РАЗДЕЛ 3 КОРПОРАТИВНОЕ УПРАВЛЕНИЕ В ЮЖНО-АФРИКАНСКОЙ РЕСПУБЛИКЕ

SECTION 3 CORPORATE GOVERNANCE PRACTICES: SOUTH AFRICA

DO PORTFOLIO MANAGERS IN SOUTH AFRICA CONSIDER HUMAN BEHAVIOUR ISSUES WHEN MAKING INVESTMENT DECISIONS OR ADVISING CLIENTS?

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Abstract

The efficient market hypothesis is based on the assumption that individuals act rationally, processing all available information in their decision-making process. Prices therefore reflect the appropriate risk and return. However, research conducted regarding the ways that investors arrive at decisions when faced with uncertainty, has revealed that this is in fact not always the case. People often make systematic errors, the so-called *cognitive biases,* which lead them to less rational behaviour than the traditional economic paradigm predicts. These cognitive biases have been found to be responsible for various irregular phenomena often observed in financial markets as(turbulence or, volatility, seasonable cycles, "bubbles", etc. Behavioural finance attempts to explain some of the changes in the financial markets that can not be explained by the efficient market hypothesis. This research reviews some results from the behavioural finance and other related literature. A survey was also done to determine whether the most prominent portfolio managers in South Africa are aware of behavioural finance issues/models and consider the influence of cognitive issues when making investment decisions or giving advice to clients.

Keywords: Behavioural Finance, Herding, Overconfidence, Aversion, Risk

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Introduction

Behavioural finance is the paradigm where financial and capital markets are studied using models that are not as narrow as those based on the expected utility theory and arbitrage assumptions. Specifically, behavioural finance has cognitive psychology as a main building block. Cognitive refers to how people think. Much has been dealt with in literature documenting how people make errors in the way they think. People are often overconfident, they put too much weight on recent experience, they tend to overreact or follow other players in the market. The American sub-prime issue may well be proof of many of the behaviours as it relates to cognitive issues, that we would expect of investors. The mere fact that so many hedge funds were affected by the problems created by it underlines how much herding is taking place in the financial markets and also how much overconfidence there may be amongst

managers. Part of the way these managers act or the decisions they take has to do not only with herding but greed. Their actions may very well not always be as rational as they would make them out to be.

Many anomalies have been observed in securities markets all around the world. The size effect and the value effect in stock markets are among the most common. Researchers who have been trying to reveal factors underlying some of the anomalies can be divided into at least two schools. One school consists of proponents of traditional finance theory. As shown in Fama and French (1993), they try to resolve seemingly irregular phenomena by generalizing equilibrium models. The most important feature of this school is their insistence that all of the players in the market are rational. Rationality means that they conform to the assumptions of expected utility theory, and that prices reflect all of the information (in terms of risk and return) available in the market (von Neumann and Morgenstein, 1947).

As a result, modern finance has as a building block the Efficient Market Hypothesis (EMH). The EMH is based on the premise that competition between investors seeking abnormal profits drives prices to their "correct" value. The EMH does not assume that markets can foresee the future, but it does assume that investors make unbiased forecasts of the future.

The other school consists of researchers opposed to the idea of fully rational market players. They insist that the level of investors' rationality is seriously limited. Simon (1955) called it bounded rationality, and was sceptical regarding the assumption made by expected utility theory that decision makers are completely rational. Simon proposed instead the construction of decision-making models that do not assume perfect rationality on the part of decision-makers. Building on Simon's work, Tversky and Kahneman (1974) introduced the idea of heuristics. This idea means that people tend to use rules of thumb when making a decision due to their lack of ability to process information rationally and *I* or to time pressures, i.e. they have to make many decisions in a limited time. A few years after they presented the idea of heuristics, Kahneman and Tversky (1979) proposed prospect theory, an alternative decision-making model to expected utility theory.

In the last twenty years several radical psychology-oriented theories made their appearance in the financial world, which have significantly changed the way we see pricing of securities. Those theories in many ways contradict the traditional financial framework, where security analysis is based solely on fundamental information. That is, information concerning the company, industry, sector or the economy as a whole. By incorporating "behavioural" ideas into the modelling framework, it will lead to a more realistic and accurate representation of financial phenomena.

