A Division of S&P Global

SPIVA® Australia Scorecard

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

The SPIVA Australia Scorecard measures the performance of actively managed funds relative to benchmarks over various time horizons, covering equity, real estate and bond funds, and providing statistics on outperformance rates, survivorship rates and fund performance dispersion. In this year-end 2023 edition, domestic equity funds in New Zealand are included for the first time.

2023 Highlights

It was among the best of times and the worst of times for actively managed funds. In the Australian Equity General category, more than three-quarters of active managers failed to keep up with the s&P/ASX 200, and a similar story was seen in the International Equity General category. Meanwhile, active bond managers had an exceptional year, with almost three-quarters of Australian Bonds funds beating the s&P/ASX Australian Fixed Interest 0+ Index. Exhibit 1 summarizes the results across all our reported categories.

Exhibit 1: Percentage of Underperforming Active Australia and New Zealand Funds



Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2023. Past performance is no guarantee of future results. Chart is provided for illustrative purposes. Underperformance rates for the Australian Equity Mid- and Small-Cap and Australian Bonds categories are reported for time horizons over which the respective benchmark indices were live.

 Australian Equity General Funds: The S&P/ASX 200 ended the year up 12.4%, and Australian Equity General funds struggled to keep up; the one-year underperformance rate of 77% was the second highest in our records (see Exhibit 8). Longer term, underperformance rates were even higher, rising to 85% of funds underperforming the benchmark over 15 years.

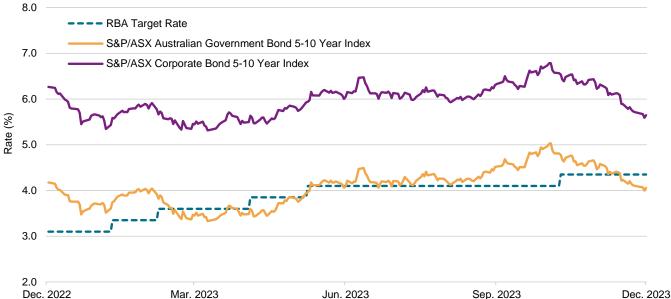
- Australian Equity Mid- and Small-Cap Funds: The <u>S&P/ASX Mid-Small</u> gained 7.8% in 2023 and a firm majority (64%) of actively managed Australian Equity Mid- and Small-Cap funds managed to beat it. Funds in the category gained 10.8% and 13.0% on an equal-and asset-weighted average basis, respectively. More such years will be required to change the longer-term statistics, however, with 77% of funds currently lagging over 10 years.
- International Equity General Funds: International equity funds posted average 2023 returns of 20.3% and 19.2% on an equal- and asset-weighted basis, respectively, with 81% of funds trailing the S&P Developed Ex-Australia LargeMidCap s total return of 24.1%. Over the 10- and 15-year horizons, around 94% of funds underperformed.
- Australian Bonds Funds: Active managers in the Australian Bonds category posted their lowest one-year underperformance rate since the 2015 launch of the S&P/ASX Australian Fixed Interest 0+ Index, with just 26% of funds lagging the index. The longer-term record was also better relative to other categories, with 56% and 46% underperforming over the three- and five-year periods, respectively.
- Australian Equity A-REIT Funds: After a challenging start to the year,¹ active managers in the Australian Equity A-REIT category improved their underperformance rate to 69% over the full year. Over the 15-year period, 80% of active funds underperformed.
- New Zealand Domestic Equity Funds: Over the one-year period, actively managed funds in the New Zealand Domestic Equity category gained 4.8% and 5.1% on an equal-and asset-weighted basis, compared to a 3.5% gross return with imputation for the S&P/NZX 50 Index. Within this category, 54% of active funds outperformed over one year, but just 23% outperformed over the 15-year period.
- Fund Survivorship: Liquidation rates for most active fund categories were moderate in 2023. International Equity General Funds recorded the highest liquidation rate at 7.7%. In contrast, none of the New Zealand Domestic Equity funds were liquidated, while only 1.3% of Australian Equity Mid- and Small-Cap funds failed to survive. The attrition rate increased over longer time horizons, with 57% of funds across all categories merged or liquidated over the 15-year period.

