



Access the opportunities.



The road to recovery (revisited):

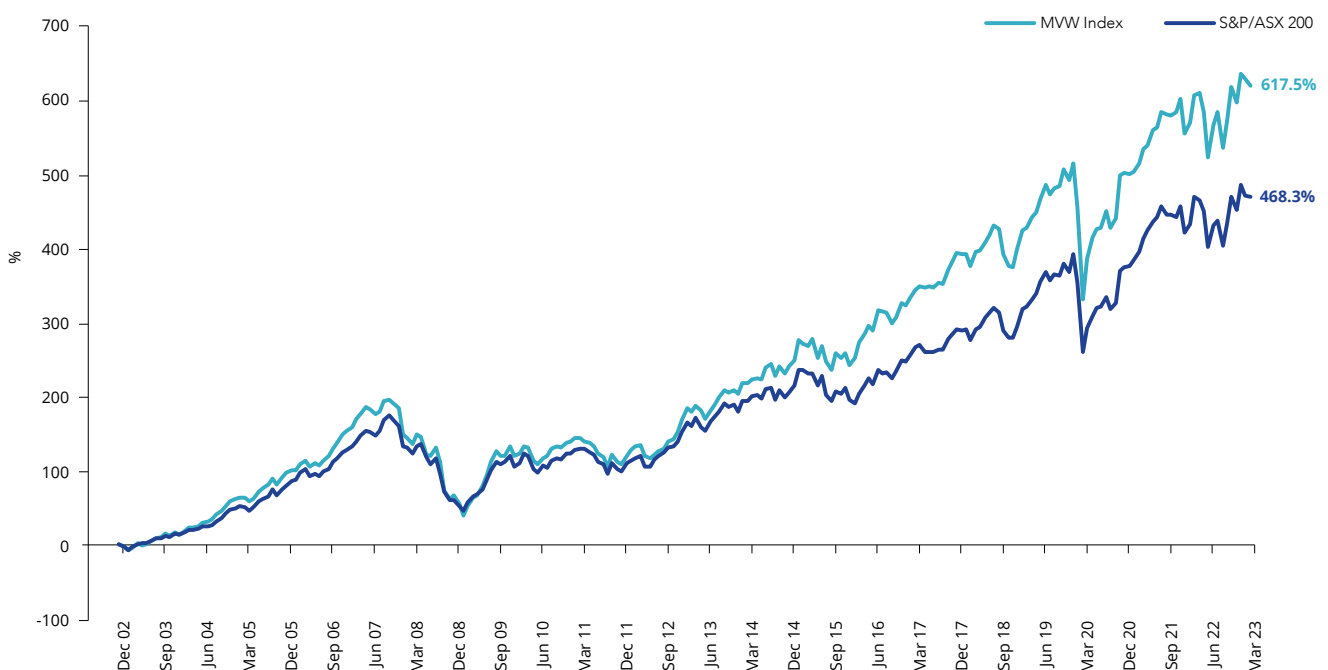
Further analysis of equal weight performance
after market declines

April 2023

It has been mathematically proven why equal weight has outperformed. Given current market volatility, only three years after the market experienced sharp falls as a result of COVID lockdowns, we think it is worth revisiting our 2020 paper, The Road to Recovery which posited, “Should the recovery, from the market falls in early 2020, be similar to the recoveries the Australian equity market has experienced in the past, mathematics tells us a fund tracking an equal weight index is well positioned to outperform the S&P/ASX 200.” Mathematics again, proves why this was the case, and why it could be the case in subsequent recoveries.

Equally weighted portfolios have historically outperformed their market capitalisation counterparts over the long term. There have been a number of studies¹ which support this and it is demonstrated in Figure 1. Figure 1 shows the performance of Australia’s standard equal weighted index, the MVIS Australia Equal Weight Index (MVW Index), against Australia’s standard market capitalisation weighted index, the S&P/ASX 200 Accumulation Index (S&P/ASX 200).