The purpose of this research is to investigate the extent to which investor behaviour and their investment decision-making processes are influenced by one or more irrational factors. An attempt is made to explain these apparent market irrationalities by using a fundamentally psychological approach, also referred to as behavioural finance. This, in effect, challenges the traditional notion that people are thought of as rational economic agents that do not engage in financial decisions based on emotion.

Some light could be shed on the question of whether a psychological approach could be used to help understand and explain eccentric and irrational investor behaviour within capital and financial markets by focusing on the following topics for discussion throughout this research:

- To what degree are institutional investors in South Africa aware and subject to certain cognitive biases when evaluating investments for their clients?
- What are some of the most important and predictable behavioural or cognitive biases that we know of?
- How do these biases influence and characterise financial and economic agent's behaviour?

Methodology

Most, of the information to be used in this research will be qualitative in nature. A questionnaire was sent to some of the largest and most influential brokerage houses and portfolio managers in South Africa.

Due to the similarity of the problems/issues that many of the asset managers/portfolio managers/brokers may face when doing business in today's investment environment, it would not be unreasonable to claim this research to be a fair representation of what is experienced by managers in South Africa as a whole. Some differences in emphasis may, however, occur in different regions due to the differences in the wealth of clients. However, the underlying issues researched should not be different.

Brief overview of literature

Few mainstream finance theorists argue that individuals cannot behave in an irrational way and that the *homo economicus* is a gross simplification that does not describe any human being. At the same time, economists normally maintain that the functioning of markets may be well described and predicted "as if' agents were all homo economicus. The analysis of the functioning of markets is the core task of economics, and economics does not deal with the psychology of economic agents as an objective *per se,* but only with the market implications of it (Mas-Colell, 1999).

In essence, the debate around behavioural and

mainstream finance revolves around the "as if' hypothesis. Most of the debate concerns whether prices set on speculative and highly competitive and developed markets are "rational" or whether a pricing error arises. Both behavioural and mainstream finance theorists agree that studying these markets is important. The fundamental problem, however, is that no agreement can be reached on the very definition of "rationality". Rubenstein (2000) goes on to describe various types of market rationality. He distinguishes between markets that are maximally rational, rational, and minimally rational. Markets are defined as "maximally rational" if all investors are rational. If markets were maximally rational, investors would probably trade relatively infrequently and make extensive use of index funds.

The concept of rationality maintained by mainstream finance theorists is normally ons of attempting to beat the market. Initially, the publication of the paper by De Bondt and Thaler (1985) - according to whom the stock market displays a systematic tendency to *overreact* to any type of news - seemed to deal a blow to market rationality as proposed by the traditional, mainstream financial theories everyone were so familiar with. However, in subsequent years several instances of market under-reaction were also detected. This has led Fama (1998) to claim that over- and under-reaction anomalies are simply due to chance, and that market efficiency prevails *on average.* Moreover, Fama (1998) stressed that most anomalies are fragile and do not withstand a closer scrutiny. Today, there seems to be almost a consensus that the market is rational most of the time. The most solid proof of this is that portfolio managers and in general active investment strategies, do not outperform passive investment strategies, especially when transaction costs are considered (Malkiel, 1995). In this beat-the-market sense, mainstream finance seems to have resisted the "attack" by behaviouralists (as Thaler, 1999b).

It is important to stress, however, that market irrationality in the beat-the-market sense is not necessarily inconsistent with the idea that anomalies are a persistent and systematic behaviour of individuals and may lead to a pricing bias. It simply signals that it is not easy to make money out of these anomalies, for example because there are limits to arbitrage activity (Schleifer and Vishny, 1997). Mullainathan and Thaler (2000) and Barberis and Thaler (2001) pointed out that it is impossible to arbitrage away many instances of "irrationality", simply because there is no speculative market on such matters or because arbitrage is risky. Thus, a pricing bias term might be impossible to arbitrage away, and the existence of a pricing bias is fully compatible with rational expectations and random walk behaviour of asset prices.

Most advocates of behavioural finance contend that the beat-the-market definition of market rationality is too narrow and not relevant from a welfare perspective (Barberis and Thaler, 2001). The ultimate function of the financial market is not to allow agents to speculate over future movements in prices, but rather (over time) to allow them to allocate consumption in their lifetime in an optimal manner and to allocate funds to the most attractive or productive investment opportunities. There is very little research on whether behavioural biases lead to misallocations of capital and to lower economic growth in the longer run, despite the obvious importance of this matter. Misallocation of capital due to biases does in all likeliness take place. It is, however, not in the scope of this research.