See the <u>SPIVA Australia Mid-Year 2023 Scorecard.</u>

Market Context

In 2023, as in many previous years, central bank policy decisions domestically and abroad dictated much of the market sentiment. The Reserve Bank of Australia (RBA) increased its target rate five times during the year, while fluctuating long-term inflation and economic expectations sent longer-dated government bond yields lower, then higher, before they ended the year close to where they began. Credit spreads moved mildly lower, with the spread between the <u>S&P/ASX Australian Government Bond 5-10 Year Index</u> and <u>S&P/ASX Corporate</u> Bond 5-10 Year Index falling from 209 bps to 159 bps over the year.





Source: S&P Dow Jones Indices LLC and RBA. Data as of Dec. 31, 2023. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Australian equities seesawed over the year. Despite having a flat return as late as October, the fall in longer-dated bond yields in the final two months of the year accompanied a "risk on" dynamic that drove Australian equities into double-digit gains; the S&P/ASX 200 finished the year with a total return of 12.4%. Global equities had more consistent gains through the year, with the S&P Developed Ex-Australia LargeMidCap posting a total return of 24.1% (in AUD).

130 — S&P Developed Ex-Australia LargeMidCap
— S&P/ASX 200
— S&P/ASX Mid-Small
— S&P/ASX Australian Fixed Interest 0+ Index

110

90
Dec. 2022 Mar. 2023 Jun. 2023 Sep. 2023 Dec. 2023

Exhibit 3: Australian Equities Posted Gains but Trailed Other Developed Markets

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2023. Index performance based on total return in AUD. Index levels rebased to 100 on Dec. 30, 2022. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Sectors played an important role in driving performance, with Information Technology contributing almost half of the developed benchmark's gains. In Australia, equities experienced noticeable rotations among sectors from the prior year: Information Technology and Consumer Discretionary were the best-performing sectors, with gains of 31% and 22% in 2023 contrasting with losses of 34% and 20% in 2022, respectively. Meanwhile Energy and Utilities, which had strong gains of 49% and 30% in 2022, respectively, barely remained in positive territory in 2023 (see Exhibit 4).

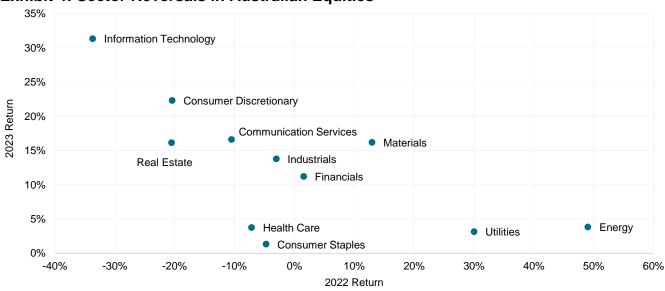
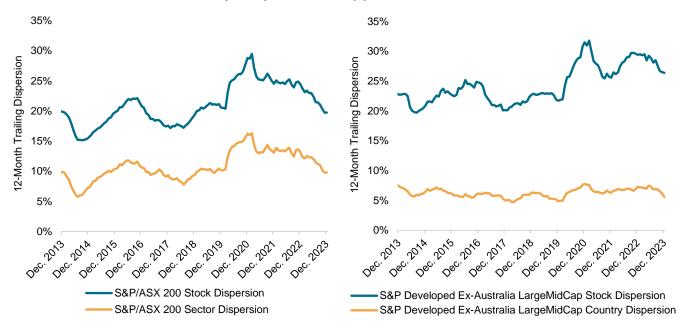


Exhibit 4: Sector Reversals in Australian Equities

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2023. S&P/ASX 200 sector performance based on total return in AUD. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Dispersion—which measures the opportunity set for active outperformance via stock, sector or country selection—fell in the second half of 2023 in both domestic and international equity markets. The 12-month trailing S&P/ASX 200 sector- and stock-level dispersion fell to levels unseen since December 2018, while there was a notable decline in country-level dispersion within the S&P Developed Ex-Australia LargeMidCap (see Exhibit 5).

