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Mastering Small Companies with Smart Beta

May 2017

Introduction

In The Future For Investors, Jeremy Seigel (2005), the Russell E Palmer Professor of Finance at the Wharton School of the University of Pennsylvania, argued that dividends are the link between a company's profits and its value. Analysing over 45 years of data Seigel demonstrated that stocks within the S&P 500 that offered the highest dividends offered investors the highest returns. Stocks that didn't pay dividends were the worst performing over the long term. While these stocks did have a moment in the sun in the late 1990's during the tech bubble, history records that bubble burst.

More recently, in the CFA Institute's Financial Analysts Journal, Conover, Jensen and Simpson (2016) tested the link between dividends and company value beyond the 500 largest US companies in a study that also considered dividends in relation to a company's size. They found "small- and mid-cap stocks have higher returns when a dividend is paid" and that "the performance of non-dividend-paying small-and mid-cap growth portfolios has been abysmal. These portfolios report by far the lowest returns, and even worse, their risk exceeds that of all dividend-paying portfolios."

The experience in Australia supports these findings.

The MVIS Australia Small-Cap Dividend Payers Index (MVS Index) is a smart beta index that filters Australian Small companies for inclusion on the basis they pay a dividend. Since its inception in 2009 the MVS Index has outperformed the standard market capitalisation index, the S&P/ASX Small Ordinaries Index (Small Ords). In this paper we examine the characteristics of the MVS Index to understand the drivers of its performance.

We begin with an analysis of the differences between the construction methodologies of the MVS Index and the Small Ords. We find that the MVS Index is a subset of a universe with similar characteristics to the Small Ords. The MVS Index achieves its differences in performance, relative to the Small Ords, from its dividend filter which produces its quality tilt and, its exposure to stocks with low volatility while avoiding the problem of positive skew. We observe that it outperforms both on an absolute basis and a risk adjusted basis. We also observe that it has a value tilt. The VanEck Vectors Small Companies Masters ETF (ASX: MVS) tracks the MVS Index. We conclude that MVS is therefore a smart beta substitute for an active small company fund.

Indexing Australian small companies

The MVS Index is provided by MV Index Solutions GmbH (MVIS), a related body corporate within the VanEck group of companies. MVIS indices are specifically designed to underlie ETFs by incorporating both liquidity and diversification factors to produce investable indices. For Australian small companies, initially MVIS calculates the MVIS Australia Small-Cap Index (Parent Index). The Parent Index includes only the most liquid Australian companies within the 90 to 98th percentiles by market capitalisation of Australian companies and trusts listed on ASX.

Constituents of the MVS Index are those companies from the Parent Index that did not omit their last dividend payment. The MVS Index currently has 95 components. Dividend screening is the first point of difference between the MVS Index and the Small Ords. Secondly, some stocks that do not pass MVIS's liquidity screens do pass the less stringent liquidity screens for inclusion in the Small Ords. Therefore the Small Ords may include stocks that are difficult for investment managers to buy and sell at fair value.

