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Until recently, investors seeking to gain a single exposure to a diversified portfolio of Australian small companies could either invest in a traditional, unlisted, actively managed small cap fund or via a passive index fund focused on Australian small companies. There are pros and cons associated with either approach: For example, active managers tend to charge higher fees even when many do not necessarily historically out-perform the benchmark. For example, according to the 2017 SPIVA Australian scorecard, as at end December 2017, around 75% of active Australian equity “mid/small cap managers” under-performed their benchmark over a one and three year period, and, while the numbers improved over long term time periods, a full 55% of these managers under-performed over 15 years (the longest time period available in this analysis). Investors may also very well find that any active managers that have recorded sustained out-performance are either capacity constrained or closed to new investors.

At the other end of the spectrum, index funds usually charge significantly lower fees. However, the underlying index exposure can be littered with companies that have undesirable investment characteristics. For example, one in five companies currently within the S&P/ASX Small Ordinaries Index (the prevailing small cap benchmark) made a loss in the preceding 12 months - and this figure has approached one in two if we look back over 10 years in the companies' earnings histories¹.

When thinking about how we might design an approach for investment in Australian small companies we tried to frame our discussion not about an active vs. passive debate. Instead, our goal was to design a smart alternative approach to investing in Australian small companies to meet the demand of investors. Fundamental to this design is our belief that there are inefficiencies within the current benchmark and hence there is an opportunity to deliver an exchange traded Australian small cap solution that offers a compelling alternative to both the traditional index products and to unlisted active Australian small cap managers.

In this piece, what we hope to show is that, by taking a somewhat systematic approach to investing in Australian small-caps, we can achieve favourable outcomes i.e. seek to generate returns above the benchmark at a similar risk level over the investment cycle, while at the same time delivering these outcomes at a much lower fee than your average active small cap manager.

In what follows, we will look to examine the performance that has historically been generated by simply removing stocks from consideration which we deem to have undesirable investment characteristics. We aim to do this while at the same time applying portfolio management theory in the construction process which is driven by a repeatable, consistent process throughout the investment cycle.

1. Source: Bloomberg



The Fundamental Law of Active Management

It is important to recognise the strengths and the limitations of a systematic approach. A simple formula² called the “fundamental law of active management” tries to capture the Information Ratio or value add for any given strategy by two variables:

1. Breadth (BR); and
2. Skill (IC).

BR: Is the strategy’s “breadth”. This is defined as the number of independent forecasts of abnormal returns (above benchmark) made each year, i.e. the number of bets made or active positions taken.

IC: Is the manager’s “information coefficient”. This measures the skill attached to each bet or active position, i.e. it is the correlation of each forecast with the actual outcomes. For simplicity let’s assume the IC is the same for all forecasts.

The formula is: $\text{Information Ratio} = \text{IC} \times \sqrt{\text{BR}}$

The information ratio (IR) is a measure of active return adjusted for active risk. Notice, if we wanted to double our IR, we would have to either double our forecasting skill (IC), increase the number of positions (BR) by a factor of 4 or some combination of both.

One can argue that the average fundamental manager has a higher IC or skill level in forecasting abnormal returns at the security level than your average quantitative manager. Typically, fundamental investment processes will do in-depth research into a company, they will review the quality of the management team and business strategy, the strength of a company’s balance sheet etc and use their relationships and knowledge of the industry to gain further insight into the growth prospects of the company relative to the competition. Due to the high investment hurdle which such a process tends to involve, there are usually less opportunities or companies to invest in once this has been completed and hence these managers tend to hold fewer stocks. As a result, they can take on more stock specific risk (i.e. hold less positions) due to the higher skill or confidence level they have in their forecasts.

On the other hand, a quantitative process will typically take large amounts of data from the universe of companies and screen or filter by factors which have shown to add value over the benchmark historically. Typically, less is known about each individual company and hence the individual forecast (IC) will have a lower confidence level. But, as a group of companies which have similar factor exposures, more can be gained by increasing the breadth or number of positions in the portfolio. In fact, this is necessary in a systematic process to compete against fundamental managers, as highlighted by “The Fundamental Law of Active Management”. Given the lower IC in any one forecast, diversification is the key in reducing unwanted stock specific risk, which, in turn (assuming the IC can be maintained for all active positions), should increase the IR as highlighted in the above formula.

