

CONTRIBUTOR

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

SPIVA[®] Australia Scorecard

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 on our 16 years of experience publishing the report by expanding scorecard coverage into Australia, Canada, Europe, India, Japan, Latin America, and South Africa.
- While the report will not end the debate on active versus passive investing in Australia, we hope to make a meaningful contribution by examining market segments in which one strategy works better than the other.
- The SPIVA Australia Scorecard reports on the performance of actively managed Australian mutual funds against their respective benchmark indices over 1-, 3-, 5-, 10-, and now 15-year investment horizons. In this scorecard, we evaluated returns of more than 786 Australian equity funds (large, mid, and small cap, as well as A-REIT), 378 international equity funds, and 109 Australian bond funds.
- In 2017, the majority of Australian funds in most categories underperformed their respective benchmarks, apart from the Australian A-REIT category. There is no consistent trend in the yearly active versus index figures, but we have consistently observed that the majority of Australian active funds in most categories fail to beat the comparable benchmark indices over long-term horizons.
- Over the 10-year period ending Dec. 29, 2017, more than 85% of international equity and Australian bond funds and more than 70% of Australian general equity and A-REIT funds underperformed their respective benchmarks on an absolute basis. However, only 40% of Australian small-cap funds lagged their benchmarks. Observations based on risk-adjusted returns were similar for most categories, with the result for the Australian bond funds being slightly more favorable.

- **Australian General Equity Funds:** Over the one-year period, the [S&P/ASX 200](#) recorded a gain of 11.8%, while Australian large-cap equity funds posted a similar average return, with 59% of funds underperforming the S&P/ASX 200. Over the 3-, 5-, and 15-year periods, 67%, 63%, and 77% of funds in this category underperformed the benchmark, respectively.
- **Australian Mid- and Small-Cap Equity Funds:** In 2017, the S&P/ASX Mid-Small recorded a return of 21.2%, while Australian mid- and small-cap funds gained a smaller average return of 17.9%. Over the one- and three-year periods, 74% and 75% of funds in this category underperformed the benchmark, respectively, which was higher than the observations over the longer measured periods.
- **International Equity Funds:** The [S&P Developed Ex-Australia LargeMidCap](#) gained 14.5% in 2017 and international equity funds recorded a stronger return of 15.4%, despite 53% of funds underperforming the benchmark. This was in contrast to the observations for the longer periods (3-, 5-, 10-, and 15-year) when more than 80% of funds in this category lagged the benchmark.
- **Australian Bond Funds:** The Australian bond funds gained 3.2% in 2017, with 69% of them underperforming the [S&P/ASX Australian Fixed Interest 0+ Index](#), which posted an annual return of 3.6%. Over the 5- and 10-year periods, 85% of Australian bond funds underperformed the benchmark. Noticeably, the relative performance of Australian bond funds appeared more favorable on a risk-adjusted basis, with 57%, 67%, and 70% of funds lagging the benchmark over the 1-, 5-, and 10-year periods.
- **Australian A-REIT Funds:** The [S&P/ASX 200 A-REIT](#) gained 5.7% in 2017 and the Australian A-REIT funds delivered a higher average return of 6.8% over the same period. For the one-year period, 44% of funds in this category underperformed the benchmark, while 66%, 84%, and 78% of funds lagged the benchmark over the 3-, 5-, and 15-year horizons, respectively.
- **Fund Survivorship:** In 2017, 6.2% of Australian funds from all measured categories were merged or liquidated, with Australian large-cap funds disappearing at the fastest rate and Australian bond funds recording a 100% survival rate. However, over the 15-year horizon, Australian bond funds had the lowest survival rate of 33%, while the Australian mid- and small-cap funds had the highest rate of 59%. Funds across all categories had an overall survivorship rate of 51% over the 15-year period.
- **Equal-Weighted Average Fund Returns:** In 2017, funds in the international equity and Australian A-REIT categories delivered equal-weighted average returns that exceeded their respective benchmarks. In contrast, Australian mid- and small-cap equity funds underperformed the benchmark by 3.3% for the one-year period. Meanwhile, over the 15-year period, Australian mid- and small-cap equity funds recorded average excess returns of 2.9% per year, while international equity funds lagged the benchmark by 1.2% per year.
- **Asset-Weighted Average Fund Returns:** Aside from Australian mid- and small-cap funds, asset-weighted average returns for all fund categories exceeded their respective equal-weighted average returns across all measured periods, indicating larger funds delivered higher returns than smaller funds in these categories.