The Small Ords is made up of the smallest 200 constituents of the S&P/ASX 300 Index by excluding the securities in the S&P/ASX 100 Index. The Small Ords is used as an institutional benchmark for small-cap Australian equity portfolios and according to S&P, the index covers approximately 7% of Australian equity market capitalisation. An analysis of the MVS Index, its Parent Index and the Small Ords shows that by sector and industry, they do not vary significantly.
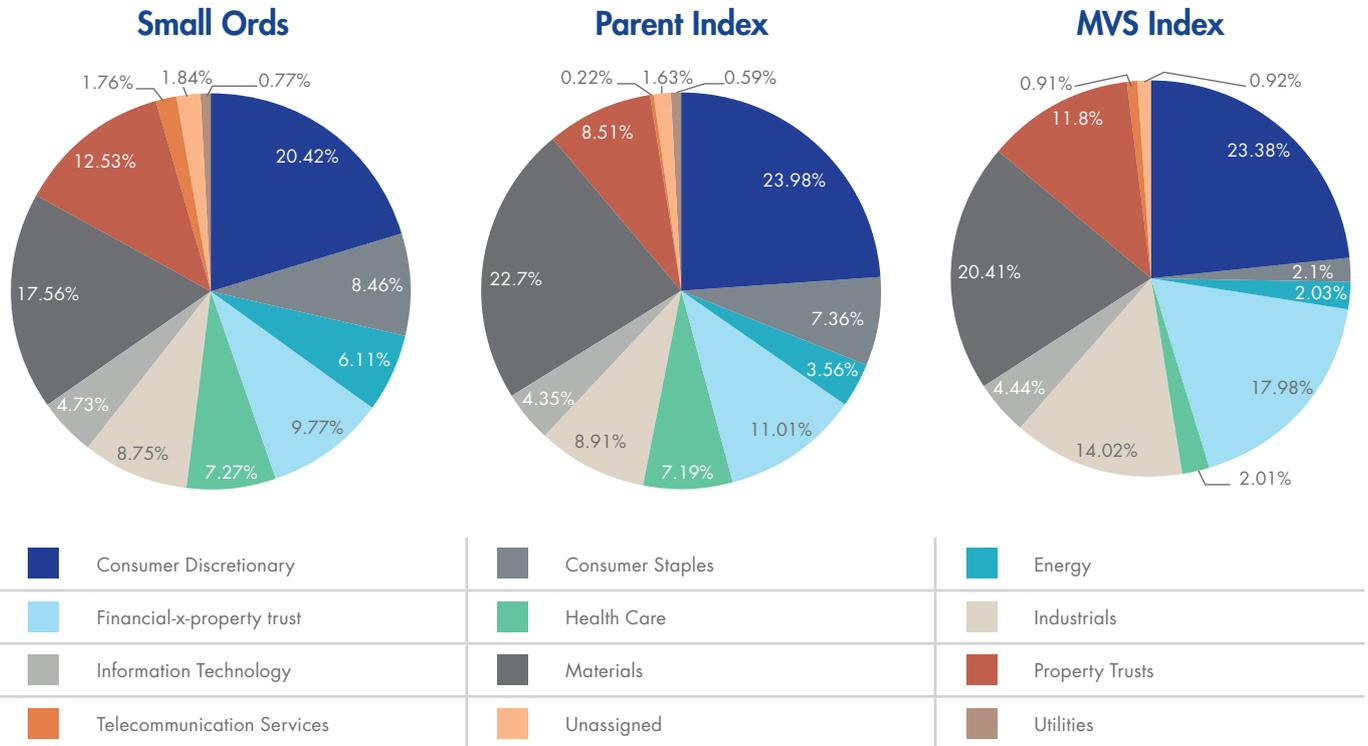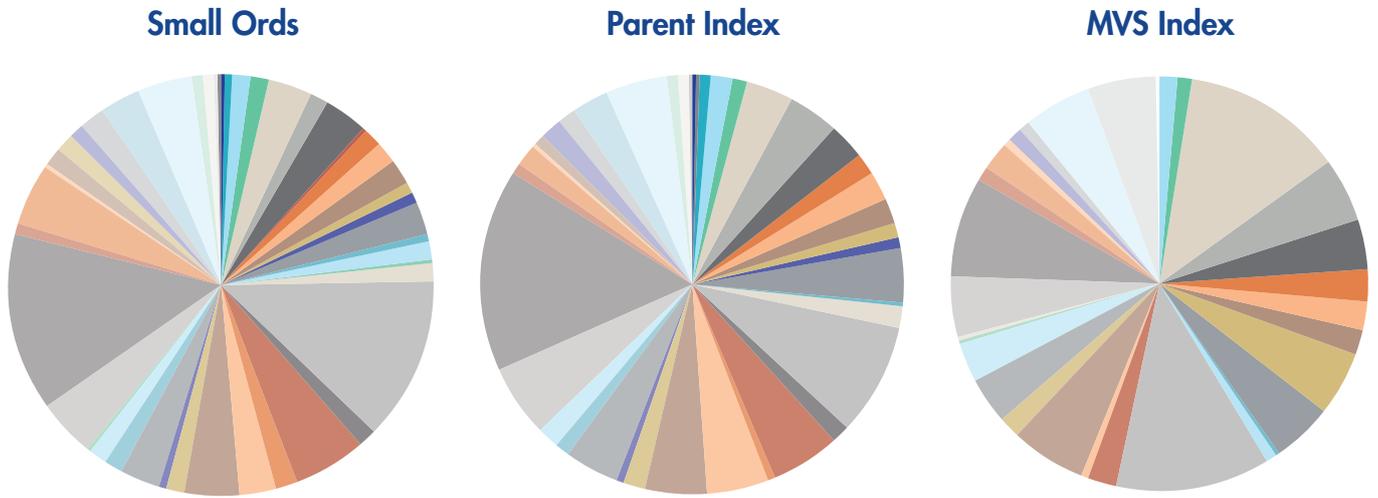
Chart 1 - Economic sector breakdown

