VanEck™

MVW VanEck Vectors Australian Equal Weight ETF

Equal Weight: Outperforming three years on

Over the three years since its 2014 launch, the first Australian equity equal weight ETF in Australia has outperformed the S&P/ASX 200 by an average of 3.73% per annum.

Giving equal weight, or importance, to stocks in a portfolio is a simple alternate approach that has had great success in equity markets around the world for many years. Equal weight investing was introduced to Australian investors in March 2014 when VanEck launched its VanEck Vectors Australian Equal Weight ETF on ASX (ASX code: MVW).

In the highly concentrated Australian equities market, equally weighting a portfolio delivers investors significantly improved diversification and reduced stock and sector concentration, resulting in superior investment outcomes compared to tracking a market capitalisation weighted index, such as the S&P/ASX 200 Accumulation Index (S&P/ASX 200).

There is a large volume of academic and investment industry research that concludes equal weight outperforms market capitalisation for the following reasons:

- it provides exposure away from mega and larger caps to smaller cap with more growth potential;
- it provides exposure to value stocks; and
- it is an inherently contra trading strategy involving frequent rebalancing that takes profits from winners and increases exposure to losers to maintain equal weighting.

Consistent with the research, in practice, during the past three years MVW has outperformed the S&P/ASX 200 and done it with less volatility. This paper provides investors with an in-depth look into the overall performance and characteristics of MVW, the impact equal weighting has on stock and sector diversification, performance attribution, volatility, and its risk-adjusted performance. MVW has proven equal weighting is well suited to the highly concentrated Australian equities market, with performance that cannot be ignored.

Performance

Since inception to 31 March 2017, MVW outperformed the S&P/ASX 200 by an average of 3.73% per annum.

Table 1: MVW performance

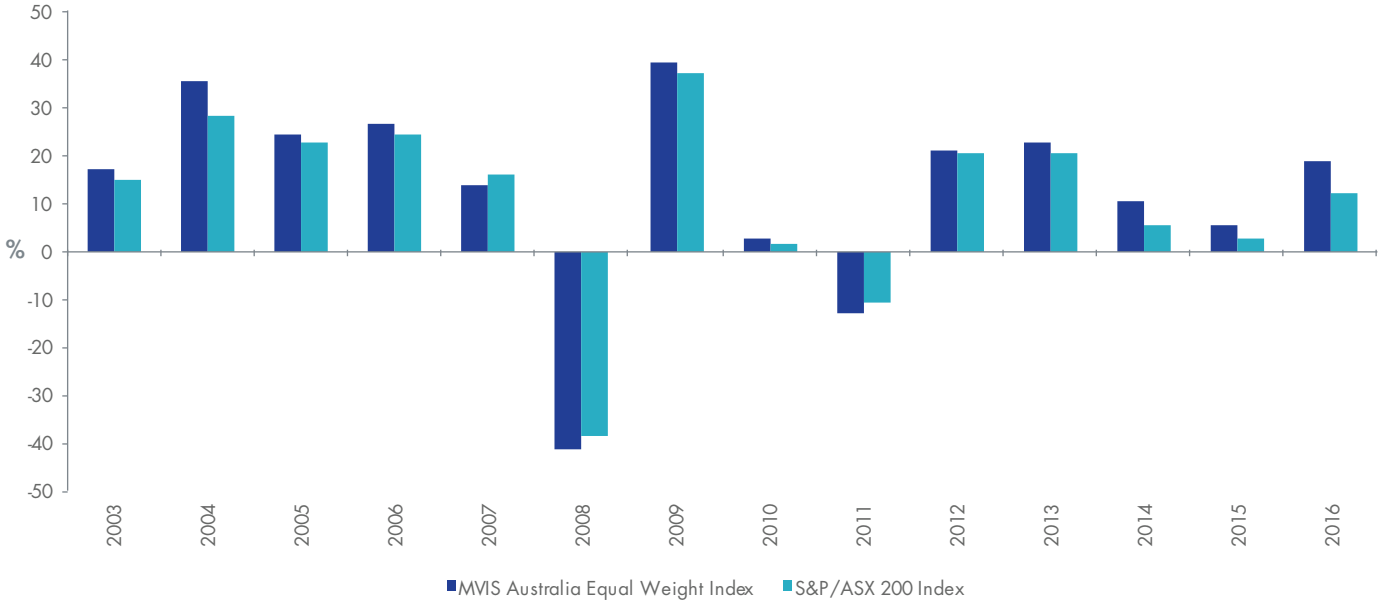
	1 Year (%)	2 Years (% p.a.)	3 years (% p.a.)	Since MVW inception (% p.a.)
MVW	18.75	8.88	11.39	11.12
S&P/ASX 200 Index	20.49	4.37	7.53	7.39
Excess	**-1.75**	**+4.51**	**+3.86**	**+3.73**