The controversy about whether markets are rational will still be with us in the years to come. This is unlikely because, as Fama (1998) pointed out, market efficiency is *per se* un-testable. In fact, testing the hypothesis that the market is efficient requires a model of expected returns, which is actually tested together with the hypothesis. Only the evidence that it is possible to *systematically* beat the market would be a certain way to discredit the hypothesis of market efficiency. Thus far, behavioural finance has failed to provide such evidence.

Whether the alleged influence of behavioural biases on financial markets calls for a policy changes or not is addressed by Daniel et al (2002). According to these authors, governments are likely to be affected by behavioural biases as well, with the difference that they would not be subject to the powerful disciplinary force of competition. Thus, their involvement in setting market prices would probably be counterproductive. At the same time, governments could make investors more aware of their psychological biases and of the incentives that others have to exploit them, creating some room for policy intervention in terms of reporting rules and disclosure.

Sources of Bias and Behavioural Models

Figure 1 represents the structure of behavioural finance (Toshino, 2004). This particular structure considers that there are several sources of bias underlying market anomalies. Aspects of the model is dealt with in the sections that follow.

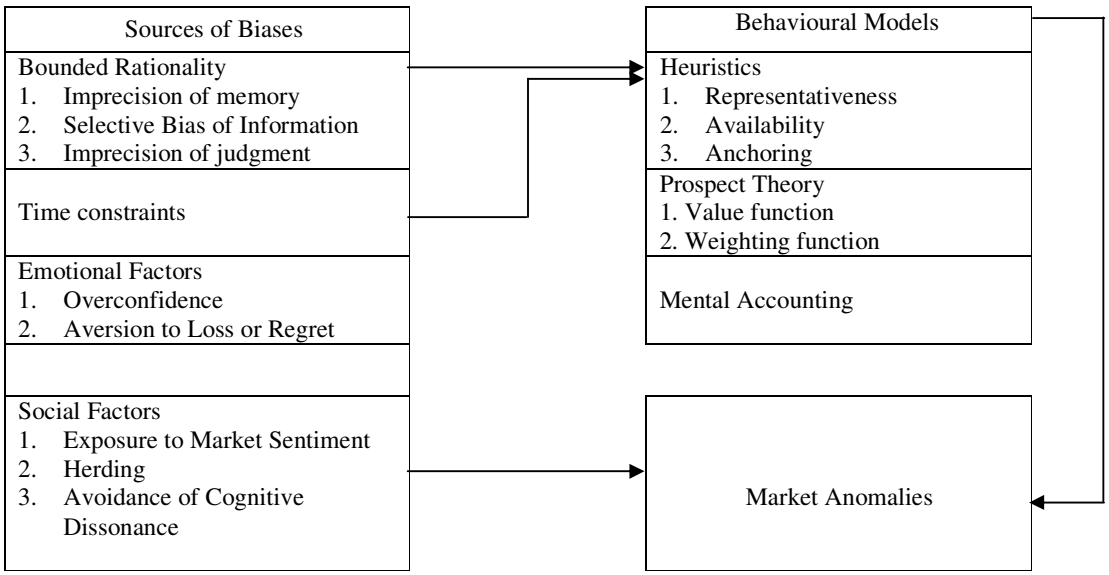


Figure 1. Structure of behavioural finance

Source: Toshino (2004)

Sources of Bias

Firstly, as already described, the concept of bounded rationality was first proposed by Simon (1955). This concept implies that human behaviour is not always rational, as assumed by the expected utility theory, and the EMH, which is the basis for traditional finance theory. Human judgment, such as selection among several alternatives, is generally made based on past memory and newly collected information (Figure 2). Simon (1955) suggested that human behavior could be subject to biases at any of three stages in the decision-making process: recalling memories; selecting information; making judgments.

The second source of bias is time constraints. Human beings are very busy and have to continuously make various decisions. Consequently, they cannot afford to spend a lot of time trying to make optimal decisions. Thirdly, emotional factors can be a source of bias in human judgment. In particular, overconfidence and regret aversion are included in biases, which could lead to market anomalies. Overconfidence suggests that investors overestimate their ability to predict market events. Overconfidence may be increased with market experience. Because of overconfidence, investors often take risks without receiving appropriate returns. Another effect of overconfidence is overtrading, which can lead to poor investment decisions and excessive transaction costs.