Small Ords

20.42%	Consumer Discretionary
8.46%	Consumer Staples
6.11%	Energy
9.77%	Financial-x-property trust
7.27%	Health Care
8.75%	Industrials
4.73%	Information Technology
17.56%	Materials
12.53%	Property Trusts
1.76%	
1.84%	
0.77%	

Parent Index

23.98%	
7.36%	
3.56%	
11.01%	
7.19%	
8.91%	
4.35%	
22.7%	
8.51%	
0.22%	
1.63%	
0.59%	

MVS Index

23.38%	
2.1%	
2.03%	
17.98%	
2.01%	
14.02%	
4.44%	
20.41%	
11.8%	
0.91%	
0.92%	

Legend:
- Consumer Discretionary
- Consumer Staples
- Energy
- Financial-x-property trust
- Health Care
- Industrials
- Information Technology
- Materials
- Property Trusts
- Telecommunication Services
- Unassigned
- Utilities

Chart 2 - Industry breakdown

Small Ords	Parent Index	MVS Index

Source: Factset, 30 April 2017

Aerospace & Defense	Airlines	Auto Components	Biotechnology	Building Products
Building Products	Capital Markets	Chemicals	Commercial Services & Supplies	Communications Equipment
Construction & Engineering	Construction Materials	Consumer Finance	Containers & Packaging	Distributors
Diversified Consumer Services	Diversified Financial Services	Diversified Telecommunication Services	Electric Utilities	Energy Equipment & Services
Equity Real Estate Investment Trusts (REITs)	Food & Staples Retailing	Food Products	Health Care Equipment & Supplies	Health Care Providers & Services
Hotels Restaurants & Leisure	Household Durables	Independent Power and Renewable Electricity Producers	Insurance	Internet & Direct Marketing Retail
Internet Software & Services	IT Services	Marine	Media	Metals & Mining
Multiline Retail	Oil Gas & Consumable Fuels	Paper & Forest Products	Personal Products	Pharmaceuticals
Professional Services	Real Estate Management & Development	Software	Specialty Retail	Thrifts & Mortgage Finance
Trading Companies & Distributors	Transportation Infrastructure	Wireless Telecommunication Services		

MVS Index performance is driven by its dividend filter

Chart 3 illustrates the returns of the MVS Index against its Parent Index and the Small Ords. It shows that while the Parent Index is highly correlated to the Small Ords, the MVS Index has significantly outperformed both indices since its base date on 31 December 2009 to 30 April 2017.

Chart 3 - Performance of small companies indices (%)
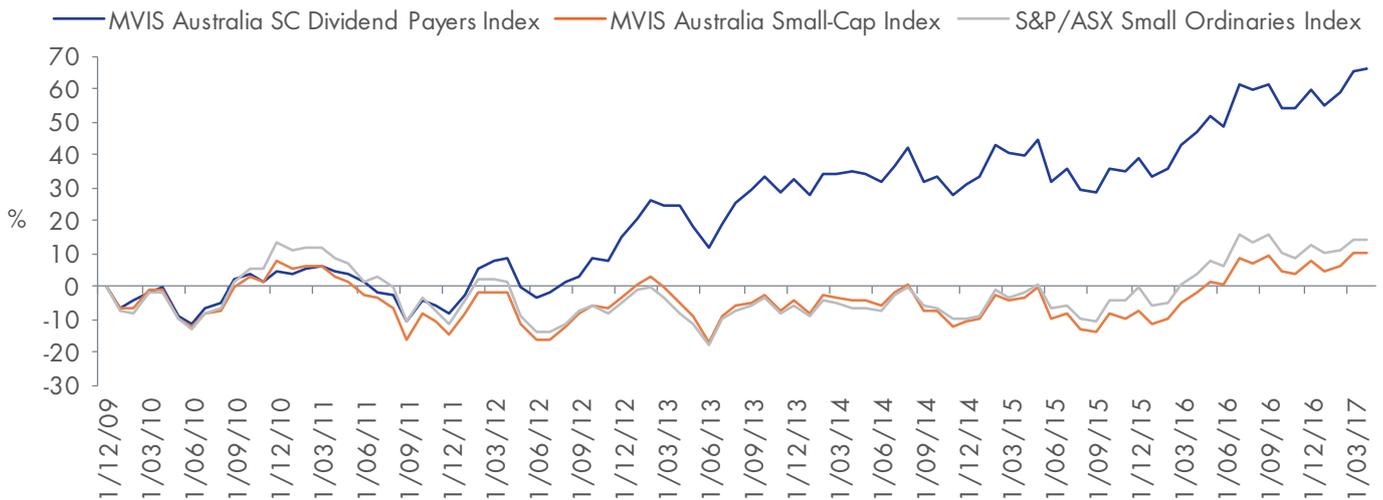
Source Morningstar, 31 December 2009 to 30 April 2017. Results are calculated daily and assume immediate reinvestment of all dividends. You cannot invest in an index. MVS Index results do not include costs of investing in MVS. Past performance of MVS's Index is not a reliable indicator of future performance of MVS.