Inception date is March 4, 2014.
Source: Morningstar Direct, as at 31 March 2017. Results are per annum, calculated daily to the last business day of the month and assume immediate reinvestment of all dividends. MVW results are net of management costs but do not include brokerage costs of investing in MVW. Past performance is not a reliable indicator of future performance.

This is not an anomaly. The index MVW tracks, the MVIS Australia Equal Weight Index (MVW) Index, has demonstrated long term outperformance.

Chart 1 below shows the MVW Index has outperformed vs S&P/ASX 200 in 11 of the past 14 calendar years including the last five in a row.

Chart 1: Annual Returns of MVIS Australia Equal Weight Index vs S&P/ASX 200 Index 2003 to 2016



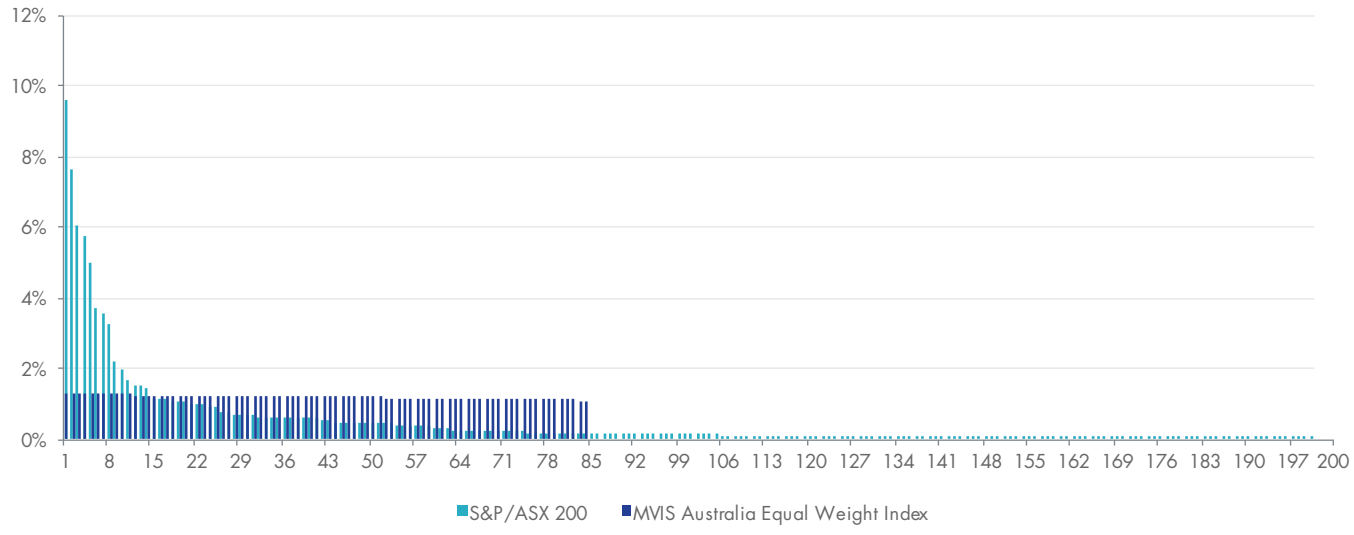
Source: VanEck, FactSet, as at 31 December 2016. Results are calculated to the last business day of the month and assume immediate reinvestment of all dividends and exclude costs associated with investing in MVW. You can't invest directly in an index. Past performance of MVW's Index is not a reliable indicator of future performance of MVW.