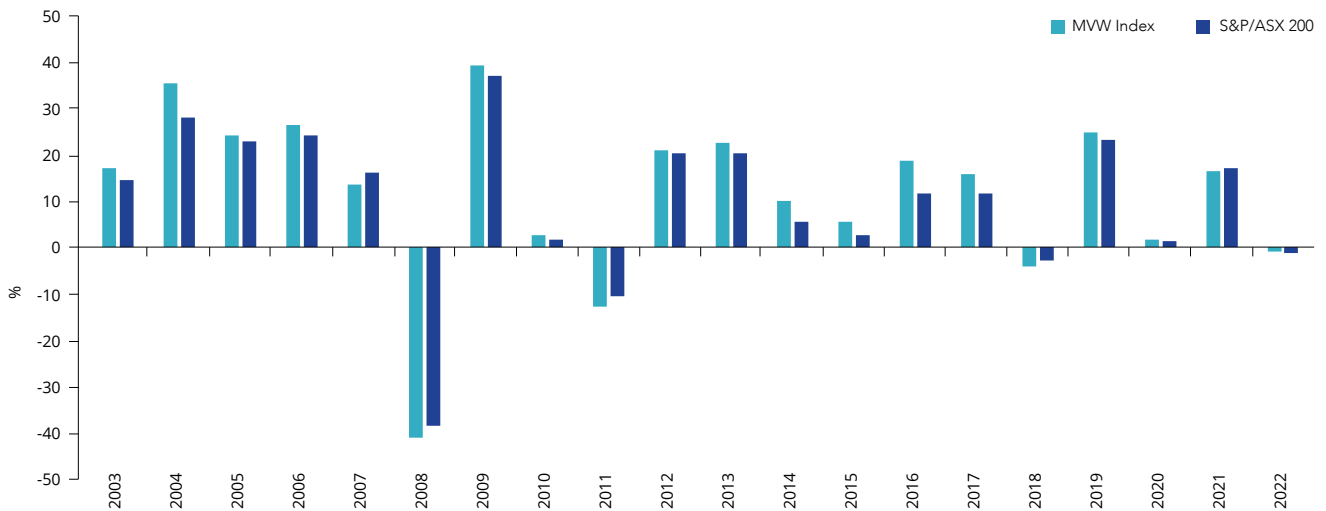
Figure 1: Cumulative performance since inception of MVIS Australia Equal Weight Index



Source: VanEck, Bloomberg, Morningstar; as at 31 March 2023. The above chart represents past performance of the MVW Index and not MVW. Index performance is not illustrative of fund performance. You cannot invest directly in an index. Index returns assume dividends are immediately reinvested and exclude management fees and costs incurred when investing in the fund. Past performance of the MVW Index is not a reliable indicator of future performance of MVW. The S&P/ASX 200 Index is shown for comparison purposes as it is the widely recognised benchmark used to measure the performance of the broad Australian equities market. It includes the 200 largest ASX-listed companies, weighted by market capitalisation. MVW's index measures the performance of the largest and most liquid ASX-listed companies, weighted equally at rebalance. MVW's index has fewer companies and different industry allocations than the S&P/ASX 200.

The MVW Index has outperformed the S&P/ASX 200 in 15 of the past 20 calendar years.

Figure 2: Calendar year performance since inception of MVIS Australia Equal Weight Index



Source: VanEck, FactSet, as at 31 December 2022. 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 cannot invest directly in an index. Past performance of the MVW Index is not a reliable indicator of future performance of MVW. The S&P/ASX 200 Index is shown for comparison purposes as it is the widely recognised benchmark used to measure the performance of the broad Australian equities market. It includes the 200 largest ASX-listed companies, weighted by market capitalisation. MVW's index measures the performance of the largest and most liquid ASX-listed companies, weighted equally at rebalance. MVW's index has fewer companies and different industry allocations than the S&P/ASX 200.

Researchers have attempted to explain this phenomenon since it was first observed.¹ In various studies it has been shown that equal weighting outperforms because of:

- These three characteristics²:
 1. higher exposure to smaller stocks rather than to larger 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.
- Contrarian trading³ which means at rebalance an equally weighted portfolio buys more of the stocks which have fallen since last rebalance and locks in gains by selling those that have gained the most since last rebalance.