The Chart shows that the Small Ords Index is highly correlated to the Parent Index. This observation is used to understand the MVS Index. The significant difference between the MVS Index and its Parent Index is the dividend filter. Therefore the MVS Index's outperformance compared to its Parent Index is attributable to this dividend filter. Due to the correlation between the Parent Index and the Small Ords, it follows that the primary reason the MVS Index outperforms the Small Ords Index is also the dividend filter.

How the dividend filter produces this outperformance
Conclusion #1: Quality tilt

Taking a current snapshot, the Parent Index has 138 constituents, 39 of which are not in the MVS Index due to the dividend filter.

Chart 4 shows the return on equity (ROE) for 133 out of the 138 components[1], including 37 of the 39 excluded from the MVS Index. Sorting the population according to ROE, the 39 stocks excluded by the dividend filter predominantly rank low.

Chart 4 - Return on equity
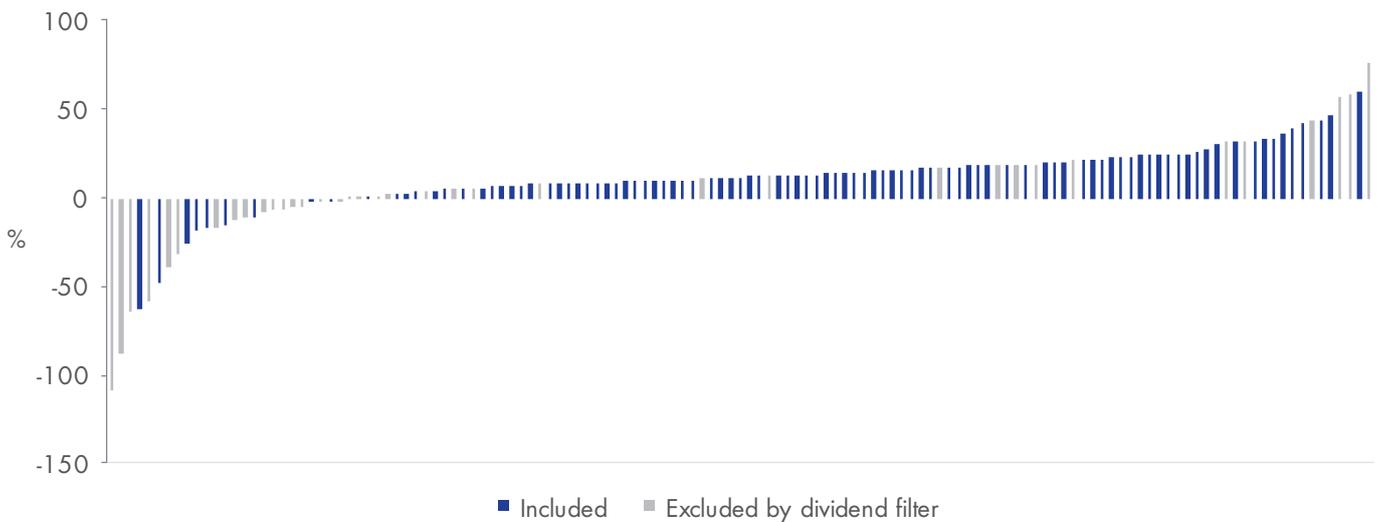
Source: Bloomberg, 19 May 2017

While the bias towards excluding stocks with low ROE is observable from the chart, it is good to also have a mathematical measure of the phenomenon. In this situation the best measure of the tendency is to calculate the percentage of excluded stocks that are above or below the median. If there was no significant tendency this number would be close to 50%. We will call this the bias statistic.