A UNIQUE SCORECARD FOR THE ACTIVE VERSUS PASSIVE DEBATE

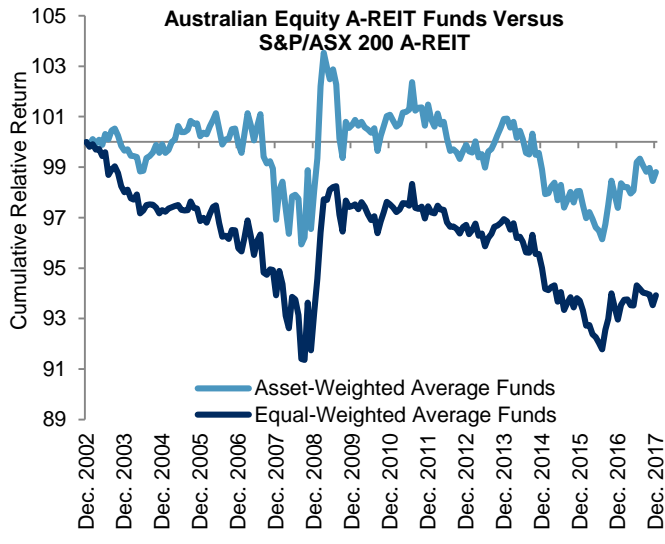
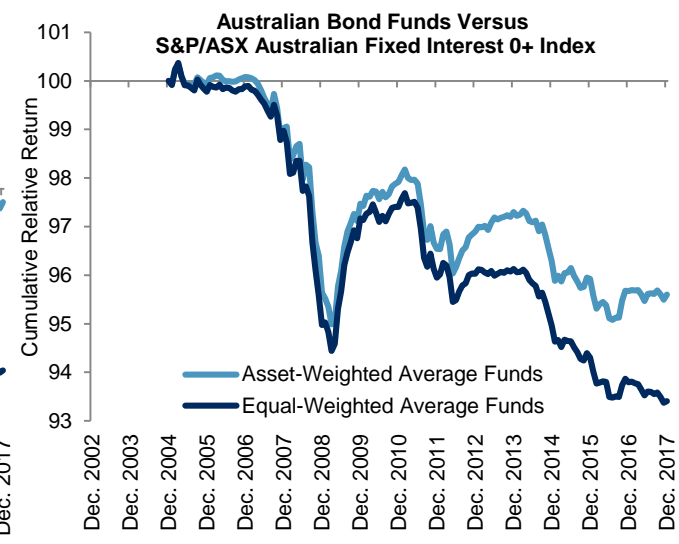
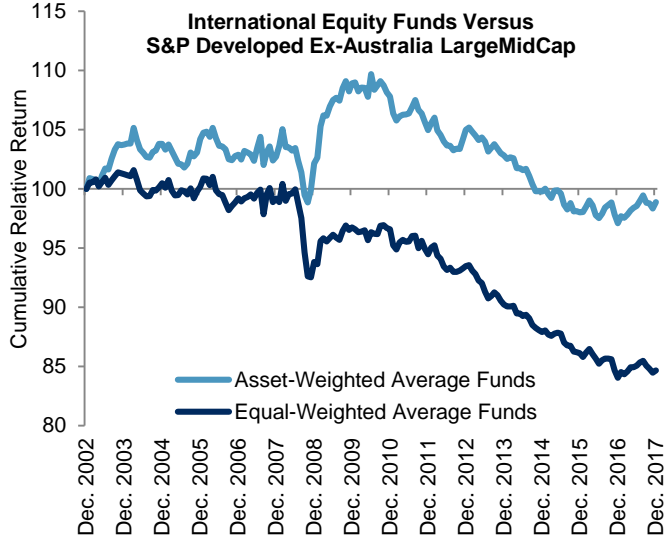
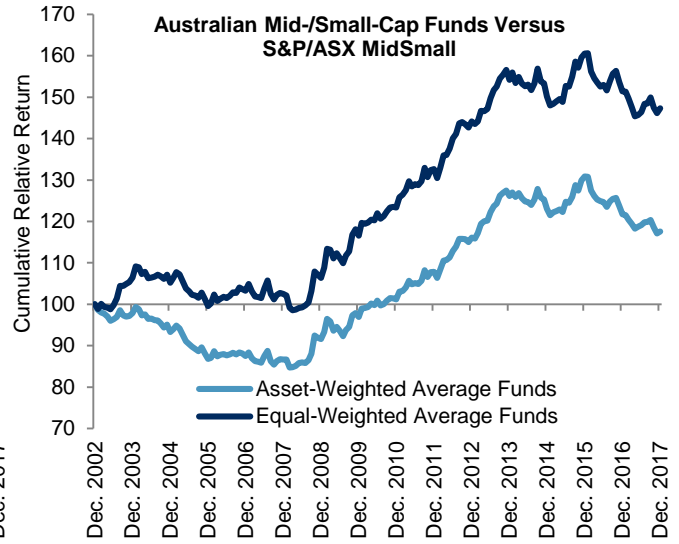
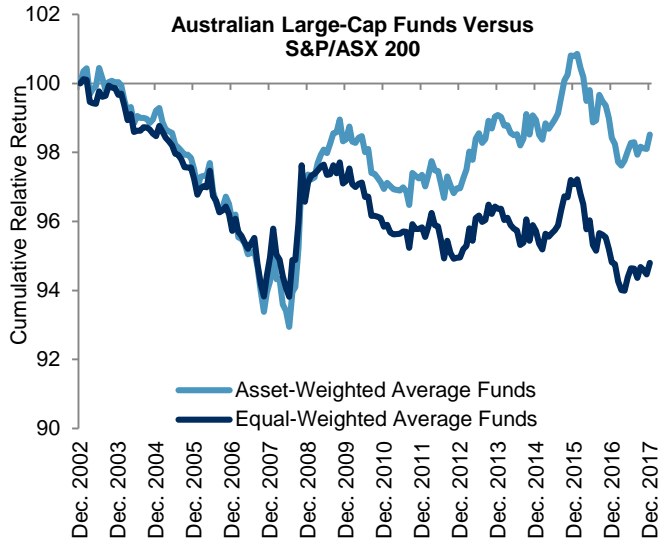
There is nothing novel about the index versus active debate. It has been a contentious subject for decades, and there are few strong believers on both sides, with the vast majority of market participants falling somewhere in between. Since its first publication 16 years ago, the SPIVA Scorecard has served as the de facto scorekeeper of the active versus passive debate. Over the years, 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 much 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 Australia 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 an AUD 10 billion fund affecting the average in the same manner as the returns of an AUD 10 million fund. However, the SPIVA Australia 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 greater assets. 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 Australia 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. 29, 2017. All returns in AUD. Past performance is no guarantee of future results. Charts are provided for illustrative purposes.