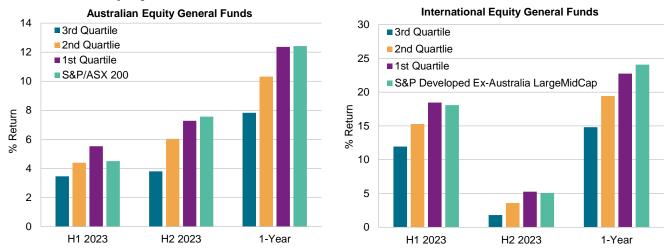
Exhibit 5: Sector and Country Dispersion Dropped in the Second Half of 2023



Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2023. Dispersion is annualized and calculated on a monthly basis. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Exhibit 6 illustrates a narrowing of active fund performance that occurred in the Australian Equity General category in 2023 and, during the second half of the year, in the International Equity General category, via the interquartile performance within each category (see Report 5). In both categories, over the full year, even top-quartile performance was not necessarily sufficient to match the benchmark's return.

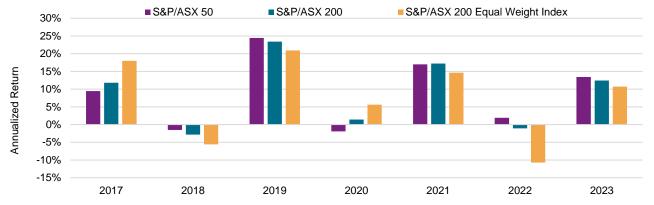
Exhibit 6: Interquartile Performance Range of Australian Equity General Funds and International Equity General Funds



Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2023. Index performance based on total return in AUD. Chart is provided for illustrative purposes. Past performance is no guarantee of future results.

Another notable trend was the outperformance of the very largest Australian stocks. In 2023, the mega-cap <u>S&P/ASX 50</u> outperformed the S&P/ASX Mid-Small by 7.0%, while concurrently, the <u>S&P/ASX 200 Equal Weight Index</u>, which has a small-cap tilt relative to the S&P/ASX 200, extended its underperformance to a third consecutive year (see Exhibit 7). This indicates challenges for the Australian large-cap active equity managers who sought opportunities outside of the stocks most heavily weighted in the capitalization-weighted S&P/ASX 200.

Exhibit 7: Large-Cap Dominance in the S&P/ASX 200 Extended Further in 2023, Leading to the S&P/ASX 200 Equal Weight Index Underperforming the S&P/ASX 200



Source: S&P Dow Jones Indices LLC. Data from Dec. 30, 2008, to Dec. 31, 2023. Index performance based on total return in AUD. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Against this challenging backdrop, Australian large-cap equity active managers suffered their second-worst underperformance rate since 2009, much worse than their long-term average of 60% (see Exhibit 8). Similarly, 81% of active managers in the International Equity General category underperformed the benchmark, also the second-worst result since 2009 and compared to a long-term average of 70% (see Exhibit 9).

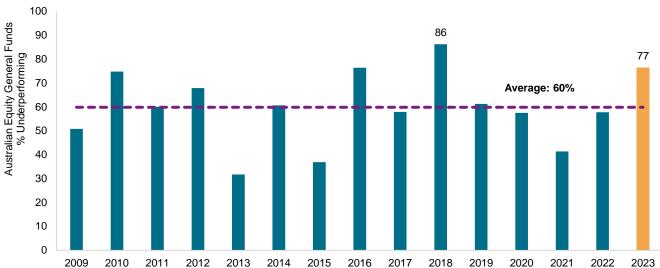


Exhibit 8: Percentage of Australian Equity General Funds Underperforming the S&P/ASX 200 Each Year

Source: S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2023. Chart is provided for illustrative purposes. Past performance is no guarantee of future results.