The bias statistic for this data is 68%. That is, 68% of the excluded stocks are below the median ROE.

This is not a surprising result. The chart shows that many of the companies excluded have a negative ROE. In other words they are making a loss rather than making a profit. Loss-making companies typically cannot pay dividends so the dividend filter is directly excluding many loss-making companies, particularly companies that have been long-term loss-makers.

1. For this chart and all subsequent charts constituents are excluded where Bloomberg does not provide the data.

High ROE has been identified as a measure of quality, as has earnings stability (Novy Marx, 2012). Chart 5 shows the earning stability of 117 constituents of the Parent Index. Earnings stability for this chart has been calculated as the standard deviation of earnings per share (EPS) growth over the most recent five years. The lower the standard deviation, the more stable the earnings growth.

Chart 5 - Earnings stability

Standard deviations above 5 have been capped at 5 so as not to distort the graph.
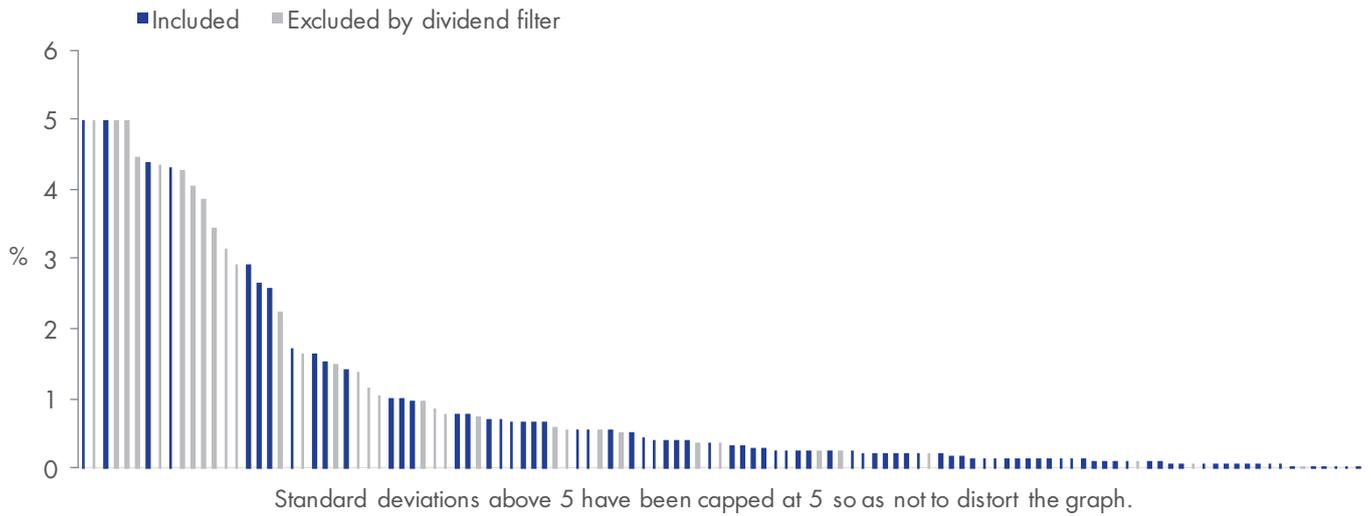
Source: Bloomberg, 19 May 2017

The predominant exclusion of high standard deviations is observable in the chart. The bias statistic, as defined above, is 82%.

Taking charts 4 and 5 together, the dividend filter excludes companies that combine poor return on equity with poor earnings stability. In other words, excluding non-dividend paying companies excludes lower quality companies. The MVS Index outperforms because it has a quality tilt.

How the dividend filter produces this outperformance
Conclusion #2: Tilt to low volatility stocks

Chart 6 shows the rolling 360 day volatility of stocks in the Parent Index. Volatility is the standard deviation of day to day logarithmic price changes. The higher the percentage, the more volatile the stock. The chart illustrates that the dividend filter is excluding many higher volatility stocks. The bias statistic is 78%.