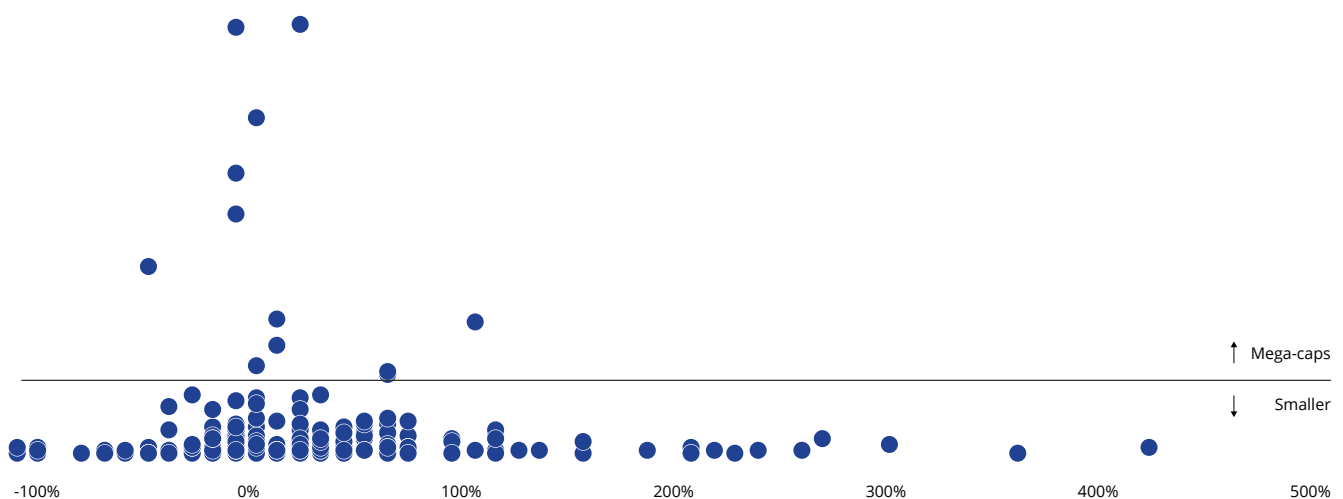
Revisiting the mathematical explanation

A mathematical analysis⁴ demonstrated that equal weighting outperformed because of its greater exposure to smaller stocks, which outperform larger stocks. The word 'smaller' was used in the analysis with its precise meaning as a relative term. There was no suggestion that the stocks referred to in the paper were small-caps. Rather, these are stocks smaller than those mega-caps who, because of their size, dominate market capitalisation indices. This is important.

The mathematical analysis in *Why Equal Weighting Outperforms: The Mathematical Explanation* showed that the returns from the larger-caps are more narrowly distributed than their 'smaller' peers so never deliver the very high returns that will be generated by some of the smaller stocks (the paper uses the top 12 to represent the 'larger' stocks). You can see this in Figure 3 below, taken from the paper.

Figure 3: Returns for the 200 largest Australian stocks versus their market capitalisation

Three years to May 2018



Source: Bloomberg, VanEck.

Figure 3, plots the returns of the largest Australian stocks against the stock's market capitalisation (that is, their size) at the beginning of the period. You can see that the companies that were the largest at the beginning of the period produced returns that are far more narrowly distributed than the rest of the stocks. The extremes are populated by the smaller sized stocks.

It feels intuitively correct that the returns from the larger-caps are more narrowly distributed. The larger-cap stocks are predominately big mature businesses so are less likely to go completely bust. On the other hand, they probably already have a big market share for their main products so their growth is more limited than is typical for smaller, less mature businesses. Conversely, we can deduce that the smaller companies are likely to experience a wider skew of returns, while the minimum they can return is -100%, the best performing 'smaller' company in the mathematical paper returned 416%.

Examining periods after a market decline

The *Mathematical Explanation* showed how this skew of returns resulted in better performance for an Australian equal weight portfolio.

