The case for indexing in Asia

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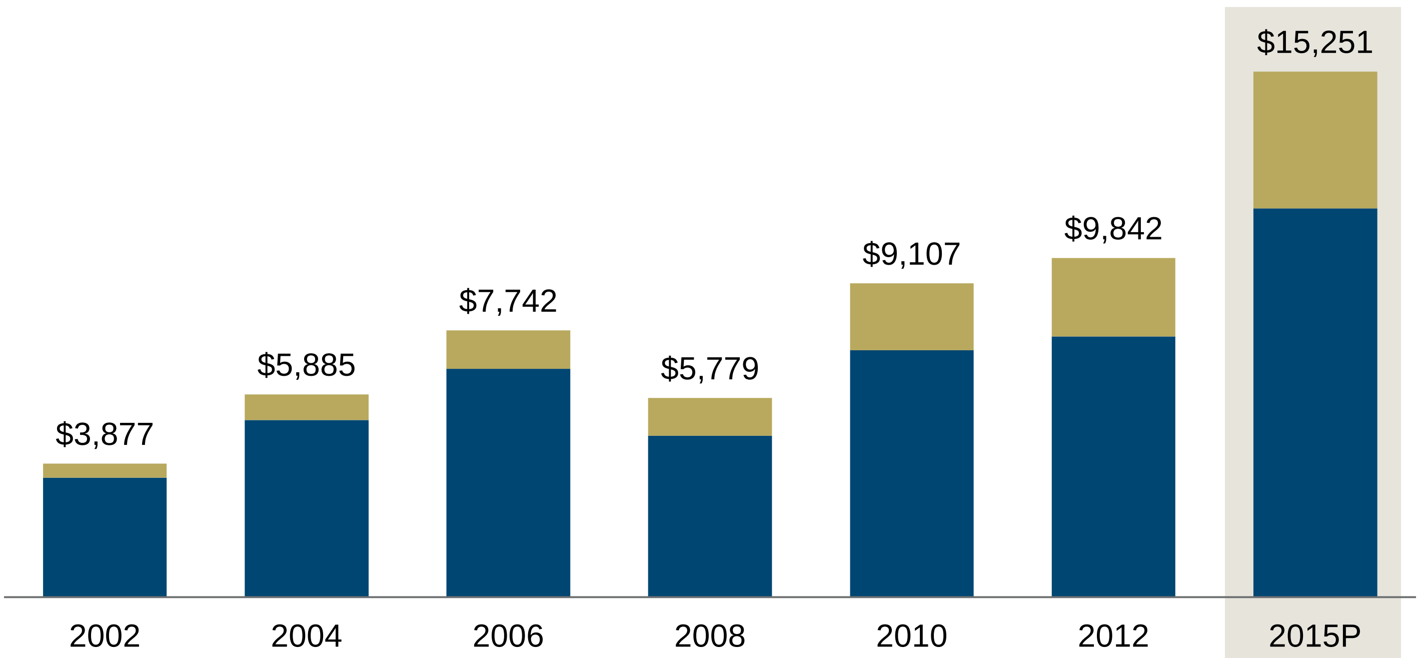
Vanguard

A trend toward index investing

Long-term US mutual fund assets (US$ billions)

