

Understanding indexing

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Time honoured investing

Since Vanguard introduced indexing to retail investors in the United States in the 1970s, indexing has become a popular investment strategy with institutional and individual investors alike. In Australia, index funds now exceed \$185 billion or 15 per cent of the total investment management market*.

Indexing is different to active management. Rather than trying to guess which investments will outperform in the future, index managers replicate a particular market or sector.

Indexing takes advantage of two time-honoured investment principles – diversification and low cost, long-term investing. As such, it offers two distinct advantages:

1. Investing in all or a representation of stocks in a market index can maximise diversification and reduce risk.
2. Buying and holding securities over the long term reduces volatility and investment costs and can lead to better returns in the long run.

This Plain Talk® guide introduces the indexing concept, explaining how it works, the benefits and some of the theory behind it. It also looks at some common indexing strategies.

* Source: Rainmaker research



What is indexing?

Put simply, indexing is a way of gaining exposure to an investment market. Most investment markets have indexes that measure their value over time. For example, a share index measures the change in value of the shares of the companies included in the index.

Picking winners isn't easy

As this table shows, quite often the best performing asset class one year appears at the bottom of the tables the next. The same can be true for investments within each asset class.

Financial year returns for the major asset classes

Year to 30 June	Australian shares	International shares	Listed property	Australian bonds	Cash
1988	-8.6%	-10.0%	-2.8%	19.4%	12.5%
1989	3.5%	18.1%	-1.1%	3.0%	15.7%
1990	4.1%	1.9%	15.2%	17.8%	18.5%
1991	5.9%	-2.0%	7.7%	22.4%	13.5%
1992	13.3%	7.1%	14.7%	22.0%	9.0%
1993	9.9%	31.8%	17.1%	13.9%	5.9%
1994	18.5%	0.0%	9.8%	-1.1%	4.9%
1995	5.7%	14.2%	7.9%	11.9%	7.1%
1996	15.8%	6.7%	3.6%	9.5%	7.8%
1997	26.6%	28.6%	28.5%	16.8%	6.8%
1998	1.6%	42.2%	10.0%	10.9%	5.1%
1999	15.3%	8.2%	4.3%	3.3%	5.0%
2000	13.7%	23.8%	12.1%	6.2%	5.6%
2001	8.8%	-6.0%	14.1%	7.4%	6.1%
2002	-4.5%	-23.5%	15.5%	6.2%	4.7%
2003	-1.1%	-18.5%	12.1%	9.8%	5.0%
2004	22.4%	19.4%	17.2%	2.3%	5.3%
2005	24.7%	0.1%	18.1%	7.8%	5.6%
2006	24.2%	19.79%	18.0%	3.4%	5.8%
2007	30.3%	7.8%	25.9%	4.0%	6.4%
2008	-12.1%	-21.3%	-36.3%	4.4%	7.4%

Best performer: The best return in a calendar year is highlighted to show the variability of returns.

Source: Andex

Past performance is not an indicator of future performance.

Assumes 100% reinvestment of distributions. Returns shown are before fees and taxes.

Indexes cover almost every industry sector and asset class, including Australian and international shares, property, bonds and cash.

Indexes provide a way for fund managers to measure their performance. Usually, active fund managers will try to outperform the index, also called a benchmark, by picking the securities they believe will outperform in the future.

Index managers, on the other hand, invest in all or a representative sample of the securities in the index and let markets do their work over the long term. Because index funds invest in all or most of the securities in an index, they provide diversification, which means lower risk.

“The (indexing) approach deliberately sacrifices the possibility of extraordinary performance in any one year for good relative performance in every year.”
Michael Porter, Professor Harvard Business School

Why index?

Here are some of the reasons why indexing has become such a popular investment strategy.

Low costs and taxes

Management costs, fund expenses and transaction costs can eat into investment returns over time – sometimes by as much as two per cent each year. Indexing provides cost savings at three levels:

Lower management costs

Index funds typically have lower management costs. This is because it costs less to operate an index fund as there is less need to employ highly paid research and investment analyst teams.

