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Overconfidence and Finance Education

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Abstract
The weaknesses of the Efficient Markets Hypothesis caused the development of a new financial paradigm. Behavioral Finance, relying on other disciplines, such as psychology, anthropology, and sociology, and on the examination of cognitive and emotional errors, offers a substantial interpretation of investment behavior, stock market imbalances as well as long-term stock market bubbles.
The present research, carried out on a sample of Financial Science students, prospective stock market investors and professionals, demonstrates that overconfidence and the biases directly related to it (illusion of knowledge, self-serving bias, "above average"- effect, optimism bias), generate irrationality, which has got a considerable impact both on their behavior and choices.
Keywords: *rational, biases, errors, behavioral, overconfidence*

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I. Introduction

Behavioural Finance is a new financial paradigm,which, in the context of the stock /financial market, studies and analyses investors' behaviour, a behaviour not explained by the Efficient Market theory.

The Efficient Market theory holds that people engaged in finance always act rationally, are well-informed and aimat maximizing investment utility. This implies that stock marketprocesses are always smooth and free from imbalances and suggests that investors cannot take advantage of capital gains. Even in case of stock market anomalies, markets are immediately regulated, as investors become promptly rational.

However, the long stock market bubbles in the recent years have highlighted the presence of specific weaknessesin the Efficient Market theory, such as irrationality and inefficiency, which wereemphasized andmodified by the emerging theory of Behavioural Finance in the early 90s.

Overall, Behavioural Finance underlined the major role of psychology, emotions, and biasesin investment decision-making processes, which are not based on rationality and utilitymaximization. Relying on various disciplinesapart from economics, psychology, anthropology, and sociology, and in conjunction with the complex and volatile nature of the global financial system, it established a significant status, andmanaged to complement and gradually replace the traditional financial paradigm.

II. Overconfidence

Overconfidence has been studied as a most common bias in behavioural research. According to Plous (1993),'No problem in judgment and decision making is more prevalent and more potentially catastrophic than overconfidence'.DeBondt and Thaler (1985) consider 'excessive confidence' a most established and fundamental finding in the psychology of decision making.

It implies people's tendency to overestimate their capabilities and skills, overstate information, knowledge and potential, and have an arrogant attitude towards stock market issues, which results in wrong investment choices.

In the framework of the specific bias, investors are confident that their activitiesare the only way to achieve gains, and that their choices are perfectly rational; they overestimate their capabilities, probabilities, control for success and positive outcomes, as well as accuracy of knowledge. However, in case of failure, they believe that this is a result of external factors rather than their own decisions.

Over-confidence is associated with the following biases:

2.1 Illusion of knowledge

The greatest enemy of knowledge is not ignorance, but illusion of knowledge (Boorstin, 1983). The specific bias involves people's tendency to believe that their perception of knowledge of the things which happen to them is better than actual knowledge. Barber and Odean (2001) hold that illusion of knowledge is people's tendency to draw unsubstantial conclusions and believe that their actions and decisions are rational, although their choices are insufficient for applying rational and scientific approaches.

2.2 Self-serving bias

It is a cognitive bias, which describes people's tendency to attribute positive outcomes to their ownspecial qualities,and negative ones to external factors. As argued by Barberis and Thaler (2003), overestimation is enhanced by people's tendency to attribute success to their skills and failure to bad luck.

2.3 The "Above-Average" effect

It is a bias which describes people's tendency to perceive themselves as superior to others. Affected by the overconfidence bias, they believe that their qualifications, knowledge and abilities are higher or above the average when they make comparative judgements.

2.4 Optimism bias

According to Montier (2002), the best evidence of all psychological errors is based on the tendency for over-optimism. Overconfident peoplewho overestimatetheir abilities and skills, are too optimistic about the outcomes of events and situations (Helweg-Larsen, Shepperd, 2001).Excessive optimism is a specific form of fallacy (Heger, Papageorgeo, 2012).

Overoptimism implies the bias which investors display when their investments are affected by irrational optimism.

III. The Research

The research sample includes second-semester Accounting & Finance students at the University of Western Macedonia, Greece.

The research was carried outduring the first week of semester courses, after the first introductory lecture and before the second session, more specifically, from 23/2/2021 to 1/3/2021, on a sample of 123second-year students (of a total number of 319), who participated in the survey and answered the questionnaire. It is worth noting thatthe sample accounts for more than 40% of the total numberof students.

