More Equal than Others: 20 Years of the S&P 500® Equal Weight Index

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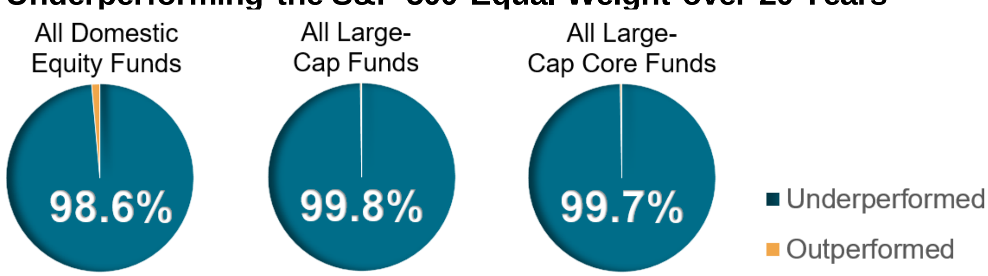
Summary

It is over 20 years since S&P Dow Jones Indices launched the S&P 500 Equal Weight Index; since then, its live performance has attracted both academic interest and investor capital in related products. To mark the anniversary, we re-examine the index's potential as a benchmark for actively managed U.S. equity mutual funds. Using 20 years of live performance, we show:

- The annual excess returns of the average actively managed Large-Cap Core U.S. equity fund (relative to the S&P 500) were correlated to those of the S&P 500 Equal Weight Index.
- Over the long term, in every major category, nearly all actively managed domestic U.S. equity funds *underperformed* the S&P 500 Equal Weight Index.
- These results would not be substantially altered after accounting for the typical frictions that might be associated with a passive investment tracking the S&P 500 Equal Weight Index.

Exhibit 1: Percentage of Actively Managed U.S. Equity Funds Underperforming the S&P 500 Equal Weight over 20 Years

