## S&P Dow Jones Indices

A Division of S&P Global

# SPIVA<sup>®</sup> Japan Scorecard

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

### SUMMARY

- S&P Dow Jones Indices has been the de facto scorekeeper of the ongoing active versus passive debate since the first publication of the SPIVA U.S. Scorecard in 2002. Over the years, we have built upon our experience by expanding scorecard coverage into Australia, Canada, Europe, India, South Africa, Latin America, and Japan. While this report will not end the debate surrounding active versus passive investing in Japan, we hope to make a meaningful contribution by examining market segments in which one strategy performs better than the other.
- The SPIVA Japan Scorecard reports on the performance of actively managed Japanese mutual funds against their respective benchmark indices over 1-, 3-, 5-, and 10-year investment horizons.<sup>1</sup> In this scorecard, we evaluated returns of more than 741 Japanese largeand mid/small-cap equity funds, along with more than 646 international equity funds investing in global, international, and emerging markets, as well as U.S. equities.
- **Domestic Equity Funds:** In 2019, the <u>S&P/TOPIX 150</u> and the S&P Japan MidSmallCap gained 19.3% and 16.8%, respectively. Over the same period, 42.4% and 74.6% of large- and mid/small-cap equity funds beat their respective benchmarks, with equal-weighted average returns of 19.1% and 21.0%, respectively. The performance of domestic equity funds relative to their benchmark in 2019 was better than in 2018, with more funds outperforming the benchmark.

Over the 10-year horizon, 30.9% and 45.2% of large- and mid/smallcap funds managed to outperform their benchmarks, while 35.4% and 37.3% of funds were liquidated, respectively. The large-cap funds recorded equal- and asset-weighted average excess returns of 8 bps and -5 bps relative to benchmark, respectively, while the mid/smallcap funds reported excess returns of 2.53% and 0.32% on equal- and asset-weighted bases, respectively. Mid/small-cap funds tended to perform better than large-cap funds in Japan, as compared to their relative benchmark indices.

<sup>1</sup> The fund returns used are net of fees, excluding loads.

Foreign Equity Funds: In 2019, the relative performance of U.S. and international equity funds against their benchmarks was worse than in 2018, while the relative performance of emerging market equity funds improved. 78.8% and 67.7% of U.S. and international equity funds underperformed their respective benchmarks, while 56.2% and 56.8% of global and emerging market equity funds did not beat their benchmarks, respectively. For 2019, all foreign equity fund categories reported negative equal-weighted average returns relative to their benchmark indices, ranging from -0.84% (global equity funds) to -5.47% (U.S. equity funds). There was significant divergence between the asset- and equal-weighted average returns in the emerging market fund category, as the asset-weighted return was dominated by a few well-performing large funds.

Over the 10-year period, the majority of foreign equity funds underperformed their respective benchmarks. More than 90% of global, international, and emerging equity funds underperformed their respective benchmarks on absolute and risk-adjusted bases. U.S. equity funds had the worst benchmark-relative performance, underperforming the benchmark by 5.3% and 6.4% on equal- and asset-weighted bases, respectively. Foreign equity funds had a 10-year survivorship rates of 56.3%, which was slightly lower than the rate for domestic equity funds (63.9%).

