

SPIVA[®] Japan Scorecard

Contributors

Priscilla Luk

Managing Director
Global Research & Design
priscilla.luk@spglobal.com

Tim Wang

Senior Analyst
Global Research & Design
tim.wang@spglobal.com

Arpit Gupta

Senior Analyst
Global Research & Design
arpit.gupta1@spglobal.com

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

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, the Middle East and North Africa, 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.¹ In this scorecard, we evaluated returns of more than 777 Japanese large- and mid/small-cap equity funds, more than 743 international equity funds investing in global, international, and emerging markets, as well as U.S. equities.
- **Japanese Equity Funds:** In 2020, the [S&P/TOPIX 150](#) gained 10.3%, and the S&P Japan MidSmallCap was nearly flat. Over the same period, 46.0% and 82.4% of large- and mid/small-cap equity funds beat their respective benchmarks, with equal-weighted average returns of 10.5% and 13.2%, respectively. Benchmark-relative performance of domestic equity funds in 2020 was better than in 2019, with higher percentages of funds outperforming the benchmark.

Over the 10-year horizon, 22.7% and 52.4% of large- and mid/small-cap funds managed to outperform their benchmarks, while 35.0% and 35.7% of funds were liquidated, respectively. The large-cap funds recorded equal- and asset-weighted average excess returns of 3.2 bps and 4.3 bps relative to benchmark, respectively, while the mid/small-cap funds reported excess returns of 3.86% and 1.85% on equal- and asset-weighted bases, respectively. Japanese mid/small-cap funds tended to deliver higher benchmark-relative excess return compared with Japanese large-cap funds.

¹ The fund returns used are net of fees, excluding loads.

- International Equity Funds:** In 2020, fewer funds in the U.S. and global equity fund categories underperformed their benchmarks than in 2019, while the opposite was observed in the international and emerging market equity fund categories. For U.S. and global equity funds, 68.4% and 52.4% underperformed their respective benchmarks, and 77.4% and 60.5% of international and emerging market equity funds lagged their benchmarks, respectively. For 2020, global equity funds delivered an equal-weighted excess return of 5.1% versus the [S&P Global 1200](#), while the rest of the foreign equity fund categories reported negative equal-weighted average returns relative to their benchmark indices. Significant divergence between the asset- and equal-weighted average returns were observed for global equity funds, with asset-weighted return exceeding the equal-weighted returns by 14.1%.

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, while 78.3% of U.S. equity funds failed to beat the [S&P 500®](#). However, U.S. equity funds had the worst benchmark-relative excess return on both equal- and asset-weighted bases (-6.1% and -6.0%, respectively). Foreign equity funds had a 10-year liquidation rate of 46.3%, which was much higher than that of domestic equity funds (35.3%).

Exhibit 1: Percentage of Funds Outperformed by the Index in Annual Figures (Based on Absolute Return)

FUND CATEGORY	COMPARISON INDEX	2015	2016	2017	2018	2019	2020
Japanese Large-Cap Funds	S&P/TOPIX 150	43.6	63.6	15.3	90.2	57.6	54.0
Japanese Mid-Cap Funds	S&P Japan MidCap 100	60.7	-	-	-	-	-
Japanese Small-Cap Funds	S&P Japan SmallCap 250	48.2	-	-	-	-	-
Japanese Mid/Small-Cap Funds	S&P Japan MidSmallCap	-	54.6	13.1	88.7	25.4	17.6
All Japanese Equity Funds	S&P Japan 500	46.4	58.2	19.7	86.9	43.7	44.3
U.S. Equity Funds	S&P 500®	87.4	61.3	74.8	46.8	78.8	68.4
Global Equity Funds	S&P Global 1200	70.9	90.1	64.6	54.2	56.2	52.4
International Equity Funds	S&P Global 1200 Ex Japan	65.5	88.7	62.3	47.3	67.7	77.4
Emerging Equity Funds	S&P Emerging BMI	46.5	82.9	75.0	70.8	56.8	60.5