Chart 6 - 360 day volatility

Included   Excluded by dividend filter
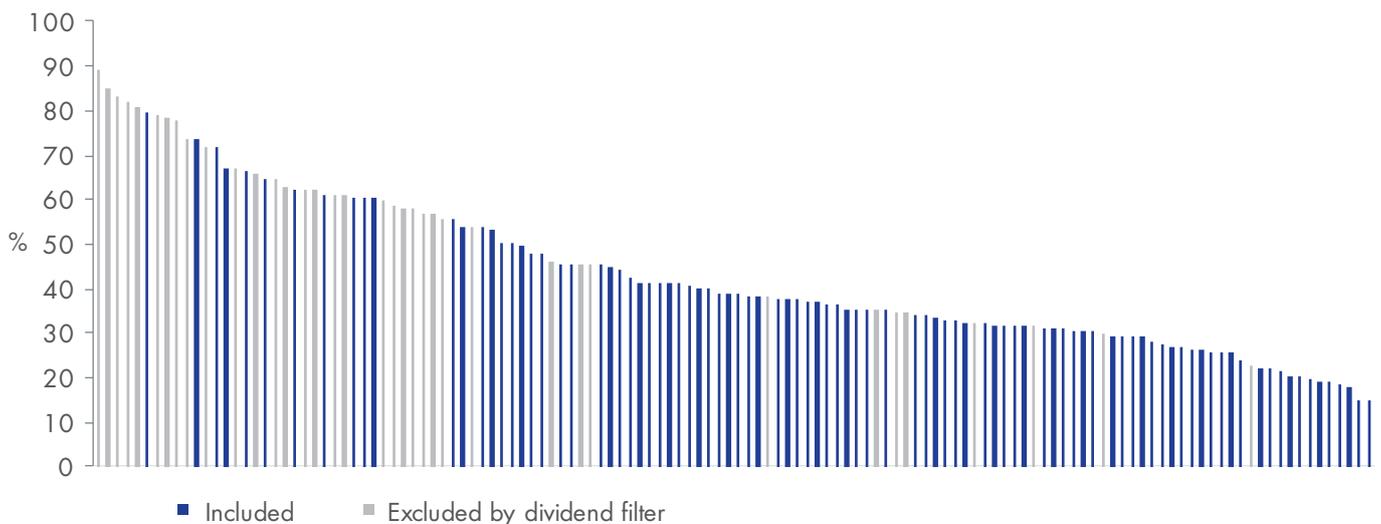
Source: Bloomberg, 19 May 2017

A tilt to low volatility stocks is a separate characteristic to the quality tilt described above. Numerous studies such as Chong & Phillips (2012) and Hsu and Li (2013) have concluded that a portfolio of low volatility stocks produces higher-risk adjusted returns than a portfolio of high volatility stocks.

Risk adjusted returns

It was shown above that the MVS Index is tilted to low volatility stocks but there is a difference between the volatility of each individual stock in a portfolio and volatility of the portfolio itself because the volatilities of the individual stocks are not statistically independent of each other.

The standard deviation of the monthly movements of the total portfolio for the period covered by the performance Chart 3 is 14.19% for the MVS Index and 15.43% for the Parent Index (Source: Morningstar). The bias to low volatility stocks does not affect the volatility of the overall portfolio.

The MVS Index's outperformance in absolute returns is therefore also an outperformance in risk adjusted returns.

Volatility

There are many small and medium size companies listed on the ASX covering a very diverse range of industries and market sectors. Investors are attracted to small companies because they offer more potential upside as they have greater potential to grow than larger companies. Investing in this sector however can be subject to greater volatility compared with investing in larger companies.

Volatility is often measured by standard deviation in returns. However for small company investors, negative outcomes or the potential for losses is a 'risk' that should also be considered. Drawdown is useful for investors to assess the past losses. Both the depth of a fall from an historical peak and the pace of the recovery to a new peak can be measured. Investments that fall less and recover faster are more desirable.

Chart 7 below shows the drawdown of the MVS Index against the Small Ords since the MVS Index's inception. In summary:

* The maximum drawdown of the MVS Index was 15.78% versus the Small Ords 27.56%

* The MVS Index recovered from its lows faster than the Small Ords Index.