Lower transaction costs

Index managers use a ‘buy-and-hold’ approach so they typically have lower turnover levels than active fund managers resulting in lower transaction costs and taxes. Transaction costs can include brokerage, commissions, stamp duty, custody and other expenses associated with trading securities.

Lower taxes

Tax can potentially take the largest chunk out of your investment return so it pays to focus on your real return, after-tax. Because of its

long-term nature, indexing takes advantage of capital gains discounts available on assets held for longer than 12 months. This effectively halves the amount of tax payable.

Investors with Australian shares exposure can take advantage of the dividend imputation system. Indexing can maximise the level of franking credits distributed, rather than diluting it like actively managed funds with higher turnover.

Long-term performance* history

Indexing has a proven long-term performance history in all the major asset classes. Rather than actively buying and selling securities, index funds buy securities and hold them for the long term. This can significantly reduce the costs, and tax impact, of investing over time and provide an efficient way to capture market growth.

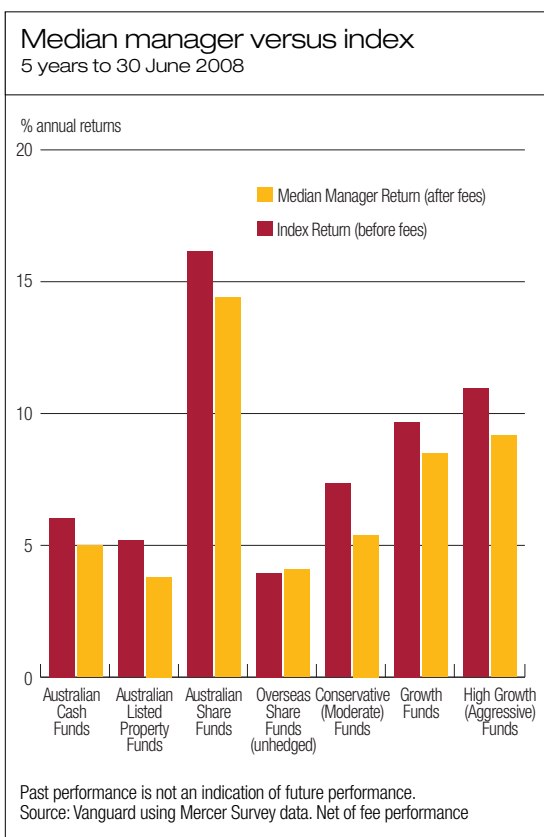
Historically, few active fund managers have been able to sustain above benchmark returns after costs over the long term. The graph left shows the performance of the median fund managers in the Mercer Retail Investment Survey against the relevant index over the five years to 30 June 2008. This demonstrates how difficult most active fund managers have found it to outperform the index over the longer term on an after fees basis.

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Diversification

Index funds invest in all or most of the securities in an index. So when you invest in an index fund you

* Past performance is not a reliable indicator of future performance.



are effectively buying the entire market, or a significant chunk of it.

Diversifying across a range of asset sectors, industries and securities can provide a good defence in bear markets and offence in bull markets. It reduces your risk by leaving you less exposed to the performance fluctuations of single investments, and fund managers for that matter.

As you have a broad range of investments in your portfolio, returns from better performing assets can help compensate those not performing so well. When markets are performing well having broad exposure to different sectors and securities positions you to take advantage of upside growth.

Active fund managers will try to pick stocks they believe will outperform the market based on their philosophy and research. Sometimes this works in their favour and sometimes it doesn't. Indexing removes the risk of underperforming the benchmark, before fees, by investing across the whole market.

Simplicity

Indexing simplifies the investment process. It is very difficult to continually pick winners and outperform the market over the long term – even the professionals get it wrong. Instead of trying to guess which fund managers will outperform the market in the future, an index fund provides a low cost way to closely track market returns.

Indexing in theory

Early advocates of indexing believed that markets were efficient and stocks continuously fairly valued reflecting the totality of investor knowledge. This theory suggests it is impossible to predict which securities will outperform the market as all investors have access to the same information.

As Vanguard's research proves, markets do not need to be efficient for indexing to work. While there may be limited

Choosing winners takes a great degree of skill and diligence.