| Exhibit 1: Percentage of Funds Outperformed by the Index in Annual Figures (Based on Absolute Return) |                          |      |      |      |      |      |      |
|---|--------------------------|------|------|------|------|------|------|
| FUND CATEGORY   | COMPARISON INDEX         | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| Japanese Large-Cap Funds  | S&P/TOPIX 150            | 51.2 | 43.6 | 63.6 | 15.3 | 90.2 | 57.6 |
| Japanese Mid-Cap Funds  | S&P Japan MidCap 100     | 69.8 | 60.7 | NA   | NA   | NA   | NA   |
| Japanese Small-Cap Funds  | S&P Japan SmallCap 250   | 56.8 | 48.2 | NA   | NA   | NA   | NA   |
| Japanese Mid/Small-Cap<br>Funds   | S&P Japan MidSmallCap    | NA   | NA   | 54.6 | 13.1 | 88.7 | 25.4 |
| All Japanese Equity Funds   | S&P Japan 500            | 60.5 | 46.4 | 58.2 | 19.7 | 86.9 | 43.7 |
| U.S. Equity Funds   | S&P 500 <sup>®</sup>     | 90.9 | 87.4 | 61.3 | 74.8 | 46.8 | 78.8 |
| Global Equity Funds   | S&P Global 1200          | 69.6 | 70.9 | 90.1 | 64.6 | 54.2 | 56.2 |
| International Equity Funds  | S&P Global 1200 Ex Japan | 85.2 | 65.5 | 88.7 | 62.3 | 47.3 | 67.7 |
| Emerging Equity Funds   | S&P Emerging BMI         | 52.5 | 46.5 | 82.9 | 75.0 | 70.8 | 56.8 |

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2019. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

## A UNIQUE SCORECARD FOR THE ACTIVE VERSUS PASSIVE DEBATE

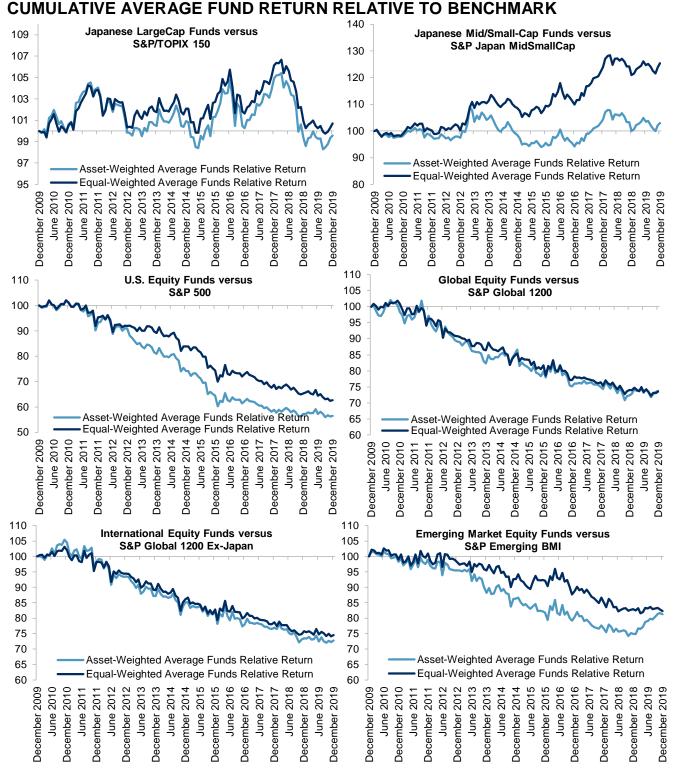
There is nothing novel about the index versus active debate. It has been a contentious subject for decades, and there are few strong believers on both sides, with the vast majority of market participants falling somewhere in between. Since its first publication 18 years ago, the SPIVA Scorecard has served as the de facto scorekeeper of the active versus passive debate. For more than a decade, we have heard passionate arguments from believers in both camps when headline numbers have deviated from their beliefs.

Beyond the SPIVA Scorecard's widely cited headline numbers is a rich data set that addresses issues related to measurement techniques, universe composition, and fund survivorship that are far less frequently discussed but are often far more fascinating. These data sets are rooted in the following fundamental principles of the SPIVA Scorecard, with which regular readers will be familiar.

- Survivorship Bias Correction: Many funds might be liquidated or merged during a period of study. However, for someone making an investment decision at the beginning of the period, these funds are part of the opportunity set. Unlike other commonly available comparison reports, SPIVA Scorecards account for the entire opportunity set—not just the survivors—thereby eliminating survivorship bias.
- **Apples-to-Apples Comparison:** Fund returns are often compared with a popular benchmark regardless of their investment category. The SPIVA Japan Scorecard makes an appropriate comparison by measuring a fund's returns against the returns of a benchmark that reflects the fund's investment category.
- Asset-Weighted Returns: Average returns for a fund group are often calculated using only equal weighting, which results in the returns of a JPY 10 billion fund affecting the average in the same manner as the returns of a JPY 10 million fund. However, the SPIVA Japan Scorecard shows both equal- and asset-weighted averages. Equal-weighted returns are a measure of average fund performance, while asset-weighted returns are a measure of the performance of the average invested dollar.