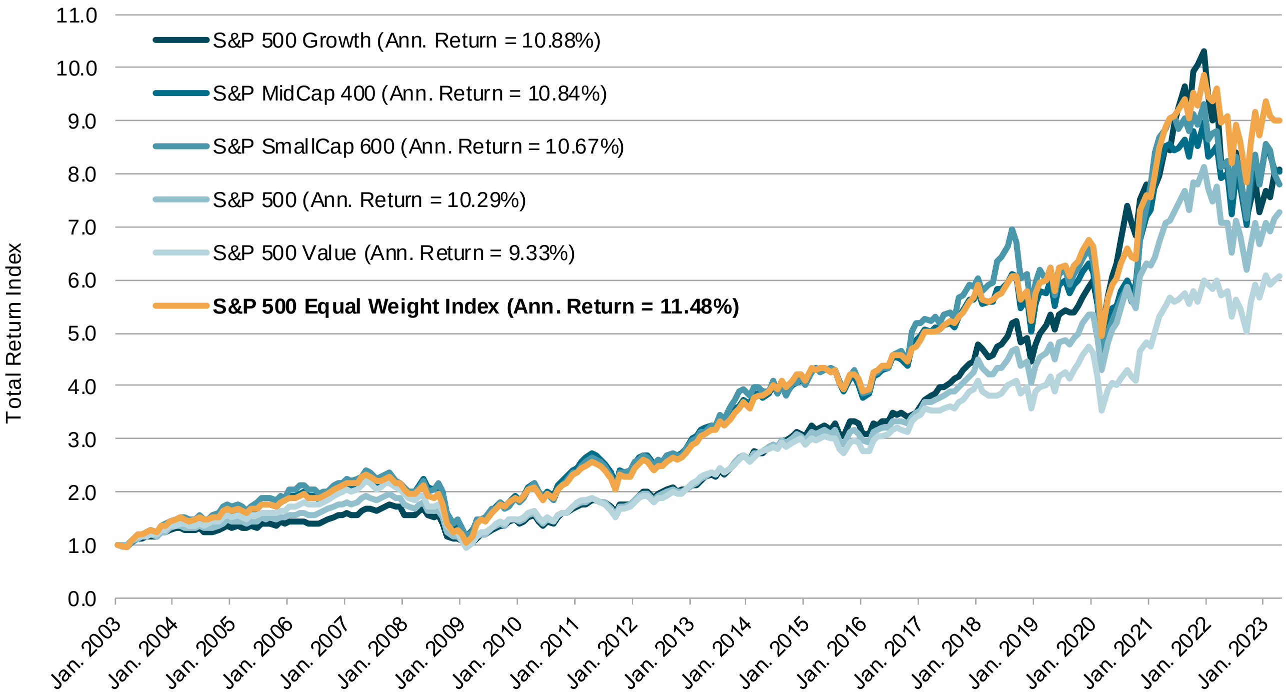


Sources: S&P Dow Jones Indices LLC, CRSP. Data as of Jan. 31, 2023. Performance based on 20-year total returns in USD. See Exhibit 5 for more details. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Introduction

Offering a simple alternative to the standard capitalization-weighted approach for U.S. blue-chip equities, the S&P 500 Equal Weight Index began publication just over 20 years ago on Jan. 8, 2003. The index's performance since launch has been notable, with a total return not only higher than its large-cap benchmark index, but also higher than S&P DJI's benchmarks for mid- and small-cap U.S. equities, as well as both growth and value indices based on the S&P 500 (Exhibit 2).[1]

Exhibit 2: S&P 500 Equal Weight Index Outperformed U.S. Large, Mid, Small, Growth and Value Segments



Sources: S&P Dow Jones Indices LLC. Data as of April 30, 2023. Index performance based on total return indices in USD. Legend provides annualized returns over the full period. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

This outperformance offers a challenging perspective on the results reported in S&P Dow Jones Indices' SPIVA® Scorecards, which have consistently shown that a high proportion of actively managed U.S. equity mutual funds underperform capitalization-weighted benchmarks.[2] "Challenging" because—as we shall illustrate—actively managed large-cap equity funds might be expected to *benefit* during periods when equal-weight indices outperform cap-weighted indices.

[1] For an outline of the drivers behind the historical relative performance of the S&P 500 Equal Weight Index, see Edwards et al, "Outperformance in Equal-Weight Indices" (2018).

[2] S&P DJI's SPIVA Scorecards may be viewed at https://www.spglobal.com/spdji/en/research-insights/spiva/.

Equal Weight as a Benchmark for "Stock Pickers"

S&P DJI has previously suggested[3] that the performance of equal-weight indices might offer an insightful lens through which to judge the performance of actively managed funds and alternatively weighted (or "factor") indices. The theoretical case may be distilled into three observations.

1. The difference in performance between the S&P 500 Equal Weight Index and the S&P 500 is frequently material, which means that it may have a potential **explanatory power** for the relative performance of other large-cap U.S. equity portfolios or indices.

2. The **expected return from selecting S&P 500 constituents *purely at random*** is equal to the unweighted average return among constituents. In between rebalances, this is exactly equal to the return of the S&P 500 Equal Weight Index.

3. **The ability to avoid concentration in the largest stocks and the discipline of regular rebalancing** are virtues sometimes ascribed exclusively to active management. Both are encoded in the design of the S&P 500 Equal Weight Index.

From a practical perspective, one should expect the S&P 500 Equal Weight Index to have a similar *overall* return to the average performance of active U.S. equity funds: both would be expected to be broadly subject to the impact of overall trends in the U.S. equity market. **The key question becomes whether they have a similar pattern of *relative* returns**—in excess or deficit of a broad, capitalization-weighted benchmark such as the S&P 500.