Of these, 67 arefemale, and 89.4% are aged 18-22. Their knowledge of stock market issues is poor(44%) to moderate (40.7%). 42% of the subjects wish to be employed in stock market jobs, whereas 50% ofthem are rather uncertain. It becomes, therefore, evident that they will be future investors or marketprofessionals and will influence clients' decisions and marketequilibrium.

The questionnaire includes large-scale close-ended questions drawn from the rich literature ofBehavioural Finance, in which large nine- and ten-point scales are acceptable by a large number ofscholars(Derek, Tanniru, 2000; Vavra, 1997). It is designed according to high content validity criteria, as it covers alldifferent dimensions of each construct, in other words, measurable variables.

The questions are treated as problems / tests attempting to indirectly assessa specific behaviour;answers to straightforward questions would be rather negative. In addition, they have been designed to fit theresearched students' profile, and academic andage group interests, and they focus on general concepts to avoidrespondents' biases.

The questionnaire reliability index (Cronbach alpha> 0.7, whichimplies the research is reliable),applied to questionnaires carried out via factor analysis, demonstrates that the present research does not allowfor further data analysis, as there is no correlation between factors.

IV. Research Results

4.1 Overconfidence

The bias of overconfidence impliesthe investors' tendency to overestimate their abilities and make a false and deceptive assessment of their skills, intellect, or talent. In effect, it involves a selfish perception of oneself, as overconfident people believe they are better than they actually are.

4.2 Illusion of knowledge

It describes the investors' tendency to believethat they have a deep understanding of events, although the approach they virtually use is completely superficial.

Illusion of knowledge is investigated by the first question of the research (Montier, 2002, Behavioral Finance: Insights into Rational Minds and Markets, and Awan, Bukhari, Ghufran, 2006, Understanding investment behaviour of individual investors. How they handle investment decisions). The specific question has been adjusted to the participating students'own interests:

"Have you got full knowledge of what is of interest for you (for example sports, economy, education or anything else that you are interested in)?" On a scale from 1 ('No, not at all') to 9 ('Yes, I definitely have'), rate your answer'.

Corpusanalysis demonstrated that a high percentage (more than 40%)of the subjects (total answersforitems 7, 8 and 9) have full knowledge of what interests them. The keywordin the particular question, which demonstrates illusion of knowledge, is the word 'full', which implies uncompromising and authoritarian attitudes, and, thus, an irrational behaviour towards information and knowledge, as well as towards a deep understanding of relevant situations.

A percentage which accounts forover 9% (total answersforitems 1, 2 and 3) suggestscomplete ignorance of what is of interest for the subjects, who underestimate their knowledge and awareness, thus, displaying a reverse irrational behaviour, namely,underestimation of knowledge and information of what is of interest for them. This could be described as illusion of ignorance.

A neutral attitude (item 5), which implies rational behaviour, is preferred by 14% of the subjects. Neither do they opt for 'full knowledge' nor 'complete ignorance'. They do not overestimate or underestimate knowledge; theyact rationally, without any illusions.

4.3 Self-serving Bias

People with the specific self-bias view their success as undeniable, attributed only to their ability to manage their skills, education, and experienceproperly;in contrast,potential failuresare attributed to other people'serrors, or unfortunate time rather than themselves.

The question describing a biased perception of success was:

'Were your successful choices in the past only a result of your own special abilities? On a scale from 1 ('No, not at all') to 9 ('They were the result of my own special abilities'), rate your answer.'(Daniel, Hirshleifer, Subrahmanyam,1998, A Theory of Overconfidence, Self-Attribution, and Security Market Under- and Over-reaction.

A keywordin thespecific question is 'only'. Success is based only on the researched students' abilities.

The answers demonstratedthat over 26% of the respondents (total answersfor items 7, 8 and 9) are confident that theirsuccess iscloselyrelated to their own abilities and potential. Thanks to these specific abilities, they have managed to handle special situations, make good use of information without any help from people or circumstances, and benefit from right timing, place, and time. They believe that success is a natural consequence of their specific capabilities.

In addition,over than 17% of the subjects (total answersforitems 1, 2 and 3) demonstrate rational thinking and are convinced that success does not only derive from themselves, but also from other circumstances and factors.

Finally, 27% of the participants opted for a neutral answer (item 5), thus, adding to the percentage of favourable attitudes towards a rational behaviour. They estimate their abilities, but their success is the result of a combination of other situations, people, and events.

4.4 The "Above-Average" effect

Affected by the bias of overconfidence, people irrationally consider their own qualifications, knowledge, and abilities far above average when compared with others, without, however, having full knowledge ofother people's abilities, knowledge, and qualifications. Thus, they are overconfident and do not believe they must improve.