Research conducted by Vanguard's US office confirms there are inefficiencies in markets and that at any point in time there will be winners as well as losers. Choosing the winners and avoiding the losers is where the difficulty lies.

Gus Sauter, Vanguard's Chief Investment Officer in the US, analysed more than 1,000 US equity mutual funds over a ten-year timeframe. His research suggested that the average investor who has no skill would be better off being 100 per cent indexed. The exposure to active funds could be increased the higher the investor's degree of skill, with someone of phenomenal skill investing around 20 per cent in index funds.

opportunities to outperform, these are diminished by the costs of investment.

In *The First Index Mutual Fund: A History of Vanguard Index Trust* and the *Vanguard Index Strategy* Bogle writes: “Investors as a group must underperform the market because of the costs of participation – largely operating expenses, advisory fees and portfolio transaction costs – constitutes a direct deduction from the market’s return.”

The loser’s game argument

In 1974, the *Journal of Portfolio Management* published an article by Dr. Samuelson entitled *Challenge to Judgment*. It noted that academics had been unable to identify any consistently excellent investment managers and challenged those who disagreed to produce ‘brute evidence to the contrary’, and pleaded for someone, somewhere to start an index fund.

A year later, in an article entitled *The Loser’s Game*, Charles D. Ellis argued that, because of fees and transaction costs, 85 per cent of pension accounts had underperformed the stock market. ‘If you can’t beat the market, you should certainly consider joining it,’ Ellis concluded. ‘An index fund is one way.’

The Loser’s Game argument presents a very strong rationale for index investing. Financial markets can be thought of as a zero-sum game, where one person’s gain is another’s loss.

Before allowing for costs, the aggregate return of all investors in the market equals the market return. If index funds earn the market return, then actively managed funds, in the aggregate, must also earn the market return – before costs. Consequently, if some actively managed funds outperform the market, others must underperform the market by an equivalent amount.

After factoring in the costs of investing, the aggregate return of all funds is less than the market return. All managed funds have expenses, but some funds are much more costly than others, which directly impacts investment returns. Since index funds typically have much lower costs than actively managed funds, the result is that index funds have a higher aggregate return.

Indexing strategies

Indexing can be a powerful strategy when used alone or combined with direct shares or actively managed funds.

Indexing as a standalone strategy

Many investors use indexing to achieve long-term, low-cost exposure to markets as part of a ‘buy-and-hold’ strategy. This can prove a successful standalone strategy due to the diversification, cost and tax efficiency benefits indexing offers.

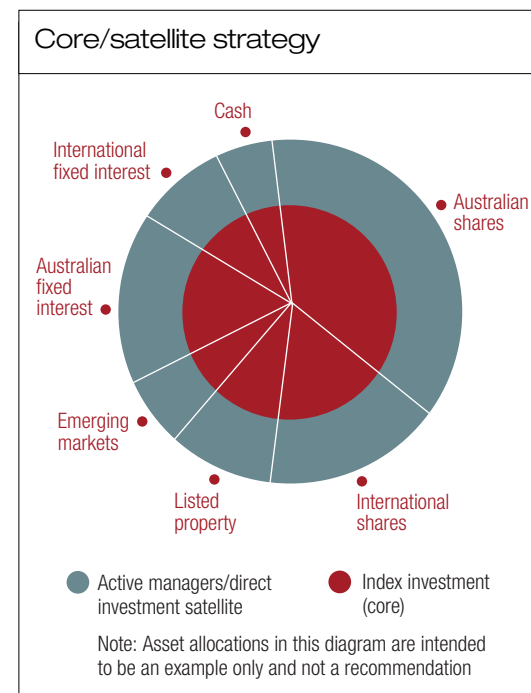
Given how you allocate your money to each asset class is one of the most important decisions you can make, many investment experts believe indexing is a good starting point for any portfolio. In their landmark 1986 paper, Gary Brinson, Randolph Hood and Gilbert Beebower’s found that stock selection and market timing had very little impact on an investor’s final return, and that long-term asset allocation was the primary determinant. Later research conducted by the Vanguard Group confirmed that around 80 per cent of the variability in a fund’s monthly return was attributed to its asset allocation policy.

