

How is an index constructed?

Exchange Traded Funds or ETFs are passively managed 'index funds'. They hold a diversified portfolio of securities that tracks an index. They buy the securities that are in the index and only change their portfolio when the index changes.

The contrast to this is 'actively managed funds' where the fund manager picks the shares they think are going to perform the best.

An index contains a selection of securities determined by applying a specific set of rules to the index construction methodology. Understanding the index methodology is key to understanding what sets one ETF apart from another.

What is an index?

The Oxford dictionary defines an index as "a sign or measure of something". Stock market indices (or benchmarks) have been used for almost 120 years as a measure of the performance of a market, be it an asset class, a segment or the market as a whole. The 'traditional' indices are referred to in the news everyday and include Australia's S&P/ASX 200 and All Ordinaries, US Dow Jones and S&P 500, London's FTSE 100 and Japan's Nikkei 225.

A brief history

When Charles Dow first published the Dow Jones Industrial Average index in 1896 he allocated weightings to the top 12 stocks of the day based on their prices. Over time, allocation based on market capitalisation was developed by Henry Varnum Poor and the Standard Statistics Co, resulting in the 1926 predecessor of the United States' S&P 500 Index.

Market capitalisation is the measure of market value calculated by multiplying the share price by the number of tradable shares:

$$\text{Market capitalisation} = \text{share price} \times \text{no. of tradeable shares on issue}$$

It was thought to produce a better economic snapshot if larger companies were given more weight in an index.

Market capitalisation indices

Market capitalisation indices are the source of market performance reported in the media. Australia's S&P/ASX 200 contains the 200 largest companies in Australia by market capitalisation. Many ETFs follow market capitalisation indices. By doing so they assume that the bigger companies are the best companies to invest in. This is not always correct.

An ETF which tracks a capitalisation index allocates more to bigger companies than smaller companies. So when the market overvalues a stock, a fund tracking that index buys too much of the overpriced stock. Conversely when the market undervalues a stock, the fund sells too much of the underpriced stock.

There is mounting research that concludes market capitalisation weighting is not the best method for portfolio construction¹.

Innovations in index construction

ETFs are innovative investment products that allow instant diversification via a single trade. As adoption of these innovative products has grown so too has sophistication of index construction specifically designed for ETFs that do not rely solely on market capitalisation.

¹ Cass Business School An evaluation of alternative equity indices Part 1: Heuristic and optimised weighting schemes & An evaluation of alternative equity indices Part 2: Fundamental weighting schemes Andrew Clare, Nick Motson and Steve Thomas, March 2013; and CSIRO-Monash Superannuation Research Cluster Is fundamental indexation able to time the market? Evidence from the Dow Jones Industrial Average, Paul Lajbcygiera, Doris Chen, Michael Dempsey, November 2013.

Capped and equal Weight indexing

A capped weight indexing method stipulates that an individual stock cannot exceed a maximum percentage of the index. Equal Weight indexing is an index construction method that gives all constituents an equal weighting regardless of their market capitalisation. Capped and equal weight indices are often selected from a universe of stocks based on market capitalisation before the capping or equal weighting is applied.

In a concentrated market like Australia, greater diversification benefits can be achieved by capping the weight of individual stocks or by applying an equal weight methodology. Capping individual stocks and equal weighting reduces the concentration risk of the large companies, such as the big banks and big miners that dominate the S&P/ASX 200 and delivers increased exposure to companies outside the top 10 where there is greater opportunity for growth.

Other indexing methods

Other indexing methods include factor-based and fundamental indexing. These are techniques that group securities based on quantifiable financial factors such as book value, return on equity and dividend yield or a combination of these. Constituents may be weighted by these factors.

Comparing index methodologies

	Market capitalisation indices	Capped weight indexing	Equal weight indexing	Factor-based or fundamental indexing
The largest stocks have the greatest impact on the performance and volatility of the index?	Yes	To a lesser extent	No	No
Reduces stock concentration risk?	No	Yes	Yes	No
Screens stocks by dividends, earnings, momentum and/or valuation metrics	No	No	No	Yes
Examples of these indices	ASX/S&P 200, S&P 500, FTSE 100, Nikkei 225, NYSE Arca Gold Miners Index	MVIS Australia Banks Index, MVIS Australia Property Index	MVIS Australia Equal Weight Index	MSCI World Quality Index

Liquidity

To properly underpin an investment fund an index should be both diversified and liquid. Liquidity is crucial since a fund can only be as liquid as the underlying index. Apart from being able to get out when you want, liquid stocks lead to better performance from not having to sell at a discount or buy at a premium when the need arises. Traditional market capitalisation indices do not have stringent liquidity requirements.

VanEck's ETFs track indices that have been purpose built for ETFs, taking into account both diversification and liquidity, to provide investors with better potential performance opportunities.

For more information on liquidity go to 'Understanding ETF Liquidity' on our website.

A note on rebalancing

Indices are reviewed and rebalanced by the index provider at regular intervals (generally quarterly) based on the index construction methodology rules. As a result of this process, existing shares may no longer be eligible for inclusion in the index so they may drop out, or new shares may be included if they have met eligibility criteria. Rules for inclusion and exclusion vary between indices. This means that for some indices, components may change often, while for others with more stringent rules, they will not.

After each index rebalance, the ETF issuer will perform a corresponding rebalance of the portfolio of shares held by the ETF.

Rules for inclusion and exclusion will impact the ETF that tracks the index. An ETF that tracks an index with a higher frequency of name changes, that is, higher turnover, will result in higher transaction and tax costs than an ETF that tracks an index with relatively few name changes.

Tips for investors

It is important for ETF investors to understand the construction methodology of the index that underpins an ETF in order to identify the ETF that best suits their investment purposes.

Investors should ask the following questions:

- What is the index being tracked?
- How is it constructed?
- Is its purpose built for an ETF or does it track a traditional market capitalisation index?
- Are the assets of the fund well diversified or is there unintended stock concentration risk in the portfolio?
- How liquid are the underlying assets?

Contact us

For more information

- vaneck.com.au
- 02 8038 3300
-  Follow us
-  @vaneck_au

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