Long-term investing is a fool's paradise

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> "Prediction is very difficult, especially about the future."
> – Niels Bohr

INVESTING FOR THE LONG TERM

Most investors, and human beings in general, exhibit a high degree of hindsight bias. This is the tendency for people to believe that things were very predictable after they have happened. The growing field of behavioural economics has generated many studies that have given empirical evidence for these biases. Early work around the mental heuristics of availability and representativeness by Amos Tversky and Daniel Kahneman[1] helped explain the development of the hindsight bias. As early as 1975, Baruch Fischhoff demonstrated the existence of the bias empirically.[2] [3]

The outcome of a hindsight bias is that it leads most people to severely overestimate their ability to predict the future. The perception that what was unknown and random was, in hindsight, actually predictable leads people to overestimate their ability to make other predictions about the future. There is also generally a bias towards overconfidence[4] that reinforces this tendency to overestimate ones predictive abilities. As a result, the majority of investors genuinely believe they have insight into the future and can outperform the market. A result, which in aggregate, is impossible.

As investors, we are all taught the fundamentals of finance which imply that outperforming the market is a function of buying good quality companies at attractive prices, a view that has been popularised by the success of Warren Buffett. While the animal spirits of the market drive randomness and volatility in the short run, the recipe for success is to buy good quality companies and wait it out in the long run. Rewards will inevitably follow. However, the world is constantly changing and so are investment fundamentals and it could be argued that with technological advances the pace of this change is accelerating. A long-term buy and hold strategy requires a fair degree of luck to be successful in an uncertain world. The combination of the hindsight and the overconfidence biases leads many investors to underperform the market under the guise of a long term investment strategy. Most successful investment strategies actually have a far smaller margin of success than is commonly realised and rely on small insights in a world of randomness. Adjusting to new information in a timely fashion in the short term is essential to long-term investment success.

While predicting the future is inherently difficult and may make some people question the role of active investing, it is not impossible. One of the largest studies of expert prediction was the Good Judgement Project which was conducted by IARPA (Intelligence Advanced Research Projects Activity) which is part of the US intelligence community. The results of this project and more are detailed by Philip Tetlock in his book "Superforecasting: The Art and Science of Prediction".[5] Across this study of expert prediction, it was found that roughly 2% of the sample had genuine predictive ability. Some of the characteristics of these "super-forecasters" were people that were highly numerate and open-minded, considering both the outside view and the inside view.[6] They tended to think probabilistically and they continually revised their opinions as new information became available.

These characteristics are directly applicable to what makes a good investor or a good investment process.

By contrast, many investors take a deterministic view of the world. An investment view is often facilitated by cognitive ease whereby a compelling story helps form expectations of the future. This expectation is then held for the long term and will be correct approximately 50% of the time. We tend to remember our successes more clearly than our failures, another protective mechanism of the ego, which means that these successes will reinforce our confidence in our own investment skill.

On the other hand, a successful investment process acknowledges the inherent uncertainty in the future and sets return expectations in the form of probabilities, or the risk return trade-off. New information is continually incorporated as it becomes available and is used to modify the probability of investment success. Short-term investing is essential to long-term success. The investment horizon may be over many years, but it would be foolish to ignore the implications of new information. The key is to distinguish important information when it occurs from the raft of noise that is generated each day.

ASSESSING PERFORMANCE

Although a short-term focus on events and new information is vital to success, this in no way guarantees continual strong performance in the short run. There is always a high noise to signal ratio in investing due to the inherent uncertainty involved. Investors are trying to make good risk return decisions, but the uncertainty surrounding predictions means that many good decisions will necessarily turn out to lose money. As such, investment performance should be assessed over the long term.

Judging investment skill in the short term is impossible by referencing performance - there is simply too much noise to differentiate between skill and luck. It is hard to determine the difference between an investor with skill who has suffered bad luck and an investor without skill. Waiting for long-term results, however, is challenged by the agency problem. When entrusting money to an agent to manage, it is difficult not to question their skill based on

short-term performance. It may take up to 10 years to identify true skill, but not many people are this patient with their investment managers. It is an intractable problem which means that a shorter term focus on results is a necessary compromise. Past performance may not be a guide to the future, but in many cases it is all there is.

Some of the characteristics of super-forecasters" may provide assistance in selecting managers beyond past performance. But what else may determine success? The structure of the fund and how it invests can be important, as well as incentive structures of the manager and the size of funds under management. Higher funds under management make it harder to deliver genuine long term outperformance.