Indexing’s low costs make it one of the most efficient ways to implement asset allocation policy.

Core/satellite strategy

Many investors are attracted to the distinctive philosophies of active fund managers as well as direct share and alternative investments. Adding index funds to this type of investment strategy can greatly improve the risk/return profile and reduce the overall costs of investing.

“Most investors, both institutional and individual, will find that the best way to own common stocks (shares) is through an index fund that charges minimal fees. Those following this path are sure to beat the net results (after fees and expenses) of the great majority of investment professionals.”
Warren Buffett,
Berkshire Hathaway
Annual Report 1996



Building on a core of broadly diversified index funds, an investor can select actively managed funds, or purchase direct holdings in other assets such as shares or property. This is known as a core/satellite approach to portfolio construction. This strategy works just as well in a diversified portfolio as it does in single sector portfolios.

Types of index funds

Not all index funds are managed the same way. Here are some of the more popular types of index fund available today.

Full replication	Invests in all securities in an index
Partial replication	Holds a representative sample of securities in index
Exchanged Traded Funds	Index funds traded on the stock exchange like shares

Full replication

As the name suggests, fully replicated funds own every stock in the index weighted by their market capitalisation – a measure used to determine a company’s size based on its current share price and number of shares on issue.

The price and market capitalisation of individual companies in the index varies constantly. As a result, full replication managers constantly buy and sell securities to maintain the appropriate index weightings.

This process can be costly as trading stocks incurs transactions costs like brokerage and stamp duty. Full benchmark replication usually results in higher turnover of the portfolio with typical benchmark turnover of around 5 per cent to 10 per cent in Australian share funds. The impact of turnover on after-tax results can be costly.

Partial replication

Partially replicated index funds hold a representative sample of stocks in index. For broader indexes containing many illiquid stocks, it is often impractical and costly to own every stock in the index. With

partial replication, the portfolio still tracks the index closely, but the costs of trading in many illiquid stocks in the small, ‘tail end’ of the index are reduced.

Some index managers like Vanguard use optimisation techniques to build portfolios that mirror the index, without holding all the securities. Optimisation aims to reduce the higher costs of owning all the securities in the index while continuing to match the index return. It takes a large number of factors into account, including the financial characteristics of securities in the index and the correlation in behaviour between stocks.

Unlike full replication, managers don’t need to constantly buy and sell securities when index weightings change, resulting in lower turnover and costs. For example, Vanguard’s average turnover for its Australian equity funds is around 2 per cent to 5 per cent. Trading only becomes necessary when the index constituents actually change, or where buying and selling is necessary to meet applications and withdrawals.

Exchange traded fund

An exchange traded fund (ETF) is a fund that tracks an index but is traded like a share. The ETF bundles together securities to reflect the holdings in a particular index. An ETF can be bought and sold at any time of the day in a single transaction and their price fluctuates from moment to moment just like a share. They are a tax efficient, low cost way for investors to achieve diversification and capture market returns with the trading flexibility of a share.

ETFs are one of the fastest growing investment products in the world. They were first introduced in the US in 1993, Europe in 1999 and Australia in 2000. Globally, ETFs are tailored to a wide array of regions, sectors commodities, bonds, futures and other asset classes. As of July 2008, there were 712 ETFs in the US, with \$582 billion in assets. In the US, trading in ETFs accounts for over half of all daily share market trades.

Vanguard's indexing approach

Vanguard believes a long-term approach to investing delivers the best results. That is why we buy and hold stocks with long-term growth in mind, rather than actively trading them in pursuit of short-term gains.

We look for the most efficient ways to manage our client's money. This means we manage costs wherever we can so you can keep more of the returns you earn.

Because we hold stocks for the long term we have lower turnover than many active funds. Lower turnover means lower costs and tax, which can lead to better real returns for investors in the long run.

Our approach focuses on the end result – that is, the return you take home after expenses and tax. An example of this is the way we take advantage of capital gains discounts and the deferral of capital gains liabilities to minimise the tax impact for investors.

