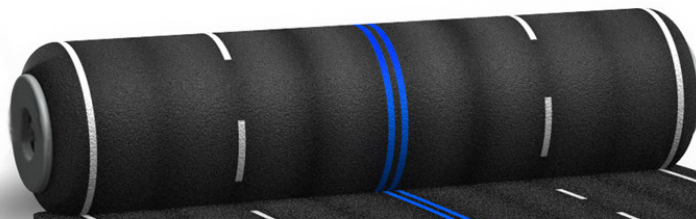VanEck®

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The road to recovery:

An analysis of equal weight performance in Australia after market declines

June 2020

It has been mathematically proven why equal weight outperforms. Given the effect of the coronavirus on markets, the pertinent question is whether this outperformance is evident in periods after a market decline. Mathematics again proves why this is the case.

Equally weighted portfolios have historically outperformed their market capitalisation counterparts over the long term. There have been a number of studies[1] 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
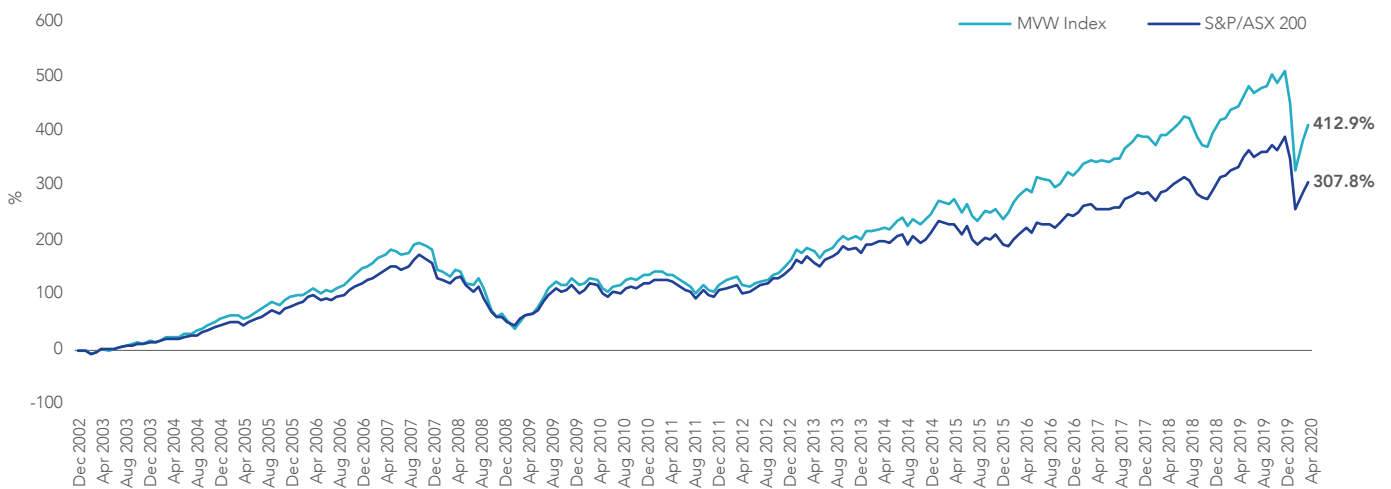
Source: VanEck, Bloomberg, FactSet; as at 31 May 2020. The above chart represents past performance of the MVW Index and not MVW. Index performance is not illustrative of fund performance. You cannot invest directly in an index. Index returns assume dividends are immediately reinvested and exclude management 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 MVW Index has outperformed the S&P/ASX 200 in 13 of the past 17 calendar years.

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

Source: VanEck, FactSet, as at 31 December 2019. 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.

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

1. These three characteristics[2]:

    a. Higher exposure to smaller stocks rather than to larger stocks;

    b. Higher exposure to so-called 'value stocks' meaning those stocks with a high book-to-market ratio; and

    c. Better market timing i.e. equal weighting extracts more returns when markets are rising and loses less when markets are falling.

