MEN BEHAVING BADLY

IRRATIONALITY IN DECISION MAKING WHEN DEFEAT BECOMES HARD TO ACCEPT

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ABSTRACT

In the past few decades, a number of market anomalies have produced themselves as proper literatures rather than being mere errors of the markets. Behavioural psychology has made it possible to link these anomalies to the core of human behaviour explaining over-trading in the markets, price volatility and the equity premium puzzle among a few. These are backed by both laboratory experiments and empirical evidence. One particularly significant theory is the theory of Loss Aversion outlining how individuals tend to be averse to losses and its effect on decisions and the markets.

This paper seeks to establish a new perspective to loss aversion. It investigates into the perception that individuals, when in a repetitive decision making process, instead of changing their decisions facing situations of winning or losing, only change the intensiveness of the decision and not the decision itself. This is exposed by proving that when defeat is hard to accept, it results in an aggressive behaviour in decision making.

The theory is validated by conducting an experiment on agents on how they behave to random situations of winning and losing in a continuous environment of decision making. This paper then verifies the theory by conducting an empirical analysis of private investors where they are asked a set of related questions, specifically about the recent market decline after March 2000, which reveal their behaviour into decision making.

Every attempt is made to clarify and demonstrate that such aggressiveness is not linked to overconfidence.

This paper also supports, theoretically, the view that such behaviour could help explain over-trading in the markets before the actual decline.

ACKNOWLEDGEMENTS

I would like to extend my gratitude to my supervisor, Professor Ralph Bailey, for his kind support, especially at times when it was needed the most. Despite many unfortunate hurdles, he has been understanding and encouraging, boosting my efforts.

I am also thankful to Jai Oberoi, a graduate programmer in I.T. who helped me in finishing the software for the experiment.

I would also like to thank Yahoo Groups for its support and discussions over the period.

Finally, the credit goes to all those who willingly participated in the experiment and also all the private investors who gave their prompt responses to the empirical investigation. I wish them good luck for the future.

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GLOSSARY OF TERMS

Agents
Economists like to refer to the people they study as economic agents. {*Source: Econmodel*}

Bear market
A market in which prices of a certain group of securities are falling or are expected to fall. Although figures can vary, a downturn of 15%-20% or more in multiple indexes (Dow or S&P 500) is considered a bear market.
{*Source: Investopedia*}

Behavioural Finance
A field of finance that proposes psychology-based theories to explain stock market anomalies. Within behavioral finance it is assumed that the information structure and the characteristics of market participants systematically influence their investment decisions as well as market outcomes. {*Source: Investopedia*}

Black Jack
A gambling game using cards; the object is to hold cards having a higher count than those dealt to the bank up to but not exceeding 21
{*Source: HyperDictonary*}

Bull market
A market in which prices of a certain group of securities are rising or are expected to rise.
{*Source: Investopedia*}

Defeat
The feeling that accompanies an experience of being thwarted in attaining your goals.
{*Source: HyperDictonary*}

Expected Utility Hypothesis
The expected utility hypothesis is the hypothesis that the utility of an agent facing uncertainty is calculated by considering utility in each possible state and constructing a weighted average, where the weights are the agent's estimate of the probability of each state. [Arrow, 1963 attributes to Daniel Bernoulli (1738) the earliest known written statement of this hypothesis; *Source: Econterms*]

Experiment
A trial or special observation, made to confirm or disprove something doubtful; esp., one under conditions determined by the experimenter; an act or operation undertaken in order to discover some unknown principle or effect, or to test, establish, or illustrate some suggest or known truth; practical test; poof. {*Source: Self Knowledge*}

Finance
The branch of economics that studies the management of money and other assets.
{*Source: WordNet ® 1.7*}

Internet
The Internet is a world-wide connection of computer networks. It allows users to send and receive information through things like electronic mail (email), search for information held on computers throughout the world and publish material over the World Wide Web. It is a public, cooperative, and self-sustaining facility accessible to hundreds of millions of people worldwide.

Loss Aversion
"A wide spread pattern, evident in many aspects of decision making, in which people seem particularly sensitive to losses and eager to avoid them" [Gleitman et al. 2000]

Over-confidence
Total certainty or greater certainty that circumstances warrant
{*Source: WordNet ® 1.7*}

Private Investor
A private investor is a person who invests his/her money on the stock market and manages his/her own portfolio of shares. He/She operates only in private matters and not employed by a corporation, partnership, proprietorship or any other entity whatsoever engaged in giving investment services. {*Source: OnlineTrader*}

Risk
The quantifiable likelihood of loss or less-than-expected returns {Source: Investorwords}

Risk Aversion
Put informally, risk aversion means that if several investments have the same expected return/payoff, the one with the smallest variation in the outcome is preferred.

I
INTRODUCTION

The world of *finance* has been driven by statistical sciences and mathematical methods. Apparently, these methods have been based upon people's attitude towards uncertainty modelled through *risk aversion*[1] and *expected utility theory*[2].

However, these classical utility functions have some serious criticisms[3]. Although risk aversion and expected utility tend to be an appealing characteristic to formulate a theory upon, much for its excellent mathematical properties, they have failed to show that all individuals have preferences that can be modelled realistically, atleast in certain circumstances. Moreover, behavioural psychology has given birth to new views to the way financial decisions are evaluated. The wide latitude of behavioural psychology in the field of finance has produced many theories that relate individuals' behaviour to markets and it holds considerable scope for new investigation.

1.1 Background

Behavioural finance tests the validity of laboratory *experiments* towards evaluating preferences. Such experiments basically root from the classical assumptions being invalid. Much research has taken place since the 1980's on understanding how people behave realistically when facing a decision involving uncertain outcomes.

One theory of such behaviour is proposed by Kaheman and Tversky (1979) as a decision framework called 'Prospect Theory'. They propose a descriptive framework for the way people make decisions under condition of risk and uncertainty.

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[1] Put informally, one is risk averse when one takes risk only if the expected return is high enough to compensate him/her for the risk. Among the pioneers in risk aversion are K. J. Arrow ('The Theory of Risk Aversion' (1964)) and Friedman & Savage ('The Utility Analysis of Choices involving Risk' (1948)).
A compact example to risk aversion can be found at http://www.wfu.edu/users/palmitar/Law&Valuation/Chapter%202/2-1-3.htm

[2] John von Neumann & Oskar Morgenstern (1944) suggested a model for understanding and systematically modelling risk preference: This was named Expected Utility Theory. An agent possesses a von-Neumann-Morgenstern utility function if he/she ranks uncertain pay-offs according to (higher) expected value of the individual outcomes that may come.

[3] Rabin (2000) and Rabin & Thaler (2001) criticise the use of diminishing marginal utility in explaining risk aversion in small gambles. Kahneman & Tversky (1979) describe several classes of choice problems in which preferences systematically violate the axioms of the *EU* theory.

Their theory describes several states of mind that can be expected to influence an individual's decision making process. One of the key concepts they address in their theory is *'Loss Aversion'*. It is based on the idea that the mental penalty experienced by an individual or *agent* associated with a given loss is greater than the mental reward from a gain of the same size. If investors are loss averse, they may be reluctant to realise losses. Perhaps loss aversion may be best described in the following phrase:

Since losses loom larger than gains, it appears that humans follow conservative strategies when presented with a positively-framed dilemma, and risky strategies when presented with negatively-framed ones.

Tversky and Kahneman (1981) illustrate the choice of framing in the famous article 'The Asian Disease Problem' where they state that a frame that *a decision maker adopts is controlled partly by the formulation of the problem and partly by the norms, habits, and personal characteristics of the decision maker.*

In their illustration, they present preference reversals with data obtained from students at Stanford University and the University of British Columbia who answered brief questionnaires in a classroom setting. The total number of respondents for each problem was denoted by N. The brackets indicate the percentage who chose the relative option. The sample was presented by two problems separately.

First one sample was presented with problem 1 which stated as follows:

"*Imagine that the US is preparing for the outbreak of an unusual Asian disease, which is expected to kill 600 people. Two alternative programs to combat the disease have been proposed. Assume that the exact scientific estimates of the consequences of the programs are:*

Option 1) If Program A is adopted, 200 people will be saved. [72 per cent]

*Option 2) If Program B is adopted, there is 1/3 probability that 600 people will be saved, and 2/3 probability that no people will be saved. [28 per cent]****"***

They then ask which of the two programs the sample would favour.

A majority chose option 1 and chose Program A. In other words, the majority of choice in this problem was risk averse. The prospect of certainly saving 200 lives was more attractive than a risky prospect of equal expected value, that is, a one-in-three chance of saving 600 lives.

A second group of respondents was given the cover story of problem 1 with a different formulation of the alternative programs, as follows:

"Problem 2 [N = 155]:

Option 1) If Program C is adopted 400 people will die. [22 per cent]

Option 2) If Program D is adopted there is 1/3 probability that nobody will die, and 2/3 probability that 600 people will die. [78 per cent]"

Once again, this sample was asked which of the two programs they would favour. This time the majority chose Option 2 for Program D. In other words, the sample was risk taking in the sense that the certain death of 400 people was less acceptable than the two-in-three chance that 600 would die.

This reversal was observed in several groups of respondents, including university faculty and highly trained physicians.

So they demonstrate that choices involving gains are often risk averse and choices involving losses are often risk taking even when the two problems are effectively identical. The only difference between them is that the outcomes are described in problem 1 by the number of lives saved and in problem 2 by the number of lives lost. In other words, one problem is positively framed and the other is negatively framed. The change is accompanied by a pronounced shift from risk aversion to risk taking.

Kaheman and Tversky show that framing a choice positively versus negatively can cause an almost perfect reversal in choices. Accordingly loss aversion becomes an issue of framing **:** violating a number of principles, agents tend to react to the same choices differently depending on whether they are framed in terms of gains or losses.

1.2 Purpose of the Thesis

However, this thesis, seeks to prove a different effect of loss aversion on decision making. It provides a new perspective through loss aversion (and does not disprove the existing theory). It seeks to prove that**:**

In a continuing (or repeating) model, agents being averse to loss, when faced with a decision to an uncertain outcome, differ only in terms of intensiveness of the choice based on the immediate previous experience of winning or losing, while the choice itself remains broadly similar.

In other words, the broad choice remains unchanged when an individual faces winning or losing in reality, subject to a continuing process of decision making.

A continuing (or repeating) model is here defined as a process which regenerates itself over and over, with the lapse of time. Investing in a stock market can be understood as a continuing process where decisions are *continuously* taken over a period of time. In other words, decisions are repeatedly required to be taken over the lapse of time.

The difference of this theory from the choice of framing is that with framing, one chooses from a set of decisions on the basis of what ***would happen*** if the decision was taken. The essence of this theory, however, lies in demonstrating the choice of decision based on what ***has already happened*** affecting the decision for the subsequent repeated situation.

This is not a paper on *Overconfidence*[4]. This thesis seeks to prove irrationality in a *continuous environment* while overconfidence does not distinguish between levels of behaviour for each decision based on past experiences. The theory of overconfidence does not take account of a *continuous process* for an investment strategy but imposes that it is the overconfidence that generates the irrationality in decision making. However, this paper seeks to pave way for proving how the outcomes of an investment strategy affect behaviour and decision making, irrespective of the issue of confidence.

[4] Lichtenstein, Fishchhoff, and Phillips (1977) find that individuals are overconfident and frequently overestimate the reliability of their knowledge. Professional investors are more confident of their predictions in fields where they have self-declared expertise, holding their predictive ability constant. More recent researches have also explained this phenomenon: De Bondt and Thaler (1985); Goldberg, Von Nitsch, 2001.

1.3 The *Experiment*

This thesis seeks to conduct an experiment involving a sample of 100 individuals using gaming software which enables to perform a test on how people react, in a continuous environment, to situations of winning or losing. The game is *'Blackjack'*, the game of cards. The sample is required to answer the questions built-in in the design of the game based on their eagerness and behaviour.

Although most of the experiment software was designed by me, but quite some help was extended by a graduate *programmer* of Information Technology and Design, Jai Oberoi, in linking the answers to the questions asked to a printable format.

The results of the experiment are generated as reports and collected to be deduced upon. The research reveals that although winning and losing affects the way a person makes a choice in its *intensity and approach*, the choice itself is almost certainly one sided.

1.4 Verification through Empirical Analysis

The validity of a laboratory experiment can be strengthened by empirical relevance. Efforts are made towards it by questioning private investors about their behaviour during investing. The time period analysed is *during* and *after* the market decline of March 2000.

However, due to time restriction, it was not possible to gather substantial evidence for empirical validation and only a small sample was analysed. But due care and thought has been given in designing the Questions in a way so as to make it easier for the sample to recollect their behaviour during that period.

1.5 Overview of the Thesis

The structure of the thesis is as follows:

Chapter 2 Consists of how the experiment is built describing the working process and gathering of results. It also accounts for how the diverse behaviours among individuals are characterised.

Chapter 3 Presents a deduction of the results evaluated and also comparisons across gender and confidence. The validity of the theory is exposed in this chapter and is also isolated from over-confidence.

Chapter 4 Describes the empirical research conducted and the results obtained. A subsequent analysis of these results is included with the observations. Here again, the isolation of the theory from overconfidence is empirically verified.

