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Investment
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Research

Greed and Fear

Investor behaviour and its influence on market cycles

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Summary

- The global financial crisis has confirmed that the market cycle is 'alive and well', thanks to the perpetual cycle of 'greed and fear'.
- Investor psychology, emotions and confidence play a powerful role in driving market returns – often at the expense of objectivity and logic.
- Most investors are not rational and often make decisions based on emotions, past experiences and pre-conceived ideas, with the constant fear
- of incurring a loss or the prospect of making an easy gain omnipresent.
- Seeking advice from financial advisers can help investors to distance the emotion and assist them in making rational decisions based on their long-term risk/return profile and investment objectives.
- Investing with a professional fund manager that adopts a disciplined process helps reduce investor biases and emotions.

Introduction

After receiving average annual returns of around 25% for four consecutive years[1], Australian share investors have experienced a rude shock over the past two financial years, with the S&P/ASX 200 Accumulation Index falling 13% p.a. in 2007/08 and 20% p.a. in 2008/09. With equities representing around 60% of a typical balanced fund (including international equities), superannuation funds have also been severely impacted. The impact cannot be understated with the market fall-out taking a huge toll on investor confidence.

Investor confidence, emotions and psychology play a vital role in driving market upturns and downturns. Investors have gone from feeling highly optimistic with the share market regularly reaching new record highs in the period 2004-2007, to extremely pessimistic with the market falling to five-year lows in March 2009 resulting in many investors seeing their investments fall sharply in value. Periods of high optimism or exuberance are generally associated with greed while pessimism is generally powered by fear.

It could be argued that greed not only propelled the market to record highs, but ultimately the pursuit of higher returns and income through the wonders of financial engineering, masquerading as defensive assets, eventually came undone – proving that the old adage of 'higher returns means higher risk' is actually true.

The crisis has also proven that markets do move in cycles (despite calls to the contrary as recently as 2007 by the then UK Chancellor of the Exchequer, Mr Gordon Brown), and while the drivers of booms and busts may change, investor behaviour doesn't. Since the onset of the global financial crisis in July 2007 many investors have been in the grip of fear, paralysed to act not wanting to crystallise losses or make the wrong decision, leading to inertia in some cases and just plain bad investment decisions in others. Many of us will undoubtedly look back on this time and realise it was a wasted opportunity, with many stocks representing exceptionally good value.

This paper explores some typical investor behaviours and the role they play in influencing investment decisions. Whether we realise it or not we all probably exhibit these behaviours – even well-known market theorist Harry Markowitz was known to.

> **"The investor's chief problem – and even his worst enemy – is likely to be himself"**
>
> Benjamin Graham economist, professional investor and one of the first advocates for value investing[2].

Efficient market hypothesis is a myth

Modern portfolio theory assumes that markets are efficient as all known relevant information is priced in to the value of shares. This means that shares always trade at their fair value and therefore there aren't any opportunities for investors to generate excess returns – either through stock selection or market timing. Another critical assumption in the hypothesis is that all investors are rational.

Behavioural finance theory, which had its formal beginnings in the 1980s and became a mainstream economic theory in the 1990s, takes a different view. Far from assuming investors are rational, it deems them to be irrational in their behaviour, often making investment decisions based on emotions, previous experiences or a fear of regret. This can result in investors making investment decisions unrelated to the future potential of that investment, causing its share price to trade at a discount or premium to its fair value.

[1] Financial years ending in 2004 to 2007

[2] Source: The Journal of Finance, Vol LV, No. 2 April 200

Active fund managers disagree with the notion that the market is perfectly efficient, believing that all information is not necessarily available to everyone, and even if it was, it is interpreted differently by market participants, and therefore isn't always built into a company's share price. Many also believe that irrational investor behaviour plays a role in forming market inefficiencies thereby creating investment opportunities – but not every opportunity is necessarily a profitable one.