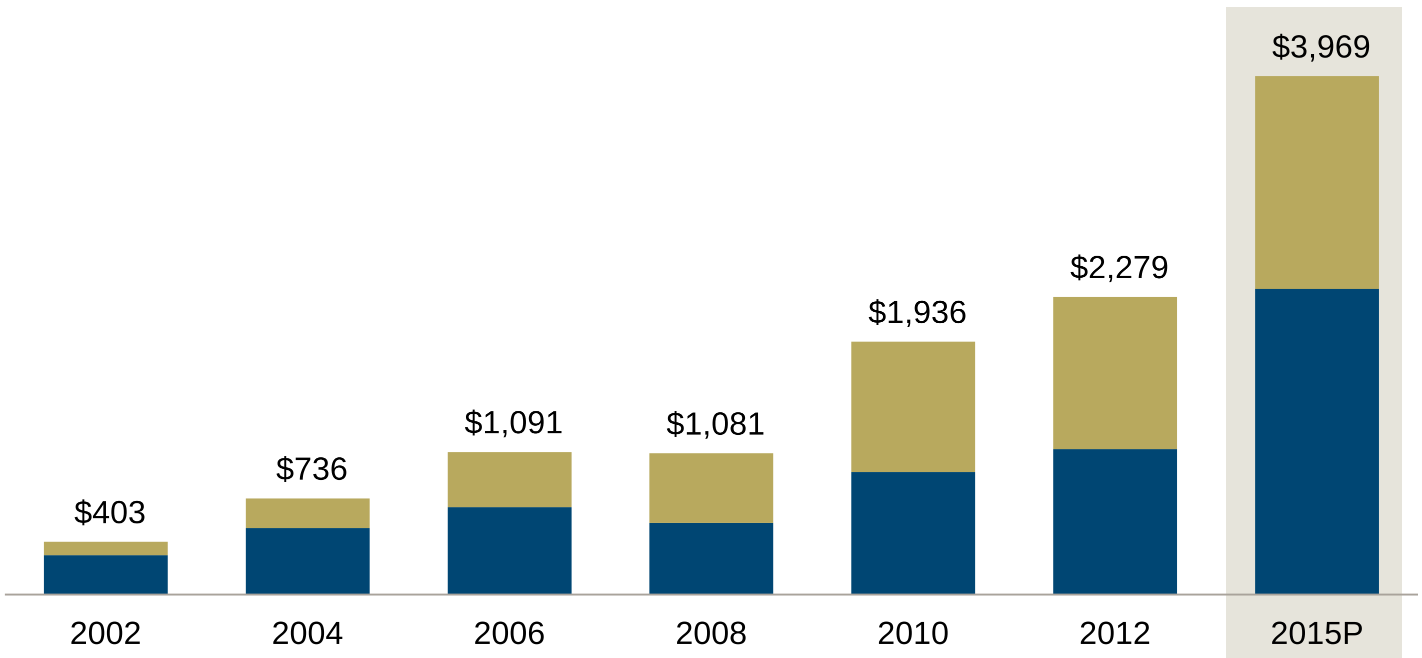


	2002	2004	2006	2008	2010	2012	2015P
Index LT	10%	13%	14%	19%	21%	23%	26%
Active LT	90%	87%	86%	81%	79%	77%	74%

Source: Vanguard analysis and illustration using data from Vanguard and Strategic Insight as at 30 June 2012.

ETFs as an indexing vehicle

Long-term US index fund assets (US$ billions)

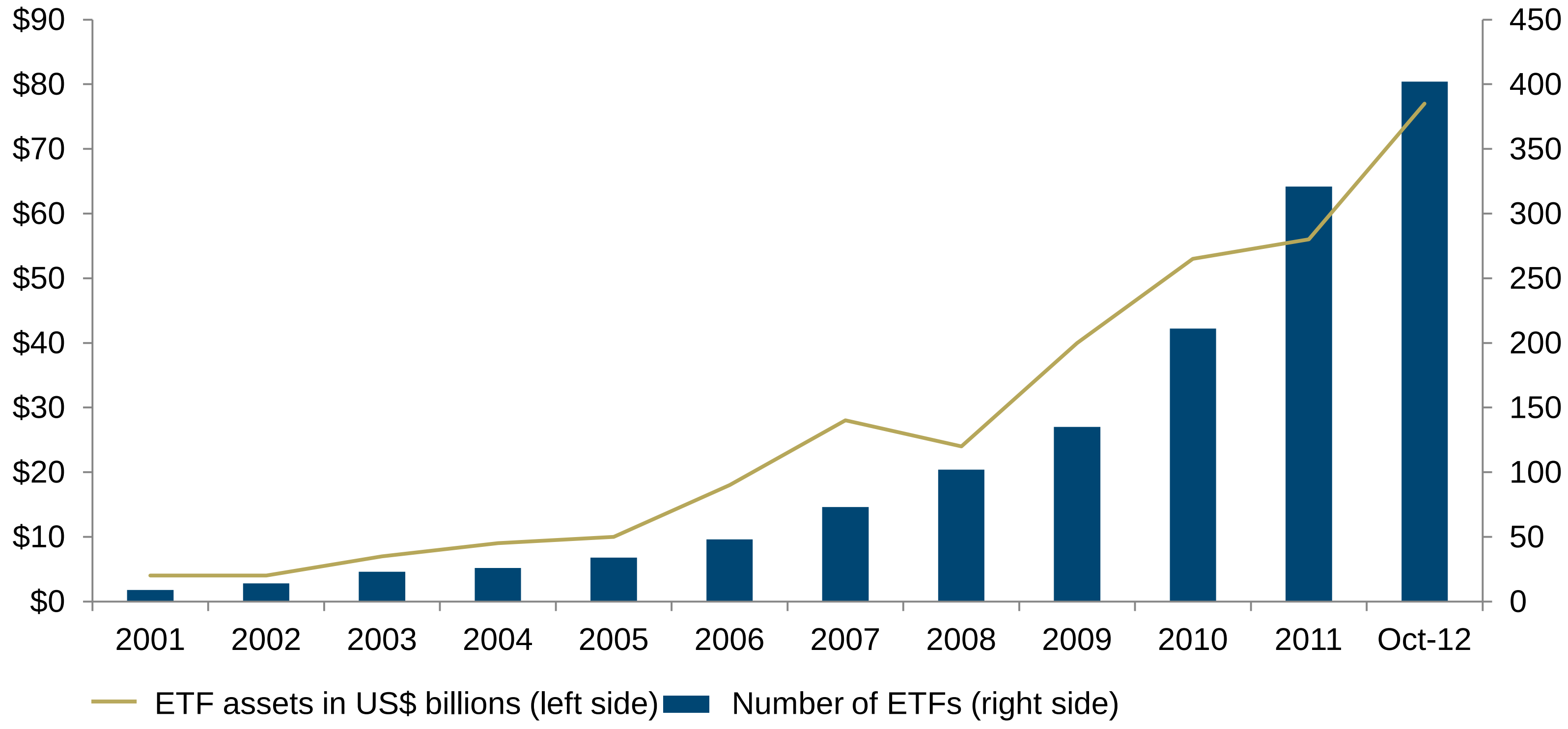


	2002	2004	2006	2008	2010	2012	2015P
ETF	25%	31%	38%	49%	52%	51%	59%
Index MF	75%	69%	62%	51%	49%	49%	41%