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 (%)	15-YEAR (%)
Australian Equity General	S&P/ASX 200	59.00	66.77	63.00	73.94	77.00
Australian Equity Mid- and Small-Cap	S&P/ASX Mid-Small	74.04	75.00	55.67	40.00	54.72
International Equity General	S&P Developed Ex-Australia LargeMidCap	52.51	80.93	90.86	88.26	87.10
Australian Bonds	S&P/ASX Australian Fixed Interest 0+ Index	68.63	77.36	85.42	85.00	NA
Australian Equity A-REIT	S&P/ASX 200 A-REIT	43.94	66.18	83.56	71.59	78.08

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 29, 2017. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

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 (%)	15-YEAR (%)
Australian Equity General	S&P/ASX 200	59.00	67.42	61.00	74.24	78.00
Australian Equity Mid- and Small-Cap	S&P/ASX Mid-Small	78.85	72.00	57.73	40.00	54.72
International Equity General	S&P Developed Ex-Australia LargeMidCap	47.49	79.07	91.88	89.20	88.71
Australian Bonds	S&P/ASX Australian Fixed Interest 0+ Index	56.86	66.04	66.67	70.00	NA
Australian Equity A-REIT	S&P/ASX 200 A-REIT	40.91	44.12	56.16	71.59	75.34