Among the emotions that determine the individual investor's perception of risk is an aversion to losses. The idea that investors are not risk-averse but loss-averse is one of the main tenets of behavioural finance. While this distinction may seem trivial, it implies that investors will increase their risk (uncertainty), in an attempt to avoid the probability of loss.

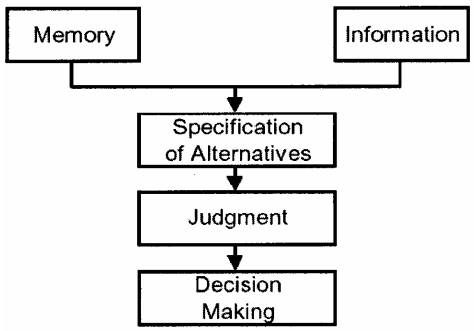


Figure 2. The human decision-making process

Source: Toshino (2004)

Fourth is social factors (see the sources of bias shown in Figure 1). Human beings tend to create a variety of societies, and to act as members of each society. Meanwhile, they are subject to some kinds of social bias such as exposure to market sentiment, herding, and avoidance of cognitive dissonance.

Market sentiment means the general atmosphere of bullishness or bearishness in the market. For example, when market sentiment is very bullish, investors would like to purchase securities even though they are mostly overvalued. The South African stock markets experienced this situation for a number of years and is now in a downward phase.

On the other hand, herding is the human tendency to act similarly, following other people's behaviour. To act differently when other people are acting uniformly is mentally very difficult. This is especially true of the American sub-prime issue. Although this research is not about this aspect, it needs to be mentioned that many hedge funds got involved in this market through securitised loans, probably because many others were doing it. Managers probably did not really think about the risk of negative gearing should defaults take place on a large scale.

Lastly, the avoidance of cognitive dissonance refers to the human tendency to try to be consistent in one's behaviour. Having once expressed a positive or negative opinion about something, people find it difficult to change their position even though they have discovered reasons for doing so. This is closely related to the perseverance belief, which indicates that people are unlikely to change their opinions even when new information becomes available. At least two effects appear to be at work. First, people are reluctant to search for evidence that contradicts their beliefs. Second, even if they find such evidence, they treat it with disproportionate scepticism.

For example, if an analyst has written a report with a buy recommendation for a certain stock, he or she may feel some mental pressure not to express a negative view about the stock even when its issuing firm has announced some unfavourable news.

Behavioural models

Some researchers have presented behavioural models reflecting the sources of bias described so far that could be more directly associated to market anomalies. Heuristics is one of the earliest behavioural models presented in Tversky and Kahneman (1974), which is considered the decisive work in the field of behavioural finance. Heuristics refers to the human tendency to try to intuitively solve problems with limited information by using rules of thumb, even when people could derive better answers with more time and information. Although this kind of decision-making rule is generally regarded as an effective way to deal with daily incumbencies, it can lead to systematically biased decisions. Tversky and Kahneman (1974) presented three types of heuristics: representativeness; availability; anchoring.

Representativeness heuristics is the human tendency to judge person A as belonging to a group X if A has any representative feature of that particular group. People consider that which they find easier to imagine, more probable.

Availability heuristics is the human tendency to consider that more familiar things happen more often. Accidents and homicides are generally considered to happen quite often because they receive a lot of coverage in the mass media. People usually take care not to get involved in such affairs since they are a familiar risk. At the same time, people tend to disregard the risk of sicknesses such as diabetes because they are largely ignored by the news media.

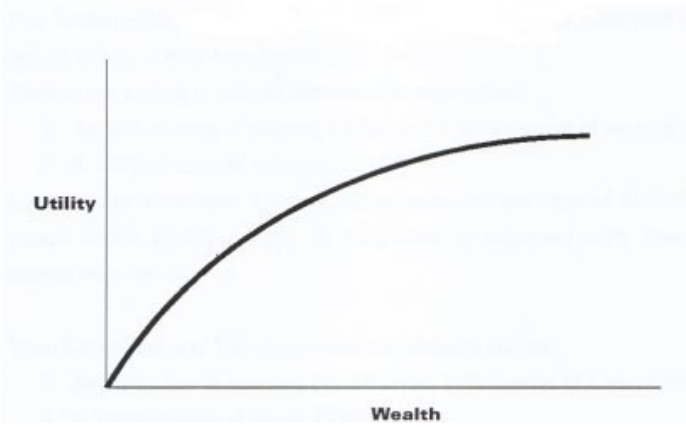
Anchoring refers to the tendency to consider a random available number as a starting point for estimating the true value of an unknown matter. The random number can affect the resulting estimate. The effects of anchoring are pervasive and robust and are extremely difficult to ignore, even when people are aware of the effect and aware that the anchor is ridiculous. One of the most common effects of anchoring is under reaction, where people fail to react to new information quickly enough.