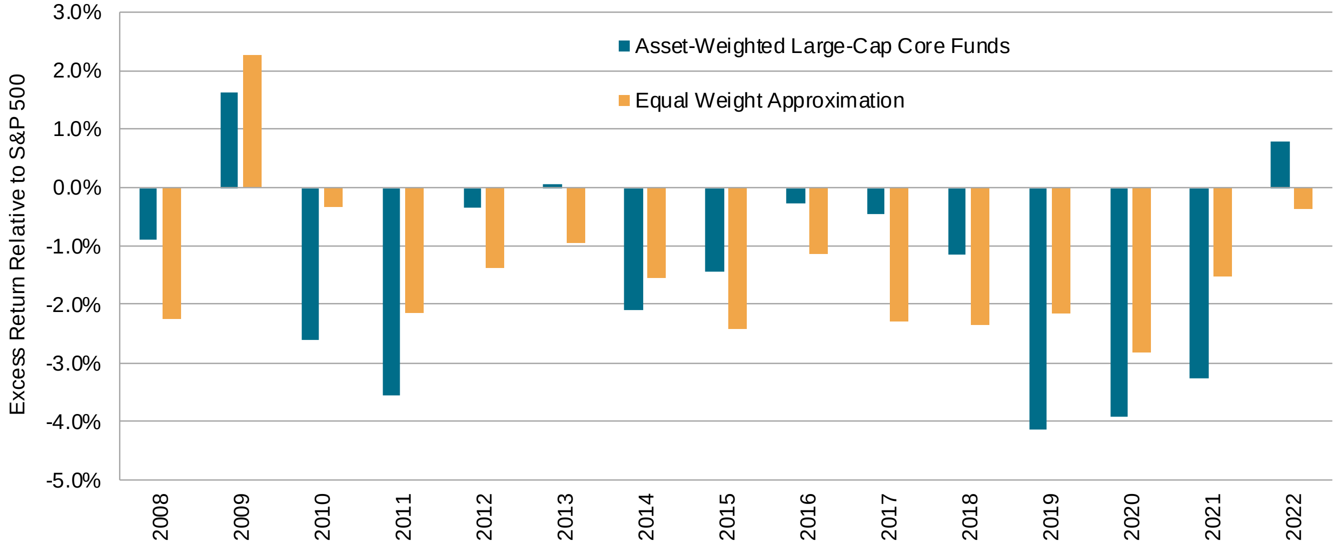
Addressing precisely this question, Exhibit 3 updates an earlier observation that the excess return of the average actively managed large-cap U.S. equity fund could be approximated by 20% of the S&P 500 Equal Weight Index's excess return, *minus* a hypothetical drag from fees and other costs of 1.7% per year—the combination of which is here called an "Equal Weight Approximation."[4] Exhibit 3 plots these two series, using the asset-weighted average excess returns (versus the S&P 500) of actively managed funds in the U.S. Large-Cap Core category, as reported in S&P DJI's historical annual SPIVA Scorecards.[5]

[3] Edwards & Lazzara, "Equal Weight Benchmarking: Raising the Monkey Bars" (2014).

[4] Edwards & Lazzara *Op. Cit.* In other words, the "Equal Weight Approximation" series is equal to 20% of the difference between the historical annual S&P 500 Equal Weight Index and standard S&P 500 total returns, minus 1.7%. The Equal Weight Approximation is not a hypothetical portfolio and could not be replicated by any combination of the indices mentioned here. The figures of 20% and 1.7% were selected in the 2014 paper as an open exercise of "data-fitting," we retain the same figures to make an "ex-post" comparison with nine more years of available data.

[5] The fund category definitions and returns are as reported in S&P DJI's SPIVA Scorecards. For example, the asset-weighted return for 2022 is shown in Report 4 of the SPIVA U.S. Year-End 2022 Scorecard.

Exhibit 3: Approximating Active Fund Relative Performance with Equal Weight



Sources: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2022. The asset-weighted Large-Cap Core Fund returns are as reported in the historical annual SPIVA U.S. Scorecards for the years 2008 to 2022 inclusive. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

The two series of Exhibit 3 display an encouraging degree of visual similarity, with a statistical correlation of 0.61 and a correlation-squared (or "R-squared") statistic of 0.37. At least statistically, this can be interpreted as saying that a little over one-third of the variation in the average excess returns of actively managed Large-Cap Core funds might be explained by the variation in the excess returns of the S&P 500 Equal Weight Index.