Chapter 5 Concerns the implications of the theory on a general level which might be able to explain some anomalies in the market trend. Although a pure econometric model might be needed to prove the implication of the theory on the anomalies, it has not been included in this research.

Chapter 6 Provides an account of the criticisms that might be faced by this thesis on a few issues. It openly invites criticism, if any, for it is then that further research will be pushed on to validate the principle behind the theory.

Relevant appendices are included at the end of the thesis.

II

BLACKJACK : THE EXPERIMENT

For most of us, the task of beating the market is not difficult, it is the job of beating ourselves that's proves to be overwhelming - Martin J. Pring

If one could master one's emotions, we would be less likely to extensively use books and mathematical methods to make judgements. Important as they may be, the response in terms of decisions to such emotions has a great deal to play in the following experiment.

The experiment of this paper relates the game BlackJack to investment psychology. It seeks to explain how immediate past performance is a reference affecting decisions, which are irrational in theory, in a continuous environment.

2.1 The Construction: Building the Experiment

It has been considered better for the game to be built as a computer gaming software and the questions constructed within for three good reasons:

1. The outreach of a computer based experiment is wide, having no need for a physical presence since the experiment questions need to be answered by the sample itself.

2. In order to eliminate personal judgments and distractions while playing the game, the sample answers all the questions itself. The ease of a computer based questionnaire (Appendix 1), which here has been designed to filter similar characteristics, is far better than paper-based questionnaires since comparisons can be made much more easily without having the need of analysing the answers on each questionnaire. It saves time and avoids misinterpretations of results.

3. By being able to experiment and gather results from different communities across geographic areas, their behaviours can be compared with each other within the experiment. Although comparisons are not included in this thesis, research is plausible by analysing the results of the experiment.

2.2 The Material: Elements of the Experiment

The *questionnaire*, as seen in Appendix I, starts by asking which group the sample belongs to. They are characterised on the basis of the following: (Appendix I: Section 1)

Gender

Age Group

Geographic Location

Expertise in gambling (It is assumed that the more familiar an individual is with gambling, the better gambler he or she is)

The *experiment* itself, starts by asking a question designed in a way so as to see how the sample feels about its chances in the game before playing the game[6] (Appendix I: Section 2). Tests similar to such, at individual levels, have been conducted before to demonstrate *overconfidence* among people in their ability and knowledge. Overconfidence is characteristic of people, not of markets (Odean 1998a). People have unrealistically positive self-evaluations (Greenwald 1980). They rate their abilities and their prospects higher than those of their peers.

When a sample of U.S. students – average age 22 – assessed their own driving safety, 82% judged themselves to be in the top 30% of the group (Svenson 1981)[7] . In a similar way, professional investors are more confident of their predictions in fields where they have self-declared expertise, holding their predictive ability constant.

The sample then enters an amount it wishes to bet with. Each individual is given a credit of *virtual* $ 200 to start with.

After the first bet is played, and the winner has either won or lost, another set of questions is required to be answered before any individual can proceed (Appendix 1: Section 3). The answers test how eager or aggressive the sample is after winning or losing the previous bet(s). In other words, a record of choices is logged and then evaluated at the end of each game. The questions here test how the sample wishes to play further thereby logging his interests.

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[5] The sample was given a copy of the game without the questions before they started the experiment so they could get familiar with the game.

[6] A modest 51% of a group of older Swedish students – average age 33 – placed themselves on the top 30% of their group.

Another question then follows in order to log how the sample responds when questioning his chances of winning the next game and his confidence in that factor. This is regardless of a situation of winning or losing.

This procedure is repeated after every game and logged[7] in a printable format till the sample quits either willingly or forcefully because of no remaining credit in the virtual account. The log created is requested back from each individual in the sample either through postal mail or through email over the internet. All results are gathered, matched and compared, and then arranged into 6 categories according to their behaviour.

2.3 The Players

Gathering a sample to conduct an experiment is a challenging task and requires a lot of resources to be devoted in assembling and re-collecting the results. However, the internet provides an excellent solution to this issue. If experiments can be prepared as computer generated (which do not require supervision) or if surveys are to be conducted, the best approach is the '***Internet'***. It accesses millions of people from all around the world for an unimaginably low cost.

For this research, the internet was used as the tool of deployment for the experiment. There are many who have their interest in the broad subject such as discussion groups on the World Wide Web, e.g. Yahoo[8]. People including friends and acquaintances were contacted through email and the results were requested back from the participants. They were told that for unbiased experimental purposes, the principle of the experiment could not be communicated and it would be publicised for the group after the research was completed. Also many former fellow classmates helped by participating in the experiment.

This tool has not only been inexpensive but fully effective. The best way to see what happens to a flower is by putting it in a room satiated by butterflies! This is what was done for this research.

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[7] The result of each question answered in the game is noted in a *log file* as a Microsoft Word document named *Results.doc*.

[8] Yahoo is an index to information on the world wide web. A small world in itself.

2.3.1 Categorising human behaviour

Categories are made so it is easier to analyse behaviour by reducing the need to observe all values or answers *individually*. This is unrelated to the primary research purpose but only assists in deducing from the results. Categories A to F (Appendix 1: Section 4) **:**

Category A

If an individual loses a game and answers "Yes, definitely" to question 2 (Appendix I: Section 2) ***and*** answers "Yes, definitely" to question 4 (Appendix I: Section 3), then he is thought to be '***irrational, aggressive and over-confident'*** and categorised as 'A'.

Category B

If an individual loses a game and answers "Yes, definitely" to question 2 (Appendix I: Section 2) ***and*** answers "Yes" or "Cannot say" to question 4 (Appendix I: Section 3), then he is thought to be ***'irrational and aggressive'*** and categorised as 'B'.

Category C

If an individual loses a game and answers "Will give it a shot" to question 2 (Appendix I: Section 2), then he is thought to be ***'cautious but irrational'*** and categorised as 'C'.

Category D

If an individual loses a game and answers "No" to question 2 (Appendix I: Section 2), then he is thought to be ***'cautious but rational'*** and categorised as 'D'.

Or

If an individual wins a game and answers "Will give it a shot" to question 2 (Appendix I: Section 2), then he is thought to be ***'cautious and rational'*** and categorised as 'D'.

Category E:

If an individual wins a game and answers "Yes, definitely" or "Yes" to question 2 (Appendix I: Section 2), then he is thought to be ***'incautious'*** and categorised as 'E'.

Category F:

If an individual wins a game and answers "No" to question 2 (Appendix I: Section 2), then his behaviour is categorised as ***'unclassified'*** under category 'F'.

All other behaviours are unclassified as well as they do not form a part or have any purpose in the research. This is because such behaviours can be triggered for a number of reasons outside either the study or (ir)rationality, such as personal reasons- Someone who wins might not want to play any further because of some important phone call or work to finish etc.. Although it may also be plausible that an individual is so satisfied after winning the bet that he or she no longer wishes to play any further, but such behaviour has a very low probability of occurrence and does not support the research. So it is categorised as unclassified.

2.4 Compiling the results

All results of the experiment have been compiled into one file using Microsoft Access and Microsoft Excel and it has made it easier to compare various aspects of the findings. Appendix 2 consists of the tables constructed from the findings.

III

"HIT OR STAY, SIR?" VALIDATING THE THEORY

He who does not hope to win has already lost – Jose Joaquin Olmedo

In many countries, the law imposes certain legal restrictions on gambling, as to the legal age limit, maximum allowable limit, geographic coverage etc., but it cannot restrict the habits within individuals. Almost every one of us is struck by it at some point in life and no matter which profile one observes, gambling is inherently familiar to that profile.

The questions posed in this experimental game indicate these profiles. We look at the purpose solved by each question and results indicated.

3.1 Profile of the Sample

The profile of the respondents is quite mixed. Out of the 100 responses received, 78 were men and 22 women. While the men came from all age groups, the women were concentrated around the 26-35 year group. (See Appendix 3)

As far as familiarity with gambling was concerned, all of them had had a previous experience of gambling, either occasionally or on a regular basis.

The sample belonged mainly to the United States, which I think is quite valuable since the stock market has shown exceptional development during the past few decades in the United States (Goetzmann, W. N. and Jorion, P. (1996)). And if the experiment is to be related empirically to the stock market, this would provide a solid ground to verify the findings of the experiment. Quite a few in the sample are from the United Kingdom, 21 to be precise. The rest are scattered around the world from Australia, India, China and Sri Lanka.

After the sample has entered their profile, a question tests their confidence on their chances of winning before they start the game. This is not done to judge overconfidence but to phase out over-confidence being linked to an aggressive decision making process after suffering a loss or facing *defeat*. Some might argue that such aggressiveness is only revealed by over-confident agents, but this research will eliminate such a supposition.

This question forms a part of that process. It will then be established that even agents or individuals without much faith in their abilities, tend ***not*** to be able to accept defeat.

69%[9] of the total sample demonstrated confidence in their ability to win the game. This is surprisingly a lower figure than anticipated judging from the findings of the previous question (that all the individuals had a previous experience of gambling). It would generally be the belief that the more one gets accustomed to a process, the more confident he would feel in the process, for the process.

Consider this: Your confidence in using a 'Do It Yourself' Kit for your home improvement or other constructions increases considerably after the first few attempts. In a *survey*[10] conducted by the Woolwich in 2000 through an Audience Selection, 50% of people enjoyed their D.I.Y. and a substantial minority felt that they could outperform the professionals in D.I.Y. Men were the most confident of their DIY skills: one in five claimed that they could do it better than any professional. Women were more cautious, or perhaps more realistic, with only 17% believing they could do better than the outside experts.

So why isn't the response to over-confidence higher than the one found?

Well, it could be believed that there is a possibility for those who do not gamble regularly but occasionally or rarely to be unconfident about their skills and abilities so as not to count themselves as the *jacks of the trade*.

[9] all percentages are approximated to the nearest decimal point.
[10] http://www.rigby-research.co.uk/marketinfo/housing/diy.asp

Certainly this is what the findings reveal. Those who gamble regularly are too confident in judging themselves. All the 63 who gambled regularly felt confident. While out of the remaining **:** 31, who only gambled occasionally, either did not feel confident or could not say what their chances of winning would be. Only a few of them, 6, were overconfident.

Another finding in this result is that proportionally more men seem to be over-confident when compared to women. Approximately 78% of the total men were over-confident, almost all (57) who played regularly, while only 37% of the total women were over-confident (8 out of 22). Once again, this might have something to do with the fact that not many women in the sample were regular gamblers. Most of them played occasionally. So to isolate the effects on confidence of 'playing occasionally' or 'being a woman' is difficult. But it has been shown in previous researches that women tend to be less confident than men[11] . These findings will come in good use later in the research.

3.2 Testing Intensity in Decisions

The sample is then asked the estimated value of the bet that they would like to place. Although the sample is given a credit of $200 each in their account, they can place a bet of any amount within that range i.e. $1-$200. The purpose of this question is to observe how much effect, if any, does winning or losing have on the proportional amount that is bet.

It could be true that aggressiveness is not only present in the decision making process but it works its way through to the intensity of the decision. In other words, in this case, we might see an increase in the amount of bet placed after a loss or defeat by the game.

The results of this question are not important at this point of time in the research but its purpose will become clear as we proceed further into the research with its significance getting greater. However, the range chosen by groups is shown in Appendix 2.

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[11] Bruce & Johnson, 1994 show that males show more confidence in gambling than females. Another research that highlights the same fact has been conducted by Toneatto, T., Blitz-Miller, T., Calderwood, K., Dragonetti, R. & Tsanos, A. (1997).

3.3 BET ONE

3.3.1 Winners and Losers

When the game starts and the sample choose their first bet, the outcome of the bet is logged (as explained in the previous chapter) according to a win or loss. Such winning or losing is random and in a sense independent to the skills and abilities of the sample in playing the game[12]

"A gambler with a system must be, to a greater or lesser extent, insane"

George Augustus Sala (1828 – 95) (English Writer and Journalist)

There is little use in explaining the results and outcomes of the first bet for the sample. However, this does have further implications on bets placed after the first one so we illustrate the results as they were logged.

54% won their first bet
39% lost their first bet
7% had a draw

3.3.2 Survivors

After the outcome of the first bet, the sample is faced with another set of questions. They are asked if they wish to play the next game. It might be too early to ask if they wished to proceed just after the first bet as one would be expected to stay for a much longer time on the table than only for one single bet. But the results tell us a different story: Even though no one is expected to quit the game, 8 people out of the sample quit; All of them men. But here quitting has been forced by insufficient credit in the account. In other words, they had bet all the money i.e. $200 towards the first bet. One would wonder why they bet all the 200 dollars on the first bet. It might seem easier to explain it when one notices that all the 8 men who were forced to quit were over-confident in the beginning of the game. This clarifies why they would want to bet the whole amount for the first bet, confident about winning it.

[12] Blackjack is a game of cards where skills can only come is use when one can count cards! Statistics and mathematics although do come to play but once the decks are shuffled, it is more of luck than anything else. One has to be extremely highly skilled and professional to beat the game.