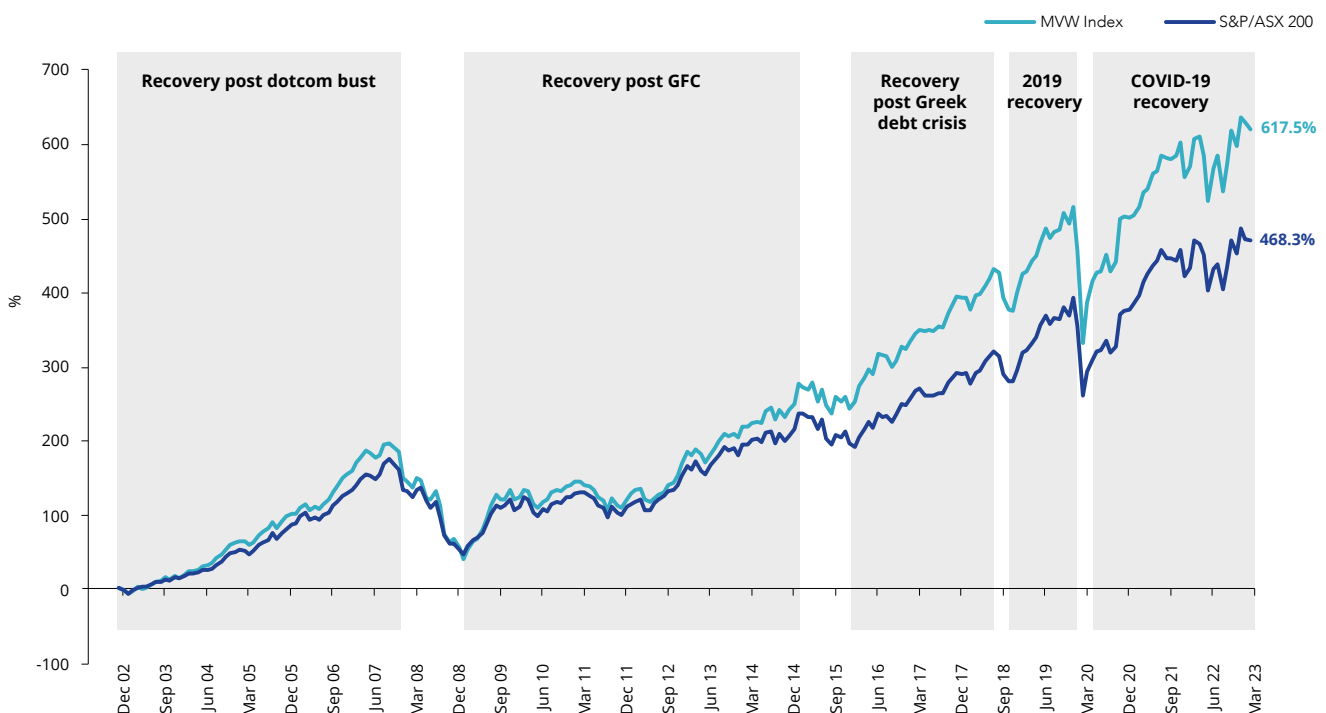
In the 2020 paper, *The Road to Recovery*,⁵ following the sharp sell-off across equity markets in February and March we investigated the skew of stock returns following market falls to determine if the characteristics of individual stock returns that lead to equal weight outperforming are found during these periods of recovery.

Below we expand on the analysis to capture the COVID-19 market falls and the subsequent market rebound. The analysis, we think, may be useful for asset allocators positioning Australian equity portfolios for a recovery following the market falls and associated volatility that commenced as a result of the interest rate hiking cycle that commenced in May 2022.

If we consider Figure 1 again, and look at periods of equity markets recovery, we can see five distinct periods of incline. These are highlighted in Figure 4.

1. After the dotcom bust of 2001, equity markets were recovering and MVW Index's base date is 31 December 2002.
2. After the GFC there was a period of sustained recovery.
3. After the 2015 and 2016 Greek debt crisis;
4. In 2019, after the downturn in quarter four of December 2018; and
5. Now, after the sharp COVID-19 downturn in February/March 2020.