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 29, 2017. Risk-adjusted return is computed as annualized average monthly return divided by annualized standard deviation of the monthly return for the measured periods. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 2: Survivorship of Funds		
FUND CATEGORY	NO. OF FUNDS AT START	SURVIVORSHIP (%)
ONE-YEAR		
Australian Equity General	306	91.50
Australian Equity Mid- and Small-Cap	105	95.24
International Equity General	225	93.78
Australian Bonds	51	100.00
Australian Equity A-REIT	67	97.01
THREE-YEAR		
Australian Equity General	315	85.71
Australian Equity Mid- and Small-Cap	101	87.13
International Equity General	221	81.90
Australian Bonds	53	90.57
Australian Equity A-REIT	69	92.75
FIVE-YEAR		
Australian Equity General	306	82.35
Australian Equity Mid- and Small-Cap	98	82.65
International Equity General	202	75.25
Australian Bonds	48	83.33
Australian Equity A-REIT	74	82.43
TEN-YEAR		
Australian Equity General	336	59.23
Australian Equity Mid- and Small-Cap	91	69.23
International Equity General	219	50.23
Australian Bonds	60	51.67
Australian Equity A-REIT	89	61.80
15-YEAR		
Australian Equity General	207	56.04
Australian Equity Mid- and Small-Cap	54	59.26
International Equity General	132	46.97
Australian Bonds	70	32.86
Australian Equity A-REIT	74	56.76

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 29, 2017. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 3: Average Fund Performance (Equal-Weighted)

INDEX/PEER GROUP	ONE-YEAR (%)	THREE-YEAR ANNUALIZED (%)	FIVE-YEAR ANNUALIZED (%)	TEN-YEAR ANNUALIZED (%)	15-YEAR ANNUALIZED (%)
S&P/ASX 200	11.80	8.63	10.23	4.14	9.49
Australian Equity General	11.77	8.27	10.19	4.12	9.10
S&P/ASX Mid-Small	21.16	15.79	12.17	2.30	9.66
Australian Equity Mid- and Small-Cap	17.89	15.05	12.66	6.08	12.52
S&P Developed Ex-Australia LargeMidCap	14.51	11.72	18.93	6.96	7.09
International Equity General	15.35	10.33	16.59	5.27	5.91
S&P/ASX Australian Fixed Interest 0+ Index	3.61	3.04	4.10	6.20	NA
Australian Bonds	3.19	2.47	3.52	5.59	5.05
S&P/ASX 200 A-REIT	5.72	11.00	13.23	1.89	5.99
Australian Equity A-REIT	6.82	10.58	12.57	1.89	5.54

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 29, 2017. All returns in AUD. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 4: Average Fund Performance (Asset-Weighted)

INDEX/PEER GROUP	ONE-YEAR (%)	THREE-YEAR ANNUALIZED (%)	FIVE-YEAR ANNUALIZED (%)	TEN-YEAR ANNUALIZED (%)	15-YEAR ANNUALIZED (%)
S&P/ASX 200	11.80	8.63	10.23	4.14	9.49
Australian Equity General	11.90	8.47	10.58	4.60	9.38
S&P/ASX Mid-Small	21.16	15.79	12.17	2.30	9.66
Australian Equity Mid- and Small-Cap	17.04	14.04	12.45	5.47	10.85
S&P Developed Ex-Australia LargeMidCap	14.51	11.72	18.93	6.96	7.09
International Equity General	16.61	11.39	17.51	6.55	7.01
S&P/ASX Australian Fixed Interest 0+ Index	3.61	3.04	4.10	6.20	NA
Australian Bonds	3.54	2.79	3.82	5.83	5.32
S&P/ASX 200 A-REIT	5.72	11.00	13.23	1.89	5.99
Australian Equity A-REIT	7.26	10.96	12.98	2.09	5.90