On the other hand, Kahneman and Tversky (1979) presented prospect theory that was intended to be an alternative model to expected utility theory. Before describing prospect theory however, it is useful to briefly comment on expected utility theory.

This was originally developed by von Neumann and Morgenstein in 1947, and describes how people behave if they follow certain requirements of rational decision-making. The most important concept behind expected utility theory was developed in 1738 by Bernoulli and is that of declining marginal utility. This implies that people will be risk averse. Specifically, Bernoulli argued that the following graph could represent the value of money (Kahneman and Tversky, 1979):

Prospect theory was developed by two Israeli psychologists, Daniel Kahneman and Amos Tversky. This model was based on five experimentally established aspects of human nature (Kahneman and Tversky, (1979):

1. People tend to evaluate alternatives not by their ultimate asset value but by how far the alternatives depart from a reference value.
2. People tend to be risk averse when making a profit, but reckless when suffering from a loss.
3. People tend to weigh a loss of a certain quantity more than a gain of the same quantity.
4. People tend to value 100% certain things much higher than merely probable things.
5. People tend to overvalue the chances of a scenario succeeding when the probability is very small.



Graph 1. Declining marginal utility

Source: Kahneman and Tversky (1979)

The fundamental issue underlying prospect theory is best illustrated using the results of one of their experiments:

They asked people to choose between two alternatives:

1. An 80% chance of winning $4 000 and a 20% chance of winning nothing
2. A 100% chance of receiving $3 000

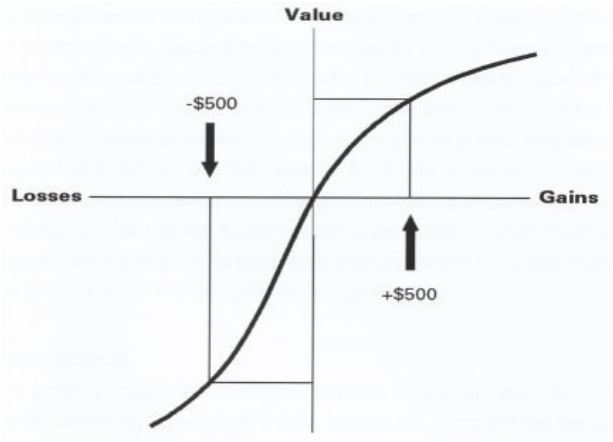
Even though alternative 1 has a higher expected outcome of $3 200, 80% of people chose alternative 2. These people were therefore risk averse as suggested by expected utility theory.

Then Kahneman and Tversky offered the following choices:

3. An 80% chance of losing $4,000 and a 20% chance of losing nothing
4. A 100% chance of losing $3,000

Even though the expected loss of $3,200 is bigger under alternative 3, 92% of people chose to gamble. When the choice involves losses people appear to become risk seeking and not risk averse.

Prospect theory provides an explanation for this asymmetry of how people make decisions. Prospect theory replaces the concept of decreasing marginal utility based on total wealth with a concept of value defined in terms of gains and losses relative to a reference point. This is illustrated in Graph 2 below. Unlike expected utility theory, prospect theory suggests that decisions like the ones above will depend on how a problem is presented or "framed".



Graph 2. Asymmetric value function of the Prospect Theory

Source: Kahneman and Tversky, 1979

If the initial position is viewed as a gain (the choice between alternatives 1 and 2) then the value function is concave, representing the risk aversion of the decision maker. If the initial position is defined such that an outcome is viewed as a loss, (the choice between alternatives 3 and 4) then the value function will be convex, representing the risk-seeking nature of the decision maker (Kahneman and Tversky, 1979).