Chart 7 - Drawdown January 2010 to April 2017 (%)
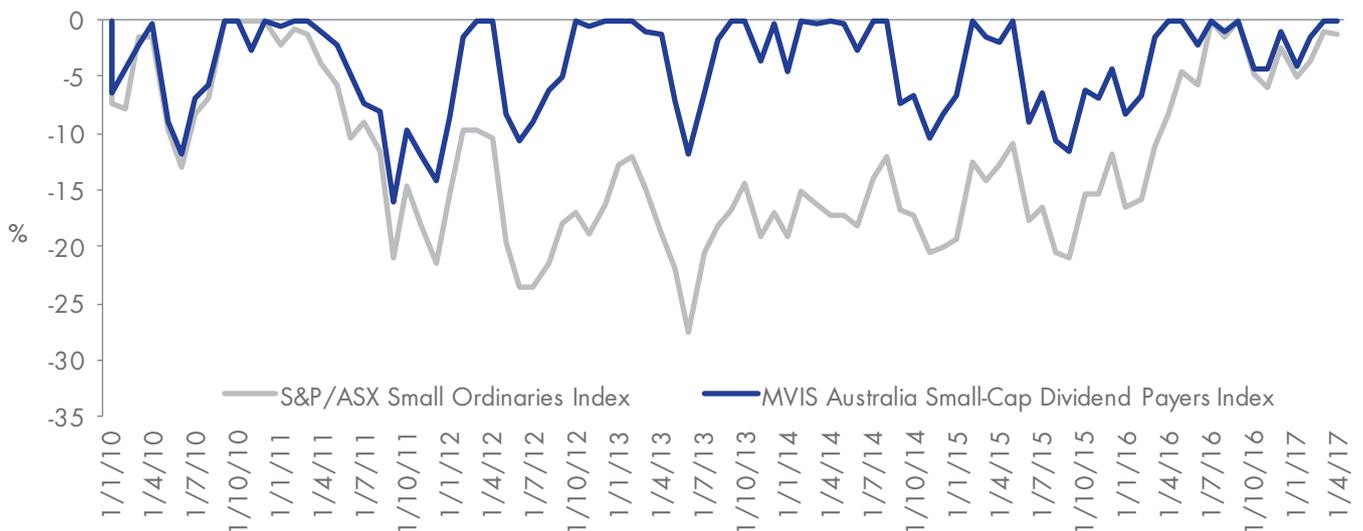
Source: Morningstar Direct, as at 31 March 2017. Results are calculated daily and assume immediate reinvestment of all dividends. You cannot invest in an index. MVS Index results do not include costs of investing in MVS. Past performance of MVS's Index is not a reliable indicator of future performance of MVS.

The Sortino ratio combines a return measure with a downside volatility measure so is a useful way of looking at risk adjusted returns. Using month end data, we calculated rolling 12 month Sortino ratios of the MVS Index and the Small Ords Index from the MVS Index's inception date up to and including April 2017.

There are 53 data points. In every instance the MVS Index Sortino ratio is higher than that of the Small Ords. At the data point where the MVS Index ratio has its biggest gap over the Small Ords ratio, the excess is 0.69. The smallest gap is 0.01.

The conclusion that can be drawn from the drawdown measures and the Sortino ratio is that by focusing on only dividend paying securities the MVS Index significantly reduces the downside risk associated with investing in small companies.

The data shows that the dividend payers filter mines the same vein that a quality filter would. At the same time it also mines the vein that a low volatility filter would. But it is more than a combination of these two elements. By filtering out the bottom tranche rather than filtering in the top tranche, it works very differently to the usual approaches in using filters. This approach of keeping most of the starting set and excluding the bad apples, rather than trying to pick just the best apples, leaves the starting set largely intact. The advantage of this approach is that it reduces the problem of positive skew.

Avoiding the problem of positive skew

Ikenberry et al (1998) demonstrated individual stock returns are highly skewed. A very small number of stocks have very large returns and a very large number of stocks have below average returns. There is no easy way to predict in advance the upside outliers. The smaller the number of stocks you select out of the starting set, the greater chance you have of missing out on the gems so the lesser chance you have of an above average portfolio return. This is known as the problem of positive skew.

Rather than a concentrated portfolio of quality stocks or low volatility stocks, the MVS Index retains most of the starting set. The dividend filter only removes a tranche of stocks with the worst characteristics leaving intact a broad portfolio with a strong chance of catching the upside surprises.