Source: Vanguard analysis and illustration using data from Vanguard and Strategic Insight as at 30 June 2012

Asia-Pacific (ex-Japan) ETF growth

ETF assets and number of products



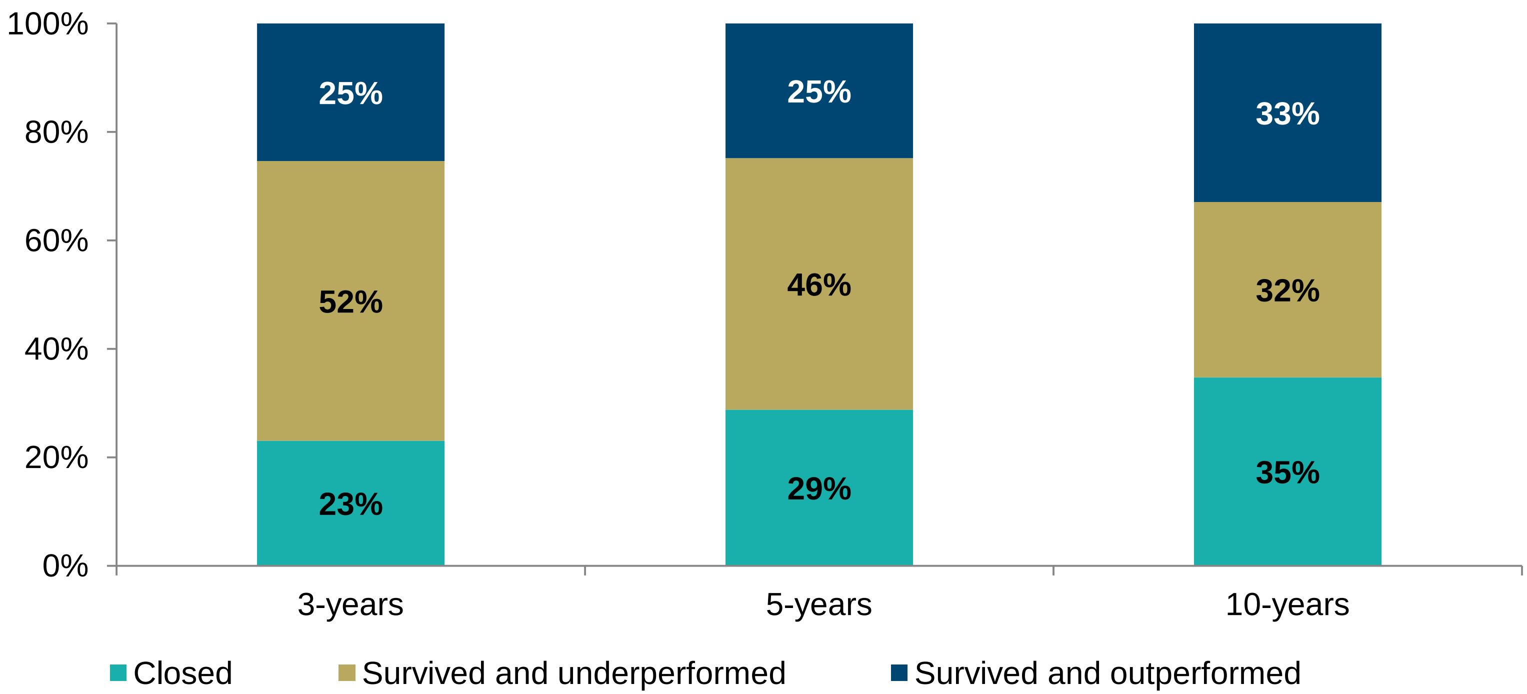
Source: Vanguard illustration using data from ETFGI as at 31 October 2012. (ETFGI analysis is of data from ETFGI, Bloomberg, ETF providers and WIND.)

The difficulty of active management

- General underperformance
- Limited persistence of outperformance
- Potential for greater volatility

Market outperformance is the exception, not the rule

What percentage of Asia-region actively managed funds have survived, and beaten their benchmark?