2. Contrarian trading[3] 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 analysis[4] 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 that their 'smaller' peers and 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
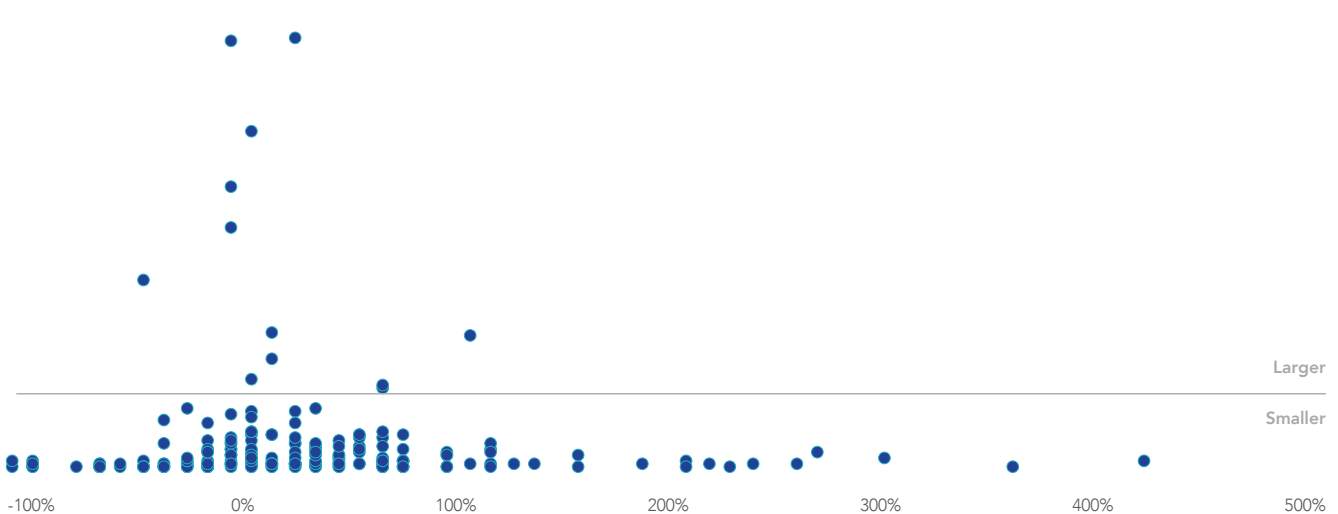
Source: Bloomberg, VanEck.

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 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 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.

The sharp sell-off across equity markets in February and March 2020 warrants an investigation into stock returns following market falls. The question is whether the characteristics of individual stock returns that lead to equal weight outperforming are found during these periods of recovery.

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 2015/16 Greek debt crisis;

