

Vanguard[®]

VANGUARD COMMENTARY

Beyond expense ratio: A contemporary guide to index fund manager selection

February 2020

Authors: Ed Rickard, Investment Product Manager – Equities
Tom Wilson, Senior Investment Product Manager – Equities
Ross Howell, Senior Portfolio Manager – Equity Index Group
Duncan Burns, Head of Equity Indexing – Asia Pacific

Executive summary

- Over the last few years, index fund expense ratios have been compressed across the industry. As a result, fee differences that once had a large impact on a fund's relative performance have become less of a differentiator.
- In the current environment, financial advisers and investment teams tasked with selecting prudent investment options must look beyond expense ratios to a broader set of more complex factors to objectively evaluate the reasonableness of product fees in the context of services provided and after-fee performance.
- This paper provides a contemporary framework for evaluating index funds and asset managers by assessing fund expenses as only one component of a broader set of qualitative and quantitative factors, including organisational incentives, portfolio management capabilities, securities-lending practices and additional considerations such as buy/sell spreads and benefits of scale.

In recent years, some asset managers have announced ultra-low expense ratio products to promote the concept that index funds are a commodity, solely differentiated by price. However, while expense ratio differences of 50, 20, or even 10 basis points have a significant impact on a fund's relative performance, these differences verge on irrelevance at two to three basis points. At these levels, performance—and due diligence—depends on less visible and more complex elements of index fund management.

Consequently, as index fund expense ratios drift lower, selecting an asset manager adept at providing investors with exposure that closely mirrors the risks and returns of a benchmark index—the primary objective of an index

fund—becomes more challenging for advisers seeking to drive the best investment outcomes for their clients.

This paper explores the relevant qualitative and quantitative criteria—organisational incentives, portfolio management capabilities, securities-lending practices, and a few modest additional considerations—and identifies questions that financial advisers should consider in addition to expense ratios when selecting an index fund manager. The example below combines these factors, including expenses, into an enduring, contemporary decision-making framework for use by financial advisers. The framework has been applied to a suite of popular broad-based Australian equity market funds offered by major asset managers, including Vanguard.

Figure 1. Framework for evaluating equity index funds

Framework	Application: Australian domestic equity index funds	
	More preferable 	Less preferable
Organisational incentives		
Asset manager structure	Mutual ownership 	For-profit ownership
Expense ratio	0.16% p.a. 	0.40% p.a.
Portfolio management		
Excess return (after fees)	-0.14% p.a. 	-0.42% p.a.
Tracking error	0.03% p.a. 	0.25% p.a.
Securities lending		
Revenue to clients	0.02% 	0.00%
Revenue to Fund company	0% 	Partial revenue sharing
Percentage of fund assets on loan	Low volume 	High volume
Additional considerations		
Buy/sell spread	0.10% 	0.20%
Economies of scale / Fund size	\$13.2B 	\$0.8B