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 29, 2017. All returns in AUD. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 5: Quartile Breakpoints of Fund Performance			
FUND CATEGORY	THIRD QUARTILE	SECOND QUARTILE	FIRST QUARTILE
ONE-YEAR			
Australian Equity General	9.44	11.36	13.73
Australian Equity Mid- and Small-Cap	12.72	17.01	21.79
International Equity General	12.80	14.60	18.27
Australian Bonds	2.68	3.37	3.67
Australian Equity A-REIT	5.21	6.52	7.64
THREE-YEAR			
Australian Equity General	6.85	7.94	9.45
Australian Equity Mid- and Small-Cap	11.53	14.19	16.83
International Equity General	9.18	10.80	11.65
Australian Bonds	2.04	2.61	3.04
Australian Equity A-REIT	9.64	10.68	11.28
FIVE-YEAR			
Australian Equity General	9.06	10.10	11.26
Australian Equity Mid- and Small-Cap	8.72	12.44	14.35
International Equity General	15.49	16.94	18.04
Australian Bonds	3.11	3.58	4.02
Australian Equity A-REIT	11.69	12.61	13.11
TEN-YEAR			
Australian Equity General	3.12	3.93	4.91
Australian Equity Mid- and Small-Cap	3.61	5.52	7.25
International Equity General	4.71	5.76	6.94
Australian Bonds	5.39	5.84	6.22
Australian Equity A-REIT	0.83	1.69	2.53
15-YEAR			
Australian Equity General	8.77	9.37	9.92
Australian Equity Mid- and Small-Cap	10.17	11.76	13.52
International Equity General	5.48	6.32	7.18
Australian Bonds	5.12	5.39	5.72
Australian Equity A-REIT	5.06	5.75	6.43

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 29, 2017. All returns in AUD. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

APPENDIX A

SPIVA Styles and Morningstar Fund Classifications

Data from Morningstar is obtained for all managed funds domiciled in Australia for which month-end data is available during the performance period. The data includes the most comprehensive Australian 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 Australia Scorecard covers the Australian Equity General (large-cap equity), Australian Equity Mid- and Small-Cap, International Equity General, Australian Bonds, and Australian Equity A-REIT categories.

The Morningstar classification system produces narrow, style-based classifications for Australian equity 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 1: Australian Equity Funds: SPIVA and Morningstar Categories

SPIVA CATEGORY	MORNINGSTAR CATEGORY
Australian Equity General	Australia Fund Equity - Australia Large Blend
	Australia Fund Equity - Australia Large Growth
	Australia Fund Equity - Australia Large Value
Australian Equity Mid- and Small-Cap	Australia Fund Equity - Australia Mid/Small Blend
	Australia Fund Equity - Australia Mid/Small Growth
	Australia Fund Equity - Australia Mid/Small Value
International Equity General	Australia Fund Equity - World Large Blend
	Australia Fund Equity - World Large Growth
	Australia Fund Equity - World Large Value
Australian Bonds	Australia Fund Bonds - Australia
Australian Equity A-REIT	Australia Fund Equity - Australia Real Estate

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

Benchmarks

The chosen benchmarks are shown in Exhibit 2. All index returns are total returns (i.e., include dividend reinvestment) in Australian dollars. 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. 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 2: SPIVA Categories and Their Benchmarks

SPIVA CATEGORY	BENCHMARK INDEX
Australian Equity General	S&P/ASX 200
Australian Equity Mid- and Small-Cap	S&P/ASX Mid-Small Index
International Equity General	S&P Developed Ex-Australia LargeMidCap
Australian Bonds	S&P/ASX Australian Fixed Interest 0+ Index
Australian Equity A-REIT	S&P/ASX 200 A-REIT

Source: S&P Dow Jones LLC and 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/ASX 200

The [S&P/ASX 200](#) is recognized as the institutional investable benchmark in Australia. The index covers approximately 80% of Australian equity market capitalization. Index constituents are drawn from eligible companies listed on the Australian Securities Exchange. The S&P/ASX 200 is a highly liquid and investable index that is designed to address investment managers' needs to benchmark against a portfolio characterized by sufficient size and liquidity.