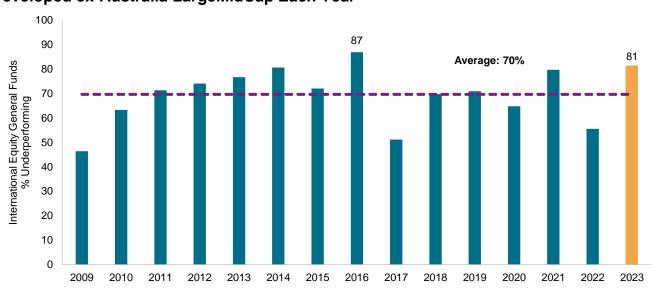


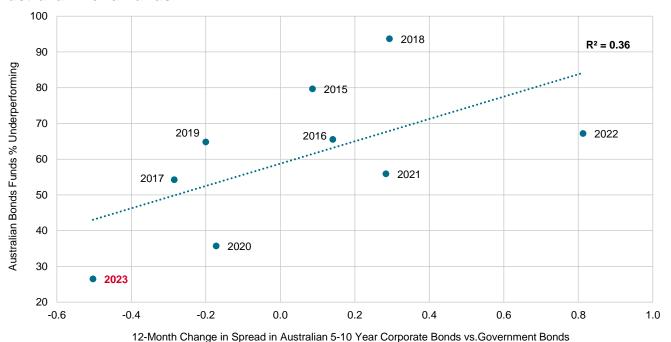
Exhibit 9: Percentage of International Equity General Funds Underperforming the S&P Developed ex-Australia LargeMidCap Each Year

S&P Dow Jones Indices LLC, Morningstar. Data as of Dec. 31, 2023. Chart is provided for illustrative purposes. Past performance is no guarantee of future results.

In the fixed income markets, the winds appear to have been more favorable for active managers—particularly those taking on a little more duration or a little more credit risk than their category benchmark. Credit spreads narrowed over the year, while longer-dated bonds generally outperformed shorter-dated bonds.² Active fund managers appear to have been well positioned for these trends, with nearly three-quarters (74%) of funds in the Australian Bonds category outperforming the S&P/ASX Australian Fixed Interest 0+ Index in 2023.

Offering a historical perspective on the impact of credit trends on the fixed income active fund performance rates reported in our Australia scorecard, Exhibit 10 shows that over the past nine years, the annual underperformance rate was generally lower in years with narrowing credit spreads.

Exhibit 10: Higher Credit Spread Exposure Tended to Lower Underperformance Rates of Australian Bond Funds



Source: S&P Dow Jones Indices LLC, Morningstar. Data from Dec. 31, 2014, to Dec. 31, 2023. Credit spread is calculated as the yield of the S&P/ASX Corporate Bond 5-10 Year Index minus the yield of the S&P/ASX Australian Government Bond 5-10 Year Index. Chart is provided for illustrative purposes. Past performance is no guarantee of future results.

² The S&P/ASX Australian Government Bond 0-5 Year, 5-10 Year, 10-15 Year and 15-20 Year Indices gained 3.3%,4.9%, 5.4% and 6.3%, respectively, in 2023.

A Unique Scorecard for the Active Versus Passive Debate

Since its first publication over 20 years ago, the SPIVA Scorecard has served as the de facto scorekeeper of the active versus passive debate. For two decades, 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 means the returns of an AUD 10 billion fund affect the average in the same manner as the returns of an AUD 10 million fund. An accurate representation of how market participants fared in a particular period can be ascertained by calculating weighted average returns where each fund's return is weighted by net assets. SPIVA Scorecards show both equal- and asset-weighted averages.
- Data Cleaning: SPIVA Scorecards avoid double-counting multiple share classes in all count-based calculations by using only the share class with greater assets. Index, leveraged and inverse funds, along with other index-linked products, are excluded because this is meant to be a scorecard for active managers.

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 (%)	15-Year (%)
Australian Equity General	S&P/ASX 200	76.53	69.30	77.55	83.33	85.37
Australian Equity Mid- and Small-Cap	S&P/ASX Mid-Small	35.85	55.48	57.97	76.79	-
International Equity General	S&P Developed Ex- Australia LargeMidCap	81.47	83.16	89.72	93.83	94.40
Australian Bonds	S&P/ASX Australian Fixed Interest 0+ Index	26.47	55.88	46.48	-	-
Australian Equity A-REIT	S&P/ASX 200 A-REIT	69.23	75.81	67.16	75.34	80.00
New Zealand Domestic Equity	S&P/NZX 50 Index	45.83	38.10	47.37	75.00	76.92