Simplifying the results: **on average, the more the S&P 500 Equal Weight Index historically outperformed the S&P 500, the more actively managed funds outperformed the S&P 500**. Such correlation might be expected on theoretical grounds, but it does make the results of the U.S. SPIVA Scorecards more surprising: despite the performance shown in Exhibit 2, just 4% of actively managed funds in the large-cap core category outperformed the S&P 500 in last 20 years.[6]

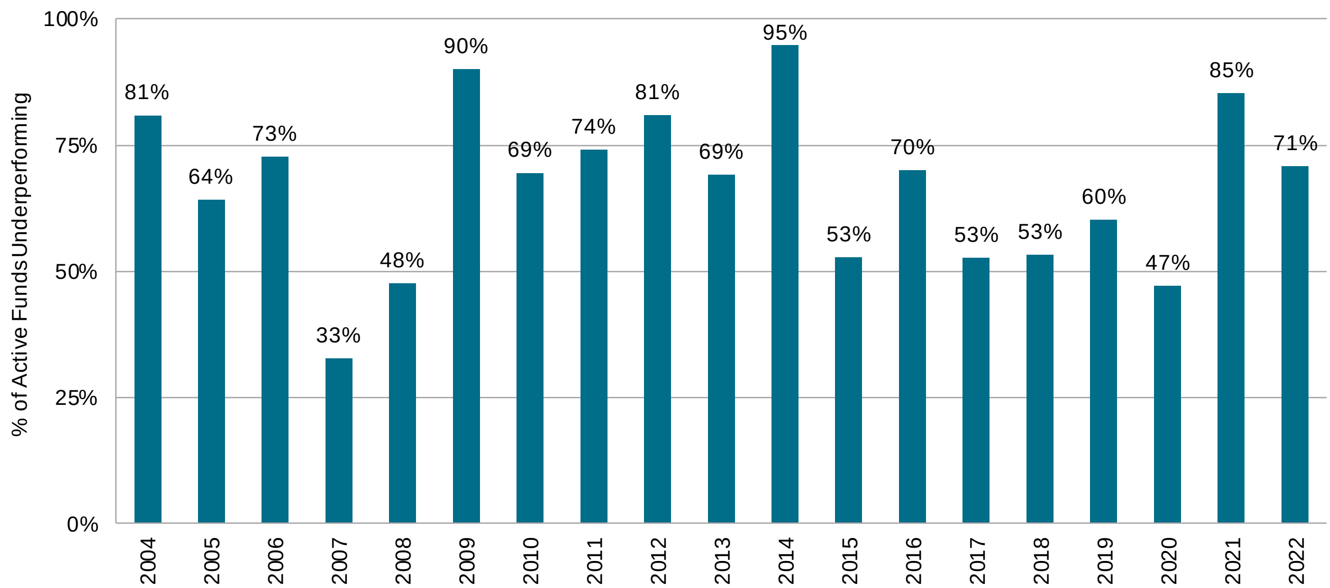
[6] Source: S&P DJI's SPIVA U.S. Year-End 2022 Scorecard.

Comparing Equal Weight to Actively Managed Fund Performance

Using the same analytical engine underlying S&P DJI's SPIVA Scorecards,[7] Exhibits 4 and 5 offer summary statistics comparing the performance of actively managed funds in various domestic equity categories to the performance the S&P 500 Equal Weight Index over various time horizons ending in January 2023—the earliest date on which a 20-year comparison of live performances became possible.

Exhibit 4 shows that a majority of all actively managed U.S. equity mutual funds underperformed the S&P 500 Equal Weight Index in 16 of the last 19 calendar years, while Exhibit 5 shows that most funds in every category underperformed the index over every time horizon longer than a year.

Exhibit 4: Percentage of All Actively Managed Domestic U.S. Equity Funds Underperforming the S&P 500 Equal Weight Index, Annually



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

[7] Further details on the methodology used for the selection, categorization and treatment of actively managed funds are provided in the 2022 U.S. SPIVA Scorecard.