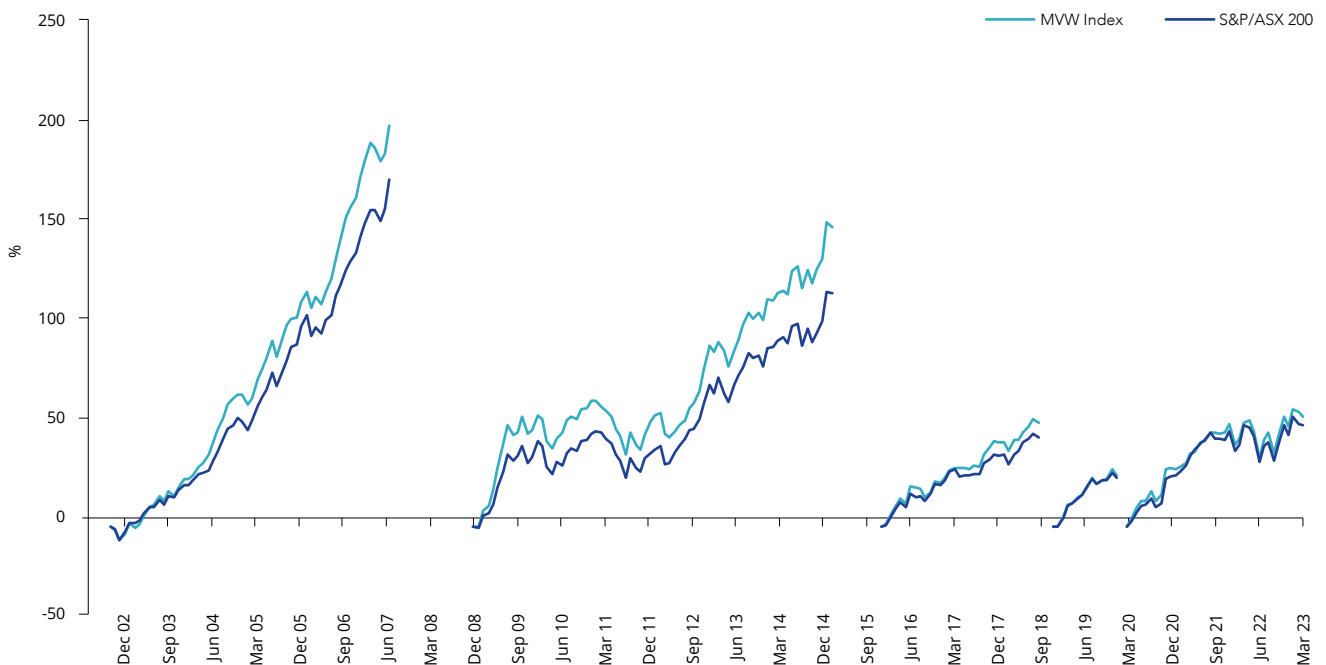
Figure 4: Cumulative performance since inception of MVW Index and periods of growth



Source: VanEck, Bloomberg, Morningstar; as at 31 March 2023. The above chart represents past performance of the MVW Index and not MVW. Index performance is not illustrative of fund performance. You cannot invest directly in an index. Index returns assume dividends are immediately reinvested and exclude management fees and costs incurred when investing in the fund. Past performance of the MVW Index is not a reliable indicator of future performance of MVW. The S&P/ASX 200 Index is shown for comparison purposes as it is the widely recognised benchmark used to measure the performance of the broad Australian equities market. It includes the 200 largest ASX-listed companies, weighted by market capitalisation. MVW's index measures the performance of the largest and most liquid ASX-listed companies, weighted equally at rebalance. MVW's index has fewer companies and different industry allocations than the S&P/ASX 200.

If we focus in on the periods after a significant downturn you can see the MVW Index recovers faster than the broader market. This is shown in Figure 5.

Figure 5: Cumulative performance during growth periods of MVW Index



Source: VanEck, Bloomberg, Morningstar; as at 31 March 2023. The above chart represents past performance of the MVW. Index performance is not illustrative of fund performance. You cannot invest directly in an index. Index returns assume dividends are immediately reinvested and exclude management fees and costs incurred when investing in the fund. Past performance of the MVW Index is not a reliable indicator of future performance of MVW. The S&P/ASX 200 Index is shown for comparison purposes as it is the widely recognised benchmark used to measure the performance of the broad Australian equities market. It includes the 200 largest ASX-listed companies, weighted by market capitalisation. MVW's index measures the performance of the largest and most liquid ASX-listed companies, weighted equally at rebalance. MVW's index has fewer companies and different industry allocations than the S&P/ASX 200.