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2020. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

A UNIQUE SCORECARD FOR THE ACTIVE VERSUS PASSIVE DEBATE

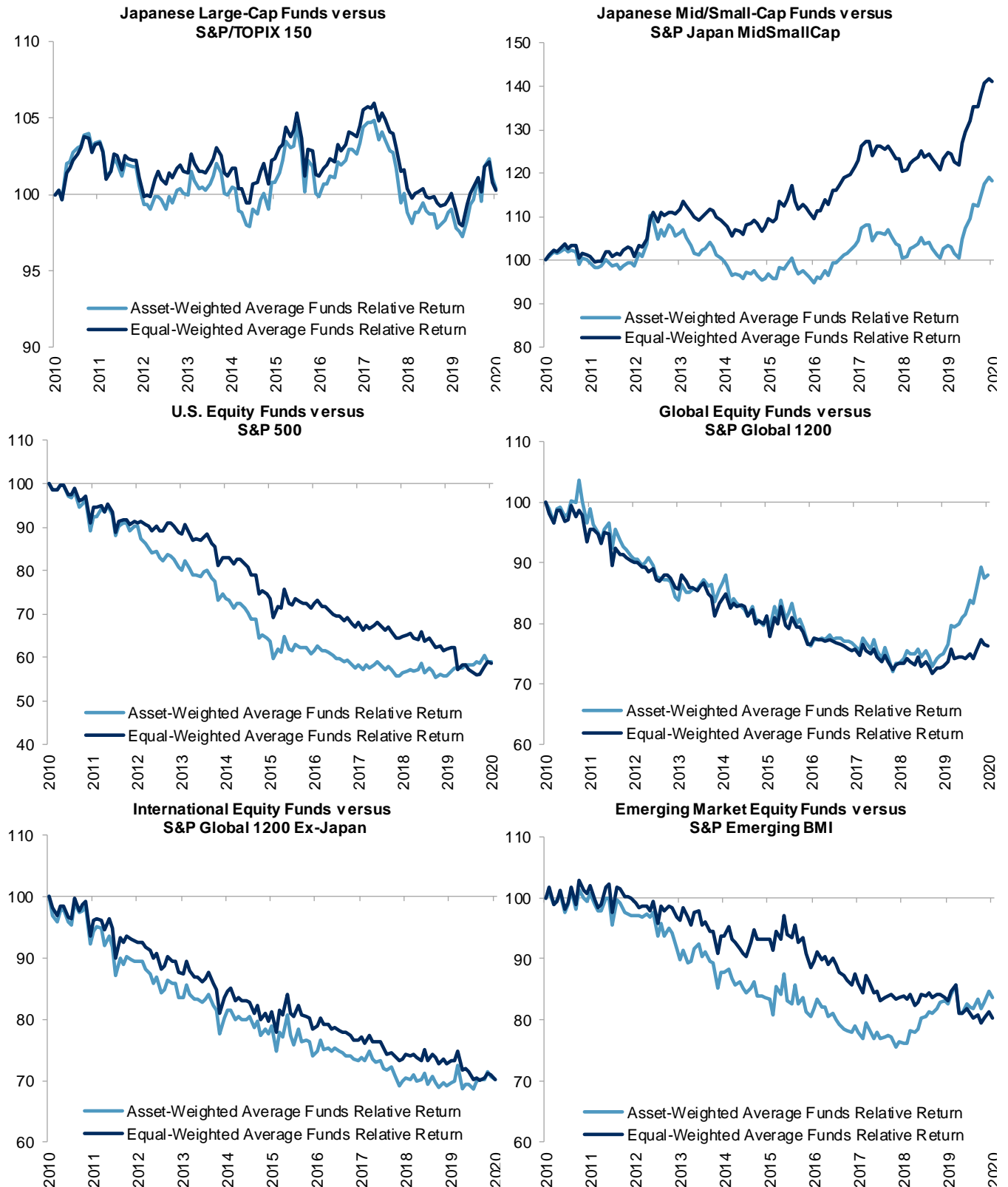
There is nothing novel about the index versus active debate. It has been a contentious subject for decades, and there are few strong believers on both sides, with the vast majority of market participants falling somewhere in between. Since its first publication 19 years ago, the SPIVA Scorecard has served 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.