Finally, the idea of mental accounting was presented by Thaler (1985). It is the human tendency to set up a local account and try to get an optimal

value for each account.

Review with regard to South African institutional investors

In this research various important *cognitive biases* are pointed out. For the sake of conducting this research, involving South African portfolio managers, the scope will include overconfidence and loss aversion only. By confining the research to these two anomalies only, it will be possible to obtain a clearer picture of the current situation in South Africa.

If too much information is gathered, the questionnaire will take too long to complete which may reduce the response rate substantially. Overconfidence and loss aversion were chosen as the two main factors that may materially affect the South African financial markets leading to a negative impact on investors. Attention is also paid to the extent to which investment professionals are aware of the behavioural finance issues and if aspects of this is ever considered when evaluating their investment decisions or dealing with clients.

Data sample

The survey was conducted in August through September 2007. Questions were grouped into three parts: the personal profile of the fund manager, some questions regarding their awareness regarding behavioural finance, and a few questions related to overconfidence and loss aversion. The questionnaire was sent to 19 prominent fund management companies within South Africa, all employing numerous individual fund managers, analysts, and other individuals involved with the management process of their assets.

Due to the fact that the sample was small, a response rate of at least 50% was sought. A response rate of 58% was achieved. Of the respondents, 91 % were male, and all held bachelor degrees (73%) or masters degrees (27%). They listed their current positions as follows: fund manager (54.5%), senior fund manager (27.3%), chief investment officer or chief executive officer (18.2%). About eighty percent of the respondents had been working in the asset management environment for at least 6 years. Around 54.5% were at the age of 36 to 45 years, while 18% were under 35 and 27% were over 45 years old.

Findings

Keeping in mind the objective of determining the degree to which institutional investors in South Africa believe the Efficient Market Hypothesis to be a proper theory for understanding financial markets, and to what extent they are aware of the concept of behavioural finance, some simple questions regarding the matter were asked. Firstly, all the respondents indicated that they were familiar with the EMH, but only three respondents believed that South African markets were efficient at least to a degree (see Table 1). Out of these three respondents, all indicated that the weak form of the hypothesis was relevant for South Africa. Likewise, all respondents pointed out that they were familiar with the concept of behavioural finance, while all believe that it definitely does hold merit, even if at least to a degree. This was an interesting observation since the respondents indicating that they believed South African markets to be weak form efficient, also indicated that the behavioural finance paradigm definitely does hold merit. Perhaps the reason for this is that some individuals are not entirely convinced that the traditional financial framework may be so fundamentally flawed, but they certainly see the reasoning behind behavioural finance.

All respondents pointed out that they were aware of one or more biases caused by human behaviour and that they do in fact take them into account most of the time (if not always) when evaluating investment decisions for their clients. It may be important to note however, that the responsibility of educating the client with regard to these behavioural biases also fall on the fund manager. The biases apply equally to the client and the manager him-/herself.

Table 1. Results on awareness and consideration of behavioural biases

Question asked		Responses	%
Familiar with EMH	Yes	11	100.00
	No	0	0.00
Believe SA markets to be efficient	Yes	2	18.18
	Sometimes	1	9.09
	No	8	72.73
If yes, form of efficiency	Strong	0	0.00
	Semi-strong	0	0.00
	Weak	3	27.27

Table 1 continued

Familiar with concept of BF	Yes	11	100.00
	No	0	0.00
Believe BF concept to hold merit	Yes	10	90.91
	Some merit	1	9.09
	No	0	0.00
Aware of cognitive anomalies	Yes	11	100.00
	No	0	0.00
Consider cognitive anomalies	Yes	9	81.82
	Mostly	2	18.18
	No	0	0.00

Findings regarding overconfidence

In order to establish the existence of overconfidence in the forecasts of institutional investors, they were required to give their one-month and one-year forecasts of the All Share Index (ALSI) and Dow Jones Industrial Average (DJIA). They were also asked to estimate a percentage change in this regard, given the current index levels as well as their 90% confidence range. The average lower bound returns, upper bound returns, and the respective medians were calculated to get an idea of the central values for every forecast.

The forecasts of South African institutional investors showed a clear positive predisposition. Although the lower bound and upper bound returns were similar in terms of absolute value for the one-month forecast of the DJIA, the average of the upper bound returns for the one-month forecast of the ALSI was larger by around 23% than that of its lower bound returns in terms of absolute value. The discrepancy was much larger for one-year return forecasts. The difference was more than 55% for the one-year return of the DJIA, while it was more than 113% for that of the ALSI.