Characteristics of MVW - Holdings

Chart 2 below demonstrates, relative to the S&P/ASX 200, MVW is underweight only the largest mega caps and the very small stocks within the long tail of the S&P/ASX 200. These very small stocks are not included due to liquidity constraints and/or MVW Index's 90% coverage rule. Either way they make a negligible contribution to the performance of the S&P/ASX 200 so their exclusion from MVW is not significant.

MVW has a larger exposure than that of the market capitalisation weighted benchmark index for around 80% of its portfolio. The companies in which MVW is overweight may be former small and mid-caps that have grown, they may be large or mega caps that have fallen in size. Importantly these companies have much greater potential for growth or are more likely to be taken over than the largest handful of stocks on ASX.

Chart 2: MVW vs S&P/ASX 200 constituent rank and weightings



Source: VanEck, Factset, as at 31 March 2017

Diversification

MVW is better diversified and has lower stock concentration than the S&P/ASX 200. A way to measure diversification of a portfolio is to calculate a Herfindahl Index. This index is a broadly used technique to quantify concentration. When used inversely, this index measures diversification. As at the last rebalance in March 2017, the Herfindahl Index for the S&P/ASX 200 was 318. The equivalent measure for the MVW Index was 119. The MVW Index is therefore nearly one-third as concentrated as the S&P/ASX 200. In other words, the MVW Index is nearly three times more diversified than the S&P/ASX 200.

Sector weightings

One way this better diversification can be clearly seen is in sector allocation. The S&P/ASX 200 has sector weightings close to those of the large and mega cap market. This is because the weight of each sector in the benchmark index at any time is dependent on the total market cap of the stocks in that sector relative to the market cap of the entire index. On the other hand the sector weights of MVW will be determined at each rebalance of the MVW Index.

Therefore, MVW will be overweight, relative to the S&P/ASX 200, sectors that contain stocks that are on average smaller than the average stock in the S&P/ASX 200 and will be underweight sectors that contain on average larger than average companies. The charts below illustrate how the sector weightings for the two indices has changed since MVW's inception.

Chart 3. MVW Sector breakdown

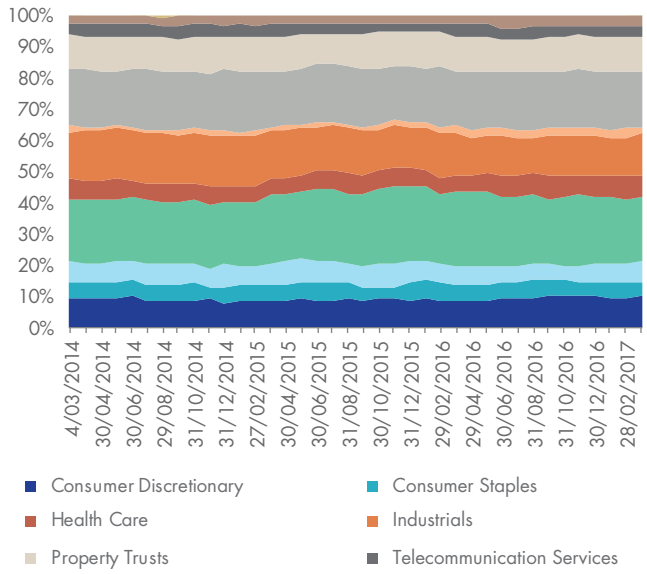
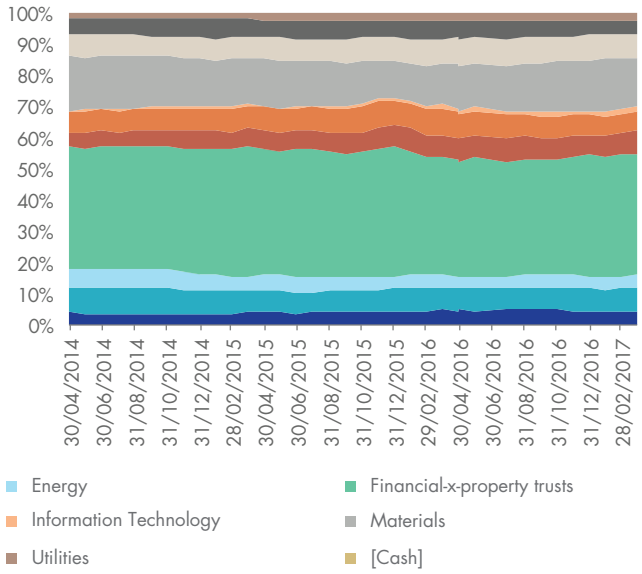