CUMULATIVE AVERAGE FUND RETURN RELATIVE TO BENCHMARK



Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2020. 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	1-YEAR (%)	3-YEAR (%)	5-YEAR (%)	10-YEAR (%)
Japanese Large-Cap Funds	S&P/TOPIX 150	54.00	67.84	69.53	77.29
Japanese Mid/Small-Cap Funds	S&P Japan MidSmallCap	17.59	20.43	25.14	47.62
All Japanese Equity Funds	S&P Japan 500	44.26	60.98	53.22	66.80
U.S. Equity Funds	S&P 500	68.42	75.38	82.83	78.26
Global Equity Funds	S&P Global 1200	52.42	66.67	86.55	92.70
International Equity Funds	S&P Global 1200 Ex Japan	77.42	82.54	88.68	94.23
Emerging Equity Funds	S&P Emerging BMI	60.49	78.65	88.46	94.20

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2020. 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	1-YEAR (%)	3-YEAR (%)	5-YEAR (%)	10-YEAR (%)
Japanese Large-Cap Funds	S&P/TOPIX 150	53.43	69.59	69.53	73.50
Japanese Mid/Small-Cap Funds	S&P Japan MidSmallCap	16.08	19.89	26.29	55.36
All Japanese Equity Funds	S&P Japan 500	45.72	61.93	54.97	68.45
U.S. Equity Funds	S&P 500	69.17	79.23	85.86	86.96
Global Equity Funds	S&P Global 1200	50.81	66.67	85.96	92.70
International Equity Funds	S&P Global 1200 Ex Japan	74.19	87.30	90.57	94.23
Emerging Equity Funds	S&P Emerging BMI	65.43	77.53	96.15	94.20

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2020. 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.

Report 2: Survivorship of Funds		
FUND CATEGORY	NO. OF FUNDS AT START	SURVIVORSHIP (%)
1-YEAR		
Japanese Large-Cap Funds	350	95.1
Japanese Mid/Small-Cap Funds	199	98.0
All Japanese Equity Funds	549	96.2
U.S. Equity Funds	133	94.7
Global Equity Funds	248	96.4
International Equity Funds	62	95.2
Emerging Equity Funds	81	93.8
All Foreign Equity Funds	524	95.4
3-YEAR		
Japanese Large-Cap Funds	342	86.5
Japanese Mid/Small-Cap Funds	186	94.1
All Japanese Equity Funds	528	89.2
U.S. Equity Funds	130	87.7
Global Equity Funds	198	87.4
International Equity Funds	63	87.3
Emerging Equity Funds	89	77.5
All Foreign Equity Funds	480	85.6
5-YEAR		
Japanese Large-Cap Funds	338	79.6
Japanese Mid/Small-Cap Funds	175	84.0
All Japanese Equity Funds	513	81.1
U.S. Equity Funds	99	81.8
Global Equity Funds	171	76.0
International Equity Funds	53	81.1
Emerging Equity Funds	78	65.4
All Foreign Equity Funds	401	76.1
10-YEAR		
Japanese Large-Cap Funds	317	65.0
Japanese Mid/Small-Cap Funds	168	64.3
All Japanese Equity Funds	485	64.7
U.S. Equity Funds	23	52.2
Global Equity Funds	137	55.5
International Equity Funds	52	67.3
Emerging Equity Funds	69	40.6
All Foreign Equity Funds	281	53.7