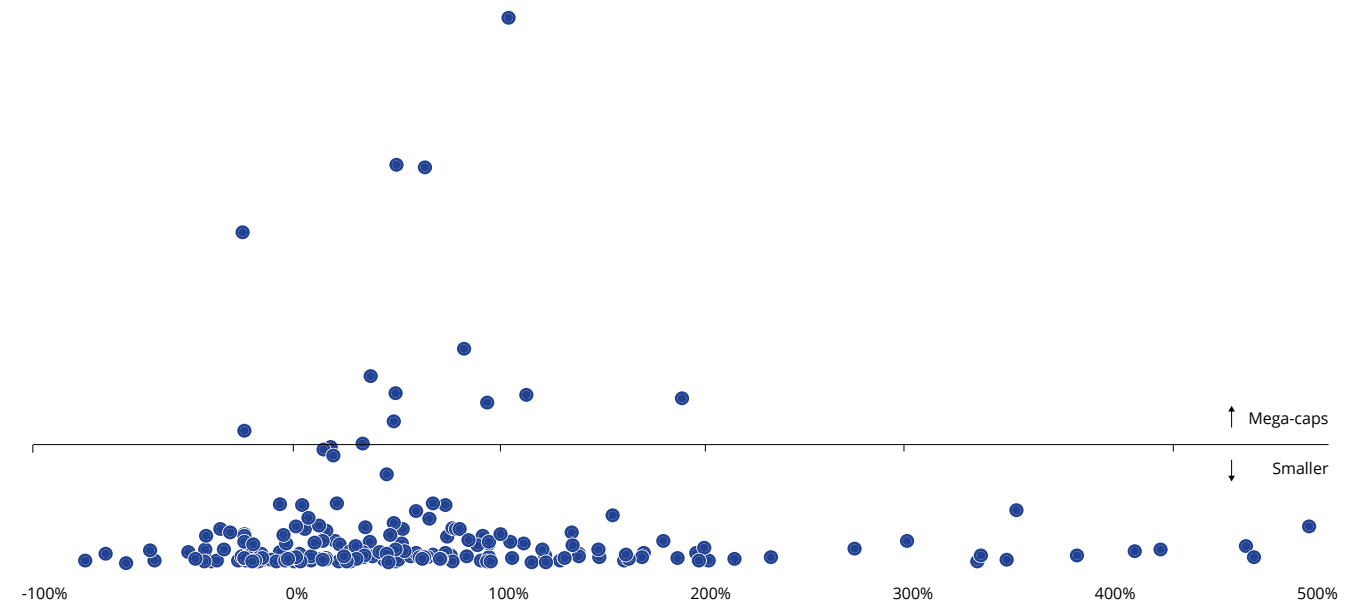
By coincidence, *The Mathematical Explanation* was based on one of these recovery periods, the three-year period starting from May 2015. That just happened to be the most recent three years at the time the paper was written. There is however enough time now to make a comparable data set to that presented in *The Mathematical Explanation* for the three years that have passed since the COVID-19-related falls that commenced on 20 February 2020.

We also have two earlier periods of sustained recovery that were analysed in *The Road to Recovery*. This provides an insight into how we can expect an Australian equal weight portfolio to outperform during subsequent recoveries.

Below is the return distribution for the three-year period ending 31 March 2023 plotted by size. This captures the period following the COVID-19 crash.