Now that we have some insight into what drives a systematic approach. We can begin to express which factors we want to include in our systematic process, which, we believe, balances the need for diversification while at the same time maximising our IC or skill. Notice, the more factors within any given process (i.e. any attempt to increase the IC) will lead to less breadth due to the simple fact that less companies are able to pass the required hurdles.

2. Grinold, C. R., & Kahn, N. R. (2000). Active Portfolio Management – A Quantitative Approach for Producing Superior Returns and Controlling Risk (2nd Edition.) United States of America, McGraw-Hill.

PORTFOLIO INSIGHTS

DESIGNING A SMART ALTERNATIVE APPROACH FOR INVESTING IN AUSTRALIAN SMALL COMPANIES

July 2018



BetaShares
Exchange Traded Funds

Factor Considerations

A recent report by Morgan Stanley, which studied several factors specifically in the Australian market place, found that momentum has worked extremely well for Australian stocks over the last 26 years. Apart from momentum, companies with disciplined capital use and good profitability have also continued to out-perform, and while both value and growth factors can work in some environments, they have not been good signals in isolation.

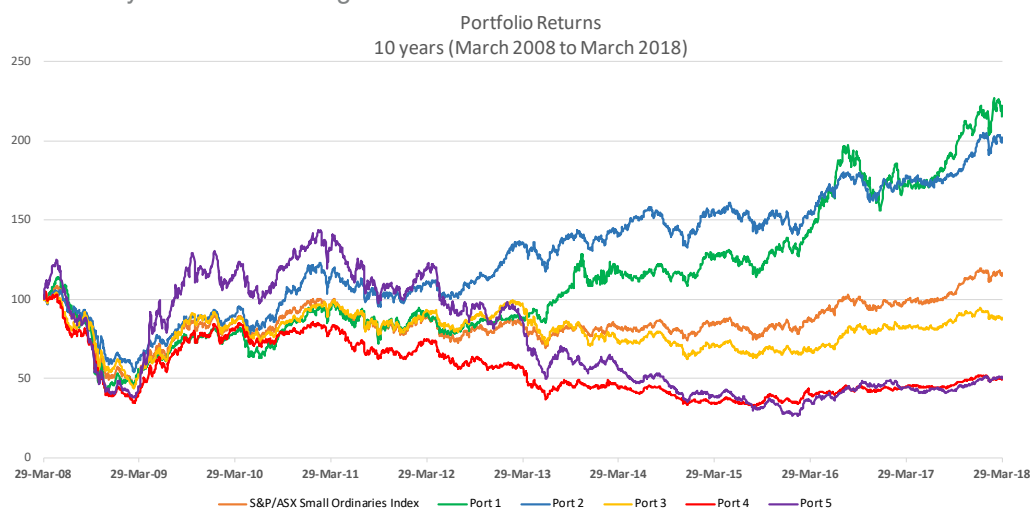
A simple screen like price momentum can be shown to add significant out-performance over the last 10 years, as seen below. Here, we take stocks directly from the benchmark universe and group them into 5 equal weighted portfolios.

Portfolio 1: The top 20% of stocks measured by 1 year total return;

Portfolio 2: The next highest 20% of stocks measured by 1 year total return and so forth to...;

Portfolio 5: Which consists of the worst 20% of stocks measured by 1 year total return.

Using 1 year price momentum as a leading indicator to group our equal weighted portfolios with an annual March rebalance yields the following back tested results⁴.



Source: Bloomberg. Past performance, actual or simulated, is not an indicator of future performance. Illustrative only.

From the chart above, Portfolio 1 (GREEN: represents the top 20% price momentum group) out-performed both the benchmark index (RED) and the remaining 4 portfolios. While Portfolio 4 (ORANGE) and Portfolio 5 (PURPLE) representing the worst price momentum groups significantly under-performed the other portfolios over the last 10 years. This is also displayed in the table below against the benchmark small ordinaries index.