**Data Cleaning:** SPIVA Scorecards avoid double counting multiple share classes in all count-based calculations, using only the share class with longer history. Since this is meant to be a scorecard for active managers, index funds, leveraged and inverse funds, and other index-linked products are excluded.

Please note that neither S&P Dow Jones Indices, nor any of its affiliates make any assurance or provide any investment recommendation on the appropriateness of investing in either index or active investing. S&P Dow Jones Indices does not sponsor, endorse, sell, or promote 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. The SPIVA Japan Scorecard simply provides semi-annual statistics according to the SPIVA methodology and a brief analysis of those statistics. Further, S&P Dow Jones Indices does advise that anyone reading this report also read the SPIVA methodology in the report in order to understand how the data was derived.



Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2019. All returns in JPY. Charts are provided for illustrative purposes. Past performance is no guarantee of future results.

## REPORTS

| Report 1a: Percentage of Funds Outperformed by the Index (Based on Absolute Return) |                          |              |                |               |              |
|---|--------------------------|--------------|----------------|---------------|--------------|
| FUND CATEGORY   | COMPARISON INDEX         | ONE-YEAR (%) | THREE-YEAR (%) | FIVE-YEAR (%) | TEN-YEAR (%) |
| Japanese Large-Cap Funds  | S&P/TOPIX 150            | 57.6         | 64.0           | 69.8          | 69.1         |
| Japanese Mid/Small-Cap Funds  | S&P Japan MidSmallCap    | 25.4         | 23.8           | 41.1          | 54.8         |
| All Japanese Equity Funds   | S&P Japan 500            | 43.7         | 50.1           | 58.2          | 66.3         |
| U.S. Equity Funds   | S&P 500                  | 78.8         | 79.6           | 92.0          | 87.5         |
| Global Equity Funds   | S&P Global 1200          | 56.2         | 75.7           | 94.3          | 93.0         |
| International Equity Funds  | S&P Global 1200 Ex Japan | 67.7         | 82.0           | 94.1          | 94.4         |
| Emerging Equity Funds   | S&P Emerging BMI         | 56.8         | 86.3           | 90.2          | 93.4         |

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2019. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

| Report 1b: Percentage of Funds Outperformed by the Index (Based on Risk-Adjusted Return) |                          |              |                |               |              |
|--|--------------------------|--------------|----------------|---------------|--------------|
| FUND CATEGORY  | COMPARISON INDEX         | ONE-YEAR (%) | THREE-YEAR (%) | FIVE-YEAR (%) | TEN-YEAR (%) |
| Japanese Large-Cap Funds   | S&P/TOPIX 150            | 63.2         | 70.4           | 68.2          | 66.4         |
| Japanese Mid/Small-Cap Funds   | S&P Japan MidSmallCap    | 38.1         | 30.8           | 45.6          | 65.7         |
| All Japanese Equity Funds  | S&P Japan 500            | 50.2         | 56.7           | 59.5          | 65.7         |
| U.S. Equity Funds  | S&P 500                  | 59.1         | 78.7           | 94.3          | 100.0        |
| Global Equity Funds  | S&P Global 1200          | 54.0         | 70.9           | 93.0          | 91.5         |
| International Equity Funds   | S&P Global 1200 Ex Japan | 48.4         | 78.7           | 96.1          | 98.1         |
| Emerging Equity Funds  | S&P Emerging BMI         | 60.5         | 88.8           | 91.5          | 93.4         |