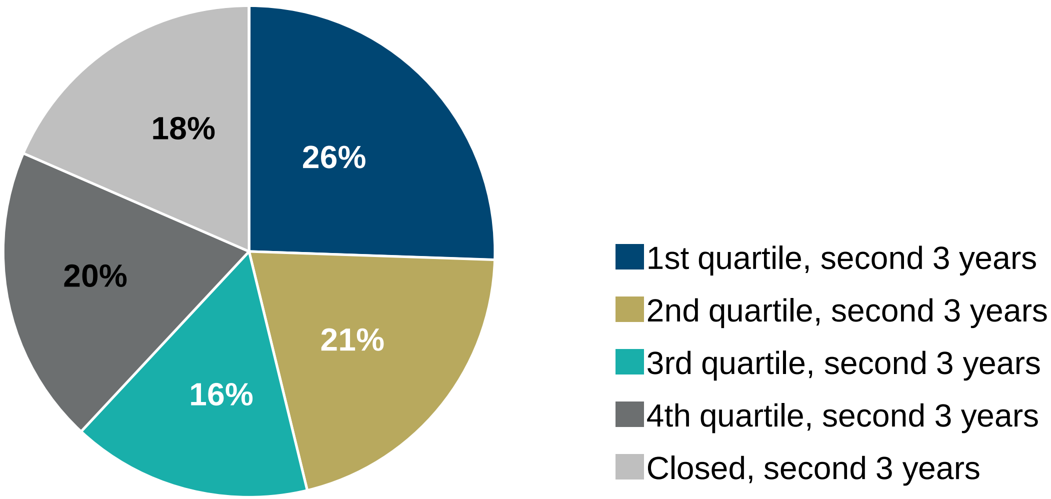
Note: Three-year figures are for the period October 2008 – September 2011; five-year figures are for the period October 2006 to September 2011; ten-year figures are for the period October 2001 to September 2011. Sample size was 1418 funds for three years, 1012 funds for five years and 383 funds for ten years.

Source: Vanguard analysis, based on data from Morningstar, Inc.

Even for winning managers, success can be fleeting

The relationship between the past and future performance of actively managed funds is nearly random…

Subsequent 3-year performance of top-quartile Asia-region equity funds



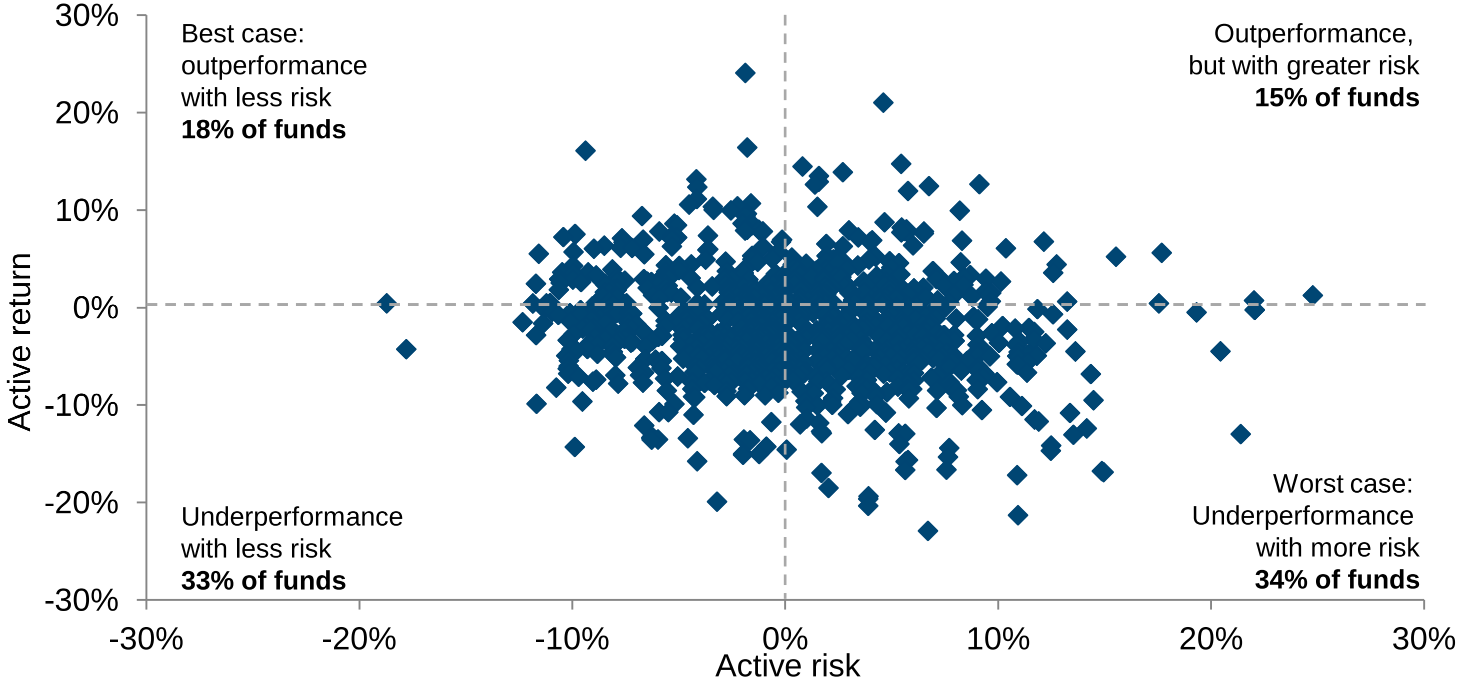
Note: Examines the top-quartile equity funds as measured by the active return over the fund's appropriate regional benchmark for the three years ending 30 Sept. 2008. These funds were then followed in the subsequent three years ending 30 September 2011 to determine their relative performance. The results are similar when examining other time periods within our available sample.