3.3.3 Testing Aggressiveness

Out of the 92 left in the sample who were still playing the game, 79 were eager to play the next bet while 13 wished to 'Give it a shot' (See Appendix 2)

Once again, out of the 79 who were eager to play further, 64% (50 off 79) were the ones who gambled regularly, and so, from the finding of over-confidence, trusted their abilities much more than the others to play the next bet. The remaining 37% (29 out of 79) were out of the group who played occasionally but out of these 26 people, 6 were overconfident to begin with during the game.

The remaining 13 who wanted to try the next game were mainly from the group who only played occasionally and were not confident in the beginning or could not say. Only 5 were the overconfident ones.

3.3.4 Testing Intensity and Confidence

Answering "Yes, definitely" or "Will give it a shot" proceeds the game to the next bet. But before the sample could place the next bet, they were required to answer two more questions. The first one of these asks how much they wish to bet. It can be observed that there was no change in the proportion of amount the sample wished to bet. This could be to do with the fact that it was only the second bet, so it did not drive up the need to feel rich rapidly in order to induce the groups to bet a higher amount. Although it would be expected that once a person wins a bet, he would bet even more for the next bet but this did not ensue here. The proportion of amount of bet placed remained largely unchanged.

The second question tests the change in level of confidence after winning or losing the first bet. The sample was asked if they thought they would win the next bet. Out of the 54 who won the first bet; 13 believed they would win the second bet but were not *over-* confident (they answered 'Yes'); 8 could not say whether they would win or lose, deeming them uncertain; and 33 were over-confident that they would win the second bet (they answered 'Yes, definitely'). Those who had faith in their abilities in the start clearly would demonstrate no sign of changing their perspective *once they win*. Among the 33, 30 were the people who were overconfident to start with while the remaining 3 were from the group which was either unconfident or could not judge the level of their abilities.

Out of the group that lost its first best, 64% still were certain they would win the second bet. These 64% constitute the 22 overconfident people and 3 who were not confident to start with. One would expect the latter group to back out of the game or atleast be cautious in determining their abilities once they lose a bet, but such rational behaviour is not exposed here. However the number of people in this group to demonstrate such behaviour is too low to assert anything. It is only after a few bets have been placed and results noted and logged, that one can analyse and draw conclusions on the behaviour of the sample.

The rest 36% out of the group that lost the first bet (14 out of 39) constituted 5 (13%) who could not say what their chances would be for the next game and 1 was certain but not *over*-confident by answering "Yes" for winning the next game. It was not possible to check the behaviour of the remaining 8 as they lost completely and were out of the game.

The findings of this question after every bet is important when compared to the question that tests aggressiveness in decision making (i.e. Question 1, Appendix 1: Section 3 - 'Do you wish to play the next game?'). As explained earlier, this is to isolate this theory from over-confidence. The attempt is to test the behaviour of the unconfident group in the sample in making decisions after facing defeat or loss. For even those who are insecure will display aggressiveness in decision making after facing defeat.

However, more attention will be paid to the behaviour of those who lose their bets at each stage from the second bet onwards as that is the primary purpose of the paper. Nevertheless, comparing the results of overconfidence with aggressiveness and intensity will also form an important part of the following findings.

3.4 BET TWO

3.4.1 Winners and Losers

92 of the sample proceed to the next bet. This time 38% won (35 out of 92); 46% lost (42 out of 92) and 16% had a draw (15 out of 92).

3.4.2 Testing Aggressiveness

Out of 92 in the sample, 70 were eager to play the next game while the remaining 22 wished to give it a shot. The interesting finding here is that among the 70 who were eager to bet again, 33 had lost the game; 31 had won the game and 6 had a draw. Also revealed in the findings is that 33 who lost their **second bet** *among the group that was aggressive*, 10 were unconfident to start with.

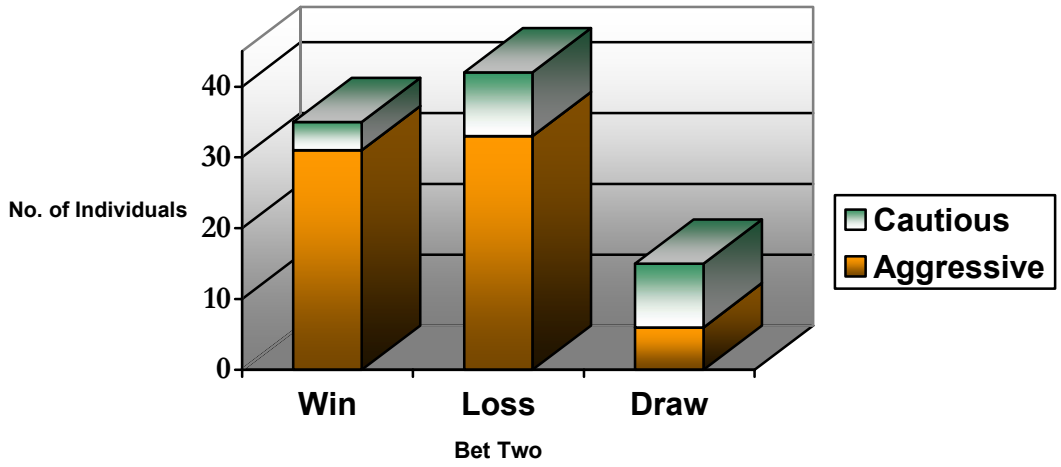

Figure 1: Measuring Aggressiveness among the groups

From the findings, there were 16 who had consecutively lost the two bets, 12 were aggressive in their decisions for placing the third bet, that is, 75% with intenseness in decision making. Of course those who win would be expected to be eager to bet (Category E), but it is the above results that are significant.

Now compare the behaviour from these results of the group who won two consecutive bets. In all, 23 won the bets consecutively, and all of them were aggressive.

One would expect that the decision on placing a bet for a group that lost two consecutive bets would differ from the decision of a group which wins two consecutive bets. But the findings reveal a similarity between the behaviour of the groups. Both are aggressive in this continuous environment although the reasons behind such aggressiveness differ.

3.4.3 Testing Intensity and Confidence

Among the 33 aggressive decision makers (who lost the second bet), 18 changed their level of betting amounts to a higher range. Among these 18, 11 belonged to the group that had lost twice consecutively *and* became aggressive (group of 12). In other words, ***these*** 92% (11 out of 12) aggressive decision makers increased their betting range after facing consecutive defeat in the *previous* bets.

Figure 2: Measuring Intensity

Thus, both groups have similar choices, only the intensity varies. 92% of the aggressive group which lost the bet increased their betting range while the winning group did not change their range for the next bet.

When asked if the sample thought they would win the next bet, the findings are even more interesting:

All the 16 who had lost twice could not comment about their chances (Category B). Among these were 12 who became intense in their decisions. So, although this group was not sure of its chances and was uncertain, but it still took the decision to play further.

This certainly does not account for any kind of rational behaviour in the theories of finance over the past decades. Such irrationality is generated purely from human nature.

It can be thought that a high percentage of losers who became aggressive decision makers is due to the fact that defeat or loss can, most of the times, be hard to accept. Such a notion may result in producing irrationality in decision making.

And this is true for all groups of people. **Out of the 70 who were eager to play the next bet, 46 were overconfident since the beginning of the game and 24 were either unconfident or not certain about their abilities. Thus, we observe an aggressive behaviour across both groups. Proportionally, 66% of the over-confident group (46 out of the 69 overconfident in all) was eager to play the next bet and 77% of the unconfident group (24 out of 31) became eager or aggressive for the next bet.**

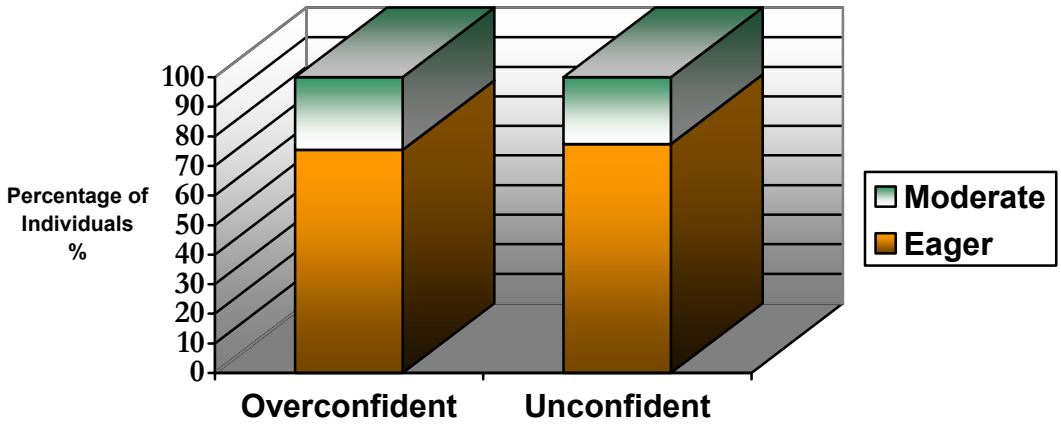

Figure 3: Comparing the theory with Overconfidence

The findings from the third bet will confirm such behaviour.

3.5 BET THREE

3.5.1 Winners and Losers

For the third bet, the following were the results**:**

49% won: 45 out of 92

43% lost: 40 out of 92

8% had a draw: 7 out of 92

3.5.2 Testing Aggressiveness

The sample still consists of 92 individuals being experimented. Among these, 74 were eager to play the next bet while 18 wanted to give it a try. Among the eager group of 73, 33 had actually lost the third bet; 38 had won it, while the remaining 3 had a draw.

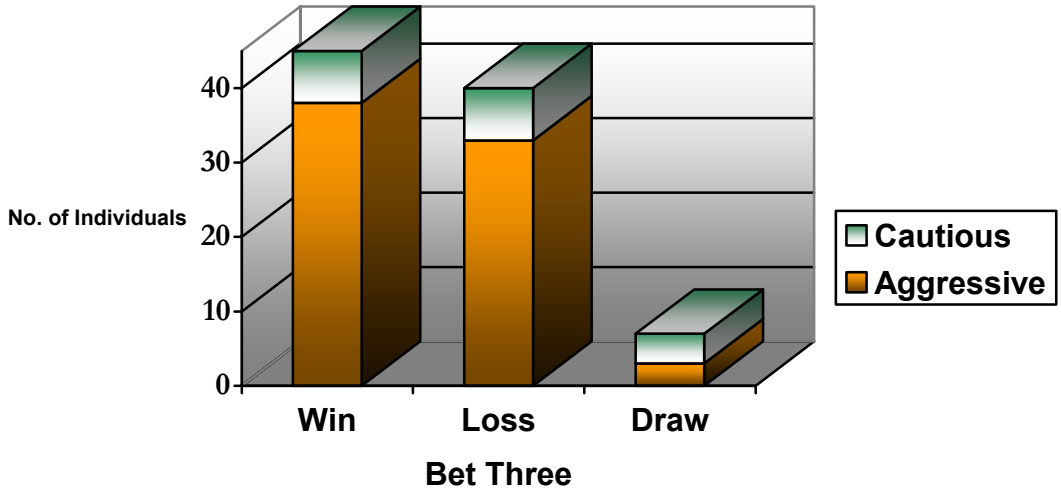

Figure 4: Measuring Aggressiveness among the groups

Observing carefully, among the 33 aggressive decision makers who had lost the third bet, 14 were unconfident in the beginning of the game.

24 of those who lost the second bet also lost the third bet. In other words, 24 of the sample in this case had lost two consecutive bets (the second bet and the third bet). Out of these, 22 became eager to play the next bet i.e. they were aggressive in taking their decisions. At this stage it was 92% of those who lost the last two bets who became intense to place the next bet.

Another interesting finding is that from the sample that lost all the three bets (7 had lost all the three bets), ***all*** of them became eager to place the fourth bet!

Now again, these results are compared with the group who won the last two bets consecutively. 19 won the second as well as the third bet; once again all of them were aggressive decision makers

3.5.3 Testing Intensity and Confidence

Among the 33 aggressive decision makers who lost the third bet, 26 increase their levels of betting. These 26 comprised the group that lost two consecutive bets and became aggressive (group of 22). This time it was 100% of the aggressive decision makers who increase their betting range after facing consecutive defeat in the previous bets.

Figure 5: Measuring Intensity

Among the 13 who had been winning all the (three) bets so far, none changed their betting amounts.

From bet three, it has been verified that both groups (winners and losers) have similar choices, only the intensity varies. This behaviour is visible when decisions are based according to the outcome of the previous bet.

The final question for the bet seeks to test if the sample is confident after taking a decision. Once again, the 24 individuals who lost twice consecutively in the previous bets could not comment about their chances. Among these were 22 who became aggressive in their decisions (Category B).

Now I attempt to isolate overconfidence from the validity of the theory.

Out of the 74 who became eager to play the next bet, 51 were overconfident since the beginning. 23 were unconfident. Here, the behaviour from the second bet can be verified. The proportions of aggressive overconfident individuals and the unconfident ones remained largely unchanged. 74% of overconfident individuals were eager to play the fourth bet (51 out of 69) and 75% of unconfident individuals became eager to play the fourth bet. Compare these findings from the second bet where 66% of the overconfident group and 77% of the unconfident group became eager to play the third bet!