Chart 4. S&P/ASX 200 Sector breakdown



Source: Factset, 4 March 2014 to 31 March 2017

Since 2014 MVW has been consistently overweight in certain sectors, such as industrials and consumer discretionary, and underweight in financials. However, for other sectors the situation has varied considerably over time. For instance, MVW has sometimes been in line with the S&P/ASX 200 in materials while at other times been as much as 6.75% overweight. MVW has been overweight health care by as much as 1.94% and been underweight by 1.77%. The differences in sector allocation helps explain how MVW performed differently compared to the S&P/ASX 200.

The sector contribution performance analysis delivers results in line with these variations. MVW has benefited most from being overweight industrials and property trusts while being underweight financials. Stock selection within materials was also a major contributor to performance, indicating that it was the allocation to small sized companies within this sector that added relative value.

Table 2 – Three year attribution of MVW

	VanEck Vectors Australian Equal Weight ETF			S&P/ASX 200			Attribution Analysis (% p.a.)		
	Average Weight	Total Return	Contrib. To Return	Average Weight	Total Return	Contrib. To Return	Allocation Effect	Selection Effect	Total Effect
Total	**100**	**12.22**	**12.22**	**100**	**7.74**	**7.74**	**1.13**	**4.11**	**5.15**
Consumer Discretionary	8.70	18.16	1.67	4.44	9.96	0.47	0.17	0.72	0.89
Consumer Staples	5.06	-2.14	-0.2	7.25	3.81	0.27	0.16	-0.36	-0.20
Energy	6.15	-6.82	-0.66	4.75	-9.21	-0.68	-0.12	0.15	0.02
Financials	21.52	11.75	2.41	38.97	8.05	2.93	-0.14	1.05	0.92
Health Care	5.93	20.24	1.29	6.18	18.48	1.15	0.03	0.07	0.10
Industrials	14.25	18.66	3.18	7.31	13.17	1.09	0.65	0.82	1.46
Information Technology	1.73	3.46	0.12	0.91	5.02	0.06	0.01	-0.04	-0.03
Materials	18.70	11.56	2.37	15.02	2.90	0.51	0.21	1.63	1.83
Property Trusts	11.03	16.67	2.26	7.46	20.29	1.63	0.05	-0.03	0.02
Telecommunication Services	3.59	0.19	0.23	5.39	2.80	0.27	0.05	-0.03	0.17
Utilities	3.04	23.18	0.79	2.17	22.01	0.51	0.14	0.03	0.17
Cash	0.11	2.22	0.00	--	--	--	-0.11	--	-0.11

Source: Factset, 1 April 2014 to 31 March 2017. Two factor Brinson attribution. Past performance is not a reliable indicator of future performance