There are many causes of inefficient markets, two well-documented theories relating to investor behaviour are:

1. Heuristic biases and

2. Frame dependence

Heuristic biases – 'rules of thumb'

Heuristic biases are essentially 'rules of thumb' gained from previous experiences. These experiences create a natural bias based on a previous experience rather than logic. For example, a person may decide not to go to a particular destination for a holiday in the belief that it's a rainy city, because the last time they went there it poured with rain. The person does not consider the average rainfall or other long-term statistics. Or an investor who lost a lot of money in a single mining stock might never invest in mining stocks again in the belief that their previous experience will be repeated. This may seem like reasonable behaviour, but it is often based on singular experiences rather than logic. One experience does not necessarily mean it will necessarily happen again.

There are a number of heuristic biases – two of these, representativeness and over-confidence, are discussed in more detail below.

Representativeness – the danger of investing based on pre-conceived ideas

Representativeness bias occurs when investors make decisions based on pre-conceived ideas or stereotypes. A typical example of this is 'gambler's fallacy', such as when a punter believes that after six heads in a row, tails must be next. There is no logical reason why tails 'has to be next' – the likelihood of either heads or tails occurring is exactly 50%, but they continue to hold the belief that their turn is due. This belief is based on the theory that over the long term there is a 50% chance of a tails or heads coming up – but there is no ability to know when that will occur. The problem is the punter is applying a long-term theory over a very short time horizon. It really comes down to how long the punter is willing to wait and how much money they are prepared to gamble to see a tails come up.

Another example of representativeness heuristic bias is an investor's decision to buy the latest hot stock. This was no more apparent than during the tech boom in the late 1990s and early 2000s when technology stocks were seen as the new paradigm and 'old economy' stocks were out of favour. Many invested on a pre-conceived idea that all tech stocks would perform well – without fully assessing a company's earnings potential.

Sure there were some good quality technology stocks, but there were some very poor ones as well. Unfortunately they were all lumped together and treated the same. This was a prime example of the 'herd mentality' at play, with investors getting caught up in the momentum and not wanting to miss out on the next big thing, especially when all of their friends and family were also investing in these stocks – so they followed the crowd and also bought technology stocks. Unfortunately many investors hopped on the bandwagon too late and suffered the consequences of the subsequent 'tech wreck'. In the US, after reaching an all-time high in March 2000, the benchmark technology index, the Nasdaq Composite Index, fell over 50% within a year.

According to De Bondt and Thaler (1985)[3], this representativeness heuristic bias means investors can be over-optimistic about past winners and over-pessimistic about past losers. This favouritism of past winners and bias away from past losers causes markets to deviate from fair value, with the former becoming overvalued and the latter becoming undervalued. They also argue that this mis-pricing is a short-term phenomenon, and over time the losers will outperform the general market and the winners will underperform.

Let's look at an example of the dangers of favouring past winners.

In chart 1, the first diagram shows the top five performing stocks in 2007 in the energy sector within the S&P/ASX 200 Index. As the bars in the chart show, all five stocks outperformed the energy sector that year. From these numbers, without undertaking proper due diligence, one could make an assumption that these five stocks must be of high quality as the market has supported them, and therefore they will continue to outperform their peers.

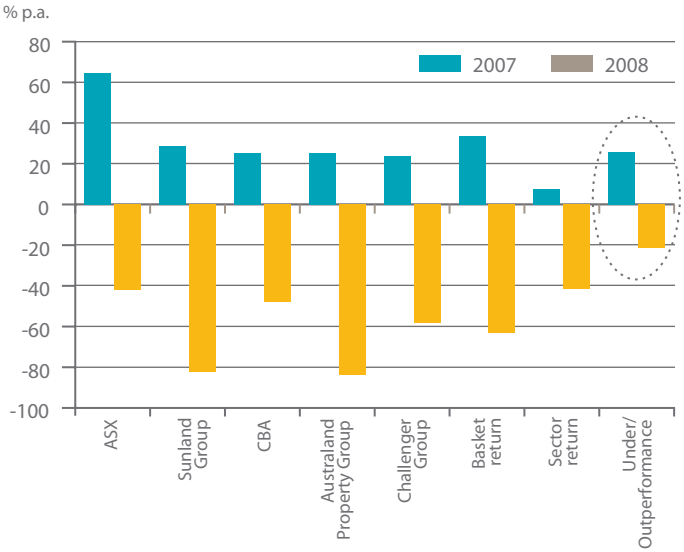
This was not the case. In 2008, there was a marked change in performance with the same 'basket' of energy stocks not only significantly underperforming the sector's benchmark that year, but the performance between the stocks was variable, ranging from -86.3% (Strata Resources) to +15.4% (Centennial Coal).