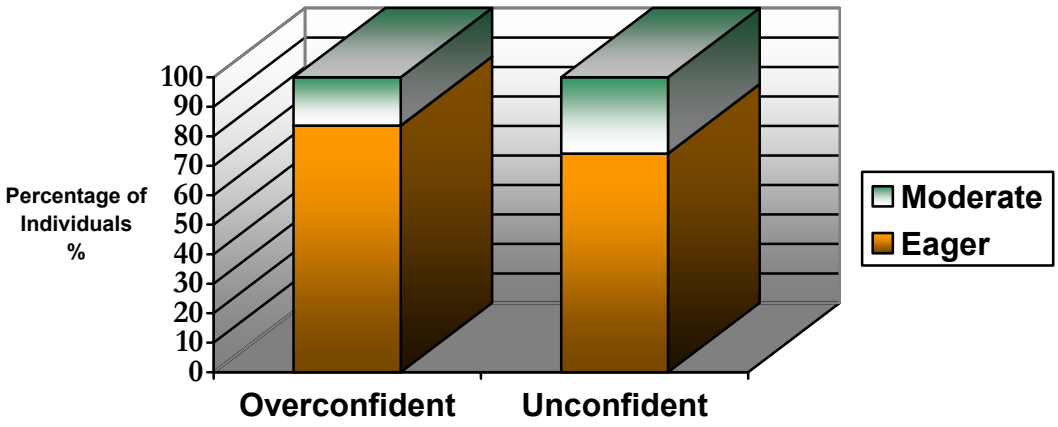

Figure 6: Comparing the theory with Overconfidence

Hence, it has not only been validated but also verified that defeat or loss becomes hard to accept and forces a decision not different from the decision taken when gains are made. This behaviour exists irrespective of the levels of confidence among individuals.

It can now be asserted that an individual, when faced with a decision leading to an uncertain outcome in a continuing process, only differs in the intenseness of the decision according to previous events of winning or losing, but the broad choice remains unaltered. More specifically, losses tend to generate the aggressiveness and intensity among the choice of decision.

The analysis rests after bet three due to limitations of the thesis though the research can be extended by observing the complete results. But a glance to the rest of the results reveals the same findings.

IV

EMPIRICAL INVESTIGATION

Pride of opinion has been responsible for the downfall of more men on Wall Street than any other factor

- Charles Dow

The laboratory results turned out just as anticipated, with individuals behaving in a manner where defeat is hard to accept. Now the purpose is to use that deduction in the stock market for empirical analysis. This chapter deals with validating the theory empirically by asking a set of questions to those involved in investing.

The questionnaire presented in Appendix 3 is the one directed at private investors.

50 questionnaires were sent out to investors from different countries through email (internet) and postal mail. Out of those, 43 questionnaires were received fully filled. 3 were incomplete and the remaining 4 were not received at all. For the investigation, only the completed questionnaires were taken into account.

The following sections will describe the profile of respondents as well as purpose of the questions together with the results obtained. Tables and statistics of each question are provided in Appendix 4.

4.1 Profile of the sample

This questionnaire is designed specifically for investors who had been involved in trading activities during the recent period of market decline in March 2000. This is done because of two reasons**:**

One, to be sure that empirical investigation is carried on around the same base and for the same time period. Otherwise discrepancies might arise among characteristics of different time periods, for each time period for the stock market is led by and characterised by different factors. The boom from 1998 till March 2000 was contributed by the growth and development of Information Technology.

Secondly, it is important to consider evidence from the recent past instead of a period long time ago since the questionnaire is one which requires one to jog his memory; and the further we go back in time, the less likely are we to get reliable results. Moreover data collected on the basis of information provided in response to questions about the past is much more reliable for a recent market crash.

The past is malleable and flexible, changing as our recollection interprets and re-explains what has happened.

- Peter Berger

79 % of the private investors who responded to the questionnaire were men, the rest women. 72 % among the age group '26-35'; 21% from the age group '36-50' and 7% were 'Over 50 years'

4.2 Involvement in Trading during 1998 and 2000

The first of the set of questions checks to see if the respondents are suitable to be included in the sample. Although a pre-check on the respondents was already undertaken, the question is still included for assurance purposes. As it turns out, all the respondents were considered for the sample.

4.3 Investor's Ability to forecast Market Development

The second question is interested to determine if investors believed they could forecast market development during the speculative bubble. The purpose is to establish the degree of over confidence among investors during the period from the fall of 1998 to March 2000. 44% of private investors (19 out of 43) believed that they could forecast the market development at some point during the speculative bubble. Out of these, 79% were men and 21% women. 14% (6 out of 43) could not decide and the rest (18 out of 43) believed that they could not forecast the market development.

The idea is to test later on if the results of the experiment on analysing the behaviour of the sample is same across all groups i.e. overconfident; unconfident; and those indecisive.

This will help isolate and distinguish the theory from over confidence. As stated earlier, this is not a theory in overconfidence and so it is necessary to test the behaviour across the group which was not confident with the group which was confident.

4.4 Involvement in Trading *during* the Market Decline in March 2000

For empirical evaluation, it was necessary to check if the sample was involved in and ***continued*** trading during the ***period of decline***. This is so because only people who continued to invest could exhibit behaviour of aggressiveness after suffering losses. Those who stopped trading could not have displayed such behaviour and are supposed to fit Category D – Cautious and rational. Questions 3 and 4 together deal with this issue.

The findings show that 12% (5 out of 43) of the respondents demonstrated such a behaviour i.e. stopped trading. The reason behind such a finding, although not investigated here, can be attributed to caution observed by some investors during investing.

4.4.1 Filtered Sample

From this moment onwards in the investigation, only the group which ***continued*** to trade ***during*** the decline is considered for research purposes. Since the idea is to test the aggressiveness in decision making after facing defeat, 5 of the investors who stopped trading are no more considered for investigation as their behaviour no longer deemed to be related to this research. *The filtered sample now consists of 38 private investors in all.*

4.5 Checking the research's Market Characteristic

Question 5 tests if the sample which was involved in trading actually did lose or did it belong to the *bear* market[13]. This paper currently only investigates the *bull* market for a compact evaluation to the dissertation. Expediently, the sample fully belongs to the bull market. Moreover as described earlier, it is necessary to suffer loss in order to prove the theory empirically which states that loss or defeat makes one more aggressive in decision making since defeat becomes hard to accept (while the choice remains unchanged in reference to a situation of win).

[13]The sample would have a lesser chance to lose if it was trading on the expectancy that process of stocks would fall. During and after the market decline, the bull market was never strong and with stock index falling, it was unlikely that anyone made a profit on the expectancy that stock index would rise.

4.6 Feeling Defeat

An important issue that follows is to identify if the sample at any point in time felt defeated by the market. When you feel defeated, it is a sense of ego that sinks deep in and you wish to undo the effects of defeat. The results for question 6 were impressively higher than expected. 76% of the filtered sample (29 out of 38) believed that they were defeated by the market. 16% (6 out of 38) blamed their own abilities in making the wrong decision. This is an important result as it also gives an account of the intenseness in decision making for those who did actually consider their investment strategies to be inappropriate.

Although the findings for this question may just be related to a change in perception over the time period since the market decline, nevertheless this is an important result. 8% could not say about how they felt. This could either be because they could not remember or because they put it to fate, nothing to do with undermining their ability in strategising investment decisions.

4.7 Accepting Defeat

It is one thing to feel defeated and another to accept it. This is what question 7 addresses. 37/38 people in the sample who felt defeated were unwilling to accept defeat. Although this amounts to 97% of the sample who felt defeated and unwilling to accept it, there was one person who did accept defeat and that is enough evidence that there is a distinction between feeling defeated and accepting defeat. However it is not reasoned as to why the investor continued investing if she did accept defeat. It could have been due to personal nature of not giving up or it could be from any other factor not investigated.

These questions, although might seem similar, but were necessary to rejuvenate all the characteristics of the specific time in the sample's memory so they could easily relate back to it.

4.8 Investigating the Choice of Decision

The next issue, question 8, was designed to test the theory for itself. It seeks to know if there was a time ***after*** the decline that the sample stopped buying more investments. This is so designed in order to know if the change in circumstances, from winning in stocks before March 2000 to losing after March 2000, affected the choice of decision making, from buying and trading investment *before* March 2000 to stopping trade *after* March 2000.

4.8.1 The Findings

The results are in line with the laboratory experiment for 85% of the sample (32 out of 38). These individuals still invested and did not stop. However, even more astonishing is that out of the 15% who did stop investing, all of them still wished they could beat the market by investing in new opportunities. *It shows intensity in thought although not in action.*

Among the 32 (85%) who did not stop investing, when asked why they continued trading (Question 8b Appendix 3), led to the following findings:

(i) "I wanted to beat the market" 31% (10 out of 32)
(ii) "I was sure of my strategies" 19% (6 out of 32)
(iii) "I could not accept losing" 50% (16 out of 32)
(iv) "Cannot say" 0

While answers to (ii) are intended to determine overconfidence, (i) and (iii) show the actual aggressiveness in behaviour after the losing. From 8 and 8b, this means that after losing, the choice of decisions remained unchanged, only the samples' degree of intenseness in decision making increased. Thus confirming the results of the experiment and the primary purpose of the paper which seeks to prove that defeat can be hard to accept, leading to aggressiveness and intenseness in decision making.

4.8.2 Isolating the Theory from Overconfidence

The secondary purpose is to check how many of the aggressive sample had faith in their abilities to forecast the market to start with. As described before, this will assist to prove that this paper is not a theory on overconfidence and that overconfidence can be kept neutral in accepting this theory. Out of the aggressive sample, 12 were *unconfident* about their abilities to start with. This amounts to 46% of the aggressive group (11 out of 26). A similar number was *confident* when they started i.e. 11 out of the aggressive group of 26 were overconfident. The remaining 3 were from the group who could not decide if they felt confident in their abilities in the beginning.

With these findings, one can assert that the aggressive behaviour is distributed amongst the whole sample without specific reference to over-confidence. *Overconfidence is not the factor that generates aggressiveness but the fact that defeat is hard to accept produces a sense of intensity in decision making.* Proportionally, out of all the overconfident group of 19, 58% turned out with an aggressive behaviour while out of the unconfident group of 18, 67% demonstrated an aggressive behaviour.

4.9 Relating Empirical Analysis to General Behaviour

The results to these 8 questions have empirically validated the theory. But is there a link between the results of the laboratory experiment and the results of the empirical investigation?

The lab experiment was conducted on a random sample from the general public. They may or may not have anything to do with investing in the stock market. On the other hand, the empirical investigation was conducted on a sample strictly involved with trading. It could just be true that two separate fields might behave in a "similar" manner when posed in front of a "similar" situation, much *specific* to their field of expertise. Or it could be that the sample was biased towards behaving the way they did during the decline in March 2000 due to broader reasons not investigated here, and that they will not behave in this fashion given a similar situation in some other time or more generally.

In other words, does it follow through logical deduction that if the empirical investigation yielded a set of results for its own area of expertise in finance, then they would yield the "same" results for a more general but similar situations.

I have already shown that the general experiment results follow through to more specific fields. To show that this is true vice versa, another set of questions is posed within the questionnaire:

4.9.1 Determining Overconfidence

Question 9 seeks to determine if the sample would become aggressive in decision making in a continuous environment in a more general situation when faced with a loss while the choice of decision will change only in intenseness and not the actual choice itself. It places the sample in a broader state and tests the decision making process. Once again the sample here is the filtered sample of 38.

When the sample was asked if they thought they were good investors, 63% of them believed that they were (24 out of 38). This shows the overconfidence factor. Although this is a percentage much higher than what the experiment generated, it is likely that such a rate of confidence is greater on a broader level than when asked about specific actions or events. Nevertheless there is not much gap or sacrifice of confidence when it comes to judging one's own skills. Moreover the purpose of this question is not to determine overconfidence, but to see how many of those who are overconfident would demonstrate aggressive decision making behaviour, if they do. Among the rest, 9 were unconfident and 5 could not determine.

4.9.2 Determining Aggression

Any aggressiveness will be measured by question 10. The sample is described a situation in which a stock that they bought has a 50-50 chance to either increase or decrease in value by 25% each week ***and*** from the past three weeks since they bought the stock, it has been falling at the rate of 25% each week. They are then asked what they would do when facing such a situation.

Four possible choices are presented:

(i) investing more in the stock to cover part or whole of the losses when the price rises since it has a 50% chance to rise as well each week.
(ii) do nothing and hold the stock till the price rises
(iii) sell the stock
(iv) cannot say

The concluding findings from this question satisfy the primary purpose of the investigation. 79% want to invest more in the stock to cover their losses. This cannot be held as rational behaviour. The risk of such an investment has risen, given that more information on the stock does not exist, to pull out of the investment if one is avert to risks. However this sample does not display such behaviour. In contrast, it becomes aggressive towards the decision making process in order to cover the previous losses.

Once again, this proves how hard it is to accept defeat thereby resulting in an aggressive behaviour, not only specific to the time period in the analysis but more generally as well.

5% wanted to do nothing and hold the stock for the 4^{th} week as well.

Although this does not display aggressiveness, it does show a tendency towards hoping to win in future. This could be due to a reluctance to accept loss or personal judgement. However the percentage is far too low compared to the percentages choosing i, that such a strategy can be considered as biased elements in estimation.

Out of the remaining, 11% wanted to sell the stock and another 5% could not decide what their strategy would be.