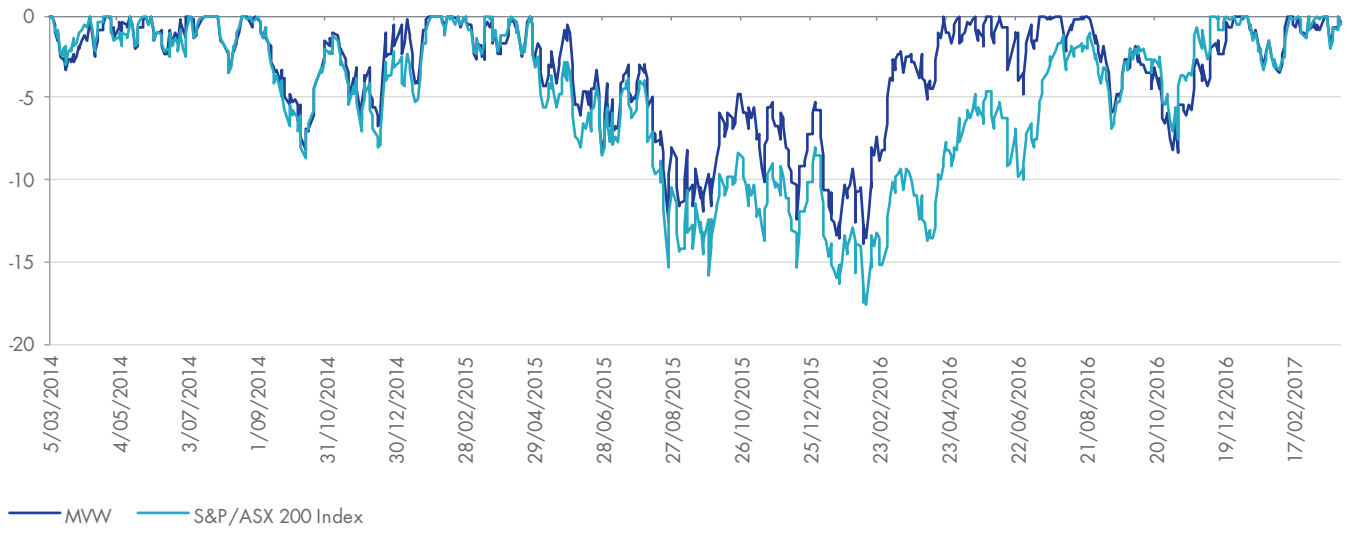
Volatility

Volatility is often measured by standard deviation in returns, however, for investors negative outcomes or the potential for losses are the true 'risk' they consider. A measure called 'drawdown' is useful for investors to assess this volatility. It demonstrates both the depth of a fall from an historical peak and the pace of the recovery to a new peak. The maximum drawdown is the distance from the highest peak to the deepest valley. Investments that fall less and recover faster are more desirable.

Chart 5 below shows the drawdown of MVW versus the S&P/ASX 200 since MVW's inception. In summary:

- The maximum drawdown of MVW was 13.82% versus the S&P/ASX 200 18.00%
- MVW recovered from its previous low faster than the S&P/ASX 200.

Chart 5 – Drawdown: MVW vs S&P/ASX 200 Index



Source: Morningstar Direct, as at 31 March 2017. Results are calculated daily to the last business day of the month and assume immediate reinvestment of all dividends. MVW results are net of management costs but do not include brokerage costs of investing in MVW. Past performance is not a reliable indicator of future performance.

Chart 6 graphs standard deviation, the traditional volatility measure, of MVW and the S&P/ASX 200. The volatility of MVW, as measured by rolling twelve month standard deviations was generally below the S&P/ASX 200. Chart 7 graphs the beta of MVW versus the S&P/ASX 200. Since its inception MVW has had a beta less than one and was a low as 0.91. Despite popular belief, there are sustained periods that the price movements of MVW are less volatile than the market index.

