S&P Dow Jones Indices

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The S&P 500 Equal Weight Index: A Supplementary Benchmark for Large-Cap Managers' Performance

In January 2003, S&P Dow Jones Indices (S&P DJI) introduced the world's first equal-weight index, the S&P 500® Equal Weight Index, leading the way for the subsequent development of non-market-cap weighted indices.[1] Since then, it outperformed its market-cap-weighted counterpart, the S&P 500, in 16 out of 28 years, with an annualized excess return of 1.44% per year.[2]

In addition to better relative performance, equal weighting can have fundamental appeal for market participants who subscribe to the notion that market-cap weighting exhibits momentum bias, with winners getting a larger weight in the index, and potentially leading to concentration and overvaluation issues. Therefore, for those who wish to reduce concentration risk or to separate the price of a security from its fundamentals, an equal-weight index can offer an alternative approach.

Moreover, equal-weight indexing could hit closer to home for proponents of passive indexing, given that its investment underpinning runs counter to active investing. While active management seeks to exploit risk/return expectations of securities through a superior selection process and diversified portfolio construction, equal-weight indexing assumes that all the securities in the universe have the same expected returns and volatility. In other words, by equal weighting, we assume that an average investor has no forecasting ability or is unable to distinguish securities' returns and volatilities.

Therefore, one can argue that the lack of risk/return and covariance matrix assumptions in an equal-weight index makes it a natural benchmark against actively managed funds that incorporate all those expectations. In fact, several studies have shown that an alpha-generating strategy should be able to outperform an equal-weight benchmark.[3]

[1] Zeng, L. and Luo, F. "10 Years Later: Where in the World Is Equal Weight Indexing Now?" S&P Dow Jones Indices LLC. April 2013.

[2] Calendar year returns were calculated from 1990 through 2017. Annualized excess returns were computed from Jan. 31, 1990, to May 31, 2018. Past performance is no guarantee of future results. Hypothetical historical performance was used. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

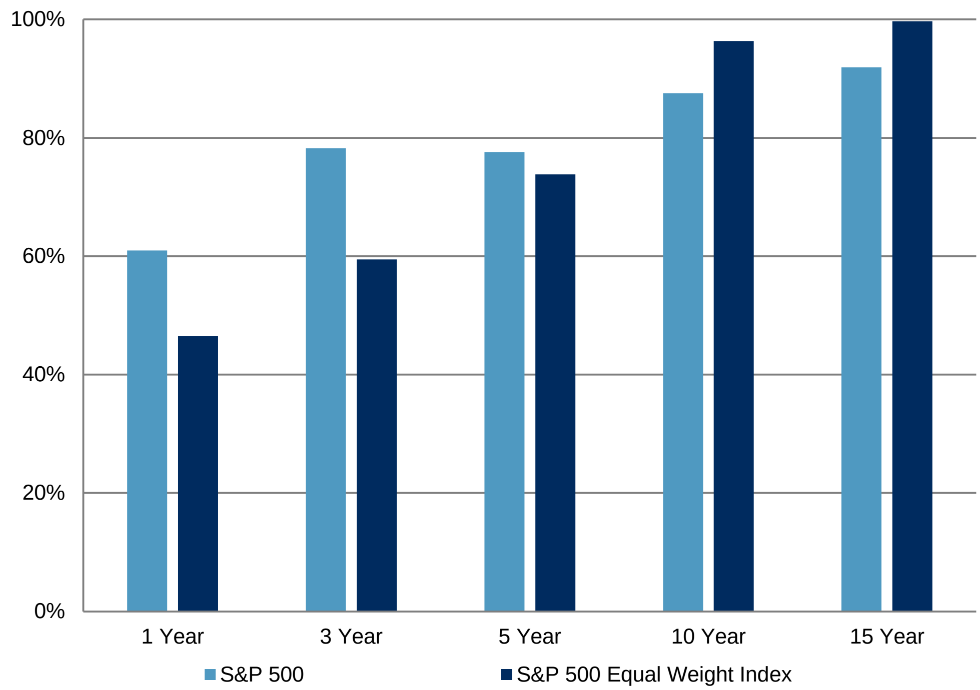
[3] Edwards, T. and Lazzara, C. "Equal-Weight Benchmarking: Raising the Monkey Bars." S&P Dow Jones Indices LLC. May 2014.