Source: Vanguard analysis, based on data from Morningstar, Inc.

Market outperformance rarely comes with less risk

Only 18% of active managers exhibited higher returns and lower volatility than the market

Three-year returns and volatility of active Asia-region equity funds



Note: Active equity managed investment funds annualised net active returns and relative total risk (annualised portfolio total volatility less annualised benchmark total volatility) are shown for the period 30 September 2008 to 30 September 2011.

Source: Vanguard analysis, based on data from Morningstar, Inc.

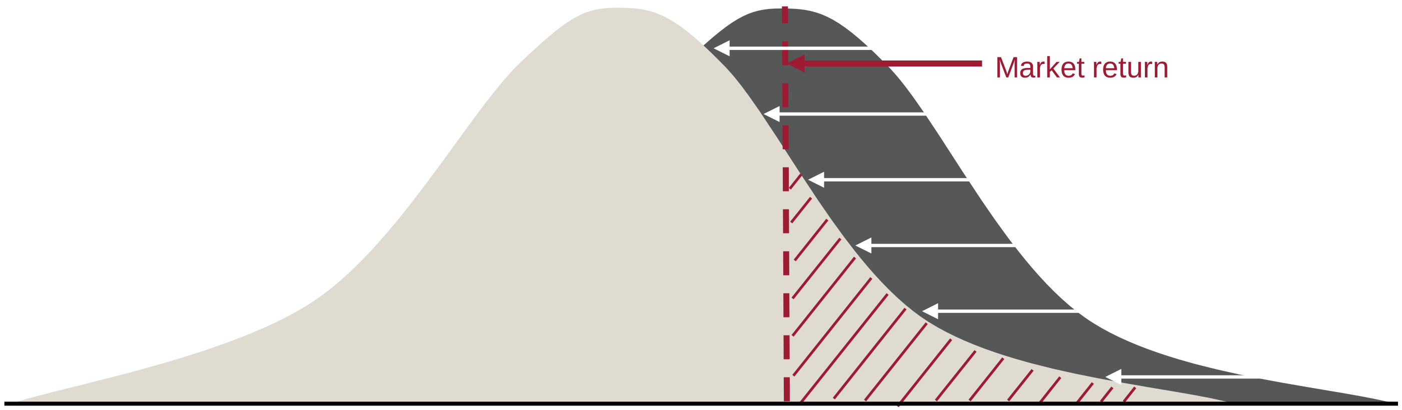
Why indexing works

The zero-sum game

Costs

The zero-sum game theory explains why a majority of invested assets will underperform a market benchmark after costs

Costs shift the investor's return distribution



After costs, less value is delivered to investors

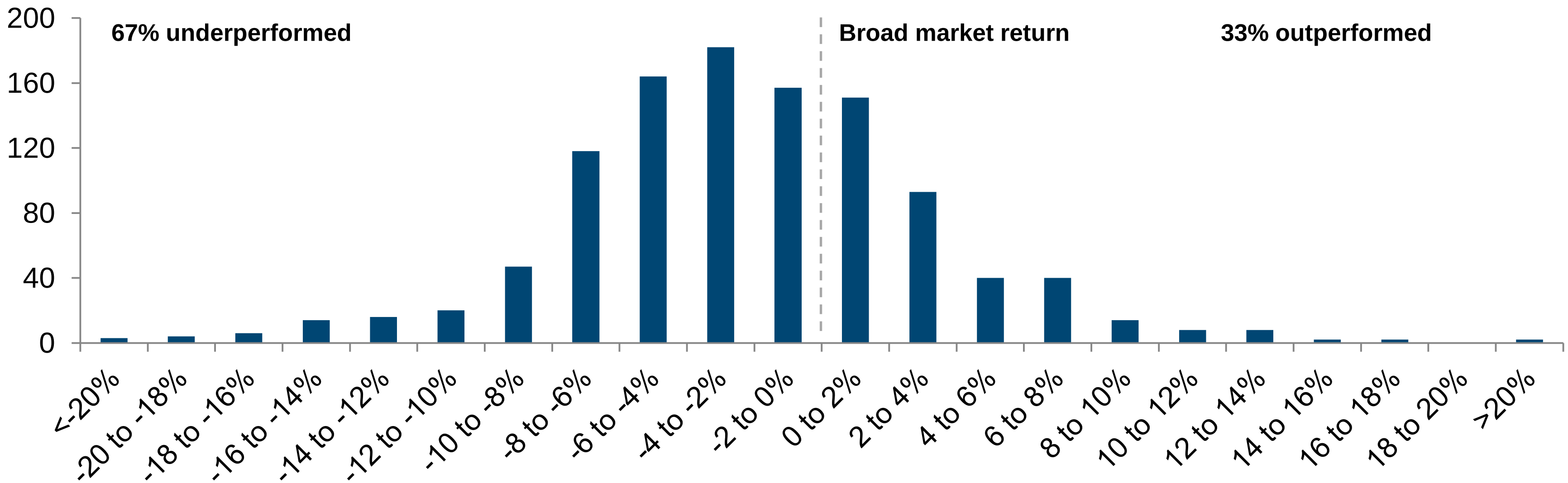
- The holdings of all investors aggregate to form a market
- Outperformance by one necessarily means underperformance by another
- The key to increasing the likelihood of remaining on the winning side is by lowering costs (but maintaining skill)

Source: Vanguard . This illustration does not represent the return on any particular investment.