Date	S&P/ASX Small Ordinaries Index	Port 1	Port 2	Port 3	Port 4	Port 5
31-Mar-09	-45.8%	-45.1%	-37.4%	-48.1%	-58.8%	-54.9%
31-Mar-10	58.1%	43.0%	43.0%	64.4%	97.9%	159.5%
31-Mar-11	13.5%	20.5%	29.0%	13.7%	0.1%	12.1%
31-Mar-12	-8.6%	-4.0%	-4.2%	-4.5%	-8.7%	-8.1%
31-Mar-13	-5.8%	-3.0%	22.5%	3.8%	-23.9%	-28.8%
31-Mar-14	-1.5%	34.0%	4.2%	-23.2%	-21.7%	-34.2%
31-Mar-15	2.3%	7.6%	9.1%	-4.6%	-22.3%	-31.8%
31-Mar-16	3.7%	14.2%	1.2%	-2.5%	17.2%	-6.9%
31-Mar-17	13.7%	18.4%	13.9%	20.7%	11.7%	24.8%
31-Mar-18	15.0%	25.4%	11.9%	5.1%	9.1%	12.5%
Cum Return p.a.	1.36%	7.97%	7.11%	-1.36%	-6.82%	-6.65%

Source: Bloomberg. Past performance, actual or simulated, is not an indicator of future performance. Illustrative only.

3. Morgan Stanley (2017). Australian Quant Research: Factor Efficacy Down Under.

4. Source: Bloomberg, BetaShares



Of course, without focusing specifically on momentum, there can be a multitude of factors which may show out-performance at various points in time. In designing our Australian Small Companies investment approach, our primary goal was to optimise the balance between having enough breadth in the portfolio throughout the investment cycle and combining the filters essential to the removal of what we deem “speculative stocks” from the index universe. This balancing act becomes even more important in the Australian small cap universe given the low number of listings on the Australian stock exchange that meet the liquidity thresholds a fund of this nature requires.

After defining the investible universe and identifying several factors which may help achieve our objectives, we settled on the ones described below.

The Strategy – BetaShares Australian Small Companies Select Fund (managed fund)

The Betashares Australian Small Companies Select Fund (ASX: SMLL) is constructed using a series of screens that aim to identify companies with positive earnings and a strong ability to service debt. Valuation metrics such as price to book, liquidity and price momentum are also evaluated as part of the process. The relative factor biases exhibited in the fund include tilts towards profitability, value, liquidity, dividend yield and size, while tilting away from earnings volatility and leverage. As a result of these factor biases, it is important to recognise that the strategy may under-perform its benchmark for prolonged periods of time throughout the investment cycle and hence taking a long-term view is necessary when considering if such a strategy is suitable for the end investor.

That said, from our perspective the strategy we have designed, which is offered at a low management fee of ~0.39% p.a. plus performance fee, meets the objective of delivering to investors and their advisers a rigorous small cap solution that removes many of the undesirable companies in the benchmark, while potentially providing investment alpha over market cycles commensurate with those offered by active managers.

Historical Back-Test Results: April 2011 to March 2017

Over the back-test period examined, the strategy yielded a back-test return of 9.15% p.a. or 3.02% p.a. above the benchmark net of fees since 2001[^].

BACKTEST RESULTS			
31-Mar-17	PORTFOLIO	ASA38 Index	Excess
3 Months	2.95%	1.46%	1.49%
6 Months	-2.55%	-3.89%	1.33%
1 Year	-9.84%	-13.04%	3.20%
3 Years	9.39%	6.44%	2.94%
5 Years	6.58%	2.28%	4.30%
10 Years	1.61%	-0.83%	2.44%
Inception (Apr 2001)	9.15%	6.13%	3.02%

Source: Bloomberg. [^]Past performance, actual or simulated, is not a reliable indicator of future performance.

In the back-tested period, the number of stocks (or the breadth) in this strategy ranged anywhere between 55 to 105 over the testing window, while the average turnover each year was circa 70% which is in line with our expectations and other active small cap strategies. The tracking error varied considerably year on year while the volatility was in-line with the benchmark.

Further information can be found [here](#).

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Notes:

SMLL is actively managed does not seek to track the performance of any index.

Back-tested performance results shown have certain inherent limitations. Unlike an actual performance record, back-tested results do not represent actual trading, are based on certain assumptions, and are produced with the benefit of hindsight. Also, since the trades have not actually been executed, the results may have under- or over-compensated for the impact, if any, of certain market factors, such as lack of liquidity. It is shown to illustrate longer term performance, and takes into account SMLL's fees but not other costs, such as transaction costs, which would reduce returns. It does not represent actual performance of SMLL. No representation is made that SMLL will achieve results similar to those shown.

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