Source: Morningstar and Vanguard September 2019

Organisational incentives

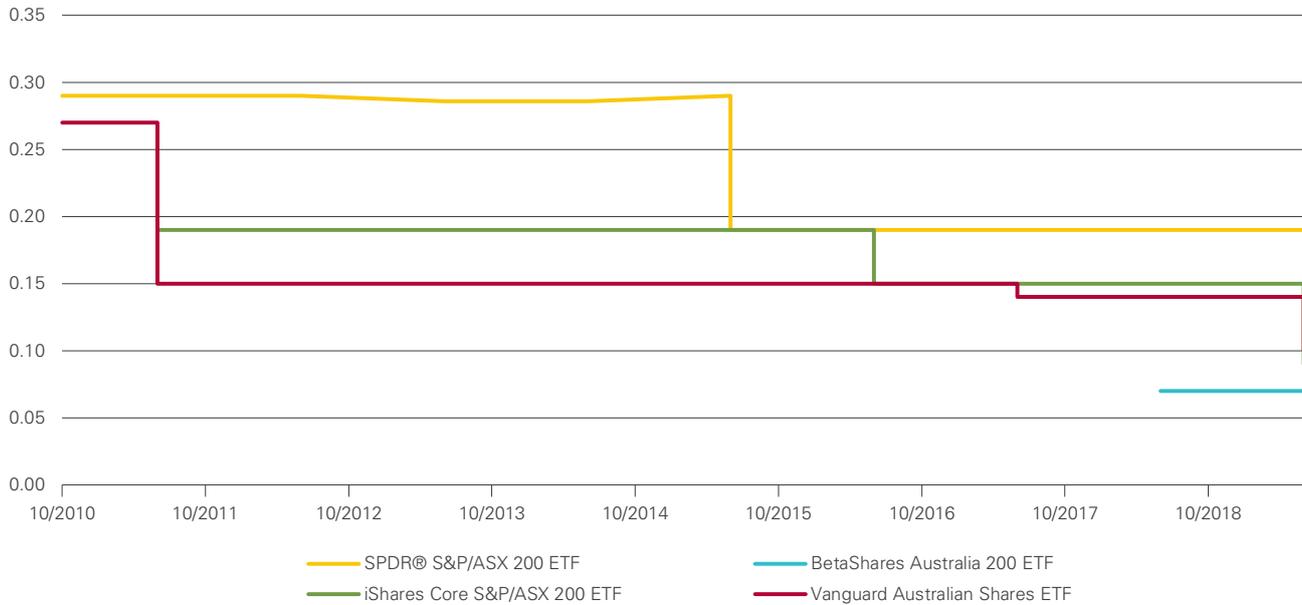
Asset manager structure

Index fund managers come in all shapes and sizes, and the details are important because an asset manager's ownership structure and philosophy define the incentives that drive a firm's business strategy. Vanguard Australia has and will continue to put investors' interests ahead of its own. It's able to do this partly due to the mutual ownership structure of its parent (Vanguard Group, Inc.) which promotes client interests ahead of profit maximisation. This filters through to the Vanguard Group and its subsidiaries' core principles of keeping costs low and always putting clients first. As demonstrated by the examples below, asset manager incentives should be closely considered during due diligence exercises.

Expense ratios

The cost—or expense ratio—of an index fund is deducted from the fund's net asset value (NAV) by the asset manager, decreasing the fund's return. As industry average expenses have compressed, the investor that selects an index fund solely to save, say, two basis points per year may do so at the expense of an amount that exceeds the savings. Still, financial advisers should seek out asset managers for their clients that have proven histories of disciplined expense management. Understanding a manager's track record helps investors in determining how that manager will treat clients over time, such as the likelihood that costs will remain flat or decrease rather than potentially fluctuate over time when selective price competition is a business strategy rather than a core philosophy.

Figure 2. Previously disparate Australian equity index fund expense ratios have converged across the industry



Source: Morningstar June 2019.

Portfolio management

Despite a belief by some that index fund management is straightforward and simple, in reality it is a complex undertaking that requires heavy investment activity, experience and sophistication. Index benchmarks are theoretical constructs calculated without the frictional costs of transacting in the real world. Linking up with a manager who is an expert at minimising those frictions can make a difference to performance. In asset management performance is the great equaliser, and consistent performance over time is driven by seasoned, talented portfolio management teams, not all of which are created equal. Some are further differentiated by time-tested, risk-controlled processes and technology carefully designed to consistently and tightly track fund benchmarks, avoid market-impact costs, and offset multiple basis points of expenses through the daily application of value-add strategies. When evaluating portfolio management capabilities, fund performance should be viewed with a long-term lens, inclusive of multiple market cycles, each with its own unique challenges—a time horizon appropriate for the typical tax-deferred investor.

Excess return

Excess return and tracking error are two measures that can help evaluate index funds, but to use the measures effectively, it is important to first understand what each one represents. The two terms are often used interchangeably, however, they have very different meanings. Excess return, which can be positive or negative, measures the extent to which an index fund has out- or underperformed its benchmark index. It is calculated as the fund's total return minus the benchmark's total return.

However, some index managers seek out trading alpha—otherwise known as positive excess return—and others don't. Over the course of a given year, some managers' portfolio management techniques can add modest amounts of value that can frequently offset some or even all of a fund's expense ratio. For example, a fund with a 10 basis point expense ratio and a negative net return of five basis points means that the manager has added five points in outperformance. Contrastingly, less skilled managers may even have negative excess return. The following example of dealing with corporate actions highlights one of several value-add strategies aimed at driving positive excess return.

Index providers outline how benchmark returns will be calculated when corporate actions occur and securities

are added or deleted. During mergers and acquisitions, indexes assume that shares of the acquired firm are sold at the close on the last day of trading. Managing a fund by following this methodology exactly will result in very tight tracking, but a carefully calculated alternative trading approach may track tightly while also adding value. To execute such strategies successfully requires skilled analysis of benchmark methodologies, execution mechanics, and risk management.