4. In 2019, after the downturn in the fourth quarter of December 2018; and

5. Now after the sharp downturn in March 2020.

Figure 4: Cumulative performance since inception of MVIS Australia Equal Weight Index and periods of growth
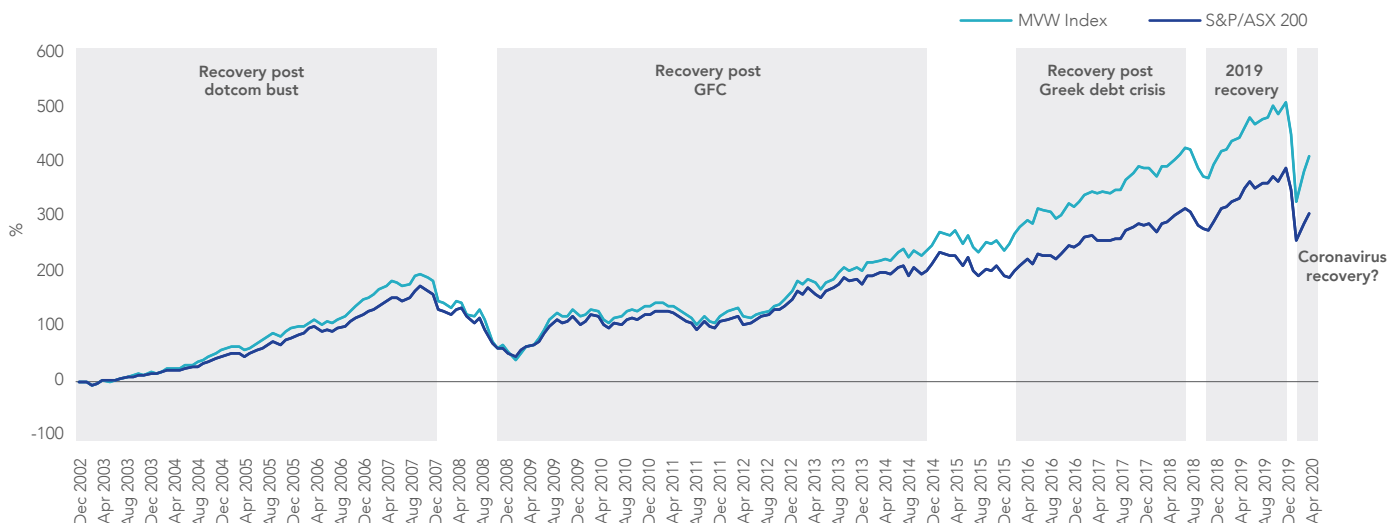
Source: VanEck, Bloomberg, FactSet; as at 31 May 2020. The above chart represents past performance of S&P/ASX 200 vs the MVW Index and not MVW. Index performance is not illustrative of fund performance. You cannot invest directly in an index. MVW Index returns assume dividends are immediately reinvested 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.

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 MVIS Australia Equal Weight
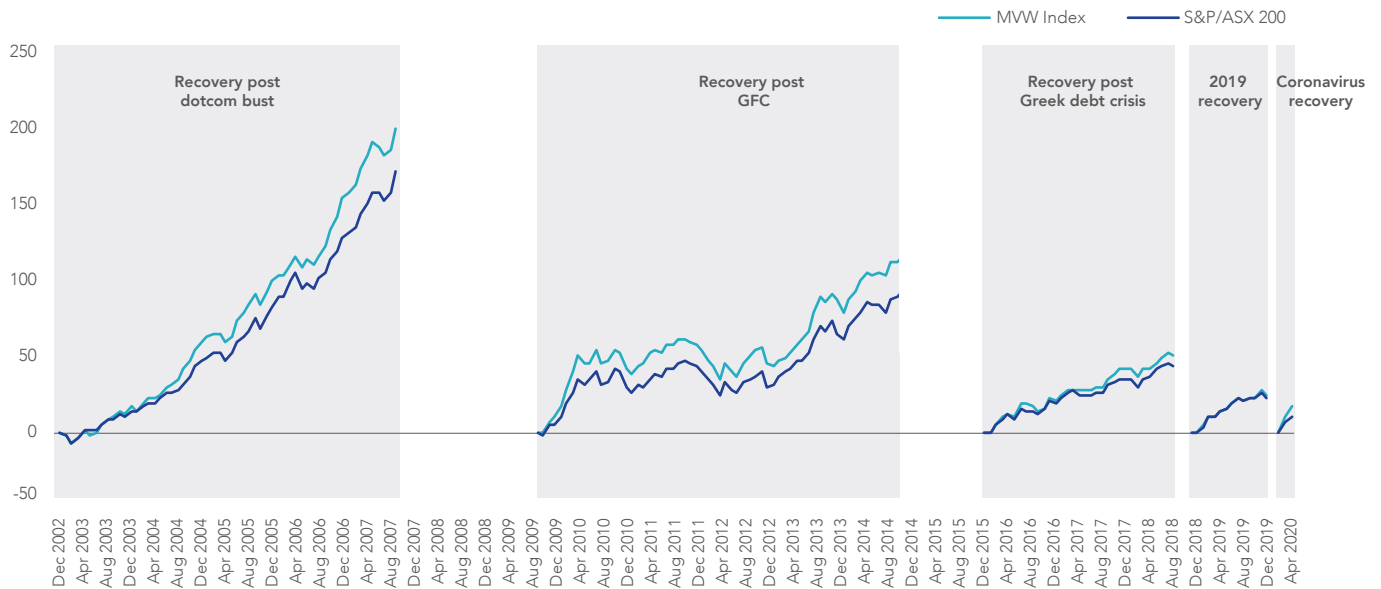
Source: VanEck, Bloomberg, FactSet; as at 31 May 2020. The above chart represents past performance of the MVW Index and not MVW. Index performance is not illustrative of fund performance. You cannot invest directly in an index. Index returns assume dividends are immediately reinvested and exclude management 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.