4.9.3 Aggression and Overconfidence: Isolating the effects of each other

Connecting the results for question 10 to the results on overconfidence in question 9:

1.*Out of the 63% who were overconfident as an investor, 20 were among the group which was aggressive; 2 wished to hold the stock for the 4th week and 2 could not say.*

2. *Out of the 9 unconfident (24%), 8 of them displayed an aggressive behaviour; 1 wanted to hold the stock for the fourth week.*

When these two relevant findings are compared, it can be observed that proportionally: 83% of the over-confident investors (from question 9) demonstrate an aggressive behaviour; Also 89% of the unconfident group demonstrates similar aggressive behaviour!

Evidently, there is no link between overconfidence and reluctance to accept defeat, for even those who do not have much faith in their abilities become aggressive in decision making after facing defeat.

It must be remembered that these deductions are from a continuous environment.

4.10 Sample Satisfaction and Design of the Questionnaire

This questionnaire was designed very carefully so it was easy to understand and recall information about the past. In cases of difficulties to remember past specific events, it is well believed that one needs to create a similar situation as the past, surrounding the subject, to help recollect familiar information from the memory. The questions here were posed in a way so as to rebuild the characteristics that might have occurred in the past, event by event or step by step.

When asked if the sample was satisfied in the way the questionnaire was designed helping them to recollect past information, 94% agreed that it was helpful while only 3 out of the sample could not determine if it refreshed their memory or not.

V

IMPLICATIONS

There are no certainties in this investment world, and where there are no certainties, you should begin by understanding yourself.

- James L. Fraser

The growth of behavioural finance research has been fuelled by the inability of the traditional framework to explain many empirical patterns, including stock market bubbles in Japan, Taiwan and the U.S. (Ritter 2003)

During a crash, every market has a cushion around it preventing the crash to take some time to materialise. This is not a cushion that prevents the inevitable, nor does it protect from the sooner implications of the crash. All it does is prolong the process of collapse. So the market fails to crash when it actually should owing to the excessive trading before and during the cushion period which takes time to dissolve.

This paper provides a general insight to the implications of the theory in explaining such empirical anomalies. It only offers an outline to what the theory implies.

According to Taylor and Brown (1988), most individuals see themselves better than others. They rate their abilities and their prospects higher than those of their peers. This same phenomenon has been applied into finance.

Anecdotal evidence suggests that in many markets trading volume is excessive (Dow and Gorton (1997)). Recent empirical studies (Odean (1998a), Statman and Thorley (1998)) indicate that overconfidence generates trading. In the absence of noise traders, heterogeneous beliefs among rational investors will generate excessive trading if rationality is common knowledge. In reality, the high trading volume produced by well informed institutional investors through their active portfolio management is much higher than the one produced by individual traders. (Odean: Volume, Volatility, Price and Profit when all traders are above average). So far through behavioural finance, overconfidence and agent relationship has been used to explain the trading volume puzzle and the belief that investors can outperform the market.

However, this paper adds another factor to explain excessive trading. The aggressiveness in decision making that follows from a recent experience, blocks all access to rationality. The impact being that it does not allow investors to stop trading when they should, during signs of losses. In other words, having *defeat* hard to accept, the decision making process becomes more intense while the decision among broader choices remains unchanged.

In the experiment, every time the sample is defeated, it becomes more intense and aggressive in order to undo the last effects. In a similar fashion, as seen in the results of the empirical investigation, it is possible to generate over trading in stocks at times when it should be low. With continuous repetition of defeat which leaves no more resources to be able to undo the wrong choices undertaken, even if defeat is still hard to accept, trading by the individual will stop only when all the resources are low or drained out. With multiple people in a similar ordeal, it is then that the whole market is affected and crashes. Thus it takes some time for the market to crash and it does not happen when it is actually should happen

VI
CRITIQUE

He only profits from praise who values criticism.
Heinrich Heine (1797 - 1856)

The analysis of this theory, though can pave way for future extensive research, it does possess characteristics that are prone to criticism. Such criticism is welcomed, for if it wasn't for the idea of criticising, new theories would not replace old ones. And this is true not just for economics or finance!

This paper deals with psychological issues in a manner most controversial. Some of the issues that may be criticised are given below. However, these criticisms can be limited by the explained attempts of assurance.

1. **Questioning Significance of the Results**

This paper lacks a statistical proof for significance of the findings. It has been more explanatory than being mathematically enhanced by hypothesis testing on the valid results. Such tests should have been included even if this theory does not disprove any existing theory but only attempts to provide a new perspective in behavioural finance through the theory of Loss Aversion. This is a strong issue to be addressed so no arguments can be given against it.

But I can assure the readers that my next work on this research will be armed with statistical analysis and tools, leaving no stone unturned. This research does not end with this thesis[14].

[14] I urge the readers who are interested in this research to participate their version or criticism to the research for the next paper(s).

2. **Questioning Authenticity of the Results**

Using a computer generated software as an experiment which does not have the need to be supervised may be criticised for the fact that the results could be falsely generated by the sample.

However it can be assured that no one from the sample knew what the experiment was regarding prior or during the experiment. It is only when copies of this paper will be sent out to the sample, as requested, that they will be provided an insight to the purpose of the experiment. Moreover, a uniquely systematic set of questions that follows according to the previous answer provided limits such deceptions.

3. **Empirical Strength of the Theory**

Another strong criticism may evolve from the empirical foundation of this paper. The results from a sample of 43 do not necessarily validate a theory. More evidence is needed and researched into before conclusive statements can be asserted. The empirical foundation of this paper, in the above sense, can be argued to be inconclusive.

However, it must be kept into account that extensive empirical research has been left out for this paper not because it was beyond the scope of study but to be able to comply with the rules of a masters' dissertation[15].

[15] Having said that, previous empirical evaluation on investor behaviour might be studied for relevance from 'Behavioral Finance – And the Change of Investor Behavior during and after the Speculative Bubble at the end of the 1990s' (Pg. 67 -70) by Malena Johnsson, Henrik Lindblom and Peter Platan.

4. **Hindsight Bias**

Also the empirical analysis carried out on a sample of 43 can be argued to be less than accurate. The empirical sample consisted of private investors and their accuracy of remembering investment strategies during past periods is controversial. The questionnaire is susceptible to the subjective opinions of the respondents. Fischhoff (1982) writes "*they even misremember their own predictions so as to exaggerate in hindsight what they know in foresight*".

One's response is often exposed to his/her subjective ability to recollect past events or strategies. It is quite possible for the respondents to have changed their perception of past events according to the actual belief in the market. Accordingly, the responses may be biased towards what they think would have been the correct strategy if they were exposed to a similar choice in the present time period instead of reflecting on the actual strategy undertaken in the past.

However, it must be noted that extensive efforts have been made in designing the questionnaire in a way so the sample can recollect past behaviour event by event.

4. **Need for a Solution**

This paper does not provide a solution to the ordeal[16]. Behavioural psychology is a vast subject. To understand and assert instances for its application in finance, it requires an extensive research of human psychology, culture, way of thinking and other such social factors which affect behaviours among men and women.

[16] My endeavours are to extensively research and validate my theory to be able to provide a key to the implications and solutions from the theory. However, for my current paper, I am limited in scope set by the rules.

5. **Dominance in the Market**

The research underlying the theory has been performed at individual investor level. Financial markets reflect the results of the behaviour of large number of individuals, especially institutional investors. The argument against the theory can be based around the observation that the empirical investigation has been carried on upon private investors and not the skilled institutional investors; so would the behaviour overflow to the institutional segment in any way?

However, quite a few researches have shown that the institutional investors behave in a similar fashion to the private individual investor[17] and sometimes even more irrational.

Apart from these criticisms, every possible attempt has been made to keep this thesis free from leakages.

[17] A good empirical investigation has been conducted by Masters Graduates of School of Economics and Management, Lund University, Sweden in their thesis: Behavioral Finance – And the change of Investor behavior during and after the speculative bubble at the end of the 1990s. Earlier research has also been done by Odean: Volume, volatility, price and profit when all traders are above average.

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Yahoo Groups:
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&
http:// groups.yahoo.com/group/behavioral-finance

APPENDICES

Appendix 1: BlackJack: The Experiment Questionnaire
Appendix 2: BlackJack: The Experiment Results
Appendix 3: Empirical Investigation Questionnaire
Appendix 4: Empirical Investigation Results

Appendix ONE

BLACKJACK: THE EXPERIMENT QUESTIONNAIRE

BLACKJACK: THE EXPERIMENT QUESTIONNAIRE

Questions posed in the game, section by section:

Section 1:

Profile

How often do you gamble?

- ☐ Regularly
- ☐ Occasionally
- ☐ Rarely
- ☐ Never

Age Group:

- ☐ Under 25
- ☐ 25 - 35
- ☐ 36 - 50
- ☐ Over 50

Gender ☐ Male ☐ Female

Country [ ]

OK

Section 2:

How do you feel about your chances in playing the game?

- ☐ Lucky, I will win
- ☐ Unlucky
- ☐ Cannot say

How much do you want to bet?

- ☐ 1 - 10
- ☐ Cannot say
- ☐ Cannot say
- ☐ Cannot say
- ☐ Cannot say
- ☐ Cannot say

Section 3:

If WIN or LOSE

1) Do you wish to play the next game?

- ☐ Yes, definitely
- ☐ Will give it a shot
- ☐ No. I will quit

If Yes:

2) How much do you want to bet?

- ☐ 1 - 10
- ☐ 11 - 20
- ☐ 21 - 30
- ☐ 31 - 40
- ☐ 41 - 50
- ☐ Over 50

3) Do you think you will win the next game?

- ☐ Yes, definitely
- ☐ Yes
- ☐ No
- ☐ No, definitely
- ☐ Cannot say

If No:

QUIT

Section 4:

Categories

If loss and answer to question 2 is "Yes, definitely"
and answer to question 4 is "Yes, definitely"
then Category A

If loss and answer to question 2 is "Yes, definitely"
and answer to question 4 is "Yes" or "Cannot say"
then Category B