The MVS Index currently has 95 constituents whereas the Small Ords has 200. On its face this would suggest that the Small Ords may be better at avoiding the problem of positive skew. The Small Ords underperformance relative to the MVS Index shows that this is not the case.

Avoiding the problem of positive skew is a balancing act. Too few stocks and the chance of missing out is too high. Too many stocks in a portfolio weighted by market capitalisation and the stocks in the long tail each carry too little weight to have an impact on the total portfolio. For example, if a stock with a weighting of 0.2% is an outlier by doubling in size, all that it adds to the return of the total portfolio is 0.2%. This is not much different to not having held the stock at all. The MVS Index's outperformance of the Small Ords shows that from a positive skew point of view 200 stocks is too many in a portfolio weighted by market capitalisation.

Value Tilt

According to Novy Marx (2013), Benjamin Graham will always be remembered as the father of value investing. Value investing is buying firms cheaply. Since Graham wrote The Intelligent Investor dividends have been used as an indicator of value, so it will not be a suprise that the dividend filter produces a value tilt. The most common metric for value is the price to earnings ratio (P/E ratio). Chart 8 shows that the dividend filter creates a bias to low P/E ratio stocks and therefore to value stocks.

Chart 8 - P/E ratio - value rather than growth

The two P/Es in excess of 80 have been capped at 80 in order to not distort the graph
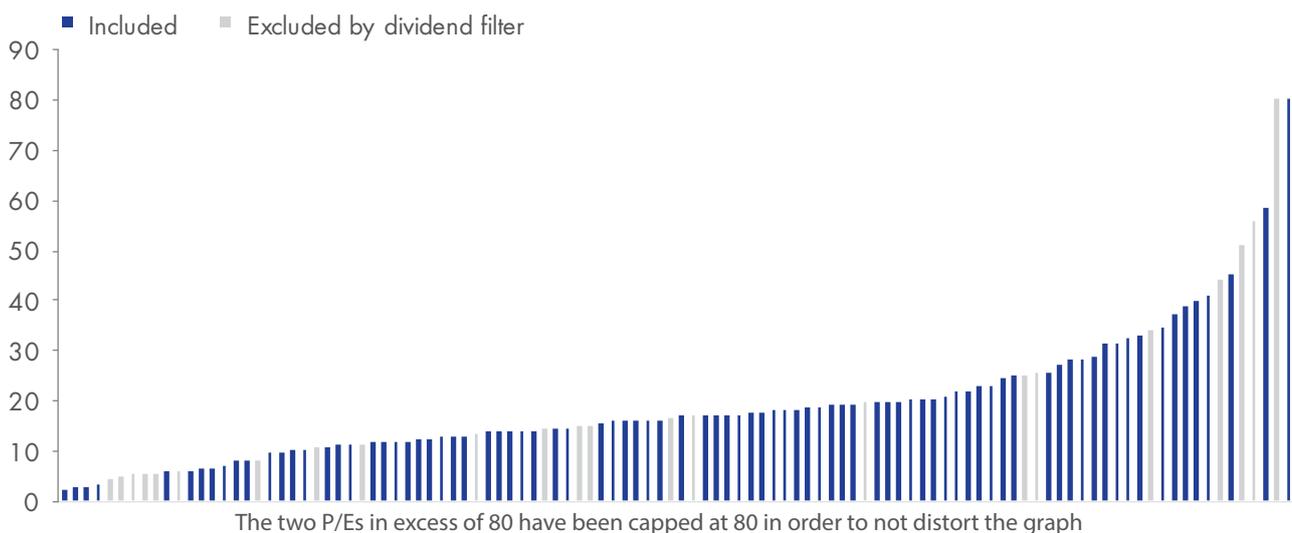
Source: Bloomberg, 18 May 2017

It is immediately observable in chart 8 that the MVS Index does not include a number of stocks that have a high P/E ratio. These stocks would be considered 'growth' stocks - their earnings are low, but the price is lofty as expectations are high. The MVS Index tilts toward value, with a 65% bias statistic.

VanEck Vectors Small Companies Masters ETF (ASX: MVS) tracks the MVS Index

MVS tracks the MVS Index by fully replicating it. MVS exhibits the same quality, low volatility and other characteristics of the MVS Index.

With a history of outperformance versus the S&P/ASX Small Ordinaries Index, MVS is a smart beta alternative to actively managed small companies funds.

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