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2019. Risk-adjusted return is computed as annualized average monthly return divided by annualized standard deviation of the monthly return for the measured periods. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

| FUND CATEGORY                | NO. OF FUNDS AT START | SURVIVORSHIP (%) |
|------------------------------|-----------------------|------------------|
| ONE-YEAR                     |                       |                  |
| Japanese Large-Cap Funds     | 361                   | 97.51            |
| Japanese Mid/Small-Cap Funds | 181                   | 97.79            |
| All Japanese Equity Funds    | 542                   | 97.60            |
| U.S. Equity Funds            | 132                   | 96.21            |
| Global Equity Funds          | 226                   | 95.13            |
| International Equity Funds   | 62                    | 96.77            |
| Emerging Equity Funds        | 81                    | 97.53            |
| All Foreign Equity Funds     | 501                   | 96.01            |
| THREE-YEAR                   |                       |                  |
| Japanese Large-Cap Funds     | 361                   | 88.09            |
| Japanese Mid/Small-Cap Funds | 172                   | 90.12            |
| All Japanese Equity Funds    | 533                   | 88.74            |
| U.S. Equity Funds            | 108                   | 91.67            |
| Global Equity Funds          | 189                   | 86.24            |
| International Equity Funds   | 61                    | 90.16            |
| Emerging Equity Funds        | 80                    | 77.50            |
| All Foreign Equity Funds     | 438                   | 86.53            |
| FIVE-YEAR                    |                       |                  |
| Japanese Large-Cap Funds     | 318                   | 82.08            |
| Japanese Mid/Small-Cap Funds | 158                   | 82.28            |
| All Japanese Equity Funds    | 476                   | 82.14            |
| U.S. Equity Funds            | 88                    | 82.95            |
| Global Equity Funds          | 158                   | 73.42            |
| International Equity Funds   | 51                    | 82.35            |
| Emerging Equity Funds        | 82                    | 60.98            |
| All Foreign Equity Funds     | 379                   | 74.14            |
| TEN-YEAR                     |                       |                  |
| Japanese Large-Cap Funds     | 333                   | 64.56            |
| Japanese Mid/Small-Cap Funds | 166                   | 62.65            |
| All Japanese Equity Funds    | 499                   | 63.93            |
| U.S. Equity Funds            | 24                    | 50.00            |
| Global Equity Funds          | 129                   | 56.59            |
| International Equity Funds   | 54                    | 66.67            |
| Emerging Equity Funds        | 61                    | 49.18            |

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2019. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

| INDEX/PEER GROUP             | ONE-YEAR (%) | THREE-YEAR<br>ANNUALIZED (%) | FIVE-YEAR<br>ANNUALIZED (%) | TEN-YEAR<br>ANNUALIZED (%) |
|------------------------------|--------------|------------------------------|-----------------------------|----------------------------|
| S&P/TOPIX 150                | 19.26        | 6.99                         | 6.15                        | 8.42                       |
| Japanese Large-Cap Funds     | 19.05        | 6.66                         | 5.86                        | 8.49                       |
| S&P Japan MidSmallCap        | 16.83        | 6.32                         | 7.15                        | 10.59                      |
| Japanese Mid/Small-Cap Funds | 21.03        | 11.10                        | 10.27                       | 13.12                      |
| S&P Japan 500                | 18.13        | 6.74                         | 6.26                        | 8.76                       |
| All Japanese Equity Funds    | 19.72        | 8.10                         | 7.30                        | 10.00                      |
| S&P 500                      | 30.24        | 12.59                        | 9.52                        | 15.33                      |
| U.S. Equity Funds            | 24.77        | 6.95                         | 3.32                        | 10.05                      |
| S&P Global 1200              | 27.11        | 10.73                        | 7.37                        | 11.70                      |
| Global Equity Funds          | 26.27        | 8.99                         | 4.38                        | 8.32                       |
| S&P Global 1200 Ex Japan     | 27.77        | 11.04                        | 7.47                        | 11.97                      |
| International Equity Funds   | 25.66        | 8.24                         | 4.42                        | 8.73                       |
| S&P Emerging BMI             | 18.73        | 9.41                         | 4.16                        | 5.90                       |
| Emerging Equity Funds        | 17.82        | 6.68                         | 1.71                        | 3.86                       |