Applying the zero-sum game to Asia-region actively managed fund performance

Investing costs cause the distribution of active returns to shift to the left of benchmark returns

Active return distribution – 3 years ended 30 September 2011



Note: Each fund was evaluated relative to the net return of the relevant MSCI Investable Market Index benchmark, depending on its stated regional focus: Asia ex Japan (All Country Asia ex Japan Index), Greater China (Zhong Hua Index), Hong Kong and Singapore. Included funds are from the following global categories for open-end funds in the Morningstar Direct Global database: Asia ex Japan Equity, Greater China Equity, Hong Kong Equity, Singapore Equity. Fund data are net of fees.

Three-year figures are for the period October 2008 – September 2011; five-year figures are for the period October 2006 to September 2011; ten-year figures are for the period October 2001 to September 2011.

Managed investment fund database survivor bias tends to overstate the average long-term returns reported by active manager databases. Survivorship bias results when managed investment fund returns are not adjusted for those funds that no longer exist, which causes the average returns to rise because as underperformers are removed, new funds replace them. To account for survivorship bias, we identified funds that existed at the start of the period and were either liquidated or merged during the stated period. Those funds identified as missing were added to the base sample of surviving managers to compute the percentage of all funds that underperformed the benchmark. It has been shown that when survivorship bias is present along with fees and benchmark mismatching, active managers—particularly small-cap managers—tend to underperform a given benchmark (Malkiel and Radisich, 2001; Ennis and Sebastian, 2002).

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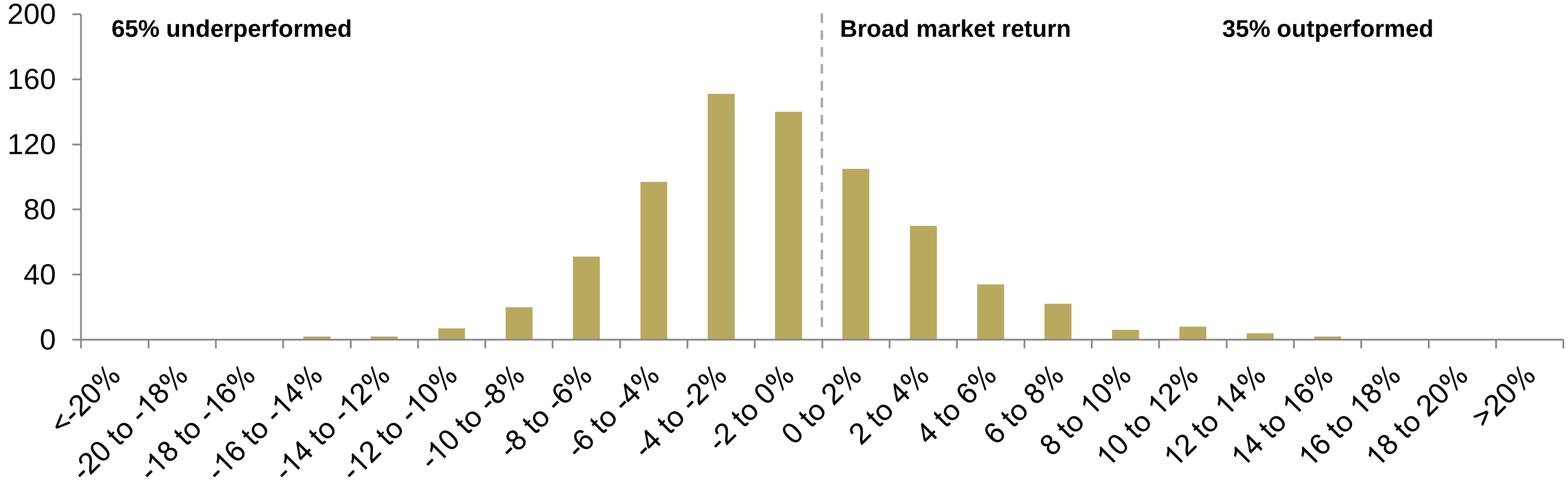
Applying the zero-sum game to Asia-region actively managed fund performance

Investing costs cause the distribution of active returns to shift to the left of benchmark returns

Active return distribution – 5 years ended 30 September 2011



Note: Each fund was evaluated relative to the net return of the relevant MSCI Investable Market Index benchmark, depending on its stated regional focus: Asia ex Japan (All Country Asia ex Japan Index), Greater China (Zhong Hua Index), Hong Kong and Singapore. Included funds are from the following global categories for open-end funds in the Morningstar Direct Global database: Asia ex Japan Equity, Greater China Equity, Hong Kong Equity, Singapore Equity. Fund data are net of fees.