If loss and answer to question 2 is "Will give it a shot",
then Category C

If loss and answer to question 2 is "NO",
then Category D

If win and answer to question 2 is "Yes, definitely" or "Yes",
then Category E

If win and answer to question 2 is "Will give it a shot",
then Category D

If win and answer to 2 is "no",
then Category F

Appendix TWO

BLACKJACK: THE EXPERIMENT RESULTS

BLACKJACK: THE EXPERIMENT
RESULTS

ID	Do you gamble?	Gender	Age Group	Country	Sec 2: Q1	Sec 2: Q2	BET ONE	Outcome	Sec 3: Q1	Sec 3: Q2	Sec 3: Q3
1	Occasionally	Female	26 -35	United States	Lucky, I will win	11 - 20	BET ONE	Win	Yes, definitely	11 - 20	Yes, definitely
2	Occasionally	Female	Under 25	Australia	Lucky, I will win	11 - 20	BET ONE	Draw	Yes, definitely	11 - 20	Yes, definitely
3	Occasionally	Female	26 -35	United States	Unlucky	11 - 20	BET ONE	Win	Yes, definitely	11 - 20	Yes
4	Occasionally	Female	26 -35	United Kingdom	Cannot say	11 - 20	BET ONE	Win	Yes, definitely	11 - 20	Yes
5	Occasionally	Female	26 -35	United States	Cannot say	11 - 20	BET ONE	Win	Yes, definitely	11 - 20	Yes
6	Occasionally	Female	26 -35	India	Unlucky	11 - 20	BET ONE	Win	Yes, definitely	21 - 30	Cannot say
7	Occasionally	Female	26 -35	United States	Cannot say	21 - 30	BET ONE	Win	Yes, definitely	21 - 30	Cannot say
8	Occasionally	Female	26 -35	United Kingdom	Unlucky	11 - 20	BET ONE	Win	Yes, definitely	11 - 20	Cannot say
9	Occasionally	Female	26 -35	United States	Unlucky	11 - 20	BET ONE	Win	Yes, definitely	11 - 20	Cannot say
10	Occasionally	Female	26 -35	India	Cannot say	1 - 10	BET ONE	Win	Will give it a shot	1 - 10	Yes
11	Occasionally	Female	26 -35	United States	Cannot say	1 - 10	BET ONE	Lose	Will give it a shot	1 - 10	Yes, definitely
12	Occasionally	Female	36 -50	United States	Cannot say	11 - 20	BET ONE	Lose	Will give it a shot	11 - 20	Yes, definitely
13	Occasionally	Female	36 -50	India	Cannot say	11 - 20	BET ONE	Lose	Will give it a shot	11 - 20	Cannot say
14	Occasionally	Female	26 -35	United States	Cannot say	11 - 20	BET ONE	Lose	Will give it a shot	11 - 20	Cannot say
15	Occasionally	Female	26 -35	United Kingdom	Cannot say	21 - 30	BET ONE	Lose	Will give it a shot	21 - 30	Yes
16	Occasionally	Female	26 -35	United Kingdom	Cannot say	21 - 30	BET ONE	Draw	Yes, definitely	21 - 30	Cannot say
17	Regularly	Female	26 -35	United Kingdom	Lucky, I will win	21 - 30	BET ONE	Win	Yes, definitely	21 - 30	Yes, definitely
18	Regularly	Female	26 -35	United States	Lucky, I will win	21 - 30	BET ONE	Win	Yes, definitely	21 - 30	Yes, definitely
19	Regularly	Female	36 -50	United States	Lucky, I will win	21 - 30	BET ONE	Win	Will give it a shot	21 - 30	Yes, definitely
20	Regularly	Female	26 -35	United States	Lucky, I will win	31 - 40	BET ONE	Lose	Yes, definitely	31 - 40	Yes, definitely
21	Regularly	Female	26 -35	United States	Lucky, I will win	31 - 40	BET ONE	Lose	Will give it a shot	31 - 40	Yes, definitely
22	Regularly	Female	36 -50	India	Lucky, I will win	31 - 40	BET ONE	Lose	Will give it a shot	31 - 40	Cannot say
23	Occasionally	Male	36 -50	United Kingdom	Cannot say	11 - 20	BET ONE	Win	Yes, definitely	11 - 20	Yes
24	Occasionally	Male	36 -50	United States	Lucky, I will win	31 - 40	BET ONE	Win	Yes, definitely	31 - 40	Yes, definitely
25	Occasionally	Male	36 -50	United States	Lucky, I will win	31 - 40	BET ONE	Draw	Yes, definitely	31 - 40	Yes, definitely
26	Occasionally	Male	36 -50	United States	Lucky, I will win	31 - 40	BET ONE	Draw	Yes, definitely	31 - 40	Cannot say
27	Occasionally	Male	26 -35	United Kingdom	Lucky, I will win	Over 50	BET ONE	Draw	Yes, definitely	Over 50	Cannot say
28	Occasionally	Male	26 -35	India	Cannot say	21 - 30	BET ONE	Win	Yes, definitely	21 - 30	Yes, definitely
29	Occasionally	Male	36 -50	United States	Cannot say	11 - 20	BET ONE	Win	Yes, definitely	11 - 20	Yes, definitely
30	Occasionally	Male	26 -35	United States	Cannot say	11 - 20	BET ONE	Win	Yes, definitely	11 - 20	Yes, definitely
31	Occasionally	Male	36 -50	United Kingdom	Cannot say	11 - 20	BET ONE	Win	Yes, definitely	11 - 20	Yes
32	Occasionally	Male	Under 25	United Kingdom	Cannot say	11 - 20	BET ONE	Win	Yes, definitely	11 - 20	Yes
33	Occasionally	Male	26 -35	United States	Cannot say	11 - 20	BET ONE	Win	Yes, definitely	11 - 20	Yes
34	Occasionally	Male	26 -35	United States	Cannot say	11 - 20	BET ONE	Win	Yes, definitely	11 - 20	Yes
35	Occasionally	Male	26 -35	India	Cannot say	21 - 30	BET ONE	Win	Yes, definitely	21 - 30	Yes
36	Occasionally	Male	36 -50	United States	Cannot say	21 - 30	BET ONE	Win	Yes, definitely	21 - 30	Yes

BLACKJACK: THE EXPERIMENT
RESULTS

BET TWO	Outcome	Sec 3: Q1	Sec 3: Q2	Sec 3: Q3	BET THREE	Outcome	Sec 3: Q1	Sec 3: Q2	Sec 3: Q3
BET TWO	Win	Yes, definitely	21 - 30	Yes, definitely	BET THREE	Win	Yes, definitely	21 - 30	Yes, definitely
BET TWO	Lose	Yes, definitely	11 - 20	Yes	BET THREE	Win	Yes, definitely	11 - 20	Yes, definitely
BET TWO	Win	Yes, definitely	11 - 20	Yes	BET THREE	Win	Yes, definitely	11 - 20	Yes, definitely
BET TWO	Lose	Yes, definitely	21 - 30	Cannot say	BET THREE	Win	Yes, definitely	21 - 30	Cannot say
BET TWO	Lose	Yes, definitely	21 - 30	Cannot say	BET THREE	Lose	Yes, definitely	41 - 50	Cannot say
BET TWO	Win	Yes, definitely	21 - 30	Cannot say	BET THREE	Lose	Yes, definitely	21 - 30	Cannot say
BET TWO	Draw	Yes, definitely	31 - 40	Yes	BET THREE	Draw	Will give it a shot	31 - 40	Yes
BET TWO	Draw	Will give it a shot	11 - 20	Cannot say	BET THREE	Win	Will give it a shot	11 - 20	Cannot say
BET TWO	Lose	Yes, definitely	11 - 20	Cannot say	BET THREE	Lose	Yes, definitely	31 - 40	Cannot say
BET TWO	Draw	Yes, definitely	1 - 10	Yes	BET THREE	Lose	Yes, definitely	21 - 30	Cannot say
BET TWO	Lose	Yes, definitely	21 - 30	Cannot say	BET THREE	Lose	Yes, definitely	31 - 40	Cannot say
BET TWO	Win	Yes, definitely	11 - 20	Yes, definitely	BET THREE	Win	Yes, definitely	1 - 10	Yes, definitely
BET TWO	Lose	Will give it a shot	11 - 20	Cannot say	BET THREE	Lose	Yes, definitely	21 - 30	Cannot say
BET TWO	Draw	Will give it a shot	11 - 20	Cannot say	BET THREE	Win	Will give it a shot	1 - 10	Cannot say
BET TWO	Lose	Yes, definitely	41 - 50	Cannot say	BET THREE	Lose	Yes, definitely	Over 50	Cannot say
BET TWO	Lose	Will give it a shot	21 - 30	Cannot say	BET THREE	Win	Will give it a shot	21 - 30	Cannot say
BET TWO	Win	Yes, definitely	21 - 30	Yes, definitely	BET THREE	Win	Yes, definitely	21 - 30	Yes, definitely
BET TWO	Lose	Yes, definitely	21 - 30	Yes	BET THREE	Win	Yes, definitely	21 - 30	Yes, definitely
BET TWO	Draw	Yes, definitely	21 - 30	Yes	BET THREE	Lose	Will give it a shot	21 - 30	Yes, definitely
BET TWO	Win	Yes, definitely	31 - 40	Yes, definitely	BET THREE	Win	Yes, definitely	31 - 40	Yes, definitely
BET TWO	Draw	Will give it a shot	31 - 40	Cannot say	BET THREE	Lose	Yes, definitely	31 - 40	Cannot say
BET TWO	Win	Will give it a shot	31 - 40	Cannot say	BET THREE	Win	Yes, definitely	31 - 40	Cannot say
BET TWO	Draw	Yes, definitely	11 - 20	Yes	BET THREE	Win	Yes, definitely	11 - 20	Yes
BET TWO	Win	Yes, definitely	31 - 40	Yes, definitely	BET THREE	Draw	Yes, definitely	31 - 40	Yes, definitely
BET TWO	Lose	Yes, definitely	31 - 40	Yes	BET THREE	Lose	Yes, definitely	Over 50	Cannot say
BET TWO	Lose	Will give it a shot	31 - 40	Cannot say	BET THREE	Lose	Yes, definitely	Over 50	Cannot say
BET TWO	Draw	Will give it a shot	Over 50	Yes	BET THREE	Win	Will give it a shot	Over 50	Yes
BET TWO	Lose	Yes, definitely	21 - 30	Yes, definitely	BET THREE	Lose	Yes, definitely	41 - 50	Cannot say
BET TWO	Lose	Yes, definitely	11 - 20	Yes	BET THREE	Lose	Yes, definitely	31 - 40	Cannot say
BET TWO	Win	Yes, definitely	11 - 20	Yes, definitely	BET THREE	Lose	Yes, definitely	21 - 30	Cannot say
BET TWO	Draw	Yes, definitely	11 - 20	Yes	BET THREE	Lose	Will give it a shot	11 - 20	Cannot say
BET TWO	Lose	Yes, definitely	21 - 30	Yes, definitely	BET THREE	Win	Yes, definitely	21 - 30	Yes, definitely
BET TWO	Lose	Yes, definitely	21 - 30	Yes	BET THREE	Win	Yes, definitely	21 - 30	Yes
BET TWO	Lose	Yes, definitely	11 - 20	Yes	BET THREE	Lose	Yes, definitely	31 - 40	Cannot say
BET TWO	Lose	Yes, definitely	41 - 50	Yes	BET THREE	Lose	Yes, definitely	Over 50	Cannot say
BET TWO	Win	Yes, definitely	21 - 30	Yes	BET THREE	Win	Yes, definitely	21 - 30	Yes

BLACKJACK: THE EXPERIMENT
RESULTS

37	Occasionally	Male	36 -50	United States	Cannot say	21 - 30	**BET ONE**	Win	Yes, definitely	21 - 30	Yes
38	Occasionally	Male	36 -50	United States	Cannot say	41 - 50	**BET ONE**	Win	Yes, definitely	41 - 50	Yes
39	Occasionally	Male	Under 25	India	Unlucky	21 - 30	**BET ONE**	Win	Yes, definitely	21 - 30	Cannot say
40	Occasionally	Male	Under 25	United Kingdom	Cannot say	21 - 30	**BET ONE**	Win	Yes, definitely	21 - 30	No, definitely
41	Occasionally	Male	Under 25	India	Cannot say	41 - 50	**BET ONE**	Win	Yes, definitely	41 - 50	Cannot say
42	Occasionally	Male	Under 25	United States	Cannot say	41 - 50	**BET ONE**	Win	Will give it a shot	Over 50	Cannot say
43	Occasionally	Male	26 -35	India	Unlucky	Over 50	**BET ONE**	Lose	Will give it a shot	21 - 30	Yes, definitely
44	Regularly	Male	26 -35	United States	Lucky, I will win	Over 50	**BET ONE**	Draw	Yes, definitely	41 - 50	Yes, definitely
45	Regularly	Male	26 -35	United States	Lucky, I will win	41 - 50	**BET ONE**	Draw	Yes, definitely	41 - 50	Yes, definitely
46	Regularly	Male	Over 50	Sri Lanka	Lucky, I will win	Over 50	**BET ONE**	Lose	x	x	x
47	Regularly	Male	Over 50	India	Lucky, I will win	Over 50	**BET ONE**	Lose	x	x	x
48	Regularly	Male	26 -35	United States	Lucky, I will win	Over 50	**BET ONE**	Lose	x	x	x
49	Regularly	Male	Under 25	United States	Lucky, I will win	Over 50	**BET ONE**	Lose	x	x	x
50	Regularly	Male	Under 25	United Kingdom	Lucky, I will win	Over 50	**BET ONE**	Lose	x	x	x
51	Regularly	Male	26 -35	United States	Lucky, I will win	Over 50	**BET ONE**	Lose	x	x	x
52	Regularly	Male	26 -35	United States	Lucky, I will win	Over 50	**BET ONE**	Lose	x	x	x
53	Regularly	Male	26 -35	United Kingdom	Lucky, I will win	Over 50	**BET ONE**	Lose	x	x	x
54	Regularly	Male	36 -50	United States	Lucky, I will win	41 - 50	**BET ONE**	Lose	Will give it a shot	41 - 50	Cannot say
55	Regularly	Male	36 -50	United States	Lucky, I will win	31 - 40	**BET ONE**	Lose	Yes, definitely	31 - 40	Cannot say
56	Regularly	Male	26 -35	United States	Lucky, I will win	41 - 50	**BET ONE**	Lose	Yes, definitely	41 - 50	Yes, definitely
57	Regularly	Male	26 -35	India	Lucky, I will win	41 - 50	**BET ONE**	Lose	Yes, definitely	31 - 40	Yes, definitely
58	Regularly	Male	Under 25	United States	Lucky, I will win	31 - 40	**BET ONE**	Lose	Yes, definitely	31 - 40	Yes, definitely
59	Regularly	Male	36 -50	United States	Lucky, I will win	31 - 40	**BET ONE**	Lose	Yes, definitely	31 - 40	Yes, definitely
60	Regularly	Male	36 -50	India	Lucky, I will win	31 - 40	**BET ONE**	Lose	Yes, definitely	31 - 40	Yes, definitely
61	Regularly	Male	Over 50	Sri Lanka	Lucky, I will win	21 - 30	**BET ONE**	Lose	Yes, definitely	21 - 30	Yes, definitely
62	Regularly	Male	26 -35	China	Lucky, I will win	31 - 40	**BET ONE**	Lose	Yes, definitely	31 - 40	Yes, definitely
63	Regularly	Male	36 -50	United Kingdom	Lucky, I will win	31 - 40	**BET ONE**	Lose	Yes, definitely	31 - 40	Yes, definitely
64	Regularly	Male	26 -35	United States	Lucky, I will win	31 - 40	**BET ONE**	Lose	Yes, definitely	31 - 40	Yes, definitely
65	Regularly	Male	26 -35	United States	Lucky, I will win	21 - 30	**BET ONE**	Lose	Yes, definitely	21 - 30	Yes, definitely
66	Regularly	Male	26 -35	United States	Lucky, I will win	21 - 30	**BET ONE**	Lose	Yes, definitely	21 - 30	Yes, definitely
67	Regularly	Male	26 -35	China	Lucky, I will win	21 - 30	**BET ONE**	Lose	Yes, definitely	21 - 30	Yes, definitely
68	Regularly	Male	26 -35	United States	Lucky, I will win	21 - 30	**BET ONE**	Lose	Yes, definitely	21 - 30	Yes, definitely
69	Regularly	Male	36 -50	United States	Lucky, I will win	21 - 30	**BET ONE**	Lose	Yes, definitely	21 - 30	Yes, definitely
70	Regularly	Male	36 -50	United States	Lucky, I will win	31 - 40	**BET ONE**	Lose	Yes, definitely	11 - 20	Yes, definitely
71	Regularly	Male	36 -50	United States	Lucky, I will win	31 - 40	**BET ONE**	Lose	Yes, definitely	31 - 40	Yes, definitely
72	Regularly	Male	Under 25	United Kingdom	Lucky, I will win	21 - 30	**BET ONE**	Lose	Yes, definitely	21 - 30	Yes, definitely
73	Regularly	Male	26 -35	United States	Lucky, I will win	31 - 40	**BET ONE**	Lose	Yes, definitely	21 - 30	Yes, definitely