Chart 6. Standard Deviation: MVW vs S&P/ASX 200

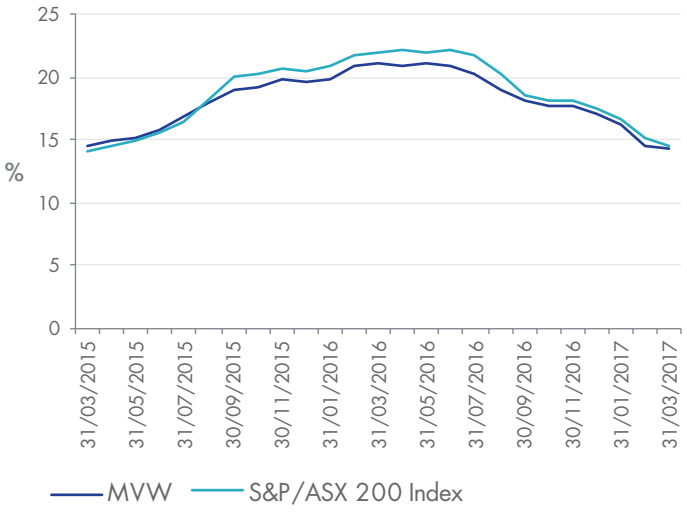
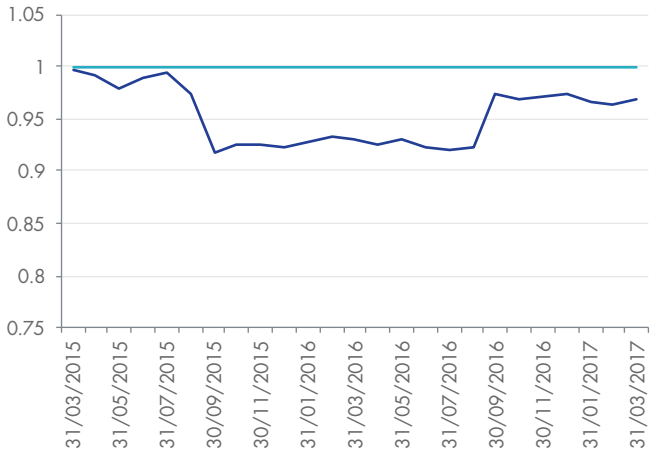


Chart 7. Beta: MVW vs S&P/ASX 200



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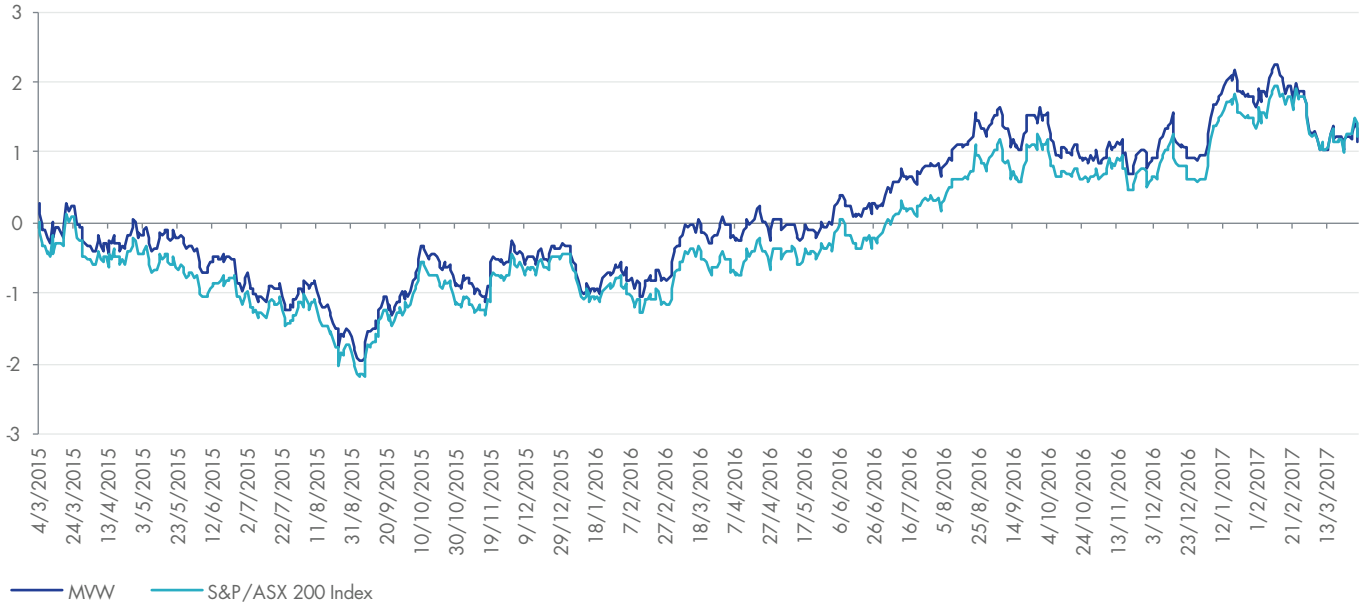
Risk adjusted performance

The Sharpe ratio combines a return measure with a volatility measure to quantify the relationship between the returns and risk[1]. It provides a measure of risk-adjusted performance. As can be seen in Chart 8, MVW consistently has a higher Sharpe ratio than the S&P/ASX 200. This means MVW has a better risk/return trade-off. MVW has delivered better returns without increasing the risk.