Over the near-term horizons (one, three, and five years), a higher percentage of large-cap funds underperformed the S&P 500 than the S&P 500 Equal Weight Index.

Against that backdrop, we compared the performance of actively managed U.S. large-cap and large-cap core funds with the S&P 500 Equal Weight Index (see Exhibits 1 and 2) as of March 31, 2018.[4] As we can see, over the near-term horizons (one, three, and five years), a higher percentage of large-cap funds underperformed the S&P 500 than the S&P 500 Equal Weight Index, primarily due to mega-cap securities performing well in the large-cap space and contributing significantly to S&P 500 returns over the past two years.

However, over the long-term investment horizons (10 or 15 years), a greater percentage of large-cap funds underperformed the S&P 500 Equal Weight Index than the S&P 500. In fact, the 15-year figures paint a difficult landscape, in which close to 100% of large-cap managers underperformed the S&P 500 Equal Weight Index.

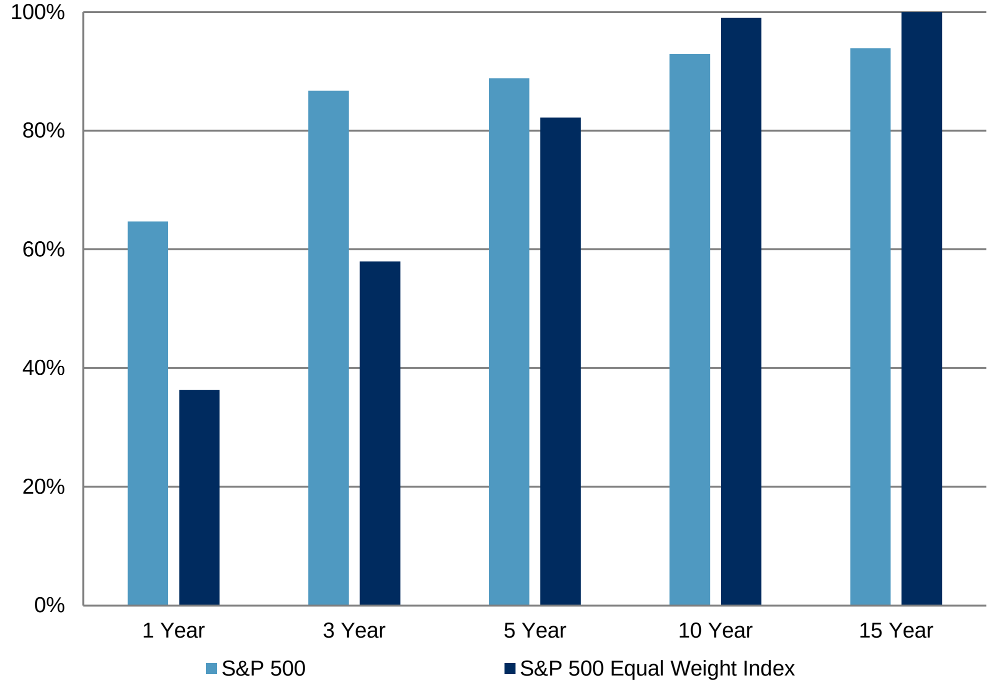
Exhibit 1: Percentage of Large-Cap Managers Outperformed by the S&P 500 and the S&P 500 Equal Weight Index



Source: S&P Dow Jones Indices LLC, CRSP. Data as of March 31, 2018. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

[4] For our analysis, the underlying data source was the University of Chicago's Center for Research in Security Prices (CRSP) Survivorship-Bias-Free US Mutual Fund Database, which is the same source used by the SPIVA® U.S. Scorecard.

Exhibit 2: Percentage of Large-Cap Core Managers Outperformed by the S&P 500 and the S&P 500 Equal Weight Index



Source: S&P Dow Jones Indices LLC, CRSP. Data as of March 31, 2018. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

The S&P 500 Equal Weight Index set a higher threshold for managers to outperform in the long run.