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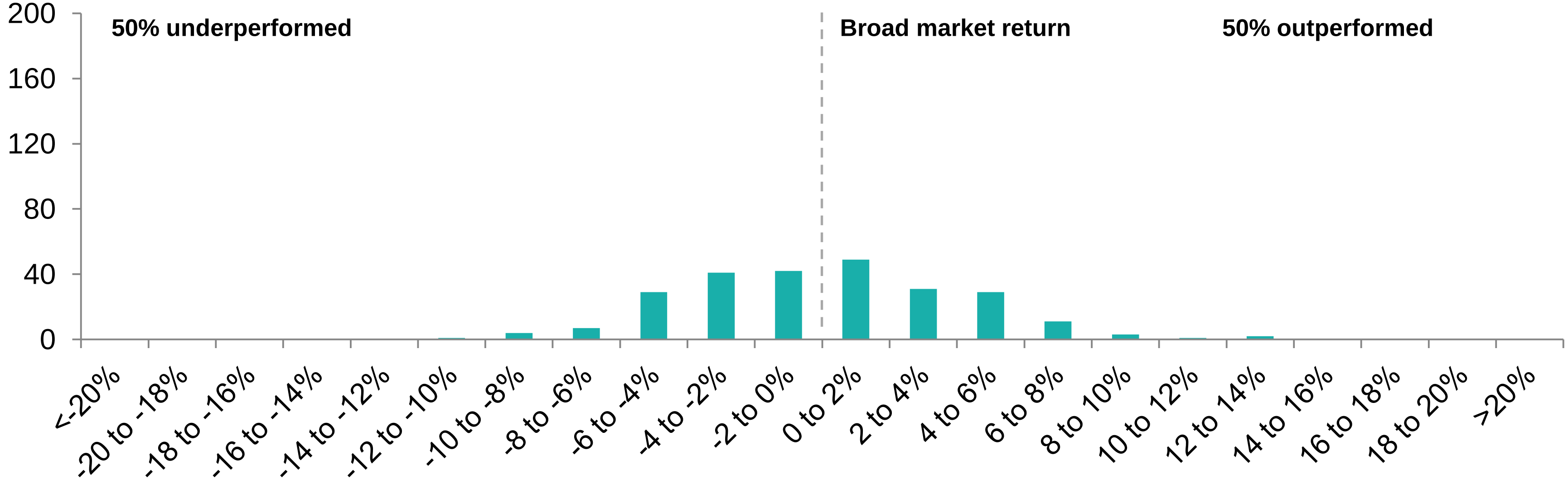
Applying the zero-sum game to Asia-region actively managed fund performance

Investing costs cause the distribution of active returns to shift to the left of benchmark returns

Active return distribution – 10 years ended 30 September 2011



Note: Each fund was evaluated relative to the net return of the relevant MSCI Investable Market Index benchmark, depending on its stated regional focus: Asia ex Japan (All Country Asia ex Japan Index), Greater China (Zhong Hua Index), Hong Kong and Singapore. Included funds are from the following global categories for open-end funds in the Morningstar Direct Global database: Asia ex Japan Equity, Greater China Equity, Hong Kong Equity, Singapore Equity. Fund data are net of fees.

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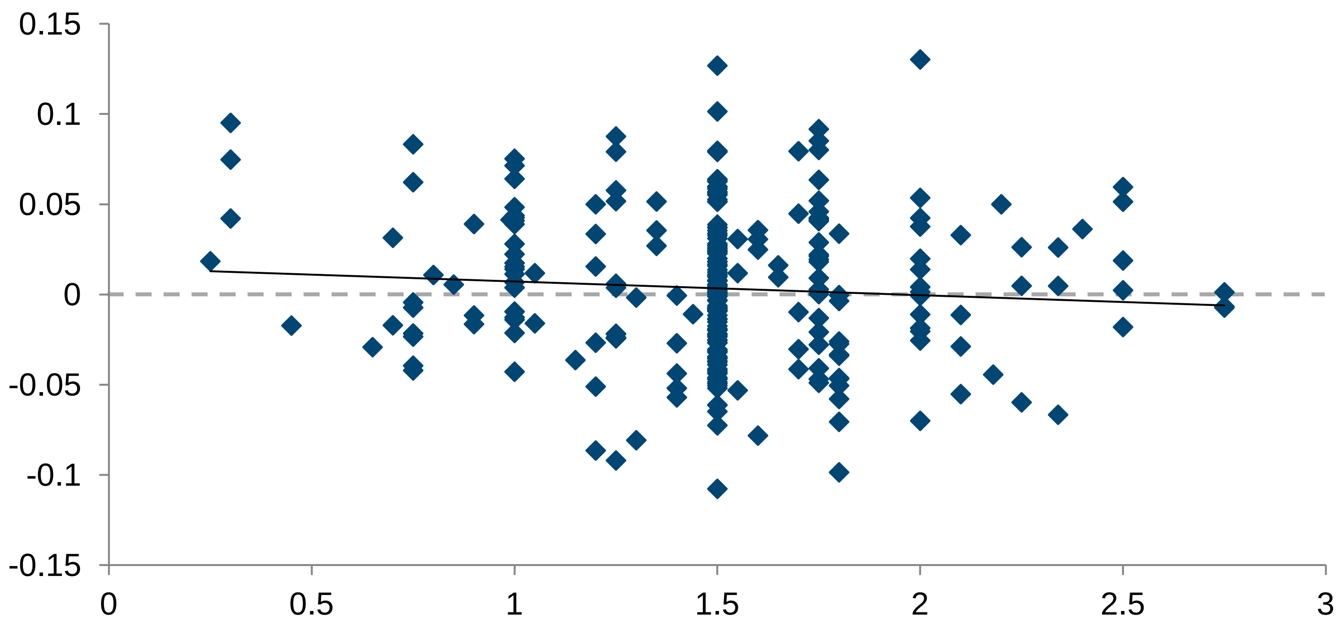
Over time, higher costs correlate with lower returns