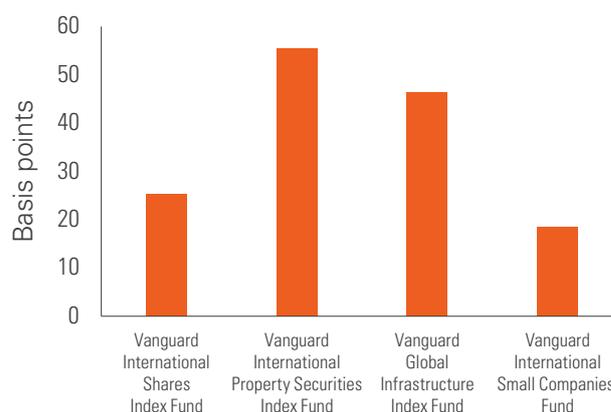
Withholding tax benefit

Excess return related to the withholding tax benefit for Australian domiciled funds invested in international stocks can have a major impact on performance, across both active and passive funds.

Australian domiciled managed funds/exchange traded funds (ETFs) that invest in US-listed stocks receive a reduced withholding tax rate of 15% due to a double taxation treaty between Australia and the US. Equity indexes disregard any individual country tax treaty and use the maximum tax rate applicable to international investors of 30%. As a result, all Australian fund managers holding US securities will receive an excess return or 'free-kick' relative to a fund's benchmark index due to the taxation differences on US dividends.

As an example (which can be seen below), the Vanguard International Property Securities Fund generated 0.55% in outperformance relative to its index (FTSE EPRA/NAREIT Developed ex Australia rental index AUD) from withholding tax relief during the 2018/19 financial year.

Figure 3. Withholding tax performance



Source: Vanguard June 2019

Tracking error

Tracking error is calculated as the annualised standard deviation of excess return data points (see Figure 3). While excess return measures the extent to which an index product's return differs from that of its benchmark index, tracking error indicates how much variability exists among the individual data points that make up the fund's average excess return.

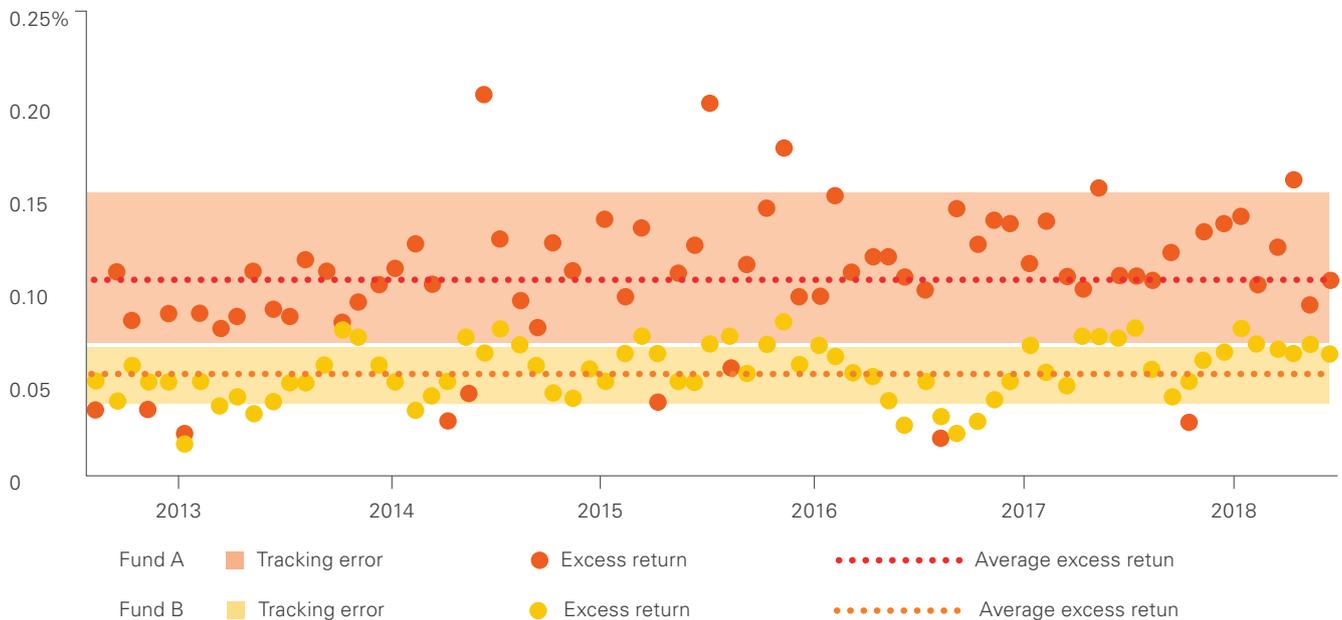
Tracking error serves as an indication of the risk inherent in a manager's process. Said differently, tracking error measures the consistency of an index fund's return relative to its benchmark's return. Since volatility includes both appreciation and depreciation, tracking error is measured as an absolute value. The further from zero, the more volatile the fund's excess return. Portfolio management decisions including sampling techniques, use of derivatives, trading at times other than market close, management of index reconstitutions, withholding tax and many other factors combine to drive tracking error.