LONG-SHORT INVESTING AS A SOLUTION

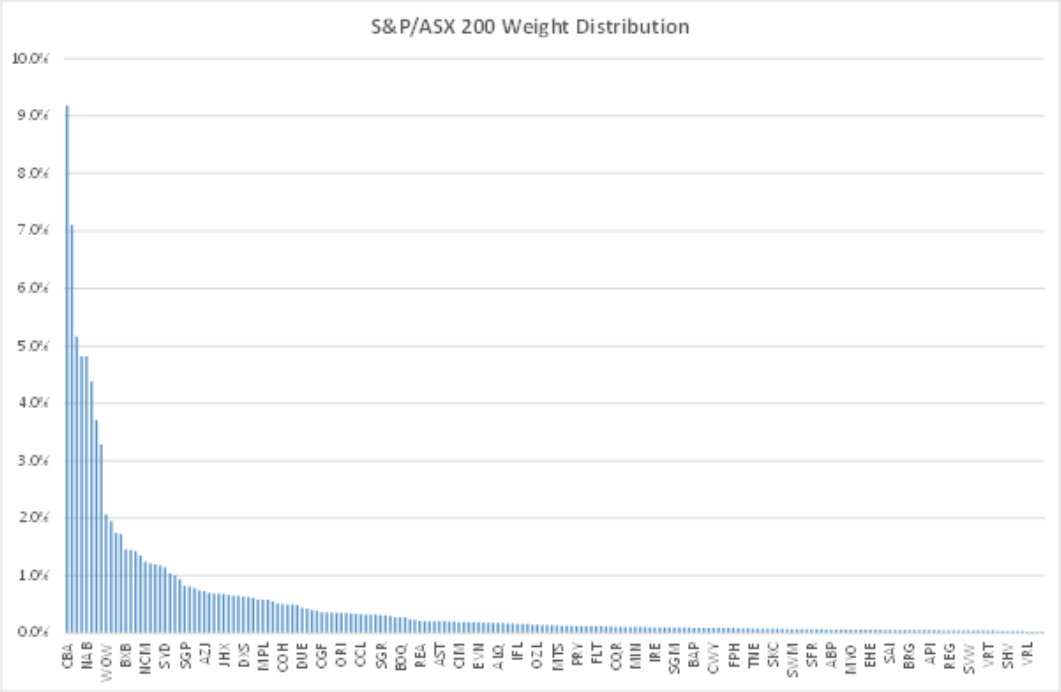
Who will do best in an environment where new information is constantly shifting expectations? Because all decision making in an uncertain environment is inherently volatile, repeatability is a key feature of a successful strategy. Diversified strategies, either with many different sources of alpha or taking a broader range of investment decisions, will be able to deliver more consistent returns. In an equity market context, an active extension or long-short structure can be very helpful in delivering this diversification.

Long-short strategies evolved to combat the inherent inefficiencies of managing against market capitalisation weighted benchmarks. Benchmarks fulfill several useful functions for investors. As well as providing a passive default option against which returns can be compared, they also constrain the risk profile of managers relative to that benchmark. This makes assessment of manager investment skill more transparent on an historic basis with returns (alpha) assessed relative to the benchmark and any passive exposure (beta) stripped out. However, when benchmark weights are unevenly distributed, there are significant constraints placed upon portfolio construction. The significance of the market capitalisation bias in the Australian equity market context is apparent in Figure 1.

A big skew in market cap-weighted benchmarks makes active investment difficult in a long-only context. When a manager is constructing an active portfolio against a benchmark, the primary consideration for risk should be the active weights of the portfolio relative to that benchmark, rather than the absolute size of the positions. When the portfolio construction problem is framed in this context, it should be apparent that every active portfolio can be considered as a composite of an index portfolio and a market neutral long-short portfolio. Any portfolio can be expressed as a long-only portfolio making up the benchmark positions and a long-short portfolio consisting of the overweight and underweight positions. A traditional long-only benchmarked portfolio is simply a special, less optimal case of a more general class of benchmarked long-short portfolios. For a traditional long-only portfolio, the size of the underweight positions is bound (i.e. constrained) by the size of the benchmark

constituents. This limits the ability of the portfolio manager to generate the most efficient returns from the portfolio.