Sources: S&P Dow Jones Indices LLC, Morningstar. Data for periods ending Dec. 31, 2023. Outperformance is based on equal-weighted fund counts. Index performance based on total return in AUD, except for the S&P/NZX 50 Index whose returns are in NZD and include reinvestment of dividends and imputation credits. Underperformance rates for Australian Bonds and Australian Equity Mid- and Small-Cap categories are reported for time horizons over which the respective benchmark indices were live. 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)

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Fund Category	Comparison Index	3-Year (%)	5-Year (%)	10-Year (%)	15-Year (%)	
Australian Equity General	S&P/ASX 200	59.88	79.88	84.85	86.97	
Australian Equity Mid- and Small-Cap	S&P/ASX Mid-Small	52.90	58.70	72.32	-	
International Equity General	S&P Developed Ex- Australia LargeMidCap	77.54	94.68	96.48	95.60	
Australian Bonds	S&P/ASX Australian Fixed Interest 0+ Index	51.47	47.89	-	-	
Australian Equity A-REIT	S&P/ASX 200 A-REIT	70.97	65.67	72.60	73.68	
New Zealand Domestic Equity	S&P/NZX 50 Index	33.33	52.63	75.00	84.62	

Sources: S&P Dow Jones Indices LLC, Morningstar. Data for periods ending Dec. 31, 2023. Index performance based on total return in AUD, except for the S&P/NZX 50 Index whose returns are in NZD and include reinvestment of dividends and imputation credits. Risk-adjusted return is computed as the annualized average monthly return divided by the annualized standard deviation of the monthly return for the measured periods. Results shown for all time horizons over which the comparison index total return was positive. Underperformance rates for Australian Bonds and Australian Equity Mid- and Small-Cap categories are reported for time horizons over which the respective benchmark indices were live. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 2: Survivorship of Funds

Fund Category	Number of Funds at Start	Survivorship (%)
1-Year		
Australian Equity General	294	94.56
Australian Equity Mid- and Small-Cap	159	98.74
International Equity General	313	92.33
Australian Bonds	68	97.06
Australian Equity A-REIT	52	98.08
New Zealand Domestic Equity	24	100.00
All Categories	910	95.05
3-Year		
Australian Equity General	329	80.24
Australian Equity Mid- and Small-Cap	155	91.61
International Equity General	285	80.35
Australian Bonds	68	88.24
Australian Equity A-REIT	62	79.03
New Zealand Domestic Equity	21	100.00
All Categories	920	83.15
5-Year		
Australian Equity General	343	72.30
Australian Equity Mid- and Small-Cap	138	83.33
International Equity General	282	69.86
Australian Bonds	71	77.46
Australian Equity A-REIT	67	71.64
New Zealand Domestic Equity	19	100.00
All Categories	920	74.13

Sources: S&P Dow Jones Indices LLC, Morningstar. Data for periods ending Dec. 31, 2023. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 2: Survivorship of Funds (cont.)

Fund Category	Number of Funds at Start	Survivorship (%)
10-Year		
Australian Equity General	330	58.48
Australian Equity Mid- and Small-Cap	112	64.29
International Equity General	227	53.74
Australian Bonds	53	66.04
Australian Equity A-REIT	73	63.01
New Zealand Domestic Equity	16	81.25
All Categories	811	59.31
15-Year		
Australian Equity General	376	42.55
Australian Equity Mid- and Small-Cap	109	50.46
International Equity General	250	38.00
Australian Bonds	58	48.28
Australian Equity A-REIT	95	46.32
New Zealand Domestic Equity	13	61.54
All Categories	901	43.29

Sources: S&P Dow Jones Indices LLC, Morningstar. Data for periods ending Dec. 31, 2023. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 3: Average Fund Performance (Equal-Weighted)