However, tracking error cannot be evaluated in isolation. First, investors should understand that what can be considered reasonable tracking error (i.e., tolerance level) varies by mandate based upon the characteristics of the

underlying market. For instance, investors should expect tighter tracking error in a passive ASX 300 (or 200) product given a large portion of the index is made up of large and relatively liquid companies, relative to an emerging markets fund that includes large-, mid-, and small-cap names traded in less efficient, developing capital markets. Second, an asset manager can underperform its benchmark by a wide margin, and as long as the underperformance is consistent, tracking error will be zero. Accordingly, both excess return and tracking error should be viewed in tandem to determine how skilfully an index fund is being managed. Importantly, the two need not be mutually exclusive; given the primary objective of an index fund is to closely mimic its benchmark's return year after year, investors should seek out index fund managers that have demonstrated an ability to deliver both reasonable excess return and minimal tracking error.

The chart below illustrates this point using two hypothetical funds, tracking the same benchmark from different managers. While Fund A shows a higher average excess return than Fund B, its tracking error is also significantly higher. As a result of this volatility, returns to some investors that purchase Fund A will be better than those who purchase Fund B, while others will be worse.

Figure 4. Investors should expect the combination of reasonable excess return and low tracking error (Fund B)*



*The above chart is hypothetical in nature and used purely for illustration purposes.