The question investigating 'the above-average effect' (Kahneman, and Riepe 1998, Aspects of Investor Psychology) was phrased as follows:

'Compare your abilitieswiththose of your fellow students. On a scale of 1 ('I'm sure I'm below average') to 9 ('I absolutely believe I'm above average'), please rate your answer'.

The analysis demonstrated thatmore than 42% of the subjects (total answersforitems 7, 8 and 9) are deeply convinced that their abilities and decisions are superiortothose of their fellow students. Their answersreveal an irrational behaviour, as it is unlikely that they are able to know about all their fellow students' abilities and, therefore, make a relevant judgement. Although self-confidence is desirable, in this framework, it exceeds rationality and implies overestimation, which prevents self-improvement as a goal.

Of the total number of answers, only about 9% (total answersforitems 1, 2 and 3)underestimate abilities and lack confidence. The subjects feel disadvantaged when compared with their fellow students, and they irrationally believe that their abilities are inferior to those of others.

Remarkably, 25% of the subjects gave neutral answers (item 5), which is evidence of rational behaviour when they compare themselves with others. They neither underestimate nor overestimate their abilities, they recognize potential weaknesses, and are always willing to improve and be rational and cautious inunstable situations.

4.5 Optimism bias

It is an emotional bias of latent optimism or excessive optimism, which involves people's belief that everything will have a happy end.It results in constraining oneself and being inactive, thus, preventing favourable outcomes. In addition, it implies over-optimismabout future events (Weinstein, 1980), and people's tendency to be over-optimistic about possible desired outcomes (Taffler, 2009). The question investigating the emotional bias of optimism (Awan, Bukhari, Ghufran, 2006, Understanding investment behaviour of individual investors. How they handle investment decisions) was phrased as follows:

'If the Athens Stock Exchange banking index drops at 3% tomorrow, do you think it will recover most losses in a few days? On a scale of 1 ('No, it will definitely not recover') to 9 ('I'm absolutely sure it will recover'), please rate your answer'.

The analysis demonstrated thatabout 18% of the subjects (total answersforitems 7, 8 and 9) make irrational decisions. A stock market index increase may be most desirable, an issue on which they are intent, but in no case is it an evidence-based prediction. Certainty about a future event under unpredictable conditions and in uncertain times, accompanied by over-optimism, implies an established irrational decision.

In addition, about 19% of the subjects (total answersforitems 1, 2 and 3) have a negative attitudetowards the progress of stock market returns, which demonstrates the researched students' irrational behaviour and exaggerated positive thinking. Pessimistic attitudes have the same impact on decision-making processes as they are driven by other psychological reactions (anxiety, fear, panic).

Finally, it is also worth noting that 30% of the participating students opted for a neutral answer (item 5) indicating rational thinking as regardspredicted probability. Informed decisions cannot be made without relevant knowledge and evidence. Thus, a considerably high percentage of the researched students object to irrational optimism.

V. Conclusions

To investigate the impact of behavioural biases on investment decisions, the research used a simple percentage analysis, as measurement of emotions - which are volatile and changeable - cannot be achieved by employing complicated scientific approaches (Fama, 1998). However, it enables drawing relevant conclusions by comparing results and determining the central tendency.

The participating students, who are potential or current investors and future investment advisors, display an irrational behaviourwhen they decide to be professionally involved in stock market processes and offer investment advice, and are affected by cognitive-emotional errors and biases.

A very highnumberof students irrationally believe that their knowledge of issueswhichinterest them is full. They are affected by the illusion of knowledge and think they have a deep understanding of the situations in which they are involved.

In addition, a large part of the surveyed students feel that their successis the result only of their own abilities. In other words, they display the irrational behaviourof self-servingbias, by underestimating various situations, people, and circumstances,which may have been crucial to their careerand life so far.

As regards the above-average effect, the researched students irrationally believe that their abilities and knowledge are superior to those of their fellow students. As theyare unable to make a proper assessment of their capabilities, they tend to overestimate them, and they do not perceivepotential weaknesses;thus,they are not willing to improve.

The subjectsareover-optimistic about events. By not relying on relevant information and evidence, their decision-making is based on the irrational belief that everything will have a happy end. Their irrational convictionabout better prospects prevents them frombeing able to prepare themselves for future decision-making.

To conclude, the present research emphasizes the great significance and contribution of psychology, emotions, and biasesto investment decision-making, and suggests that further research and analysis are requiredin order to provide relevant solutions.

Emphasis should, thus, be placed on the new economic theory, Behavioural Finance, which has been the new dominant economic paradigm to study investors' behaviour and facilitaterational investment decisions.

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