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. The recovery in 2019, a calendar year the MVW Index outperformed[i,] was short-lived. Insufficient time has passed since the period analysed in *The Mathematical Explanation* in order for us to make a comparable data set.

We therefore have two earlier periods of sustained recovery to analyse and see if we can expect an Australian equal weight portfolio to outperform during a recovery after the March 2020 COVID-19 crash.

i. See Figure 2.

Below is the return distribution for the three year period ending 31 March 2012 plotted by size.
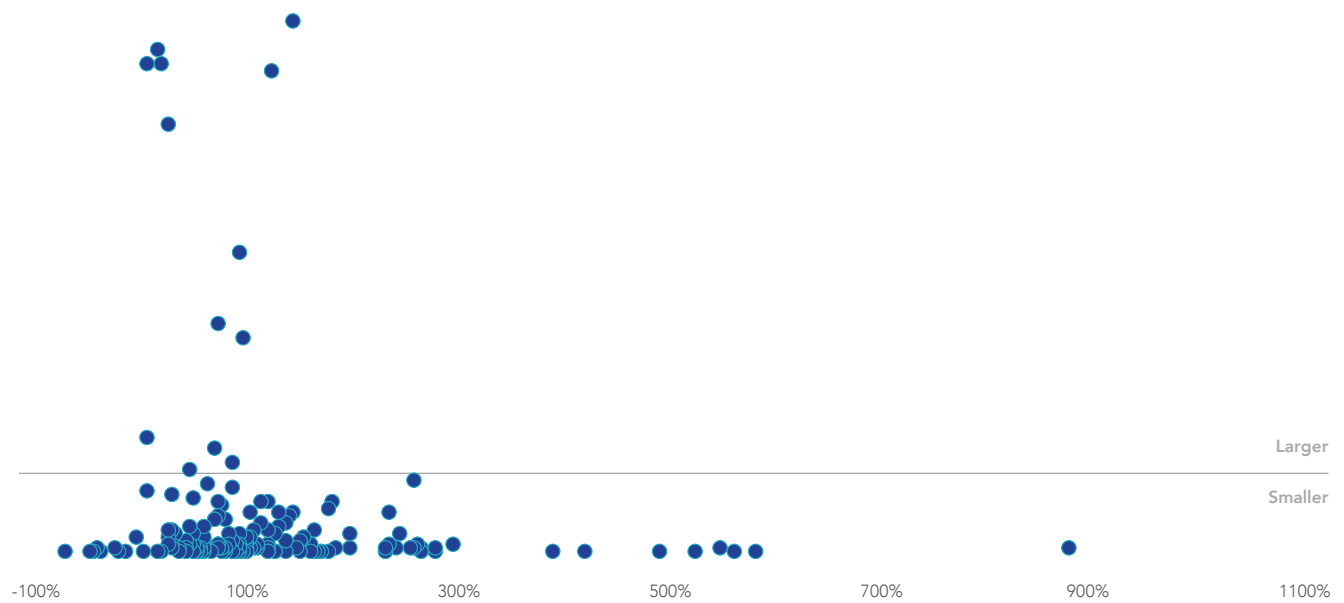
Figure 6: Returns of the 200 largest stocks versus their market capitalisation
Three years to March 2012
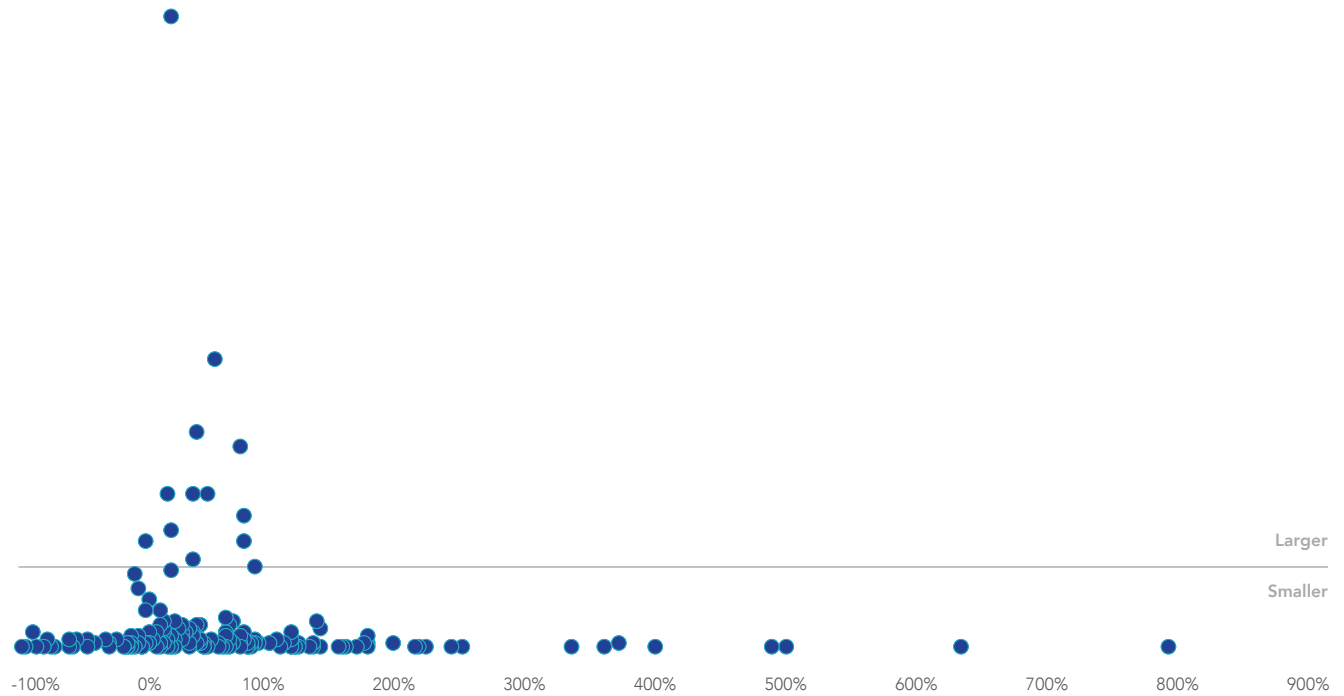
Source: Bloomberg, VanEck