Relationship of 10-year active return and average fund expense ratio



Note: Displays the 10-year active return through the period ended 30 September 2011 relative to the fund's average expense ratio over the period.
Source: Vanguard analysis, based on data from Morningstar, Inc.

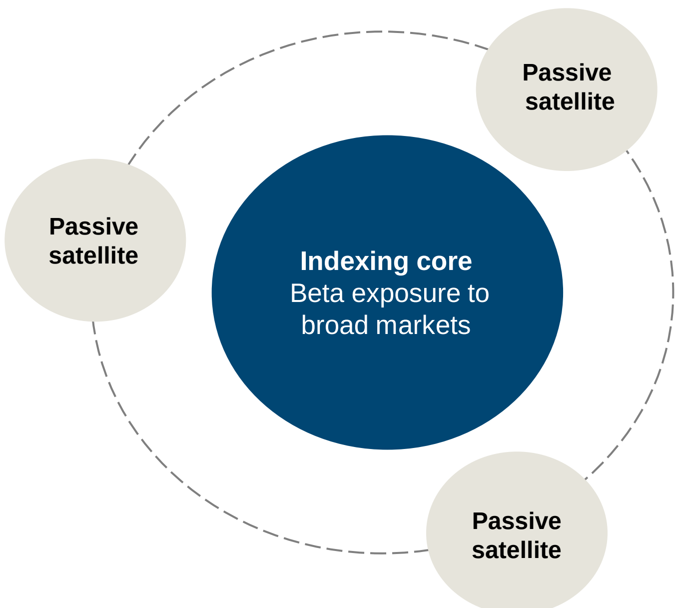
Additional benefits of indexing

- Greater control of asset class risks
- Diversification
- Style consistency
- Potential for tax efficiency

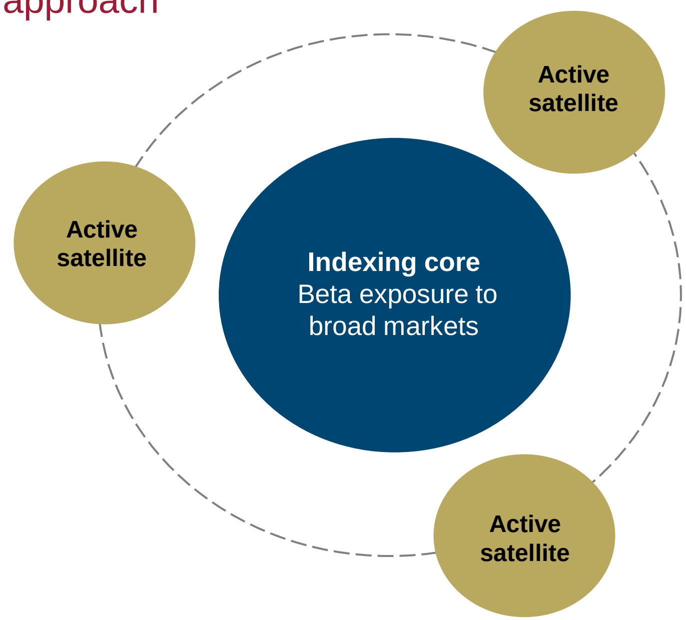
Implementing an indexing strategy

Two ways institutional investors use index funds

A passive-only approach



Core-satellite: a combined active-passive approach



Where does the core-satellite approach fit?

Expectations and assumptions under each strategy

Potential	100% Index	Index & active combined	100% Active
Alpha potential:	Low	Medium	High
Tracking error:	Low	Medium	High
Cost:	Low	Medium	High
Manager risk:	Low	Medium	High
Tax & turnover	Low	Medium	High

Conclusion

- On average, active management has not met investors' expectations
- Indexing allows investors to efficiently capture the long-run average positive trajectory of equity markets
- Indexing's low-cost advantage offers the opportunity for long-term outperformance relative to a majority of actively managed funds
- A combined active-passive approach can offer a low-cost, risk-controlled opportunity for market outperformance

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