Our analysis shows that the S&P 500 Equal Weight Index set a higher threshold for managers to outperform in the long run. Next, we look at the underlying risk factor exposures of the S&P 500 Equal Weight Index and present a framework in which the index can serve as a supplementary benchmark to evaluate large-cap managers.

As a starting point, we should note that by deviating from market-cap weighting, an equal-weight index generally displays a small-cap bias, value tilt, and higher portfolio volatility than a broad market-cap-weighted index. For example, the annualized volatility of the S&P 500 Equal Weight Index was 15.81% versus that of the S&P 500 at 14.18%.[5]

Next, to determine the underlying factor exposures of the indices, we regress the monthly returns of the two indices against the Fama-French factors' returns, specifically the size, value, and momentum factors. We can see that the S&P 500 Equal Weight Index had higher exposure to the size and value factors and higher negative exposure to the momentum factor (see Exhibit 3) compared with its market-cap-weighted counterpart, the S&P 500.

[5] The annualized volatility is from Jan. 31, 1990, to May 31, 2018. Hypothetical historical performance was used. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

All the factor coefficients were statistically significant at a 95% confidence level, with the exception of the size factor. These findings were not surprising, as several studies have noted similar results. An S&P DJI research paper reached the comparable conclusion that the size and momentum factors acted as key drivers of the S&P 500 Equal Weight Index's excess returns.[6]

Exhibit 3:Size, Value, and Momentum Factors in the S&P 500 and S&P 500 Equal Weight Index

FACTORS	S&P 500 EQUAL WEIGHT INDEX	S&P 500
Size (SMB)	0.03	-0.18
t-stat	*1.75*	*-30.94*
Value (HML)	0.26	0.02
t-stat	*13.14*	*3.64*
Momentum	-0.15	-0.02
t-stat	*-11.85*	*-4.55*
R-Squared	0.95	0.99

Source: S&P Dow Jones Indices LLC. Data from Jan. 31, 1990, to May 31, 2018. Fama-French factor portfolios are from the Ken French data library. Table is provided for illustrative purposes.

Understanding the factor exposures of the S&P 500 Equal Weight Index allows us to consider a possible framework in which we can potentially evaluate the performance of large-cap active managers on a style-adjusted basis.

Understanding the factor exposures of the S&P 500 Equal Weight Index allows us to consider a possible framework in which we can potentially evaluate the performance of large-cap active managers on a style-adjusted basis. To be fair, actively managed large-cap funds in our study generally benchmarked themselves against a market-cap-weighted large-cap index, such as the S&P 500 or the Russell 1000. Therefore, one can argue that the S&P 500 Equal Weight Index is not a natural benchmark for these managers, and that they are not managing their portfolios to deliver excess returns over the S&P 500 Equal Weight Index.

[6] Edwards, T., Lazzara, C., Preston, H., and Pestalozzi, O. "Outperformance in Equal-Weight Indices." S&P Dow Jones Indices LLC. January 2018.

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The S&P 500 Equal Weight Index was launched on January 8, 2003. All information presented prior to an index's Launch Date is hypothetical (back-tested), not actual performance. The back-test calculations are based on the same methodology that was in effect on the index Launch Date. Complete index methodology details are available at www.spdji.com.

S&P Dow Jones Indices defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the Index is set at a fixed value for calculation purposes. The Launch Date designates the date upon which the values of an index are first considered live: index values provided for any date or time period prior to the index's Launch Date are considered back-tested. S&P Dow Jones Indices defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company's public website or its datafeed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed "Date of introduction") is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index's public release date.

Past performance of the Index is not an indication of future results. Prospective application of the methodology used to construct the Index may not result in performance commensurate with the back-test returns shown. The back-test period does not necessarily correspond to the entire available history of the Index. Please refer to the methodology paper for the Index, available at www.spdji.com for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Another limitation of using back-tested information is that the back-tested calculation is generally prepared with the benefit of hindsight. Back-tested information reflects the application of the index methodology and selection of index constituents in hindsight. No hypothetical record can completely account for the impact of financial risk in actual trading. For example, there are numerous factors related to the equities, fixed income, or commodities markets in general which cannot be, and have not been accounted for in the preparation of the index information set forth, all of which can affect actual performance.

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