Source: S&P Dow Jones Indices LLC, Morningstar. Data as Dec. 31, 2019. All returns in JPY. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

| Report 4: Average Fund Performance (Asset-Weighted) |              |                              |                             |                            |
|---|--------------|------------------------------|-----------------------------|----------------------------|
| INDEX/PEER GROUP                                    | ONE-YEAR (%) | THREE-YEAR<br>ANNUALIZED (%) | FIVE-YEAR<br>ANNUALIZED (%) | TEN-YEAR<br>ANNUALIZED (%) |
| S&P/TOPIX 150                                       | 19.26        | 6.99                         | 6.15                        | 8.42                       |
| Japanese Large-Cap Funds                            | 19.56        | 6.75                         | 5.87                        | 8.37                       |
| S&P Japan MidSmallCap                               | 16.83        | 6.32                         | 7.15                        | 10.59                      |
| Japanese Mid/Small-Cap Funds                        | 20.36        | 9.51                         | 8.12                        | 10.91                      |
| S&P Japan 500                                       | 18.13        | 6.74                         | 6.26                        | 8.76                       |
| All Japanese Equity Funds                           | 19.86        | 7.35                         | 6.34                        | 8.87                       |
| S&P 500   | 30.24        | 12.59                        | 9.52                        | 15.33                      |
| U.S. Equity Funds                                   | 28.69        | 9.00                         | 3.71                        | 8.93                       |
| S&P Global 1200                                     | 27.11        | 10.73                        | 7.37                        | 11.70                      |
| Global Equity Funds                                 | 29.65        | 10.06                        | 4.30                        | 8.35                       |
| S&P Global 1200 Ex Japan                            | 27.77        | 11.04                        | 7.47                        | 11.97                      |
| International Equity Funds                          | 26.40        | 8.49                         | 4.16                        | 8.47                       |
| S&P Emerging BMI                                    | 18.73        | 9.41                         | 4.16                        | 5.90                       |
| Emerging Equity Funds                               | 28.80        | 9.84                         | 2.91                        | 3.73                       |

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2019. All returns in JPY. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

| FUND CATEGORY                | THIRD QUARTILE | SECOND QUARTILE | FIRST QUARTILE |
|------------------------------|----------------|-----------------|----------------|
| ONE-YEAR                     |                |                 |                |
| Japanese Large-Cap Funds     | 15.55          | 18.63           | 21.69          |
| Japanese Mid/Small-Cap Funds | 17.30          | 20.05           | 25.79          |
| All Japanese Equity Funds    | 16.02          | 19.09           | 22.80          |
| U.S. Equity Funds            | 21.64          | 25.46           | 29.28          |
| Global Equity Funds          | 22.70          | 25.98           | 30.53          |
| International Equity Funds   | 21.35          | 26.30           | 29.24          |
| Emerging Equity Funds        | 13.02          | 17.71           | 24.90          |
| THREE-YEAR                   |                |                 |                |
| Japanese Large-Cap Funds     | 4.80           | 6.50            | 8.12           |
| Japanese Mid/Small-Cap Funds | 7.45           | 10.33           | 12.86          |
| All Japanese Equity Funds    | 5.54           | 7.28            | 10.09          |
| U.S. Equity Funds            | 3.57           | 7.67            | 11.95          |
| Global Equity Funds          | 6.30           | 8.63            | 11.51          |
| International Equity Funds   | 5.80           | 7.96            | 10.31          |
| Emerging Equity Funds        | 3.54           | 6.30            | 8.77           |
| FIVE-YEAR                    |                |                 |                |
| Japanese Large-Cap Funds     | 4.54           | 5.56            | 6.67           |
| Japanese Mid/Small-Cap Funds | 6.88           | 9.13            | 12.04          |
| All Japanese Equity Funds    | 4.96           | 6.30            | 8.46           |
| U.S. Equity Funds            | 1.48           | 4.73            | 7.08           |
| Global Equity Funds          | 2.31           | 3.88            | 5.18           |
| International Equity Funds   | 2.91           | 4.13            | 5.37           |
| Emerging Equity Funds        | 0.25           | 1.64            | 2.86           |
| TEN-YEAR                     |                |                 |                |
| Japanese Large-Cap Funds     | 7.41           | 8.32            | 9.13           |
| Japanese Mid/Small-Cap Funds | 10.20          | 11.75           | 15.47          |
| All Japanese Equity Funds    | 7.84           | 8.85            | 11.06          |
| U.S. Equity Funds            | 12.53          | 13.29           | 15.12          |
| Global Equity Funds          | 8.17           | 9.50            | 10.57          |
| International Equity Funds   | 8.53           | 9.64            | 10.53          |
| Emerging Equity Funds        | 3.59           | 4.48            | 5.11           |