Figure 1: Index Skew – S&P/ASX 200 Weight Distribution



Sources: IRESS, Tribeca Investment Partners

Ideally, to generate the highest excess return per unit of risk, a portfolio is constructed such that the securities with the greatest expected excess returns are overweight while the securities with the lowest excess returns are underweight. In the case of a long-only portfolio, there is an upper limit to which this goal can be achieved. This limit is imposed by the long-only constraint that prevents the allocation of capital to underweight positions if they exceed the benchmark holding. Above this limit, overweight positions must be offset by less desirable underweight positions, thereby reducing the portfolio excess return per unit of tracking error (information coefficient). For benchmarks that consist of highly non-uniform weightings, the long-only constraint leads to less than optimal holdings in the largest constituents of the benchmark. This is particularly so for the Australian equity market as the median stock in the S&P/ASX 200 represents only 13 basis points in the index.

The problems arising from the long-only constraint may be overcome via active extension, i.e. taking short positions in some stocks and reinvesting the sale proceeds in other long positions. This gives the portfolio manager the freedom to assign more meaningful

overweight and underweight positions based on expected excess return, rather than having positions influenced by a stock's benchmark weighting.

There has been considerable research and material published to make the case for active extension funds. Most of this centres on Grinold and Kahn's fundamental law of active management which states:

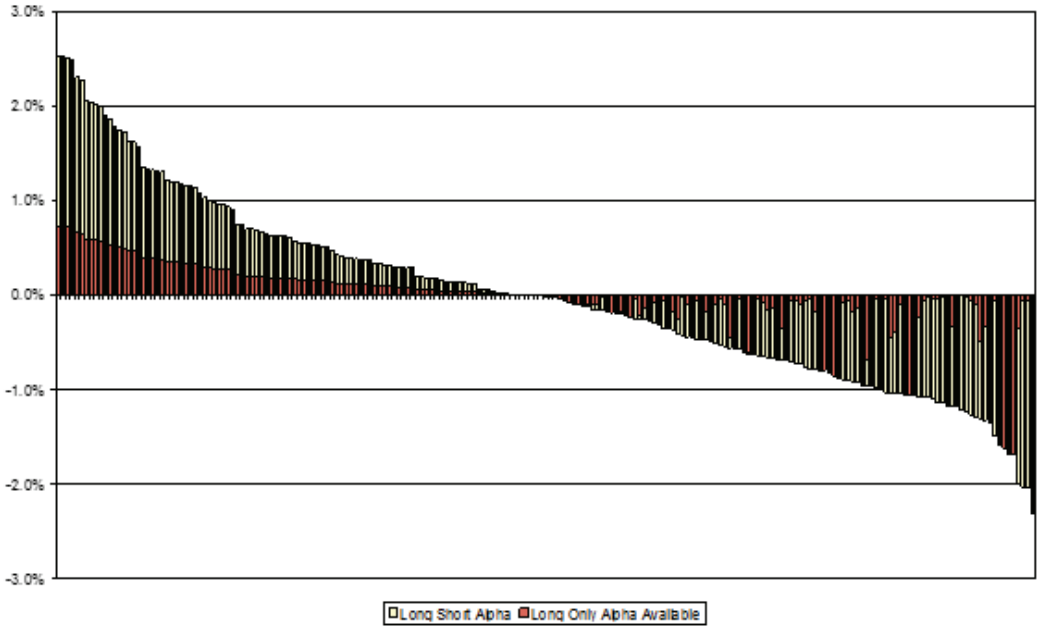
$$E(R_A) = TC \times IC \sqrt{N}\sigma_A$$

where:
$E(R_A)$ is the expected active return,
TC is the transfer coefficient,
IC is the information coefficient
N is the number of securities, and
σ_A is the active risk target

It should be apparent from this formula that the active returns available from an existing investment process can be enhanced by increasing the transfer coefficient, or the active risk target. In the long-only space, these two objectives are mutually exclusive. The active risk target can only be increased by holding fewer stocks, thereby reducing the transfer coefficient. This presents the long only fund manager with a dilemma – the only way to target higher returns is to concentrate the portfolio and reduce the information ratio.

Figure 2 highlights the impact of the long-only constraint on a stylised portfolio construction process.