Figure 6: Returns of the 200 largest stocks versus their market capitalisation

Three years to March 2023

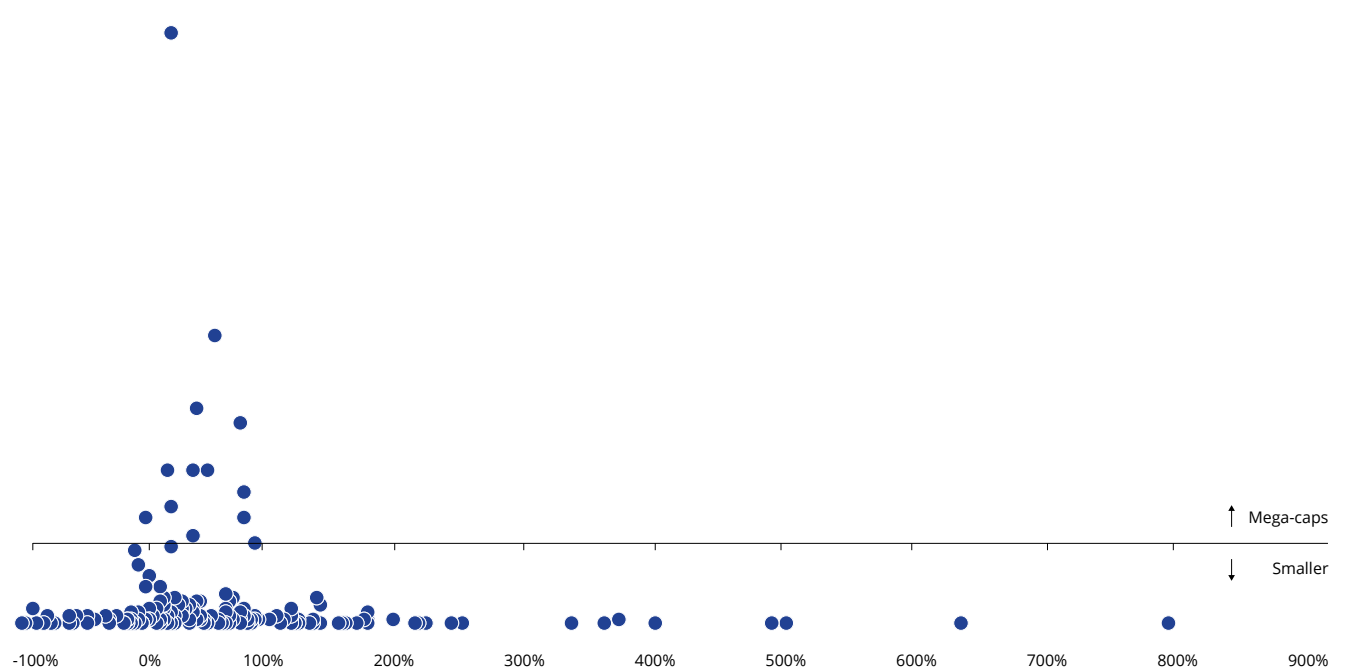


Source: Bloomberg, VanEck.

Below is the return distribution for the three-year period ending 31 March 2012 plotted by size, capturing the GFC recovery.