Exhibit 5: Percentage of Actively Managed Funds Underperforming the S&P 500 Equal Weight Index over Various Time Horizons

SPIVA Fund Category	3-Year (%)	5-Year (%)	10-Year (%)	15-Year (%)	20-Year (%)
All Domestic Funds	91.43	90.08	91.88	97.53	98.58
All Large-Cap Funds	95.14	89.31	88.04	98.31	99.76
All Mid-Cap Funds	91.22	90.48	95.53	97.83	97.76
All Small-Cap Funds	85.00	92.39	96.67	97.36	97.29
All Multi-Cap Funds	92.80	88.70	91.64	96.65	98.50
Large-Cap Core Funds	97.12	88.15	93.68	98.84	99.72
Large-Cap Growth Funds	98.61	79.75	70.21	96.38	99.61
Large-Cap Value Funds	91.28	97.29	98.66	99.57	100.00
Mid-Cap Core Funds	89.72	94.07	96.69	99.12	98.02
Mid-Cap Growth Funds	95.49	83.47	94.01	96.52	98.01
Mid-Cap Value Funds	83.93	98.18	97.14	98.99	96.04
Small-Cap Core Funds	84.06	97.09	98.70	98.27	97.55
Small-Cap Growth Funds	93.97	84.15	92.96	95.94	98.34
Small-Cap Value Funds	63.51	94.79	99.10	98.08	95.15
Multi-Cap Core Funds	93.27	91.60	95.48	96.30	98.73
Multi-Cap Growth Funds	96.05	78.36	80.50	95.68	96.88
Multi-Cap Value Funds	88.11	98.23	100.00	98.67	99.52

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

The figures reported in Exhibit 5 are particularly stark for longer-term horizons: **over 15 or 20 years, there was no category in which the underperformance rate was lower than 95%**. In the “home” category of All Large-Cap Funds, the underperformance rate was **99.76%**—corresponding to 823 out of 825 unique actively managed funds available in the category at the start of the period.

To summarize the results of Exhibits 4 and 5: **in most years, a majority of actively managed U.S. equity funds underperformed the S&P 500 Equal Weight Index** and, whatever the fund category, **it was especially hard to find actively managed funds that outperformed over the long term**.

Equal Weight and the Distribution of Active Fund Returns

It is not possible to invest directly in an index. As well as potential costs, seeking to replicate an index's performance may also produce "tracking error," arising from execution or other costs, as well as any potential differences in constituent weights. Moreover, compared to a capitalization-weighted portfolio, **a passive investment tracking the S&P 500 Equal Weight Index might also incur higher trading costs** due to the higher portfolio turnover required to maintain equal weights in each constituent.[8]

Accordingly, when comparing the results of active funds to indices, it is sometimes helpful to ask whether the results would change materially if the index return were slightly different. The appropriate value for such a handicap can vary according to the index, along with the scale and negotiation skills of the market participant. It may not even be a constant: for a long-term study, one might also wish to incorporate the fact that the typical fees and costs for investing in U.S. equities have declined over time.[9]

Rather than modeling any particular level of handicap on the index's return, Exhibit 6 illustrates the *sensitivity* of Exhibit 5's outperformance statistics to changes in the assumed net return of S&P 500 Equal Weight Index. Specifically, Exhibit 6 plots the frequency distribution of the annualized 20-year total returns of all actively managed domestic U.S. equity mutual funds that survived to produce a 20-year return.[10] The contribution to each frequency from funds in the Large-Cap category is identified for purposes of illustration, as well as the annualized total return of the S&P 500 Equal Weight Index.