Chart 8. Sharpe Ratio: MVW vs S&P/ASX 200



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[1]The Sharpe ratio takes the excess return against a relevant risk-free and divides it by the standard deviation of the return. The risk free rate used is the RBA Cash Rate.

MVW consistently achieved better risk adjusted performance than the S&P/ASX 200.

To asses this over a longer time period we calculated 12 month Sharpe ratios of the MVW Index and the S&P/ASX 200 at the end of each month starting with the period ended December 2003 and continuing up to the period ended March 2017. There are 160 data points. In 117 instances the MVW Index Sharpe ratio is higher. The S&P/ASX 200 Sharpe ratio is higher in only 43 instances. At the data point where MVW Index ratio had its biggest gap over the S&P/ASX 200 ratio, the excess is 0.75. The biggest gap the S&P/ASX 200 ratio ever had over the MVW Index ratio is 0.41.

The conclusion that can be drawn is that the better returns of MVW Index over the long term, is not the result of greater risk-taking.

Conclusion

Equal weight investing via MVW in Australia has led to significant outperformance since its inception. MVW's outperformance has been achieved due to its unique style, its contrarian trading and its superior diversification, with less risk than the market benchmark index. Based on the evidence of its first three years, MVW is an ideal core investment strategy for a broad based Australian equities exposure.

Further support

A selection of the independent academic and commercial research that have investigated the reasons that equal weighted portfolios outperform and reinforce it as an alternative passive approach are outlined below:

- The CSIRO-Monash Superannuation Research Cluster, while researching aspects of our superannuation system including investment practices, found in their paper, Is fundamental indexation able to time the market? Evidence from the Dow Jones Industrial Average(2015) that equally weighting a portfolio outperforms market capitalisation because of three factors:
    1. higher exposure to smaller stocks rather than to bigger stocks;
    2. higher exposure to so-called 'value stocks' meaning those stocks with a high book-to-market ratio; and
    3. better market timing i.e. equal weighting extracts more returns when markets are rising and loses less when markets are falling.
- DeMiguel, Garlappi and Uppal (2009) in Optimal versus naive diversification: How inefficient is the 1/N portfolio strategy? - found that out of 14 asset allocation models evaluated across seven empirical data sets, none were consistently better than equally weighting assets in terms of Sharpe Ratio and certainty-equivalent return.
- Plyakha, Uppal and Vilkov (2012) highlighted an equal weighted portfolio's contra trading, finding that its alpha arises from the "rebalancing required to maintain equal weights, which is a contrarian strategy".
- Lajbcygier and Sojka (2015) assessed the viability of different indexing methods accounting for all transaction costs using different rebalancing frequencies, trade sizes and fund sizes. For each of the three fund sizes - $500 million fund (small), $1 billion (medium) and $10 billion fund (large) - the equal weight strategy was the best performer in terms of geometric returns and Sharpe ratios.
- Hamich and Brown (2014) provided mathematical proof "that equal weight is the portfolio construction approach that gives the best diversification for the long term. Not just better than market capitalisation, but the best possible diversification among any portfolio construction strategy."
- The University of London's Cass Business School (2013) demonstrated the relative inefficiency of market capitalisation weighted indices in a comprehensive which analysed 10 million randomly created portfolios, including equally weighted portfolios.
- S&P Dow Jones Indices found that equal weight indexing was a harder to beat reference point in its white paper "Equal-Weight Benchmarking: Raising the Money Bars" (2014) and that equal weighting demonstrates long term outperformance in "10 years later: Where in the World is Equal Weight Indexing Now?" (2013).

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