Below is the return distribution for the three year period ending 31 December 2005 again plotted by size.

Figure 7: 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 and 7 is that the skew of returns of the large companies and skew of returns of the smaller sized companies is almost identical to the returns presented in *The Mathematical Explanation* which captured the 2015-2018 recovery, see Figure 3 above. That is, the larger companies have a narrow range of returns while the smaller companies have a larger skew of returns.

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

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. The explanation: Equal weighting consistently gives greater exposure to the smaller stocks, which outperform larger stocks, than market capitalisation weighting does. It is as simple as that.[5]

The VanEck Vectors Australian Equal Weight ETF (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 benefited from using MVW as the core of their Australian equities exposure.

The performance of the fund has been as follows:

Table 1: MVW Performance

	1 mth (%)	3 mths (%)	6 mths (%)	1 yr (%)	3 yrs (% p.a.)	5 yrs (% p.a.)	Since inception (% p.a.)
MVW	5.72	-7.31	-15.30	-6.44	4.34	5.94	7.62
S&P/ASX 200	4.36	-9.92	-14.59	-6.70	4.35	4.27	5.42
Difference	**+1.36**	**+2.61**	**-0.71**	**+0.26**	**-0.01**	**+1.67**	**+2.20**

Inception date is 4 March, 2014.

Source: VanEck, Morningstar Direct, as at 31 May 2020. 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.

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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. Ibid.

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