These results were consistent with expectations as follows:

Firstly, institutional investors were generally optimistic in their market forecasts. This occurrence is consistent with the notion that they are more sensitive to *positive* market news, or subject to a bias in selecting information, which is one of the aspects of bounded rationality.

Secondly, the over-/under confidence was more significant for the domestic market than for the foreign market. This result is consistent with the notion that investors tend to undervalue the risk of familiar investment products (availability heuristics). This is especially important if one considers where the South African economy will be going in the immediate future. Managers tend to overvalue the performance and underestimate the risk inherent in the markets.

Thirdly, over-/under confidence was much greater when the forecasting period was longer and there was greater uncertainty. However, it must be noted that a theoretical explanation for what appears to be a connection between forecasting period and the confidence in forecasts is still outstanding. It is reasonable to assume that investors may perhaps request a higher premium for more risky investments with a longer holding period (more uncertain).

Table 2. Results: confidence in forecasting

Target of forecast	Lower bound		Upper bound		Difference between lower and upper bound
	Median	Mean	Median	Mean	
All Share Index					
One-month forecast	-6	-7.00	8	8.64	23.40%
One-year forecast	-6	-8.73	16	18.64	113.50%
Dow Jones Industrial Average					
One-month forecast	-5	-5.09	5	5.18	1.70%
One-year forecast	-9	-8.91	14	13.82	55.10%

The conclusion that can be drawn from the above is that institutional investors were mostly confident about forecasting their own market and the optimism was stronger for the domestic market. Also, when the forecasting period was longer they tended to be more confident. This kind of uniformity

may result from the fact that most institutional investors are doing business based on similar information, e.g. economic/political news as well as market reports from analysts. As a result, they may tend to make similar market forecasts. This result is consistent with the herding concept.

Findings regarding loss aversion

In order to determine if institutional investors in South Africa are also subject to loss aversion, the following questions were posed:

"Please assume that you can make a bet with an even chance of making a profit or loss. If the loss is ten thousand rand, what would be the minimum profit that you would require in order to make a bet?"

"What would be the minimum profit if the loss were one million rand in the above question?"

Fewer than 20% of the respondents answered that they would make a bet even if it were a fair game, or the expected outcome of the bet were zero. The majority required a premium. The requirement was 1 to 2 times - they required that the profit be more than the loss, while less than twice the loss. There were even respondents who required a profit of more than 10 times the loss. This confirms the existence of investors with obvious loss aversion. The means of the answers were 46.4 thousand rand for a loss of ten thousand rand and 7 million rand for a loss of one million rand, more than twenty fold for the larger loss and almost five times for the smaller expected loss.

In order to avoid the influence of these outliers, the medians were calculated, which turned out to be R18 000 return for a loss of ten thousand rand, and R3.5 million return for a loss of one million rand. These figures imply that institutional investors are loss averse, requiring gains of several times the bet when faced with a 50-50 chance of a loss.

The medians were calculated for different categories of loss averse respondents. The following results were obtained:

Firstly, loss aversion was stronger among females and respondents with spouses than among males and respondents without spouses, respectively. Secondly, older respondents displayed stronger aversion to loss than their younger counterparts. Thirdly, academic background and the type of portfolio under management were not related to the extent of loss aversion. Finally, loss aversion was stronger for senior fund managers than for junior ones, but weaker for CIOs and CEOs than for their subordinates.

Table 3. Results: loss aversion

Required gain	Ten thousand rand		One million rand	
		%		%
<1 time	0	0.00	0	0.00
1 time	2	18.18	1	9.09
1 to 2 times	5	45.46	4	36.37
2 to 5 times	2	18.18	2	18.18
5 to 10 times	1	9.09	1	9.09
>10 times	1	9.09	3	27.27
Total	11	100.0	11	100.00
Mean	R46 400		R6.97 million	
Median	R 18 000		R3.5 million	

Table 4. Results: loss aversion by ascription

Personal details	Number of responses	Average bet for R10 000 loss	Average bet for R1 million loss
Gender			
Male	10	R42 500	R6.5mil
Female	1	R85 000	R12 mil
Marital status			
Married	8	R49 000	R7.7 mil
Not married	3	R39 500	R5.1 mil