Index/Fund Category	1-Year (%)	3-Year (%)	5-Year (%)	10-Year (%)	15-Year (%)
S&P/ASX 200	12.42	9.24	10.28	7.93	9.42
Australian Equity General	10.35	8.28	9.36	6.89	8.66
S&P/ASX Mid-Small	7.81	4.05	9.21	8.85	-
Australian Equity Mid- and Small-Cap	10.80	2.96	9.74	8.68	11.45
S&P Developed Ex-Australia LargeMidCap	24.07	11.85	13.85	12.10	11.43
International Equity General	20.25	8.61	11.28	9.84	9.61
S&P/ASX Australian Fixed Interest 0+ Index	5.29	-2.76	0.60	-	-
Australian Bonds	5.62	-2.22	0.86	2.33	3.54
S&P/ASX 200 A-REIT	17.59	5.67	6.08	9.16	8.96
Australian Equity A-REIT	15.25	5.22	5.41	8.20	8.57
S&P/NZX 50 Index	2.59	-3.48	5.96	9.53	10.27
New Zealand Domestic Equity	4.82	-2.28	7.35	10.53	11.51

Sources: S&P Dow Jones Indices LLC, Morningstar. Data for periods ending Dec. 31, 2023. Returns for periods greater than one year are annualized. Index performance based on total return in AUD, except for the S&P/NZX 50 Index whose returns are in NZD and include reinvestment of dividends and imputation credits. Index returns for the S&P/ASX Mid-Small and S&P/ASX Australian Fixed Interest 0+ Index are reported for time horizons over which the indices were live. Funds are equal weighted, but indices are not. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Report 4: Average Fund Performance (Asset-Weighted)

Index/Fund Category	1-Year (%)	3-Year (%)	5-Year (%)	10-Year (%)	15-Year (%)
S&P/ASX 200	12.42	9.24	10.28	7.93	9.42
Australian Equity General	10.83	8.29	9.51	7.12	8.99
S&P/ASX Mid-Small	7.81	4.05	9.21	8.85	-
Australian Equity Mid- and Small-Cap	13.01	2.86	9.14	8.05	10.71
S&P Developed Ex-Australia LargeMidCap	24.07	11.85	13.85	12.10	11.43
International Equity General	19.21	7.82	10.34	9.50	9.81
S&P/ASX Australian Fixed Interest 0+ Index	5.29	-2.76	0.60	-	-
Australian Bonds	5.86	-1.76	1.14	2.62	3.84
S&P/ASX 200 A-REIT	17.59	5.67	6.08	9.16	8.96
Australian Equity A-REIT	15.02	5.27	5.29	8.28	8.57
S&P/NZX 50 Index	2.59	-3.48	5.96	9.53	10.27
New Zealand Domestic Equity	5.06	-2.35	7.62	10.71	11.45

Sources: S&P Dow Jones Indices LLC, Morningstar. Data for periods ending Dec. 31, 2023. Returns for periods greater than one year are annualized. Index performance based on total return in AUD, except for the S&P/NZX 50 Index whose returns are in NZD and include reinvestment of dividends and imputation credits. Index returns for the S&P/ASX Mid-Small and S&P/ASX Australian Fixed Interest 0+ Index are reported for time horizons over which the indices were live. Funds are asset weighted, but indices are not. 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
1-Year			
Australian Equity General	7.84	10.32	12.37
Australian Equity Mid- and Small-Cap	5.75	10.21	14.54
International Equity General	14.81	19.43	22.74
Australian Bonds	5.32	5.67	6.19
Australian Equity A-REIT	13.56	16.64	17.91
New Zealand Domestic Equity	2.61	3.58	5.23
3-Year			
Australian Equity General	7.09	8.66	10.00
Australian Equity Mid- and Small-Cap	-0.41	3.97	6.36
International Equity General	6.30	9.11	11.49
Australian Bonds	-3.01	-2.76	-2.44
Australian Equity A-REIT	4.88	5.33	5.89
New Zealand Domestic Equity	-2.87	-2.58	-1.66
5-Year			
Australian Equity General	8.33	9.56	10.55
Australian Equity Mid- and Small-Cap	7.76	9.31	11.54
International Equity General	9.68	11.69	13.06
Australian Bonds	0.43	0.75	1.01
Australian Equity A-REIT	4.04	5.88	7.12
New Zealand Domestic Equity	6.36	7.15	7.78
10-Year			
Australian Equity General	6.07	7.02	8.07
Australian Equity Mid- and Small-Cap	6.94	8.22	9.79
International Equity General	9.13	10.26	11.07
Australian Bonds	2.05	2.42	2.74
Australian Equity A-REIT	7.21	8.77	9.35
New Zealand Domestic Equity	9.80	10.41	10.89
15-Year			
Australian Equity General	7.87	8.82	9.78
Australian Equity Mid- and Small-Cap	9.21	11.13	12.53
International Equity General	8.67	10.03	10.81
Australian Bonds	3.52	3.70	4.11
Australian Equity A-REIT	7.82	8.81	9.64
New Zealand Domestic Equity	10.61	11.32	12.01