Figure 7: Returns of the 200 largest stocks versus their market capitalisation

Three years to March 2012

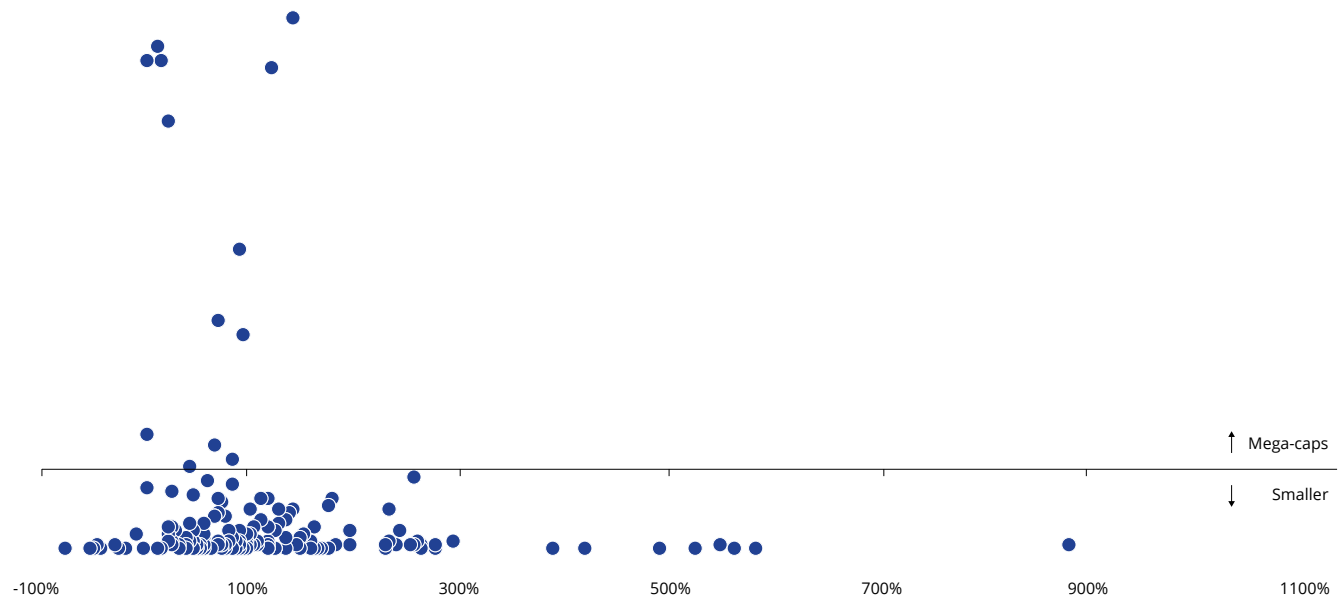


Source: Bloomberg, VanEck.

Below is the return distribution for the three-year period ending 31 December 2005, as markets recovered from the dotcom bust, again companies are plotted by size.

Figure 8: Returns of the 200 largest stocks versus their market capitalisation

Three years to December 2005



Source: Bloomberg VanEck.

What is immediately noticeable in Figures 6, 7 and 8 is that the skew of returns of the large companies and skew of returns by the smaller sized companies is almost identical to the returns presented in *The Mathematical Explanation* which captured the 2015-2018 recovery, Figure 3 above. That is, the mega-caps have a narrow range of returns while the smaller sized companies have a larger skew of returns.

So, all four sustained recovery periods show equal weighting outperforming and show the same skewed distribution of individual stock returns, favouring the smaller sized stocks that gives rise to outperformance. This reinforces the findings of *The Mathematical Explanation*.

Should a recovery, from any market falls as a result of the new rate and inflation regime, be similar to the recoveries the Australian equity market has experienced in the past, mathematics tells us a fund tracking an equal weight index is well positioned to outperform the S&P/ASX 200. The explanation: Equal weighting consistently gives greater exposure to the smaller stocks, have shown to outperform larger stocks, than market capitalisation weighting does. It is as simple as that.⁶

The VanEck Australian Equal Weight ETF on ASX (ASX Code: MVW) launched in March 2014 and is a passive strategy that tracks the MVIS Australia Equal Weight Index. Since March 2014 many investors have benefitted from using MVW as the core of their Australian equities exposure.

The performance of the fund has been as follows:

Table 1: MVW Performance as at 31 March 2023

	1 yr (%)	3 yrs (% p.a.)	5 yrs (% p.a.)	7 yrs (% p.a.)	Since inception (% p.a.)
MVW	1.64	18.30	8.19	9.47	9.04
S&P/ASX 200	0.10	16.53	8.70	9.39	7.56
Difference	+1.54	+1.77	-0.51	+0.08	+1.48


Inception date is 4 March, 2014.

Source: Morningstar Direct, VanEck. 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 fees and other costs incurred in the fund but do not include brokerage costs and buy/sell spreads incurred when investing in MVW. Past performance is not a reliable indicator of future performance. You cannot invest directly in an index. The S&P/ASX 200 Index is shown for comparison purposes as it is the widely recognised benchmark used to measure the performance of the broad Australian equities market. It includes the 200 largest ASX-listed companies, weighted by market capitalisation. MVW's index measures the performance of the largest and most liquid ASX-listed companies, weighted equally at rebalance. MVW's index has fewer companies and different industry allocations than the S&P/ASX 200.

1. A discussion on the academic support of equal weight compared to market capitalisation appears in Appendix 1 of VanEck whitepaper, *The unequalled power of equal weight: A deep dive into the drivers of equal weight outperformance*, June 2016.
2. Lajbcygier, Paul, Doris Chen & Michael Dempsey, 2015, Is fundamental indexation able to time the market? Evidence from the Dow Jones Industrial Average and the Russell 1000, *Journal of International Financial Markets, Institutions and Money*, Volume 37.
3. Plyakha, Yuliya, Raman Uppal, Grigory Vilkov, 2012, *Why does an equal-weighted portfolio outperform value and price-weighted portfolios?*
4. Brown, Michael, 2018. *Why Equal Weighting Outperforms: The Mathematical Explanation*, VanEck.
5. VanEck, 2020 *"The road to recovery: An analysis of equal weight performance after market declines*, VanEck.
6. Brown, Michael, 2018. *"Why Equal Weighting Outperforms: The Mathematical Explanation*, VanEck.

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