The second diagram in chart 1 shows a similar outcome for the financials sector (excluding property trusts). While the variation between stocks was not as marked, there was a similar turnaround from significant outperformance of the sector's benchmark in 2007 to underperformance the following year. These two examples highlight the danger of making investment decisions based on representativeness bias without undertaking proper research and then forming a rational opinion.

[3] Source: Hersh Shefrin (2002) "Beyond Greed and Fear, Understanding Behavioral Finance and the Psychology of Investing", Oxford University Press.

Chart 1: Dangers in favouring last year's winners
Energy Sector (S&P/ASX 200 Index)

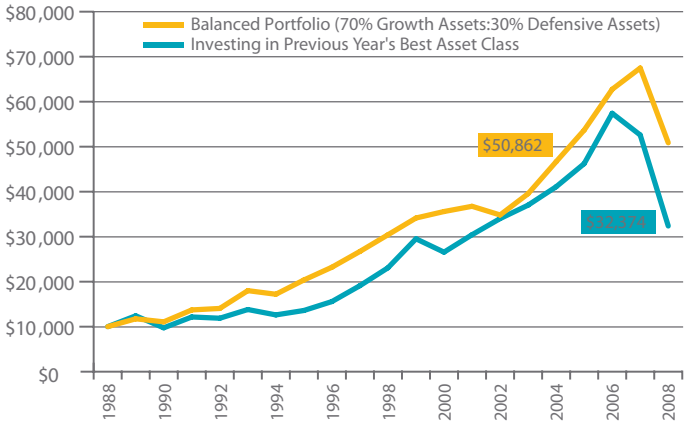
Financials Sector ex Property Trusts
(S&P/ASX 200 Index)



Source: Investment Technology Group and Tyndall Investment Management Limited

Looking at past performance of a particular asset class could also be a form of representativeness. Despite numerous warnings that past performance is not an indicator of future performance; investors often look to this as a guide as to what to invest in. This approach is a flawed strategy as shown in chart 2. If an investor invested in each year's best asset class over a 20-year period, an initial investment of $10,000 in December 1988 would have been worth $32,374 in December 2008[4]. This is significantly less than $50,862 if invested in a typical balanced fund where the asset allocation[5] is fixed over the whole period.

Chart 2: Pitfalls of investing in last year's best asset class
Value of $10,000 invested in December 1988



Source: Intech Investment Consultants and Tyndall Investment Management Limited

Over-confidence – can lead to over-trading and reduced net returns

Another heuristic bias which can influence the way people make investment decisions is over-confidence. When investors make a number of successful stock picks, a certain level of over-confidence can creep in and their desire to trade more increases. Investors don't necessarily weigh up the cost of trading against the marginal benefit of holding one stock rather than another, since they are so confident the new stock will be an imminent success. While this may or may not lead to higher gross returns, the increased trading activity generates higher trading costs (brokerage) and hence may result in lower net returns than a 'buy and hold' approach. For Australian investors there are also tax implications for stocks held for less than twelve months.

The link between over-trading and reduced net returns was explored by Brad M Barber and Terrance Odean[6]. Their analysis, which was based on around 66,000 households in the US with accounts at a large discount broker from February 1991 to January 1997, showed that over-trading had a huge impact on net returns. As shown in chart 3, households that traded frequently earned a net annualised return of 11.4% over the five-year period, while those who traded infrequently earned a much higher annualised return of 18.5%.

[4] Source: Intech Investment Consulting and Tyndall Investment Management Limited. Indices: Australian Equities: S&P/ASX 200 Accumulation Index; International Equities: MSCI World ex Australia Local Currency; Cash: RBA Official Cash Rate; Australian Fixed Interest: UBS Composite Bond Index; International Fixed Interest: JP Morgan World Govt ex Australia A$ Hedged; Listed Property Trusts: S&P/ASX 200 Property Index. Past performance is not a guarantee of future performance.

[5] 35% Australian equities, 25% international equities, 10% listed property trusts, 13% Australian fixed interest, 12% international fixed interest and 5% cash.