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2020. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 3: Average Fund Performance (Equal-Weighted)				
INDEX/PEER GROUP	1-YEAR (%)	3-YEAR ANNUALIZED (%)	5-YEAR ANNUALIZED (%)	10-YEAR ANNUALIZED (%)
S&P/TOPIX 150	10.26	3.97	6.11	9.41
Japanese Large-Cap Funds	10.51	2.23	5.69	9.44
S&P Japan MidSmallCap	0.02	-1.46	4.50	10.22
Japanese Mid/Small-Cap Funds	13.22	3.14	9.96	14.08
S&P Japan 500	8.72	2.86	5.74	9.62
All Japanese Equity Funds	11.58	2.60	7.18	11.05
S&P 500	12.48	10.91	11.75	16.67
U.S. Equity Funds	6.32	5.54	6.75	10.59
S&P Global 1200	9.79	7.63	9.52	13.03
Global Equity Funds	14.84	7.88	8.20	10.02
S&P Global 1200 Ex Japan	9.75	7.94	9.80	13.33
International Equity Funds	5.24	4.54	6.61	9.37
S&P Emerging BMI	9.74	3.14	9.17	6.41
Emerging Equity Funds	5.85	0.80	5.96	4.09

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2020. 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	1-YEAR (%)	3-YEAR ANNUALIZED (%)	5-YEAR ANNUALIZED (%)	10-YEAR ANNUALIZED (%)
S&P/TOPIX 150	10.26	3.97	6.11	9.41
Japanese Large-Cap Funds	11.81	2.62	6.02	9.45
S&P Japan MidSmallCap	0.02	-1.46	4.50	10.22
Japanese Mid/Small-Cap Funds	14.19	2.64	8.74	12.07
S&P Japan 500	8.72	2.86	5.74	9.62
All Japanese Equity Funds	12.66	2.57	6.74	10.02
S&P 500	12.48	10.91	11.75	16.67
U.S. Equity Funds	18.64	11.37	10.01	10.66
S&P Global 1200	9.79	7.63	9.52	13.03
Global Equity Funds	28.90	12.97	11.32	11.60
S&P Global 1200 Ex Japan	9.75	7.94	9.80	13.33
International Equity Funds	10.43	6.15	7.26	9.37
S&P Emerging BMI	9.74	3.14	9.17	6.41
Emerging Equity Funds	10.90	5.61	9.27	4.53

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2020. All returns in JPY. Table is provided for illustrative purposes. Past performance is no guarantee of future results.

Report 5: Quartile Breakpoints of Fund Performance			
FUND CATEGORY	THIRD QUARTILE	SECOND QUARTILE	FIRST QUARTILE
1-YEAR			
Japanese Large-Cap Funds	4.13	10.10	19.51
Japanese Mid/Small-Cap Funds	4.52	12.49	20.36
All Japanese Equity Funds	4.36	10.57	19.69
U.S. Equity Funds	-7.35	8.59	17.82
Global Equity Funds	-0.68	9.28	25.50
International Equity Funds	-1.81	5.00	9.62
Emerging Equity Funds	-1.89	7.95	12.48
3-YEAR			
Japanese Large-Cap Funds	-1.13	1.77	5.24
Japanese Mid/Small-Cap Funds	-0.40	2.06	6.44
All Japanese Equity Funds	-0.68	1.93	5.59
U.S. Equity Funds	0.90	4.32	11.32
Global Equity Funds	1.01	6.12	11.54
International Equity Funds	0.55	3.58	7.38
Emerging Equity Funds	-2.11	1.70	3.29
5-YEAR			
Japanese Large-Cap Funds	3.24	5.15	7.84
Japanese Mid/Small-Cap Funds	6.56	9.49	12.56
All Japanese Equity Funds	4.03	6.35	9.60
U.S. Equity Funds	2.69	5.86	10.37
Global Equity Funds	2.65	5.47	8.53
International Equity Funds	3.36	6.58	7.78
Emerging Equity Funds	3.35	6.96	8.38
10-YEAR			
Japanese Large-Cap Funds	7.81	8.97	10.61
Japanese Mid/Small-Cap Funds	10.77	13.02	17.21
All Japanese Equity Funds	8.48	9.72	12.27
U.S. Equity Funds	13.89	15.68	17.82
Global Equity Funds	7.91	10.15	11.88
International Equity Funds	8.69	10.90	11.57
Emerging Equity Funds	3.50	5.19	6.13

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2020. 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 include 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- and mid/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.