Figure 2: The long-only constraint



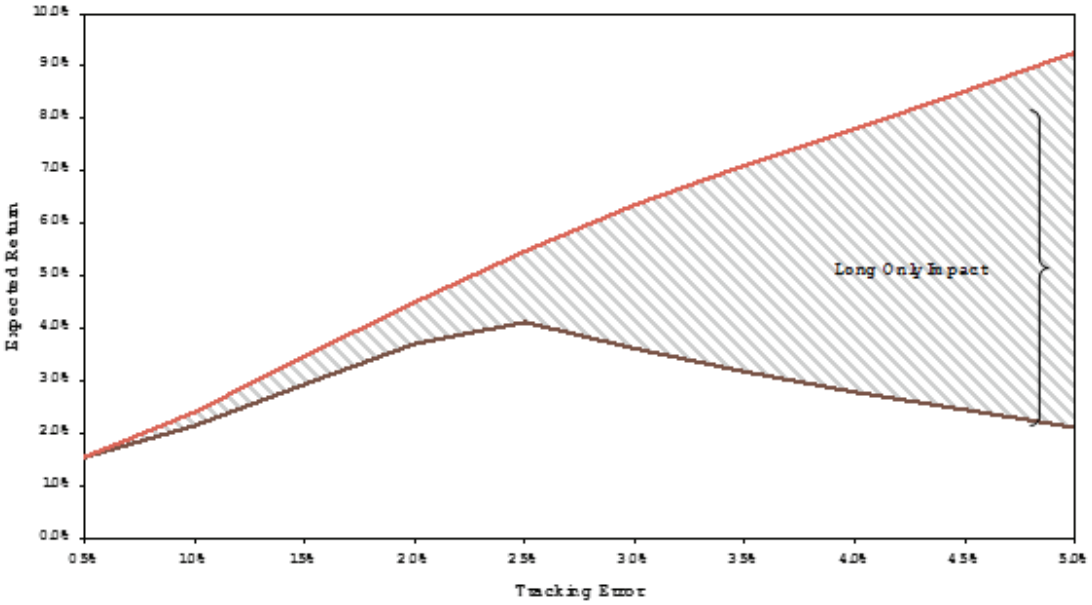
Source: Tribeca Investment Partners

What is clear from Figure 2 is that the long-only constraint – the fact that the minimum underweight position is limited to its index weight – destroys the transfer coefficient on the underweight side of the investment process.

By enabling shorting within a fund, underweights can be extended out to match the investment ranking. This frees up cash that can be reinvested back in the overweight side of the fund so that active weights here can also match the investment process. Removing the long-only constraint enables the fund to simultaneously increase the level of active risk as well as the transfer coefficient of the investment process. This means that active extension funds are able to offer higher returns with proportionately less risk (i.e. a higher information ratio arising from the higher transfer coefficient). In plain English, alpha extension funds offer better returns by capturing more of the short alpha.

This is shown further in Figure 3. It simulates returns from a quantitative investment process for different tracking error targets, with and without the long-only constraint. While the slope of the line for the long-short fund remains relatively constant, indicating that the information ratio is largely unaffected by taking on more active risk, the information ratio from the long-only fund declines as it moves beyond the enhanced index space and peaks out at a tracking error of 2.5%. This is before transaction costs are even taken into account and gives a strong indication as to why long-short managers have been successful as a cohort.

Figure 3: Quantifying the long-only impact



Source: Tribeca Investment Partners

CONCLUSION

The concept of long-term investing is intuitively appealing. It appeals to our sense of the way the world should work. Unfortunately, this intuitive appeal is influenced by a range of cognitive biases that lead investors to generally overestimate their skill. A long-term investment strategy simply compounds these problems and can lead to underperformance. Forecasting is an inherently difficult task in a volatile and changing world, however, empirical evidence does point to certain approaches that are more likely to be successful. An investment approach that recognises and incorporates uncertainty into probability based expectations and frequently reviews and revises forecasts based on new information is more likely to be successful. The long run is simply a series of short runs and being successful in the short term the majority of the time is essential to long-term outperformance.

A solid investment process that incorporates these attributes for success is a good starting point, but a long-short investment structure can also improve outcomes. This is particularly true in the context of the Australian equity market where there is a significant market capitalisation bias. A long-short or active extension portfolio can improve the risk-return trade-off in a portfolio by removing the long-only constraint. This allows an improvement in diversification by having a broader range of investment positions that more accurately reflect the underlying investment process.