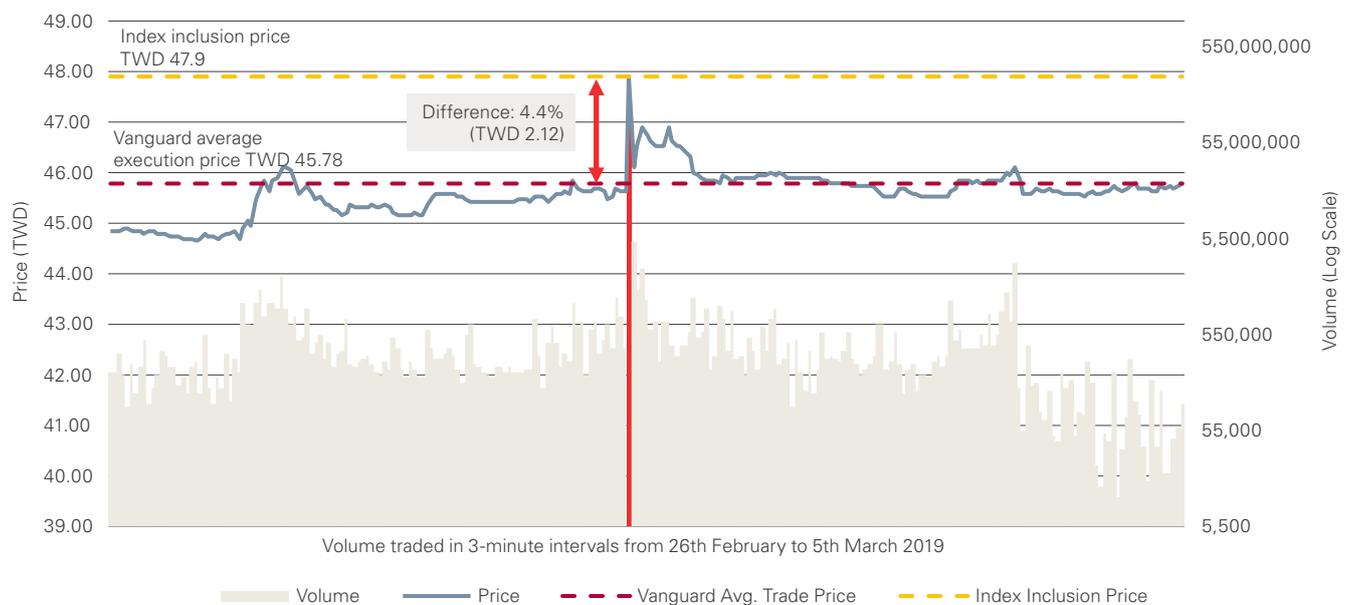
Market impact

As it turns out, portfolio management can not only impact the return of a fund, but that of its index as well. This occurs through the concept of market impact: the effect that an asset manager’s purchase or sale of a security has on that security’s price. Each security has an equilibrium price based on market supply and demand. Fund managers can push the price up or down temporarily through their trading activity, impacting any index or fund that holds that security, regardless of the asset manager. Market impact affects all asset managers—active and passive, large and small, equity and fixed income—and, if not effectively managed, can diminish the wealth of investors. Worse yet, market impact is not reflected in publicly disclosed performance numbers. It can slowly, steadily, and imperceptibly erode performance.

Think of this in the context of the price of roses. On Valentine’s Day, roses are artificially expensive because of increased demand but return to their equilibrium price the next day, when demand subsides. Similarly, if an asset manager places a single buy order because of a large daily cash flow, it can push the price of that security up, impacting all those in the market for that security. When the asset manager is absent from the market during the next trading session, the security will typically regress to its previous equilibrium price, decreasing the value of all indexes and funds that own it and erode the returns of their own investors in the process.

The below chart demonstrates this concept using the addition of Shanghai Commercial & Savings Bank (SC&SB) to the MSCI Emerging Markets Index.

Figure 5. Shanghai Commercial & Savings Bank impact on the MSCI Emerging Markets Index



Source: Vanguard

On February 27, 2019, Shanghai Commercial & Savings Bank (SC&SB) was added to the MSCI Emerging Markets Index. The average trading volume and price of SC&SB in the five days prior to the index addition was 23 million shares per day and TWD46.35 per share. On February 27 trade volume for SC&SB increased to more than 270 million shares due to rebalance demand, pushing the stock to a closing price of TWD47.9, only to close lower over the subsequent days as volume declined. The volume driven by asset managers that traded on the close of the rebalance day pushed SC&SB’s price to artificially high levels. However, asset managers that traded before, during, and after the reconstitution date diminished the market impact

on February 27. In addition, those managers received the average price over the time period, creating positive excess return relative to the fund’s benchmark and a better outcome for investors.

Sampling techniques

Sampling refers to the approach that an asset manager takes to selecting the securities within an index fund. Often the most desirable approach is to purchase every security in an index—sometimes referred to as full replication. However, benchmarks often contain securities with low or even no liquidity, rendering them prohibitively expensive

or, sometimes, impossible to trade in the real world. This is especially true in the fixed income space. As a result, an asset manager may apply an optimisation approach in which portfolio managers balance tracking error risk against transaction costs by purchasing a representative sample of the index securities aimed at matching the fundamental characteristics (e.g., capitalisation, style, sector) of the index without purchasing all of the securities within the benchmark. An optimisation approach may also be appropriate in the case of broad-market indexes where fully replicating the index may be impractical, as well as in international equity funds where there is an option to purchase either American Depositary Receipts or local securities, each with differing levels of liquidity relative to each other. Further, in less-liquid emerging markets, trading costs can be substantial and, as a result, full replication can actually result in underperformance relative to indexes, none of which adjust returns for trading costs. Overall, optimisation introduces varying levels of risk and can depress investor returns over time when poorly executed. Accordingly, investors should favour full replication where feasible and otherwise use tracking error to evaluate a manager's skill when optimising.

Securities lending

Globally, securities lending is a widely used value-adding investment strategy involving the loan of portfolio securities to financial institutions that have a need to borrow such securities. The asset manager receives either cash or acceptable alternative securities as collateral to protect against the borrower failing to return the securities. While this basic framework exists across the globe, the approach or lending philosophy can vary significantly from firm to firm.

Most of Vanguard's Australian domiciled funds participate in our securities lending program. It is our understanding that very few publicly available passively managed Australian domiciled equity funds engage in this value-adding activity on behalf of clients.