Exhibit 2: Japanese Equity Funds: SPIVA and Morningstar Categories	
SPIVA CATEGORY	MORNINGSTAR CATEGORY
Japanese Large-Cap Funds	Japan Fund Japan Large-Cap Value Equity
	Japan Fund Japan Large-Cap Growth Equity
	Japan Fund Japan Large-Cap Blend Equity
Japanese Mid/Small-Cap Funds	Japan Fund Japan Small/Mid-Cap Value Equity
	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.

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^{th} percentile for a set of data is the value that is greater than or equal to $p\%$ of the data, but is less than or equal to $(100-p)\%$ of the data. In other words, it is a value that divides the data into two parts: the lower $p\%$ of the values and the upper $(100-p)\%$ of the values. The first quartile is the 75th percentile, the value separating the elements of a population into the lower 75% and the upper 25%. The second quartile is the 50th percentile and the third quartile is the 25th 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®) 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 [S&P Japan BMI](#), comprehensive, rules-based index measuring Japanese stock market performance.

S&P JAPAN 500

The [S&P Japan 500](#) 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-capitalization-weighted 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 S&P Global 1200 is a composite of seven headline indices, many of which are accepted leaders in their regions. It includes the S&P 500 (U.S.), [S&P Europe 350®](#) (Europe), S&P/TOPIX 150 (Japan), [S&P/TSX 60](#) (Canada), [S&P/ASX All Australian 50](#) (Australia), [S&P Asia 50](#) (Asia Ex-Japan), and [S&P Latin America 40](#) (Latin America).

S&P 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 [S&P Global BMI](#) 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 CONTRIBUTORS		
Sunjiv Mainie, CFA, CQF	Global Head	sunjiv.mainie@spglobal.com
Jake Vukelic	Business Manager	jake.vukelic@spglobal.com
GLOBAL RESEARCH & DESIGN		
AMERICAS		
Gaurav Sinha	Americas Head	gaurav.sinha@spglobal.com
Laura Assis	Analyst	laura.assis@spglobal.com
Cristopher Anguiano, FRM	Senior Analyst	cristopher.anguiano@spglobal.com
Nazerke Bakytzhan, PhD	Senior Analyst	nazerke.bakytzhan@spglobal.com
Smita Chirputkar	Director	smita.chirputkar@spglobal.com
Rachel Du	Senior Analyst	rachel.du@spglobal.com
Bill Hao	Director	wenli.hao@spglobal.com
Qing Li	Director	qing.li@spglobal.com
Berlinda Liu, CFA	Director	berlinda.liu@spglobal.com
Lalit Ponnala, PhD	Director	lalit.ponnala@spglobal.com
Maria Sanchez, CIPM	Associate Director	maria.sanchez@spglobal.com
Hong Xie, CFA	Senior Director	hong.xie@spglobal.com
APAC		
Priscilla Luk	APAC Head	priscilla.luk@spglobal.com
Arpit Gupta	Senior Analyst	arpit.gupta1@spglobal.com
Akash Jain	Associate Director	akash.jain@spglobal.com
Anurag Kumar	Senior Analyst	anurag.kumar@spglobal.com
Xiaoya Qu	Senior Analyst	xiaoya.qu@spglobal.com
Yan Sun	Senior Analyst	yan.sun@spglobal.com
Tim Wang	Senior Analyst	tim.wang@spglobal.com
Liyu Zeng, CFA	Director	liyu.zeng@spglobal.com
EMEA		
Andrew Innes	EMEA Head	andrew.innes@spglobal.com
Alberto Allegrucci, PhD	Senior Analyst	alberto.allegrucci@spglobal.com
Panos Brezas, PhD	Senior Analyst	panos.brezas@spglobal.com
Leonardo Cabrer, PhD	Associate Director	leonardo.cabrer@spglobal.com
Andrew Cairns, CFA	Associate Director	andrew.cairns@spglobal.com
Niall Gilbride, CFA	Senior Analyst	niall.gilbride@spglobal.com
Rui Li, ACA	Senior Analyst	rui.li@spglobal.com
Jingwen Shi, PhD	Senior Analyst	jingwen.shi@spglobal.com
INDEX INVESTMENT STRATEGY		
Craig J. Lazzara, CFA	Global Head	craig.lazzara@spglobal.com
Fei Mei Chan	Director	feimei.chan@spglobal.com
Tim Edwards, PhD	Managing Director	tim.edwards@spglobal.com
Anu R. Ganti, CFA	Senior Director	anu.ganti@spglobal.com
Sherifa Issifu	Associate	sherifa.issifu@spglobal.com

