13***
Small-Cap Growth Funds	23.44***	66.96***	63.93***	74.77***	86.09***	90.70***
Small-Cap Core Funds	31.90***	39.85***	54.21	86.96***	93.46***	93.56***
Small-Cap Value Funds	38.98*	32.50***	46.07	81.54***	90.71***	91.40***
Multi-Cap Growth Funds	75.78***	74.49***	81.04***	88.64***	90.34***	92.45***
Multi-Cap Core Funds	80.48***	84.74***	87.20***	96.51***	95.43***	94.90***
Multi-Cap Value Funds	36.72***	87.71***	80.00***	93.75***	95.71***	90.86***
Real Estate Funds	80.00***	85.06***	78.65***	74.49***	87.16***	89.89***

Panel B: International Equity Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
Global Funds	84.83***	90.07***	90.56***	91.07***	94.25***	-
International Funds	68.94***	62.76***	64.63***	81.39***	81.07***	-
International Small-Cap Funds	35.87***	62.50**	53.92	72.53***	71.93***	77.55***
Emerging Markets Funds	71.37***	73.31***	74.42***	87.74***	88.05***	96.00***

Panel C: Fixed Income Funds

Fund Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year
General Government Funds	70.73***	83.33***	85.00***	98.39***	77.89***	-
Government Intermediate Funds	95.00***	95.24***	95.45***	94.74***	91.67***	-
Government Short & Short-Intermediate Funds	38.89	48.57	58.54	88.68***	92.65***	-
General Investment-Grade Funds	32.67***	33.94***	53.45	76.36***	89.26***	93.59***
Investment-Grade Intermediate Funds	18.86***	47.13	37.65***	54.34	56.82**	71.81***
Investment-Grade Short & Intermediate Funds	13.78***	23.32***	31.02***	47.73	65.85***	-
General Bond Funds	17.54***	26.67***	34.04**	50.72	68.49***	-
High Yield Funds	59.16**	67.91***	51.09	73.36***	74.43***	77.91***
Mortgage-Backed Securities Funds	30.26***	36.92**	43.33	71.19***	71.01***	87.69***
Inflation-Linked Funds	40.32	37.70*	48.39	74.65***	90.00***	91.30***
Global Income Funds	25.44***	40.74*	46.15	60.00**	64.00***	77.61***
Emerging Market Debt Funds	38.81*	36.71**	57.69	81.82***	93.75***	87.50***
General Municipal Debt Funds	12.26***	69.70***	55.79	62.11**	58.24	-
California Municipal Debt Funds	8.33***	66.67*	52.78	50.00	50.00	-
New York Municipal Debt Funds	11.54***	88.89***	75.00***	71.88**	69.44**	-
Loan Participation Funds	64.86***	84.13***	86.15***	85.45***	95.00***	-