S&P/ASX MID-SMALL

The S&P/ASX Mid-Small is designed to measure performance of companies included in the [S&P/ASX 300](#), but not in the [S&P/ASX 50](#). It is a combination of the [S&P/ASX MidCap 50](#) and the [S&P/ASX Small Ordinaries](#). The index covers approximately 18% of Australian equity market capitalization.

S&P DEVELOPED EX-AUSTRALIA LARGEMIDCAP

The [S&P Developed Ex-Australia LargeMidCap](#) is a float-adjusted, market-capitalization-weighted index comprising large- and mid-cap companies in developed markets, excluding Australia. It represents approximately 85% of each relevant market's total available capital. This index is part of the S&P Global BMI (Broad Market Index) Series.

S&P/ASX AUSTRALIAN FIXED INTEREST 0+ INDEX

The [S&P/ASX Australian Fixed Interest 0+ Index](#) is part of the S&P/ASX Australian Fixed Interest 0+ Index Series, a broad benchmark index family designed to measure the performance of Australian bonds meeting investability criteria.

S&P/ASX 200 A-REIT

The [S&P/ASX 200 A-REIT](#) is a sector subindex of the S&P/ASX 200. The index seeks to provide investors with exposure to Australian Real Estate Investment Trusts (A-REITs), which are captured under the Global Industry Classification Standard (GICS® Tier 2).

S&P DJI RESEARCH CONTRIBUTORS		
Charles Mounts	Global Head	charles.mounts@spglobal.com
Jake Vukelic	Business Manager	jake.vukelic@spglobal.com
GLOBAL RESEARCH & DESIGN		
AMERICAS		
Aye M. Soe, CFA	Americas Head	aye.soe@spglobal.com
Dennis Badlyans	Associate Director	dennis.badlyans@spglobal.com
Phillip Brzenk, CFA	Director	phillip.brzenk@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
Ryan Poirier, FRM	Senior Analyst	ryan.poirier@spglobal.com
Maria Sanchez	Associate Director	maria.sanchez@spglobal.com
Kelly Tang, CFA	Director	kelly.tang@spglobal.com
Peter Tsui	Director	peter.tsui@spglobal.com
Hong Xie, CFA	Director	hong.xie@spglobal.com
APAC		
Priscilla Luk	APAC Head	priscilla.luk@spglobal.com
Utkarsh Agrawal, CFA	Associate Director	utkarsh.agrawal@spglobal.com
Liyu Zeng, CFA	Director	liyu.zeng@spglobal.com
Akash Jain	Associate Director	akash.jain@spglobal.com
EMEA		
Sunjiv Mainie, CFA, CQF	EMEA Head	sunjiv.mainie@spglobal.com
Leonardo Cabrer, PhD	Senior Analyst	leonardo.cabrer@spglobal.com
Andrew Innes	Associate Director	andrew.innes@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	Senior Director	tim.edwards@spglobal.com
Anu R. Ganti, CFA	Director	anu.ganti@spglobal.com
Hamish Preston	Senior Associate	hamish.preston@spglobal.com
Howard Silverblatt	Senior Index Analyst	howard.silverblatt@spglobal.com

GENERAL DISCLAIMER

Copyright © 2018 by S&P Dow Jones Indices LLC, a part of S&P Global. All rights reserved. Standard & Poor's®, S&P 500® and S&P® are registered trademarks of Standard & Poor's Financial Services LLC ("S&P"), a subsidiary of S&P Global. Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC ("Dow Jones"). Trademarks have been licensed to S&P Dow Jones Indices LLC. Redistribution, reproduction and/or photocopying in whole or in part are prohibited without written permission. This document does not constitute an offer of services in jurisdictions where S&P Dow Jones Indices LLC, Dow Jones, S&P or their respective affiliates (collectively "S&P Dow Jones Indices") do not have the necessary licenses. 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. Past performance of an index is not a guarantee of future results.

It is not possible to invest directly in an index. Exposure to an asset class represented by an index is 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 vehicle. 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 Dow Jones Indices keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of S&P Dow Jones Indices may have information that is not available to other business units. S&P Dow Jones Indices 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.