[6] Source: Journal of Finance, Vol LV, No.2, April 2000 "Trading is Hazardous to Your Wealth: The Common Stock Investment Performance of Individual Investors"

Chart 3: Trading is hazardous for your wealth

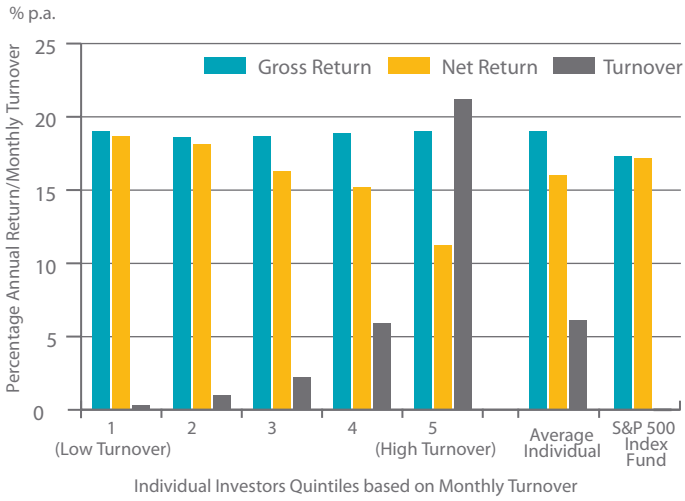


Chart 3. Monthly turnover and annual performance of individual investors. The blue bar (light grey bar) represents the gross (net) annualised geometric mean return for February 1991 through January 1997 for individual investor quintiles based on monthly turnover, the average individual investor, and the S&P 500. The net return on the S&P 500 Index Fund is that earned by the Vanguard Index 500. The dark grey bar represents the monthly turnover.

Source: The Journal of Finance, Vol. LV No. 2, April 2000

There can also be a level of over-confidence in one's investment prowess, particularly with regards to forecasting ability. This can lead to bad stock decisions. Studies have also shown that investors who are excessively over-confident don't diversify their portfolios adequately, don't believe in the positive risk/return trade-off (i.e. higher risk means higher returns) and tend to take on more risk[7].

This tendency for over-confidence highlights the need to have a long-term focus so as to minimise trading activity. It also highlights the benefit of investing in managed funds, where trading costs are shared across a pool of investors.

Heuristic biases are thus ever-present, often clouding investors' decisions. One way of reducing investors' susceptibility to many of these biases is to invest with professional fund managers. Their use of valuation models, disciplined processes and extensive company visits are just a few of the tools they use to help reduce the emotive element from the decision making process and determine the true price of a stock or security. Constant peer review by fellow team members and oversight by an investment committee also helps to reduce biases and improves the probability of decisions being made based on logical and rational analysis.

Frame dependence – fear of incurring losses

Another area within behavioural finance theory that can help explain irrational investor behaviour is frame dependence. This concept centres on people having 'frames of reference' when making decisions – particularly when it involves risk or uncertainty. An easy way to think of 'frames of reference' is to picture several boxes or compartments in your mind for different pots of money – and when it comes to making a decision the outcome depends on which pot of money is being invested.

Let's look at an example. Assume a punter bets $10 in poker and wins $50. In their mind, the $10 is the amount that goes in the 'can't lose box' and hence goes back in the pocket, while the $40 goes in the 'can lose box' and stays in the hand. After all, the punter didn't have the $40 at the beginning of the night (and hence sees it as 'free' money) and is happy to take high levels of risk with that money. By allocating the $50 between two pots in their mind, the investor fails to make logical decisions. In this example, the punter should look at their total money as if it is in one pot ($50) and decide how much they wish to risk. This action is likely to result in the punter making more conservative decisions.

This behaviour can equally apply to investing. Investors often focus on the initial capital outlay as the amount 'at risk', rather than the accumulated value over time. For example assume an initial investment of $10,000 that one year later rises in value by $1,000. Investors will tend to regard the amount of money at risk as being the initial $10,000, but really the total 'at risk' money is $11,000. It is this total amount invested that the investor should be constantlyre-evaluating when making investment decisions – whether it is to invest more, redeem or switch to another fund/asset class.