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2019. All returns in JPY. Figures are computed from universe of funds that survived for the entire measured periods. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

## **APPENDIX A: GLOSSARY**

#### **SPIVA Styles and Morningstar Fund Classifications**

Data from Morningstar is obtained for all managed funds domiciled in Japan for which month-end data is available during the performance period. The data includes the most comprehensive Japanese fund data on active and finalized (merged or liquidated) funds over the chosen period. Funds are classified based on the Morningstar fund classification system, and the SPIVA Japan Scorecard covers Japanese and international equity categories.

#### **Japanese Equity Funds**

The SPIVA Japan Scorecard covers major capitalization levels including large-, mid-, and small-cap funds. S&P Dow Jones Indices uses the Morningstar fund categories, which determine a fund portfolio's capitalization assignments.

The Morningstar classification system produces narrow, style-based classifications for Japanese equities funds. S&P Dow Jones Indices has consolidated the style-based categories in order to generate a larger sample size and develop a broad-market comparison to market-based benchmarks. A narrow, style-based comparison would yield a limited sample size, given value and growth style segments are not consistently discernible over the past five years.

Morningstar categories have been mapped to SPIVA peer groups in the following manner.

| SPIVA CATEGORY               | MORNINGSTAR CATEGORY                         |  |
|------------------------------|--|--|
|                              | Japan Fund Japan Large-Cap Value Equity      |  |
| apanese Large-Cap Funds      | Japan Fund Japan Large-Cap Growth Equity     |  |
|                              | Japan Fund Japan Large-Cap Blend Equity      |  |
|                              | Japan Fund Japan Small/Mid-Cap Value Equity  |  |
| Japanese Mid/Small-Cap Funds | Japan Fund Japan Small/Mid-Cap Growth Equity |  |
|                              | Japan Fund Japan Small/Mid-Cap Blend Equity  |  |

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

#### **International Equity Funds**

For international equity, the SPIVA Japan Scorecard reports on four major categories (U.S., global, international, and emerging market funds) of interest to global asset allocators.

Morningstar categories have been mapped to SPIVA peer groups in the following manner.

| Exhibit 3: International Equity Funds: SPIVA and Morningstar Categories |  |  |
|---|--|--|
| SPIVA CATEGORY  | MORNINGSTAR CATEGORY                             |  |
| U.S. Equity Funds   | Japan Fund North America Equity                  |  |
| Global Equity Funds   | Japan Fund World Equity                          |  |
| International Equity Funds  | Japan Fund World ex-Japan Equity                 |  |
| Emerging Equity Funds   | Japan Fund Emerging Multiple Country/Area Equity |  |

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

#### **RESEARCH | SPIVA**

#### Benchmarks

The chosen benchmarks are shown in Exhibit 4. All index returns are total returns (i.e., include dividend reinvestment) in Japanese yen. There has been no deduction from index returns to account for fund investment expenses. It is important to note that active fund returns are after expenses, but they do not include loads and entry fees.