Table 4 continued

Age (years)			
<35	2	R15 000	R1.35 mil
36 - 45	6	R19300	R5.9mil
>45	3	R121 500	R12.9 mil
Academic background			
Bachelor	8	R46 000	R8.5mil
Masters	3	R47 500	R8.7mil
Position held			
Fund manager	6	R37 800	R6.3mil
Senior FM	3	R86 700	R12 mil
CEO or cia	2	R11 750	R1.4 mil
Financial asset			
Stocks	9	R46 700	R7.0mil
Bonds	2	R44 750	R6.9mil

Although the scope of this study did not include all sources of bias and all behavioural models, important biases were detected among institutional investors and professionals in the investment management industry in South Africa.

To briefly summarize the findings, the results confirmed the existence of:

1. High confidence in market forecasting by institutional investors
2. The use of availability heuristics to underestimate the risk of more familiar markets
3. Herding behaviour due to the uniformity of the information on which institutional investors base their forecasts
4. A loss aversion tendency where investors feel much more pain from losses than they feel joy from gains for the same amount involved.

It is apparent that confidence was stronger for a longer forecasting period. The reason for this may be due to many different reasons which may not so obvious. However, the observations shown above may also be subject to bias. The prevailing economic conditions in South African securities markets certainly influence the outlook for markets. The same research conducted in a downward phase in the economy may deliver different results. However, this does not mean that one can not depend on the research, it just means that the outcome of the research has to be interpreted in the relevant context. This also means that a model may be developed which may be used to interpret results. However, this can be the subject for further research.

As far as loss aversion is concerned, prospect theory also implies that people start to take greater risks when suffering from a loss. People tend to gamble, trying to recover some of the losses and in this sense then increase risk.

Summary and Conclusion

A lot of research has been conducted on variability in the financial markets. Behavioural finance as a field is fundamentally another attempt to try and explain some of the noise that influence the markets and that affect the pricing of instruments and impacts on the return that we may expect from a portfolio. Understanding why people make certain decisions is important from an investment management perspective. It also helps us understand how markets will react to information. We also will be better equipped to advise clients when we understand more of the psychological aspects of human behaviour. We can not ignore the fact that emotion is more often than not, part of how we make decisions and it may, depending on the special circumstances, cause us to make irrational decisions.

Critics of behavioural finance typically support the efficient market hypothesis. They contend that behavioural finance comprises merely a collection of explained anomalies rather than being a true branch of finance and that these anomalies will eventually be priced out of the market or somehow be explained.

The survey of the South African managers concerning two of the emotional factors namely over/under confidence and loss aversion was carried out. The confidence aspect showed how different managers view the market. There seems to be a distinct bias which may have various sources. What is important about this is that the bias eventually affects the managers/markets negatively or positively. However, only knowing that it is there is unfortunately not enough. Experts/managers need to be able to somehow measure bias and use the outcome of the measurement to make more realistic forecasts/take more realistic investment actions, with other words, de-bias our forecasts/investment actions. At the same time managers/experts should be able to formulate better investment policy statements on behalf of their clients. Clients also need to understand something about the bias that they may be subject to and have realistic expectations.

The second emotional factor included in the survey was aversion to loss. The results show that people are a lot more emotional about losses and conversely require substantially more return on investment compared to a loss of a certain amount.

This confirms that institutional investors are loss averse.

This research reiterated that there is a human aspect that attaches to the business environment. The scholars that support the EMH can not argue away the fact that people make the markets function and the very people that do that are subject to certain biases. If the JSE's ALSI falls by a thousand points from one day to the next due to sudden news of the prospect of high inflation in the coming months, no values actually changed from the one day to the next. It is the emotional aspect and the perceptions of people that changed due to the release of new economic information. These people therefore place lower values on the shares due to what is expected in the months to come.

Suggestion for further research

Similar, more comprehensive research may be undertaken per region/country over different economic cycles on a regular basis capturing especially the social aspects as regards the sources of bias mentioned in Figure 1. Setting up a database over time with factors that may be used as behavioural adjustments to financial magnitudes in the investment environment my help remove some of the bias. Although it may not be the ultimate solution to counter some of the volatility experienced in the financial markets, it is certainly more meaningful than ignoring the human element of investor actions. With frequent use and further research this field may eventually take its rightful place in the investment industry.

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