It is important not to underestimate the impact of securities lending revenue for some passive equity funds, especially if price is one of the key criteria being used to select a fund. For example, the Vanguard Australian Shares Fund/ETF generated approximately 0.028% of revenue for its clients over the 12 months to September 30, 2019. While this may not sound significant, considering the fee on the ETF and fund are 0.10% p.a. and 0.16% p.a. respectively, the revenue being generated makes a substantial impact on partly offsetting the total management fee of these products for Vanguard clients.

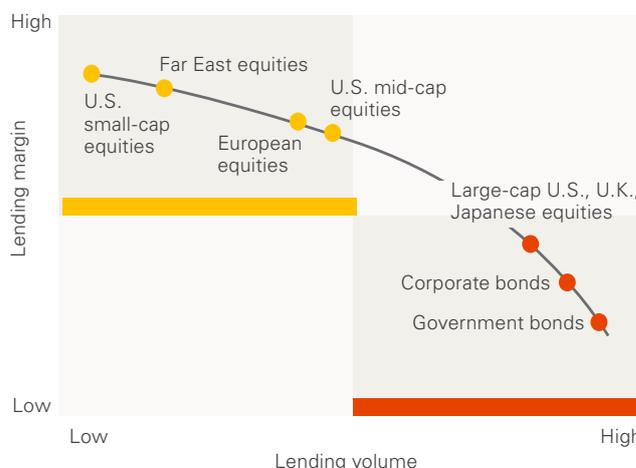
Fee split

An investor should be appropriately compensated for assuming the risk associated with securities lending. However, this is yet another area where various asset managers differ. All revenue generated through Vanguard Australia's program is fully returned to clients (after program costs). This differs from some other asset managers throughout the world who choose to keep a portion the revenue for their own benefit. All else being equal, lower costs mean higher returns to investors.

Lending philosophy

An investor should understand the program's fundamental approach to securities lending. On the conservative end of the spectrum is value lending, where an asset manager concentrates on lending relatively small amounts of hard-to-borrow securities (e.g. small cap or emerging market stocks). High demand equates to higher loan fees, allowing asset managers to limit the amount on loan while maximising returns. Value lending limits the number of securities eligible for loan and, in some market cycles, dictate that the optimal approach is to lend nothing at all. On the more aggressive end is volume lending, which concentrates on lending significantly larger amounts of securities. The key distinction here is risk-adjusted return. If one value and one volume program produce the same returns for two identical funds, the value program would do so with a smaller amount on loan and, accordingly, a smaller portion of the portfolio's holdings that would be susceptible to loss. While the probability of investor losses may be small, many times such risks are the greatest during times of market turmoil, when investors most want their portfolios to be insulated from such ancillary risks.

Figure 6. Securities-lending philosophies drive the level of program risk and vary widely among asset managers



Source: Vanguard

These two approaches must be aligned with the two key risks associated with securities lending: borrower default risk and collateral risk.

Borrower default risk

This risk is the possibility that the borrower fails to return the securities, usually because of financial hardship. It is important to understand how much rigour an asset manager puts into the screening of potential borrowers to assess their credit quality.

Collateral reinvestment risk

In managed fund/ETF structures, securities borrowers must deliver enough collateral to cover 100% or more of the borrowed security's value, which the lender generally reinvests for the term of the loan. In the event of a borrower default or insolvency, this collateral will be used to cover the repurchase of the loaned securities. This process creates collateral reinvestment risk. Managed funds are required to reinvest collateral in conservative fixed income investments, which themselves carry various degrees of risk that should be understood. Extending duration and/or lowering credit quality will increase risk but also yield, producing additional revenue not only for the client but potentially for the asset manager as well. Collateral reinvestment risk was most apparent during the 2008 global financial crisis, when several firms experienced significant losses related to their securities-lending programs. It's important to note that the losses occurred primarily because of significant declines in the value of collateral resulting from aggressive reinvestment strategies and not from the practice of securities lending itself.

These details drive the return of each program, which, depending on the strategy, can add 0 to 10+ basis points of return to overall performance, along with varying levels of risk, much of which is borne by shareholders. Accordingly, securities lending can represent hidden costs and risks that, unlike expense ratios and tracking error, are not immediately apparent to the investor. Transparency is critical, and investors should be wary of any manager unwilling to provide line of sight into its lending program.