Regret – afraid to make the wrong decision

Another area that falls under frame dependence is regret. The key underlying premise for this behaviour is an investor's fear of incurringlosses. Studies by Daniel Kahneman and Amos Tversky[8] have shown that investors feel a loss two and half times more strongly than a gain of the same amount. They call this phenomenon 'loss aversion'

This fear of making the wrong decision often means investors don't assess risk correctly – they tend to over-emphasise risk which can actually lead to wrong decisions or inertia in making a decision. Investors need to ask themselves which risk is greater: the risk of making a decision that could lose them money; or the risk of missing out on an opportunity that could make them money? Studies have shown that people tend to have the highest level of regret for actions they didn't take rather than actions they did take[9].

Even Nobel Prize winner Harry Markowitz, one of the founders of modern portfolio theory which espoused the merits of diversification, suffered from the fear of regret. He invested his entire retirement money in an even split between equities and bonds, which goes completely against his own investment theories. Why? He didn't want to regret his decision by diversifying any further. "My intention was to minimise my future regret".[10]

[7] Source: CFA (2008), Level 3, Study Session 3, Behavioural Finance, DeVry/Becker Educational Development Corp

[8] Source: Shefrin, H.

[9] Source: Shefrin, H.

[10] Source: Shefrin, H.

A different example of regret is investors' difficulty in selling a losing stock. The feeling of regret is strongest when the loss is crystallised – until that point the investor holds out hope of the stock returning to its 'former glory' and avoids generating feelings of regret by holding onto it. Another aspect to this is that if the investor made the original investment decision by themselves, the feeling of regret is much greater than if they were following someone's advice. It's not so much about the pain of making a loss, but rather the pain of being responsible for making the decision. This could explain why investors sometimes find it easier to outsource their investment decisions (i.e. to a financial adviser) – apart from needing professional advice, it also means some of the burden of making decisions is shared.

By contrast, professional fund managers acknowledge and seek to control this behavioural risk. This is largely through their disciplined processes that allow them to assess the relative merits of investing in particular stocks and make relatively unbiased decisions – if selling a losing stock is the right decision, the framework will be in place to allow that to occur. They constantly assess the risk/return trade-off of holding one stock versus another stock. Let's look at an example. An investor is holding a stock which they paid $10 for and it's now trading at $7. They find it very hard to sell the stock and incur a $3 loss. A fund manager on the other hand, would look at other stock opportunities and if another stock, identified through their investment process, could offer a forecast gain higher than the original stock, they will have no hesitation in selling the losing stock and buying the other one (after taking into account tax implications and transaction costs).

The fear of regret often leads to inertia in making decisions. In some respects this could be one of the reasons why around 80% of Australians have remained in the 'default' fund in their superannuation plan, despite encouragement from the heavily publicised 'Super Choice' campaigns. As the default option tends to be a balanced fund, this can mean a significantly lower superannuation payout on retirement than if invested in a higher growth option over an individual's full working life.

Not making a choice therefore potentially exposes investors to greater risk – they are swapping the risk of losing money with the risk of not having enough money in retirement. Given many super investors have a very long time horizon the latter risk is likely to be significantly higher than the former.

"Psychology is probably the most important factor in the market – and one that is least understood".

David Dreman[11]

Conclusion

This research paper has highlighted just a sample of investor behaviours that can influence investor decisions and ultimately asset prices, and is by no means exhaustive. Emotion and the human psyche are indeed powerful forces, often leading investors to make irrational decisions, or some times even worse, not making any decisions – both of which can be detrimental to the long-term performance of an investor's investment portfolio. The recent turmoil in the global financial markets has highlighted two of the most extreme emotions – that of greed (associated with good times, optimism and hope) followed by fear (reflective of uncertainty and pessimism) – with ironically the former playing a role in causing the latter. By removing these emotions and psychological behaviours (in the form of heuristic biases and frame dependence), from the decision making process, investors are in a better position to make logical and rational decisions. Seeking professional investment advice from a financial adviser, taking a long-term view, constructing portfolios based on an investor's risk/return profile and investing with professional fund managers are steps an investor can take to help them achieve this.

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Disclaimer

[11] Source: David N Dreman (1977) "Psychology and the Stock Market: Investment Strategy Beyond Random Walk", Amacom (New York)