Not all index managers are the same. Instead of holding every security in an index, we aim to build portfolios with the optimal number of securities to closely track the index performance without incurring unnecessary transaction costs. It's what we call optimised indexing. This way investors get all the benefits of holding a diversified portfolio, like lower risk and enhanced return potential, without the associated costs.

Indexes used

Vanguard offers a wide choice of index funds in different asset classes. The table opposite shows the indexes we currently use for our retail funds. These indexes provide an efficient way of gaining exposure to each investment market and have been carefully selected for their broad diversification and composition.

Sector	Index	Description
Cash	Vanguard® Cash Plus Index	A custom index developed by Vanguard to measure high quality Australian cash and short-term fixed interest (debt) securities.
Diversified bonds	UBS Australian Composite Bond Index	The UBS Australian Composite Bond Index is a value weighted index of approximately 310 securities (bonds) issued by the Commonwealth Government, State Government guaranteed treasury corporations and semi-governmental authorities, as well as investment grade corporate issues with a credit rating of at least A-.
	Lehman Global Aggregate ex Securitised Index	The Lehman Global Aggregate ex Securitised Index is a value weighted index of approximately 10,000 securities (bonds) issued by government owned entities, government guaranteed entities and investment grade corporations with a credit rating of at least BBB-.
Australian property securities	S&P/ASX A-Reit Index	A sector index of the S&P/ASX 300 Australian Shares Index comprising diversified exposure to property trusts listed on the Australian Stock Exchange.
Australian shares	S&P/ASX 300 Index	A free-float* adjusted capitalisation weighted index of Australian equity securities. The index represents around 90 per cent of the value of Australian based companies and property trusts listed on the Australian Stock Exchange.
Australian shares – high yield	S&P/ASX 200 Index	The S&P/ASX 200 Index (excluding listed property trusts) consists of approximately 170 Australian equity securities (shares) and represents over 92% of the value of all Australian-based companies (excluding listed property trusts) listed on the Australian Stock Exchange.
International shares	MSCI World (ex-Australia) Index (hedged and unhedged)	Comprises shares in companies listed on the exchanges of 22 of the world's major developed economies.

* Free-float is the proportion of issued shares that the index vendor considers readily available to investors.

The indexing pioneers

Vanguard pioneered the concept of indexing, introducing the first retail fund in the US in 1976. Vanguard has since become one of the world's most experienced and successful indexing specialists. In fact, the Vanguard Group manages more than US\$1.3 trillion worldwide. In Australia, we've been helping professional and personal investors invest through our unique style of indexing for more than ten years.

Vanguard® index funds

Personal and professional investors can benefit from Vanguard's high quality, low-cost investment solutions.

Vanguard's indexing approach is a proven long-term strategy for wealth, super and self managed super fund investors alike. Our funds are available directly or on a wide range of platforms through financial advisers, and include:

- Vanguard's **Investor** Index Funds are suitable for individuals, joint investors, SMSF investors, businesses and trusts.
- Vanguard's Personal **Superannuation** Plan is a flexible super plan you can use throughout your working life.
- Vanguard's Personal **Pension** Plan offers a flexible account-based pension for retirees seeking a tax-effective income stream.

With Vanguard's low fees, around half the industry average of retail managed funds, you can be assured your investments are off to a head start. Scaled management costs apply to balances over \$50,000 so the more you invest the less you pay. And there are no upfront fees. Investors with larger sums to invest can access our range of index funds at wholesale rates.

Like some more Plain Talk®?

At Vanguard, we believe it is just as important to know about the potential risks of your investments as well as the rewards. That's why we publish our Plain Talk guides on a range of popular investment topics. After all, better informed investors make better investment decisions.

Our Plain Talk range includes:

- Understanding indexing;
- Realistic sharemarket expectations;
- Building your investment portfolio;
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- Self Managed Super Funds and you;
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Note

All currency is in Australian dollars unless otherwise stated. Unless otherwise stated data sources are Vanguard, using market data. Performance data is as at 30 June 2008. To view current performance data, visit our website www.vanguard.com.au

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