The benchmarks chosen are the most commonly adopted benchmarks for funds that fall into the respective fund peer groups. In some instances, a fund may not adopt the benchmarks stipulated in Exhibit 4. However, a vast majority do set their performance hurdle based on the assigned benchmarks in this report, ensuring that the study is robust and fair.

| Exhibit 4: SPIVA Categories and Their Benchmarks |                          |  |
|--|--------------------------|--|
| SPIVA CATEGORY                                   | BENCHMARK INDEX          |  |
| Japanese Large-Cap Funds                         | S&P/TOPIX 150            |  |
| Japanese Mid/Small-Cap Funds                     | S&P Japan MidSmallCap    |  |
| All Japanese Equity Funds                        | S&P Japan 500            |  |
| U.S. Equity Funds                                | S&P 500                  |  |
| Global Equity Funds                              | S&P Global 1200          |  |
| International Equity Funds                       | S&P Global 1200 Ex Japan |  |
| Emerging Equity Funds                            | S&P Emerging BMI         |  |

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

## **APPENDIX B: GLOSSARY**

#### Percentage of Funds Outperformed by the Index

To correct for survivorship bias, we use the opportunity set available at the beginning of the period as the denominator. We determine the count of funds that have survived and beat the index. We then report the index outperformance percentage.

#### Survivorship (%)

This measure represents the percentage of funds in existence at the beginning of the time period that is still active at the end of the time period.

#### **Equal-Weighted Fund Performance**

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

#### **Asset-Weighted Fund Performance**

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

#### **Quartiles Breakpoints**

The p<sup>th</sup> 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. For fund category quartiles in a particular time horizon, the data used is the return of the largest share class of the fund net of fees, excluding loads.

#### **Survivorship Bias**

Many funds might liquidate or merge during a period of study. This usually occurs due to continued poor performance by the fund. Therefore, if index returns were compared to fund returns using only surviving funds, the comparison would be biased in favor of the fund category. These reports remove this bias by (a) using the entire investment opportunity set, made up of all funds in that particular category at the outset of the period, as the denominator for outperformance calculations, (b) explicitly showing the survivorship rate in each category, and (c) constructing peer average return series for each category based on all available funds at the outset of the period.

#### Fees

The fund returns used are net of fees, excluding loads.

#### Indices

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

#### S&P/TOPIX 150

The S&P/TOPIX 150 is designed to represent the large-cap universe for Japan. It includes 150 highly liquid securities as leading, blue-chip companies from each of the Global Industry Classification Standard (GICS<sup>®</sup>) sectors of the Japanese market.

#### S&P JAPAN MIDSMALLCAP

The S&P Japan MidSmallCap combines the S&P Japan MidCap and S&P SmallCap indices and comprises the stocks representing the lowest 30% of float-adjusted market cap in Japan. It is a subset of the <u>S&P Japan BMI</u>, comprehensive, rules-based index measuring Japanese stock market performance.

#### S&P JAPAN 500

The <u>S&P Japan 500</u> is designed to represent the Japanese investable market. Index constituents are drawn from eligible companies listed on the Tokyo, Osaka, or JASDAQ exchanges. Data is sourced from the comprehensive Toyo Keizai database. Constituents represent the large-, mid-, and small-cap components of the Japanese equity markets.

#### S&P 500

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

#### S&P GLOBAL 1200

Capturing approximately 70% of the world's capital markets, the <u>S&P Global 1200</u> is a composite of seven headline indices, many of which are accepted leaders in their regions. It includes the <u>S&P 500</u> (U.S.), <u>S&P Europe 350<sup>®</sup></u> (Europe), S&P/TOPIX 150 (Japan), <u>S&P/TSX 60</u> (Canada), <u>S&P/ASX All</u> <u>Australian 50</u> (Australia), <u>S&P Asia 50</u> (Asia Ex-Japan), and <u>S&P Latin America 40</u> (Latin America).

#### S&P GLOBAL 1200 EX JAPAN

The S&P Global 1200 Ex Japan is a composite of six headline indices, many of which are accepted leaders in their regions. It includes the S&P 500 (U.S.), S&P Europe 350 (Europe), S&P/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 EMERGING BMI

The S&P Emerging BMI captures all companies domiciled in the emerging markets within the <u>S&P</u> <u>Global BMI</u> with a float-adjusted market capitalization of at least USD 100 million and a minimum annual trading liquidity of USD 50 million.

| S&P DJI RESEARCH CONT    | RIBUTORS           |                                  |
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