During their analysis, investors may also want to explore the program's performance over past market cycles. Did investors lose money? Did asset managers pitch in to cover losses in any product? Full program transparency should be

a minimum expectation. In the end, securities lending is all about investor preference and risk appetite. However, in general, securities lending programs that are conservatively operated in terms of lending volume and collateral reinvestment and that return the greatest portion of lending revenue to investors should be preferred.

Additional considerations

Buy/sell spreads

Whether in the form of bid/offer spreads on ETFs or buy/sell spreads levied on funds, when it comes to total cost of ownership, buy/sell spreads must be factored in. ETF bid/offer spreads (or quotes) are plain to see and easy to include in your total cost of ownership calculations. Fund buy/sell spreads are costs buyers and sellers of a fund need to pay when transacting both buying into and selling out of the fund. In Vanguard's case, these spreads do not go to the manager. Instead, they go back into the fund to cover the cost of the transactions incurred when investors buy into or sell out of a fund. Charging buy/sell spreads in this fashion protects existing long-term investors from the transaction costs of other investors coming in and out of the fund.

The quoted buy/sell spread costs when entering or exiting a fund will typically be the maximum an investor would expect to pay when investing into this type of vehicle. Vanguard's investment management team uses all methods possible to ensure these costs are minimised for investors, which include:

- Matching buyers with sellers on the same trading day to partially or fully eliminate spreads
- Designating specific crossing days to maximise the opportunity for matching buyers and sellers

To put this into perspective, the quoted buy spread is 0.05% and the sell spread is 0.05% for the Vanguard Australian Shares Index Fund. However, due to the high degree of crossing at zero, the average realised buy spread and sell spread were 0.04% and 0.00%¹ respectively during the 2018/19 financial year.

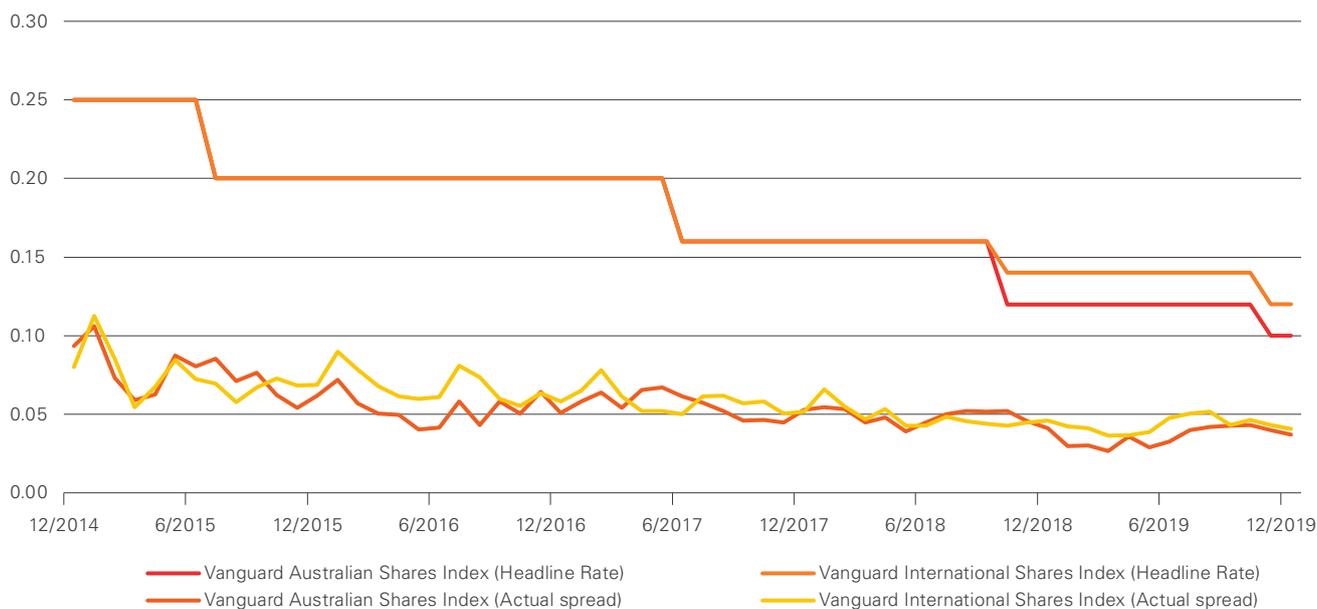
Typically, index funds will charge significantly lower buy/sell spreads compared to active strategies. When comparing index managers, there can also be some, at times, material differences.