BLACKJACK: THE EXPERIMENT
RESULTS

BET TWO	Win	Yes, definitely	21 - 30	Yes	**BET THREE**	Win	Yes, definitely	21 - 30	Yes
BET TWO	Win	Yes, definitely	41 - 50	Yes	**BET THREE**	Lose	Will give it a shot	41 - 50	Cannot say
BET TWO	Lose	Yes, definitely	21 - 30	Yes	**BET THREE**	Lose	Yes, definitely	31 - 40	Cannot say
BET TWO	Lose	Will give it a shot	21 - 30	Cannot say	**BET THREE**	Lose	Yes, definitely	31 - 40	Cannot say
BET TWO	Draw	Will give it a shot	41 - 50	Cannot say	**BET THREE**	Win	Will give it a shot	41 - 50	Cannot say
BET TWO	Draw	Will give it a shot	Over 50	Cannot say	**BET THREE**	Lose	Will give it a shot	Over 50	Cannot say
BET TWO	Lose	Yes, definitely	41 - 50	Cannot say	**BET THREE**	Lose	Yes, definitely	Over 50	Cannot say
BET TWO	Lose	Yes, definitely	41 - 50	Cannot say	**BET THREE**	Win	Yes, definitely	41 - 50	Yes
BET TWO	Win	Yes, definitely	41 - 50	Yes, definitely	**BET THREE**	Win	Yes, definitely	41 - 50	Yes, definitely
x	x	x	x	x	**x**	x	x	x	x
x	x	x	x	x	**x**	x	x	x	x
x	x	x	x	x	**x**	x	x	x	x
x	x	x	x	x	**x**	x	x	x	x
x	x	x	x	x	**x**	x	x	x	x
x	x	x	x	x	**x**	x	x	x	x
x	x	x	x	x	**x**	x	x	x	x
x	x	x	x	x	**x**	x	x	x	x
BET TWO	Draw	Will give it a shot	41 - 50	Cannot say	**BET THREE**	Lose	Yes, definitely	41 - 50	Cannot say
BET TWO	Lose	Yes, definitely	Over 50	Cannot say	**BET THREE**	Lose	Yes, definitely	over 50	Cannot say
BET TWO	Draw	Will give it a shot	41 - 50	Yes	**BET THREE**	Win	Will give it a shot	41 - 50	Yes
BET TWO	Lose	Yes, definitely	41 - 50	Cannot say	**BET THREE**	Lose	Yes, definitely	Over 50	Cannot say
BET TWO	Lose	Yes, definitely	41 - 50	Cannot say	**BET THREE**	Lose	Yes, definitely	Over 50	Cannot say
BET TWO	Lose	Yes, definitely	41 - 50	Cannot say	**BET THREE**	Lose	Yes, definitely	Over 50	Cannot say
BET TWO	Lose	Yes, definitely	Over 50	Cannot say	**BET THREE**	Win	Yes, definitely	Over 50	Cannot say
BET TWO	Lose	Yes, definitely	41 - 50	Cannot say	**BET THREE**	Win	Yes, definitely	41 - 50	Cannot say
BET TWO	Lose	Yes, definitely	41 - 50	Cannot say	**BET THREE**	Win	Yes, definitely	41 - 50	Yes
BET TWO	Lose	Yes, definitely	41 - 50	Cannot say	**BET THREE**	Win	Yes, definitely	41 - 50	Cannot say
BET TWO	Lose	Yes, definitely	31 - 40	Cannot say	**BET THREE**	Win	Yes, definitely	31 - 40	Yes
BET TWO	Lose	Will give it a shot	31 - 40	Cannot say	**BET THREE**	Lose	Yes, definitely	41 - 50	Cannot say
BET TWO	Lose	Will give it a shot	21 - 30	Cannot say	**BET THREE**	Lose	Yes, definitely	31 - 40	Cannot say
BET TWO	Lose	Will give it a shot	21 - 30	Cannot say	**BET THREE**	Win	Yes, definitely	21 - 30	Yes
BET TWO	Win	Yes, definitely	21 - 30	Yes, definitely	**BET THREE**	Lose	Yes, definitely	21 - 30	Yes
BET TWO	Win	Yes, definitely	21 - 30	Yes, definitely	**BET THREE**	Lose	Yes, definitely	31 - 40	Yes, definitely
BET TWO	Win	Yes, definitely	11 - 20	Yes, definitely	**BET THREE**	Win	Yes, definitely	11 - 20	Yes, definitely
BET TWO	Win	Yes, definitely	31 - 40	Yes	**BET THREE**	Win	Yes, definitely	31 - 40	Yes
BET TWO	Win	Yes, definitely	21 - 30	Yes	**BET THREE**	Draw	Will give it a shot	21 - 30	Cannot say
BET TWO	Win	Will give it a shot	21 - 30	Yes	**BET THREE**	Lose	Will give it a shot	21 - 30	Cannot say

BLACKJACK: THE EXPERIMENT
RESULTS

74	Regularly	Male	Under 25	United Kingdom	Lucky, I will win	21 - 30	**BET ONE**	Lose	Yes, definitely	21 - 30	Yes, definitely
75	Regularly	Male	36 -50	United States	Lucky, I will win	21 - 30	**BET ONE**	Lose	Yes, definitely	21 - 30	Yes, definitely
76	Regularly	Male	36 -50	United States	Lucky, I will win	21 - 30	**BET ONE**	Win	Will give it a shot	21 - 30	Yes, definitely
77	Regularly	Male	36 -50	United States	Lucky, I will win	41 - 50	**BET ONE**	Win	Yes, definitely	41 - 50	Yes, definitely
78	Regularly	Male	36 -50	United States	Lucky, I will win	41 - 50	**BET ONE**	Win	Yes, definitely	41 - 50	Yes, definitely
79	Regularly	Male	26 -35	United States	Lucky, I will win	Over 50	**BET ONE**	Win	Yes, definitely	Over 50	Yes, definitely
80	Regularly	Male	26 -35	United States	Lucky, I will win	31 - 40	**BET ONE**	Win	Yes, definitely	31 - 40	Yes, definitely
81	Regularly	Male	26 -35	United States	Lucky, I will win	21 - 30	**BET ONE**	Win	Yes, definitely	21 - 30	Yes, definitely
82	Regularly	Male	36 -50	United States	Lucky, I will win	21 - 30	**BET ONE**	Win	Yes, definitely	21 - 30	Yes, definitely
83	Regularly	Male	26 -35	China	Lucky, I will win	21 - 30	**BET ONE**	Win	Yes, definitely	21 - 30	Yes, definitely
84	Regularly	Male	36 -50	United Kingdom	Lucky, I will win	31 - 40	**BET ONE**	Win	Yes, definitely	31 - 40	Yes, definitely
85	Regularly	Male	Over 50	United States	Lucky, I will win	21 - 30	**BET ONE**	Win	Yes, definitely	21 - 30	Yes, definitely
86	Regularly	Male	36 -50	United States	Lucky, I will win	11 - 20	**BET ONE**	Win	Yes, definitely	11 - 20	Yes, definitely
87	Regularly	Male	36 -50	China	Lucky, I will win	21 - 30	**BET ONE**	Win	Yes, definitely	21 - 30	Yes, definitely
88	Regularly	Male	26 -35	United States	Lucky, I will win	11 - 20	**BET ONE**	Win	Yes, definitely	11 - 20	Yes, definitely
89	Regularly	Male	36 -50	United Kingdom	Lucky, I will win	11 - 20	**BET ONE**	Win	Yes, definitely	11 - 20	Yes, definitely
90	Regularly	Male	36 -50	United States	Lucky, I will win	21 - 30	**BET ONE**	Win	Yes, definitely	21 - 30	Yes, definitely
91	Regularly	Male	36 -50	United Kingdom	Lucky, I will win	21 - 30	**BET ONE**	Win	Yes, definitely	21 - 30	Yes, definitely
92	Regularly	Male	36 -50	United States	Lucky, I will win	21 - 30	**BET ONE**	Win	Yes, definitely	21 - 30	Yes, definitely
93	Regularly	Male	26 -35	China	Lucky, I will win	21 - 30	**BET ONE**	Win	Yes, definitely	21 - 30	Yes, definitely
94	Regularly	Male	Over 50	United States	Lucky, I will win	21 - 30	**BET ONE**	Win	Yes, definitely	21 - 30	Yes, definitely
95	Regularly	Male	26 -35	United Kingdom	Lucky, I will win	21 - 30	**BET ONE**	Win	Yes, definitely	21 - 30	Yes, definitely
96	Regularly	Male	Over 50	United Kingdom	Lucky, I will win	21 - 30	**BET ONE**	Win	Yes, definitely	21 - 30	Yes, definitely
97	Regularly	Male	Over 50	United States	Lucky, I will win	31 - 40	**BET ONE**	Win	Yes, definitely	31 - 40	Yes, definitely
98	Regularly	Male	Over 50	United States	Lucky, I will win	31 - 40	**BET ONE**	Win	Yes, definitely	31 - 40	Yes, definitely
99	Regularly	Male	26 -35	China	Lucky, I will win	41 - 50	**BET ONE**	Win	Yes, definitely	41 - 50	Yes, definitely
100	Regularly	Male	Under 25	United Kingdom	Lucky, I will win	21 - 30	**BET ONE**	Win	Yes, definitely	21 - 30	Yes, definitely

BET TWO	Win	Will give it a shot	21 - 30	Yes	BET THREE	Draw	Will give it a shot	21 - 30	Yes
BET TWO	Win	Will give it a shot	21 - 30	Yes	BET THREE	Draw	Will give it a shot	21 - 30	Cannot say
BET TWO	Win	Yes, definitely	21 - 30	Yes, definitely	BET THREE	Draw	Yes, definitely	21 - 30	Yes, definitely
BET TWO	Draw	Yes, definitely	41 - 50	Yes, definitely	BET THREE	Win	Yes, definitely	41 - 50	Yes, definitely
BET TWO	Draw	Will give it a shot	41 - 50	Cannot say	BET THREE	Lose	Will give it a shot	41 - 50	Cannot say
BET TWO	Lose	Yes, definitely	Over 50	Yes, definitely	BET THREE	Win	Yes, definitely	Over 50	Yes, definitely
BET TWO	Lose	Yes, definitely	31 - 40	Yes, definitely	BET THREE	Win	Yes, definitely	31 - 40	Yes, definitely
BET TWO	Lose	Yes, definitely	31 - 40	Yes, definitely	BET THREE	Win	Yes, definitely	31 - 40	Yes, definitely
BET TWO	Lose	Yes, definitely	21 - 30	Yes, definitely	BET THREE	Win	Yes, definitely	21 - 30	Cannot say
BET TWO	Lose	Yes, definitely	31 - 40	Yes, definitely	BET THREE	Lose	Will give it a shot	31 - 40	Cannot say
BET TWO	Lose	Yes, definitely	31 - 40	Yes, definitely	BET THREE	Lose	Will give it a shot	31 - 40	Cannot say
BET TWO	Lose	Yes, definitely	21 - 30	Yes, definitely	BET THREE	Lose	Yes, definitely	31 - 40	Cannot say
BET TWO	Lose	Will give it a shot	11 - 20	Yes	BET THREE	Win	Yes, definitely	11 - 20	Yes
BET TWO	Lose	Will give it a shot	21 - 30	Yes	BET THREE	Lose	Yes, definitely	41 - 50	Cannot say
BET TWO	Win	Yes, definitely	11 - 20	Yes, definitely	BET THREE	Win	Yes, definitely	11 - 20	Yes, definitely
BET TWO	Win	Yes, definitely	11 - 20	Yes, definitely	BET THREE	Win	Yes, definitely	11 - 20	Yes, definitely
BET TWO	Win	Yes, definitely	21 - 30	Yes, definitely	BET THREE	Win	Yes, definitely	21 - 30	Yes, definitely
BET TWO	Win	Yes, definitely	21 - 30	Yes, definitely	BET THREE	Win	Yes, definitely	21 - 30	Yes, definitely
BET TWO	Win	Yes, definitely	21 - 30	Yes, definitely	BET THREE	Win	Yes, definitely	21 - 30	Yes, definitely
BET TWO	Win	Yes, definitely	21 - 30	Yes, definitely	BET THREE	Win	Yes, definitely	21 - 30	Yes, definitely
BET TWO	Win	Yes, definitely	21 - 30	Yes, definitely	BET THREE	Win	Yes, definitely	21 - 30	Yes, definitely
BET TWO	Win	Yes, definitely	21 - 30	Yes, definitely	BET THREE	Win	Yes, definitely	21 - 30	Yes, definitely
BET TWO	Win	Yes, definitely	21 - 30	Yes, definitely	BET THREE	Lose	Yes, definitely	21 - 30	Yes, definitely
BET TWO	Win	Yes, definitely	31 - 40	Yes, definitely	BET THREE	Lose	Yes, definitely	31 - 40	Yes, definitely
BET TWO	Win	Yes, definitely	31 - 40	Yes, definitely	BET THREE	Lose	Yes, definitely	31 - 40	Yes, definitely
BET TWO	Win	Yes, definitely	41 - 50	Yes, definitely	BET THREE	Lose	Yes, definitely	41 - 50	Yes, definitely
BET TWO	Win	Yes, definitely	21 - 30	Yes, definitely	BET THREE	Draw	Yes, definitely	21 - 30	Yes, definitely

Appendix THREE

EMPIRICAL INVESTIGATION QUESTIONNAIRE

Dear Sir/Mam,

I am a student Economics from the University of Birmingham, United Kingdom and am writing my Master's Thesis on one aspect of Behavioural Finance. My research deals with the issue concerning how the choice of decision is affected while investing in the stock market. For unbiased research purposes, it would not be possible to provide full details of the research before filling the questionnaire. However, once the questionnaires have been submitted, the purpose of this research will be communicated to all participants.