Sources: S&P Dow Jones Indices LLC, Morningstar. Data for periods ending Dec. 31, 2023. Returns based on total returns and annualized for periods greater than one year. 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 are obtained for all managed funds³ domiciled in Australia and New Zealand for which month-end data is available during the performance period. The data include the most comprehensive 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 Australian-domiciled funds in the Australian Equity General (large-cap equity), Australian Equity Mid- and Small-Cap, International Equity General, Australian Bonds and Australian Equity A-REIT categories, and New Zealand-domiciled funds in the New Zealand Domestic Equity category.

The Morningstar classification system produces narrow, style-based classifications for 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 11: Australian Equity Funds – SPIVA and Morningstar Categories

SPIVA Category	Morningstar Category
	Australia Fund Equity - Australia Large Blend
Australian Equity General	Australia Fund Equity - Australia Large Growth
	Australia Fund Equity - Australia Large Value
	Australia Fund Equity - Australia Mid/Small Blend
Australian Equity Mid- and Small-Cap	Australia Fund Equity - Australia Mid/Small Growth
	Australia Fund Equity - Australia Mid/Small Value
	Australia Fund Equity - World Large Blend
International Equity General	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
New Zealand Domestic Equity	New Zealand Fund Equity - New Zealand

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

Includes open-ended managed funds and ETFs.

Benchmarks

The chosen benchmarks are shown in Exhibit 12. Index returns are total returns (i.e., include dividend reinvestment) in Australian dollars, except for the S&P/NZX 50 Index (Gross with Imputation) whose returns are in New Zealand dollars and include reinvestment of dividends and imputation credits. 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. To ensure the study is robust and fair, representative benchmarks were selected for each fund category, but not all funds adopt the benchmarks stipulated. However, many funds do set their performance hurdle based on either the assigned benchmarks in this report, or a similar alternative.

Exhibit 12: 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
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
New Zealand Domestic Equity	S&P/NZX 50 Index

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 percentage of funds that did not survive and beat the index.

Survivorship (%)

The survivorship measure represents the percentage of funds in existence at the beginning of the time period that are still active at the end of the time period.

Equal-Weighted Fund Performance

Equal-weighted returns for a particular style category and time horizon are determined by compounding the simple average of the monthly returns of all active funds that were available at the start of the period.

Asset-Weighted Fund Performance

Asset-weighted returns for a particular style category are calculated similarly, except based on a weighted average return of fund returns each month, with each fund's return weighted by its total net assets. Asset-weighted returns can be a better indicator of category performances because they reflect the returns of the total money invested across the sample of funds.

Quartile Breakpoints

The pth 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, which is 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 surviving 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. The SPIVA reports remove this bias in three ways. The first method to remove the bias is to use 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. The second is explicitly to show the survivorship rate in each category. The final way is to construct a 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 <u>S&P/ASX 300</u> but not in the <u>S&P/ASX 50</u>. It is a combination of the <u>S&P/ASX MidCap 50</u> and the <u>S&P/ASX Small Ordinaries</u>. 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/NZX 50 Index (Gross with Imputation)

The S&P/NZX 50 Index is designed to measure the performance of the 50 largest, eligible stocks listed on the Main Board of the NZX by float-adjusted market capitalization. The index covers approximately 90% of New Zealand equity market capitalization. The gross with imputation version reinvests the regular dividends, as reported on the ex-dividend date, along with any associated imputation credits, as declared by the respective company.

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 series 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 exposure to Australian real estate investment trusts (A-REITs), which are captured under the Global Industry Classification Standard (GICS®) Tier 2.

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