1. The sell cost is 0.0027% but to two decimal places is 0.00%. Selling units typically incurs a smaller spread on this fund as inflows usually outweigh outflows.

We're unable to explicitly comment on the practices of some of our competitors, but at Vanguard we conduct annual reviews to ensure the spreads we charge on our managed funds are an accurate reflection of actual average transaction costs.

Through annual reviews we've displayed a consistent commitment to lowering buy/sell spread costs over the years, as the below chart demonstrates:

Figure 7. Vanguard International Share Index Fund and Vanguard Australian Share Index Fund headline and actual spreads (buy/sell)



Source: Vanguard

Benefits of scale

Economies of scale are defined as savings that accrue as a firm's production volume expands over time. In asset management, scale is a key differentiator, and one that is increasingly difficult for new entrants to achieve. Economies of scale in index fund management exist at both the fund and firm levels, often manifesting in the form of increasing effectiveness of other value-add capabilities, including, but not limited to, the examples below:

- **Trading costs:** Scale at the firm level allows for lower trading costs by increasing the opportunities for cross trading within a family of funds, as well as obtaining new securities through syndicated offerings, both of which eliminate brokerage commissions. In addition,

scale relationships can decrease the commission rates themselves, with the largest providers paying fractions of a cent per trade. On a fund level, scale also enables access to tighter bid-ask spreads by trading in round versus odd lots.

- **Securities lending:** Large managers are more consistently able to participate in the lending of the wide variety of securities they hold. Generally speaking, the more assets a firm has under management the more opportunity there is for that firm to optimise its securities lending program (as noted above, optimising often does not mean more lending, but rather smarter lending). Further, large index funds can command a premium in the securities lending market because of their size and their ability to fill large orders, and

because a passive management approach means they are less likely to call loans back early.

- **Global trading platform:** For funds that own international securities, a key capability required for combating market impact is a strong global trading operation. Asset managers that have trading desks in regions around the world are able to carefully execute their funds' trades in ways that best align with the strategies of the portfolios. In contrast, those with only a domestic trading desk must often rely on regional brokers, who are paid commissions based on trade volume, to execute trades on their behalf. As a result of their incentives, such partners may not value the idea of managing market impact, instead trading in a way that is indifferent to maximising value for clients. Furthermore, the local market expertise afforded by a global platform empowers an asset manager to more effectively perform due diligence when considering how to approach trading strategies in various capital markets around the world.
- **Broker relationships:** Large managers have the ability to establish stronger relationships with investment banks and other financial services firms, providing increased access to syndicated initial public offers, secondary offerings, and new fixed income issues. When used appropriately, this access represents a meaningful source of value to investors.
- **Industry impact:** Asset managers often have an opportunity to engage with regulators and index

providers on topics important to investors. The larger the manager, the louder the voice they can have at the table, allowing firms with significant scale to influence policy. This concept further increases the importance of working with a firm that uses its influence in ways that align with clients' interests.

- **Replication:** Scale increases a manager's ability to more closely replicate benchmarks that contain less-liquid securities that may be prohibitively expensive for smaller asset managers to trade, forcing the latter to optimise portfolios through a less diversified, representative sampling.

Conclusion

Expenses have long been the most visible differentiator of investor outcomes, leading many financial advisers to evaluate products primarily based on cost. However, the market for passively managed investments has changed dramatically over recent years, giving way to industry wide, ultra-low expense ratios. As a result of this price compression, real savings achieved by switching to the lowest-cost product have been minimised or eliminated, meaning prudent investment selection cannot be achieved by focusing on cost alone. Accordingly, when searching for and selecting investment options, financial advisers should create and use a contemporary decision-making framework that takes into account expenses and organisational incentives, portfolio management capabilities, securities lending programs and scale in more equal weights than in the past.

Connect with Vanguard™ > vanguard.com.au

Vanguard Investments Australia Ltd (ABN 72 072 881 086 / AFS Licence 227263) is the product issuer. We have not taken your or your clients' circumstances into account when preparing the information so it may not be applicable to your or your clients' circumstances. You should consider your or your client's circumstances and our Product Disclosure Statements ("PDSs") before making any investment decision. You can access our PDSs at vanguard.com.au or by calling 1300 655 102. Past performance is not an indication of future performance. This publication was prepared in good faith and we accept no liability for any errors or omissions.



© 2020 Vanguard Investments Australia Ltd.
All rights reserved.
RPBERAU_022020