This questionnaire consists of 11 Questions and should take approximately 10-15 minutes to complete. For each question, please choose the best option that reflects your opinion or experience. The form can then be emailed to me at the address given at the bottom of the questionnaire. Your kind response would greatly contribute to the research.

It can be assured that all questionnaires will be kept anonymous and confidential.

EMPIRICAL INVESTIGATION
QUESTIONNAIRE

Profile

Gender
- ☐ Male
- ☐ Female

Age Group
- ☐ Under 25
- ☐ 25 - 35
- ☐ 36 - 50
- ☐ Over 50

Country [ ]

1. Were you involved in investing during 1998 and 2000?
   - ☐ Yes
   - ☐ No

2. During the increases in equity price from the fall of 1998 ***up to*** March 2000, did you at any point in time think that you could forecast the future market development correctly?
   - ☐ Yes
   - ☐ No
   - ☐ Cannot say

3. Were you involved in trading/investing ***during*** the market decline in March 2000?
   - ☐ Yes
   - ☐ No

4. Did you continue to trade and make new or modify old investments during the decline?
   - ☐ Yes
   - ☐ No

5. Did you lose investments during the decline?
   - ☐ Yes
   - ☐ No

6. Did you at any point in time feel defeated by the market?
   - ☐ Yes, I felt defeated
   - ☐ No, I lost due to my own faults
   - ☐ Cannot say

7. If Yes, was it hard to accept defeat?
   - ☐ Yes
   - ☐ No
   - ☐ Cannot say

8. After March 2000, was there a time when you stopped investing any further?
   - ☐ Yes, I stopped investing
   - ☐ No, I still invested

8a. If Yes, did you still wish you were able to beat the market by investing in new opportunities?
   - ☐ Yes
   - ☐ No

8b. If No, why did you still keep investing?
   - ☐ I wanted to beat the market
   - ☐ I was sure of my strategies
   - ☐ I could not accept losing
   - ☐ Cannot say

9. Do you think you are a good investor?
   - ☐ Yes, I am a very good investor
   - ☐ No, I am an average or bad investor
   - ☐ Cannot say

10. Only the following information exists for a stock investment: Suppose a stock has 50-50 chance to either increase or decrease by 25% each week. The first 3 weeks since you bought the stock, it falls by 25% each week. What would you do for the 4th week?
   - ☐ Invest more in stock to cover up losses when price rises as it has a 50-50 chance
   - ☐ Hold the stock for 1 more week to check price movement
   - ☐ Sell the stock
   - ☐ Cannot say

11. Finally, do you think the set of questions posed in this questionnaire helped you recollect events from the past?
   - ☐ Yes, it was very helpful
   - ☐ No, I had to stress to remember
   - ☐ Cannot say

Thank you kindly.

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e-mail to: *rishi.oberoi@lycos.co.uk*

Appendix FOUR
EMPIRICAL INVESTIGATION RESULTS

Empirical Investigation Results

ID	Gender	Age Group	Country	Q1	Q2	Q3	Q4	Q5	Q6	Q7
1	Male	25 - 35	United States	Yes	Yes	Yes	Yes	Yes	Yes, I felt defeated	Yes
2	Male	25 - 35	United States	Yes	Yes	Yes	Yes	Yes	Yes, I felt defeated	Yes
3	Male	35 - 50	United States	Yes	Yes	Yes	Yes	Yes	Yes, I felt defeated	Yes
4	Male	25 - 35	United States	Yes	Yes	Yes	Yes	Yes	Yes, I felt defeated	Yes
5	Male	25 - 35	United States	Yes	Yes	Yes	Yes	Yes	Yes, I felt defeated	Yes
6	Male	Over 50	United States	Yes	Yes	Yes	Yes	Yes	Yes, I felt defeated	Yes
7	Male	25 - 35	United States	Yes	Yes	Yes	Yes	Yes	Yes, I felt defeated	Yes
8	Male	Over 50	United States	Yes	Yes	Yes	Yes	Yes	Yes, I felt defeated	Yes
9	Male	25 - 35	United States	Yes	Yes	Yes	Yes	Yes	Yes, I felt defeated	Yes
10	Male	25 - 35	United States	Yes	Yes	Yes	Yes	Yes	Yes, I felt defeated	Yes
11	Male	25 - 35	United States	Yes	Yes	Yes	Yes	Yes	Yes, I felt defeated	Yes
12	Male	25 - 35	United Kingdom	Yes	Yes	Yes	Yes	Yes	Yes, I felt defeated	Yes
13	Male	35 - 50	United Kingdom	Yes	Yes	Yes	Yes	Yes	Yes, I felt defeated	Yes
14	Male	25 - 35	United Kingdom	Yes	Yes	Yes	Yes	Yes	Yes, I felt defeated	Yes
15	Male	35 - 50	United States	Yes	Yes	Yes	Yes	Yes	No, I lost due to my own faults	No
16	Male	25 - 35	United Kingdom	Yes	No	Yes	Yes	Yes	Yes, I felt defeated	Yes
17	Male	25 - 35	United Kingdom	Yes	No	Yes	Yes	Yes	Yes, I felt defeated	Yes
18	Male	25 - 35	United States	Yes	No	Yes	Yes	Yes	Yes, I felt defeated	Yes
19	Male	25 - 35	United States	Yes	No	Yes	Yes	Yes	Yes, I felt defeated	Yes
20	Male	25 - 35	United States	Yes	No	Yes	Yes	Yes	Yes, I felt defeated	Yes
21	Male	25 - 35	United Kingdom	Yes	No	Yes	Yes	Yes	Yes, I felt defeated	Yes
22	Male	25 - 35	United Kingdom	Yes	No	Yes	Yes	Yes	Yes, I felt defeated	Yes
23	Male	25 - 35	United Kingdom	Yes	No	Yes	Yes	Yes	No, I lost due to my own faults	Yes
24	Male	25 - 35	United Kingdom	Yes	No	Yes	Yes	Yes	No, I lost due to my own faults	Yes
25	Male	25 - 35	United Kingdom	Yes	No	Yes	Yes	Yes	No, I lost due to my own faults	Yes
26	Male	25 - 35	France	Yes	No	Yes	Yes	Yes	Cannot say	Yes
27	Male	25 - 35	France	Yes	No	Yes	Yes	Yes	Cannot say	Yes
28	Male	35 - 50	United Kingdom	Yes	No	Yes	No	x	x	x
29	Male	35 - 50	United States	Yes	No	Yes	No	x	x	x
30	Male	25 - 35	United States	Yes	Cannot say	Yes	Yes	Yes	Yes, I felt defeated	Yes
31	Male	25 - 35	United States	Yes	Cannot say	Yes	Yes	Yes	Yes, I felt defeated	Yes
32	Male	25 - 35	Germany	Yes	Cannot say	Yes	Yes	Yes	Yes, I felt defeated	Yes
33	Male	35 - 50	Germany	Yes	Cannot say	Yes	Yes	Yes	Yes, I felt defeated	Yes
34	Male	25 - 35	United Kingdom	Yes	Cannot say	Yes	Yes	Yes	Cannot say	Yes
35	Female	25 - 35	United Kingdom	Yes	Yes	Yes	Yes	Yes	Yes, I felt defeated	Yes
36	Female	35 - 50	United Kingdom	Yes	Yes	Yes	Yes	Yes	Yes, I felt defeated	Yes
37	Female	Over 50	United States	Yes	Yes	Yes	Yes	Yes	Yes, I felt defeated	Yes
38	Female	25 - 35	United States	Yes	Yes	Yes	Yes	Yes	No, I lost due to my own faults	Yes
39	Female	25 - 35	United States	Yes	No	Yes	Yes	Yes	No, I lost due to my own faults	Yes
40	Female	35 - 50	France	Yes	No	Yes	No	x	x	x
41	Female	35 - 50	France	Yes	No	Yes	No	x	x	x
42	Female	25 - 35	France	Yes	No	Yes	No	x	x	x
43	Female	25 - 35	United States	Yes	Cannot say	Yes	Yes	Yes	Yes, I felt defeated	Yes

Empirical Investigation Results

ID	Question 8	Question 8a	Question 8b
1	No, I still invested	x	I wanted to beat the market
2	No, I still invested	x	I wanted to beat the market
3	No, I still invested	x	I wanted to beat the market
4	No, I still invested	x	I wanted to beat the market
5	No, I still invested	x	I wanted to beat the market
6	No, I still invested	x	I was sure of my strategies
7	No, I still invested	x	I was sure of my strategies
8	No, I still invested	x	I was sure of my strategies
9	No, I still invested	x	I was sure of my strategies
10	No, I still invested	x	I could not accept losing
11	No, I still invested	x	I could not accept losing
12	No, I still invested	x	I could not accept losing
13	No, I still invested	x	I could not accept losing
14	No, I still invested	x	I could not accept losing
15	Yes, I stopped investing.	Yes	x
16	No, I still invested	x	I wanted to beat the market
17	No, I still invested	x	I wanted to beat the market
18	No, I still invested	x	I could not accept losing
19	No, I still invested	x	I could not accept losing
20	No, I still invested	x	I could not accept losing
21	No, I still invested	x	I could not accept losing
22	No, I still invested	x	I could not accept losing
23	No, I still invested	x	I could not accept losing
24	No, I still invested	x	I could not accept losing
25	Yes, I stopped investing.	Yes	x
26	No, I still invested	x	I could not accept losing
27	No, I still invested	x	I could not accept losing
28	x	x	x
29	x	x	x
30	No, I still invested	x	I could not accept losing
31	No, I still invested	x	I could not accept losing
32	Yes, I stopped investing.	Yes	x
33	Yes, I stopped investing.	Yes	x
34	No, I still invested	x	I could not accept losing
35	Yes, I stopped investing.	Yes	x
36	No, I still invested	x	I wanted to beat the market
37	No, I still invested	x	I was sure of my strategies
38	No, I still invested	x	I was sure of my strategies
39	No, I still invested	x	I wanted to beat the market
40	x	x	x
41	x	x	x
42	x	x	x
43	Yes, I stopped investing.	Yes	x

Empirical Investigation Results

ID	Q9	Q10	Question 11
1	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
2	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
3	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
4	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
5	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Cannot say
6	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
7	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
8	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
9	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
10	No, I am an average or bad investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
11	No, I am an average or bad investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
12	No, I am an average or bad investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
13	No, I am an average or bad investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
14	Yes, I am very good investor	Hold the stock for 1 more week to check price movement	Yes, it was very helpful
15	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
16	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
17	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
18	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
19	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
20	No, I am an average or bad investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
21	No, I am an average or bad investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
22	No, I am an average or bad investor	Hold the stock for 1 more week to check price movement	Yes, it was very helpful
23	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
24	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
25	No, I am an average or bad investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
26	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
27	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
28	x	x	Cannot say
29	x	x	Cannot say
30	Yes, I am very good investor	Cannot say	Yes, it was very helpful
31	Yes, I am very good investor	Hold the stock for 1 more week to check price movement	Yes, it was very helpful
32	Cannot say	Cannot say	Yes, it was very helpful
33	Cannot say	Sell the stock	Yes, it was very helpful
34	Cannot say	Cannot say	Yes, it was very helpful
35	Cannot say	Sell the stock	Yes, it was very helpful
36	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
37	Yes, I am very good investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
38	Yes, I am very good investor	Cannot say	Yes, it was very helpful
39	No, I am an average or bad investor	Invest more in stock to cover up losses when price rises as it has a 50-50 chance	Yes, it was very helpful
40	x	x	Yes, it was very helpful
41	x	x	Yes, it was very helpful
42	x	x	Yes, it was very helpful
43	Cannot say	Sell the stock	Yes, it was very helpful