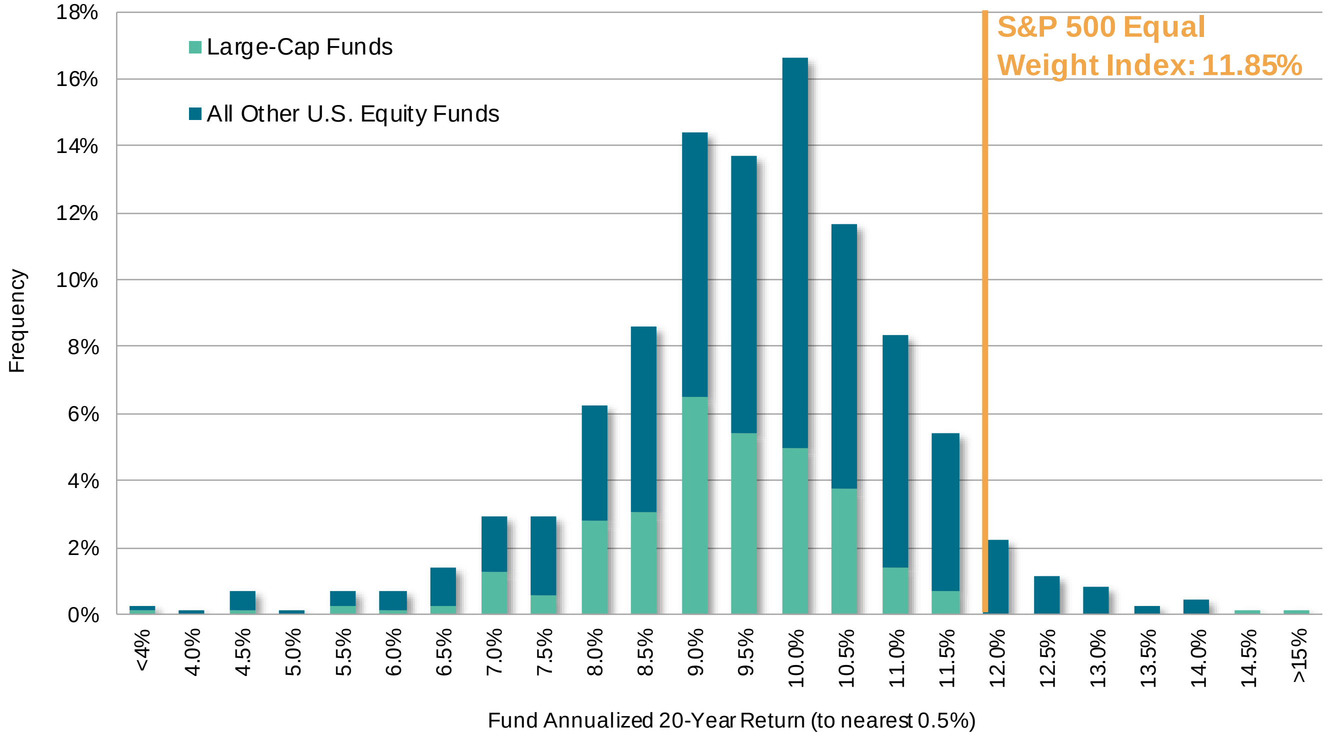
Exhibit 6 makes it clear that, in the hypothetical scenario where the S&P 500 Equal Weight Index's return was diminished by 0.5% or even 2% annually, it would have still outperformed a firm majority of the actively managed U.S. equity funds that survived to post a 20-year return.

[8] As of April 30, 2023, the S&P 500 Equal Weight Index had an average one-way turnover of 22% per year over the past 10 years, compared to just 5% for the S&P 500. Further statistics are available in the April 2023 edition of the S&P 500 Factor Dashboard.

[9] Source: the Investment Company Institute's 2023 Fact Book, pages 72-83, available at www.ici.org.

[10] In order to place these results in proper context, note that only 32% of All Domestic funds and 28% of All Large-Cap funds available at the start of the period survived to post a 20-year return.

Exhibit 6: Distribution of Surviving Active Funds' 20-Year Returns



Sources: S&P Dow Jones Indices LLC, CRSP. Frequency is calculated as the proportion of all surviving domestic equity funds with matching 20-year annualized returns to the nearest 0.5%. Data as of Jan. 31, 2023. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Conclusions

With over 20 years of live performance, the S&P 500 Equal Weight Index offers a rich history enabling long-term comparisons to both other indices and actively managed funds, with unique credentials in the potential role of a U.S. equity benchmark that is representative, theoretically appropriate for active approaches and "harder to beat."

In particular, the relative performance of the S&P 500 Equal Weight Index offers insightful perspectives on the drivers of performance in—and the value added or subtracted by—actively managed U.S. equity funds. Despite sharing a similar pattern of excess returns, very few active funds were able to match the index's returns over the past two decades.

Beyond benchmarking applications, for market participants who are comfortable with potentially higher tracking error and turnover than is typical in capitalization-weighted indices, the S&P 500 Equal Weight Index's live historical performance suggests that a passive approach guided by this index could have provided a viable alternative to actively managed U.S. equity mutual funds.

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