GENERAL DISCLAIMER

Copyright © 2021 S&P Dow Jones Indices LLC. All rights reserved. S&P, S&P 500, S&P 500 LOW VOLATILITY INDEX, S&P 100, S&P COMPOSITE 1500, S&P MIDCAP 400, S&P SMALLCAP 600, SELECT SECTOR, S&P GIVI, GLOBAL TITANS, DIVIDEND ARISTOCRATS, S&P TARGET DATE INDICES, S&P PRISM, S&P STRIDE, GICS, SPIVA, SPDR and INDEXOLOGY are registered trademarks of Standard & Poor's Financial Services LLC, a division of S&P Global ("S&P"). DOW JONES, DJ, DJIA, The Dow and DOW JONES INDUSTRIAL AVERAGE are registered trademarks of Dow Jones Trademark Holdings LLC ("Dow Jones"). These trademarks together with others have been licensed to S&P Dow Jones Indices LLC. Redistribution or reproduction in whole or in part are prohibited without written permission of S&P Dow Jones Indices LLC. This document does not constitute an offer of services in jurisdictions where S&P Dow Jones Indices LLC, S&P, Dow Jones or their respective affiliates (collectively "S&P Dow Jones Indices") do not have the necessary licenses. Except for certain custom index calculation services, all information provided by S&P Dow Jones Indices is impersonal and not tailored to the needs of any person, entity or group of persons. S&P Dow Jones Indices receives compensation in connection with licensing its indices to third parties and providing custom calculation services. Past performance of an index is not an indication or guarantee of future results.

It is not possible to invest directly in an index. Exposure to an asset class represented by an index may be available through investable instruments based on that index. S&P Dow Jones Indices does not sponsor, endorse, sell, promote or manage any investment fund or other investment vehicle that is offered by third parties and that seeks to provide an investment return based on the performance of any index. S&P Dow Jones Indices makes no assurance that investment products based on the index will accurately track index performance or provide positive investment returns. S&P Dow Jones Indices LLC is not an investment advisor, and S&P Dow Jones Indices makes no representation regarding the advisability of investing in any such investment fund or other investment vehicle. A decision to invest in any such investment fund or other investment vehicle should not be made in reliance on any of the statements set forth in this document. Prospective investors are advised to make an investment in any such fund or other vehicle only after carefully considering the risks associated with investing in such funds, as detailed in an offering memorandum or similar document that is prepared by or on behalf of the issuer of the investment fund or other investment product or vehicle. S&P Dow Jones Indices LLC is not a tax advisor. A tax advisor should be consulted to evaluate the impact of any tax-exempt securities on portfolios and the tax consequences of making any particular investment decision. Inclusion of a security within an index is not a recommendation by S&P Dow Jones Indices to buy, sell, or hold such security, nor is it considered to be investment advice.

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

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

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

TOPIX is a trademark of Tokyo Stock Exchange and has been licensed for use by S&P Dow Jones Indices.