

Effect of Cognitive and Emotional Biases on Investor Decisions: An Analytical Study of the Iraq Stock Exchange

Noor Sabah Hameed Al-Dahan^a, Mohammed Faez Hasan^b, Hamid Mohsin Jadah^c, ^{a,b,c}University of Karbala, Email: ^anoor.s@uokerbala.edu.iq, ^bmohammed.faiz@uokerbala.edu.iq, ^chamed.m@uokerbala.edu.iq

The purpose of this research is to understand and analyse the behaviour of emotional and cognitive bias experienced by investors in making investment decisions, which leads to them making wrong decisions, bearing large losses and allowing irresponsible behaviour to dominate their investment decisions. The problem of the study revolves around how cognitive and emotional prejudices affect investment decisions. What are the most influential biases in these decisions? The importance of the study stems from the importance of its subject. The behaviour of investors and their decisions, especially the psychological and behavioural aspects, has a significant impact on the functioning of the financial market in any country and also affects the indicators of companies and institutions listed on the market. Consequently, this study tests and analyses some behavioural biases of investors and their impact on the investment decision-making process, in addition to the interpretation of abnormal decisions taken by investors in the financial markets in general and the Iraqi market for securities in particular. Since the research relates to some biases that affect the decisions of investors in the financial markets, it was conducted in the Iraq Stock Exchange as a research community and a sample of investors in the market as a sample of research with 80 investors. The data were collected via a questionnaire about behavioural biases (i.e. cognitive and emotional biases) and investor decisions. The research reached a number of conclusions, the most important of which is that investors in the Iraqi market for securities are characterised by over-confidence about their investments and about the status and situation of the financial market in the near future. Investors in the Iraqi market for securities tend to base

their investment decisions available information without resorting to deep research and investigation.

Key words: *Behavioural finance, cognitive biases, emotional biases, investor decisions.*

Introduction

Information is quickly reflected in the behaviour and direction of stock prices in financial markets, which have experienced extreme volatility globally since the 2008 global financial crisis as a result of anomalies that run counter to the logic of the rational expectations theory of investor sentiment, which is a major determinant of market movements. Many researchers are interested in studying the behavioural factors of investors. Financial markets play an important role in a country's economy, and this research explores the role played by behavioural factors (cognitive and emotional), such as fear, greed, excessive confidence and other behavioural factors, in the formulation of investment decisions. Consequently, behavioural finance has become the specialised field in studying how psychological factors affect investment decision-making in case of uncertainty.

In this article, theoretical discussion will be presented to understand and analyse the emotional and cognitive biases that are specific to the decisions of investors in financial markets and how these biases affect their investment decisions, resulting in irrational behaviour dominating their investment decisions.

Methodology of the study

The study centres on the following questions:

1. How do cognitive biases affect investment decisions? What are the most influential biases in these decisions?
2. How do emotional prejudices affect investment decisions? What are the most influential biases in these decisions?
3. What are the most important biases associated with making investment decisions and how can these biases significantly affect the decision of investors?

Behavioural biases affect investor behaviour when making a decision

1. Cognitive biases affect the behaviour of the investor when making the decision and stem from the following sub hypotheses:
2. Emotional prejudices affect the behaviour of the investor when making the decision, followed by the following hypotheses:

- H1: Excessive trust bias has a positive impact on investor decisions
H2: Representative bias has a positive impact on investor decisions.
H3: Availability bias has a positive impact on investor decisions
H4: Bias illusion of control has a positive impact on investors' decisions
H5: installation bias has a positive impact on investor decisions
H6: Late perception bias has a positive effect on investor decisions.
Emotional prejudices affect the behavior of the investor when making the decision, followed by the following hypotheses:
H7: Excessive optimism bias has a positive effect on investor decisions
H8: loss avoidance bias has a positive impact on investor decisions
H9: prejudice avoidance bias has a positive impact on investor decisions
H10: Ownership bias has a positive effect on investor decisions.

Importance of the study

The importance of the study stems from the importance of the subject, as investor behaviour and decisions, especially the psychological and behavioural aspects, have a significant impact on the functioning of the financial market in any country, and also affect the indicators of companies and institutions listed in the market. This study therefore works to test some biases by analysing the behaviours of investors and examining their impact in the process of investment decision-making, in addition to the interpretation of abnormal decisions taken by investors in financial markets in general and the Iraqi market for securities in particular.

Objectives of the study

This study aims to achieve the following objectives:

1. To understand, analyse and test the emotional and cognitive biases experienced by investors in financial markets, and the Iraqi market in particular.
2. To know which cognitive biases most affect decision-making.
3. To know which emotional prejudices most affect decision-making.

Study and Sample Population

The study relates to some biases that affect the decisions of investors in the financial markets. Data were collected through a questionnaire tested on behavioural biases – that is, cognitive and emotional biases – and investor decisions.

Behavioural Finance

Behavioural finance is a branch of economics that explains the irrational decisions of an investor. Behavioural finance focuses on the application of the principles of psychology and economics to

develop the investment decision-making process (Parik, 2009; Titisari, Susanto & Prajitiasari, 2018), whereby finance, psychology and investor behaviour are integrated (Mayo, 2013; Mohd, Rahman & Yaacob, 2018). The main logic of behavioural finance is that the decisions of investors in the financial market are irrational as a result of cognitive and emotional prejudices – unlike traditional financial research, which emphasises the rational behaviour of the investor and explains the wrong decisions of people, and whether feelings of fear, greed and other psychological factors that can impact investors' decisions in financial markets are irrational to securities buyers and sellers. They thus explain phenomena and anomalies that rational theory cannot explain, such as bubbles, crises and mispricing of financial instruments and financial decisions (David et al., 2018; Hirschey & Nofsinger, 2008).

Cognitive Biases

Pompian (2011) describes the first types of prejudice, which are seen as the most important.

Over-confidence Bias

This is one of the cognitive prejudices possessed by people, and is believed to be one of the most prominent features of success and excellence in many decision-making areas. It also refers to confidence, and confidence in language means a person's sense of certainty. It may also indicate the accuracy in the expression and persuasion of something (Hawkins & Allen, 1991). The person who possesses this bias tends to exaggerate their cognitive abilities and skills in the investment field because they believe they possess more knowledge and insight than others when making a decision. The first to describe excessive confidence in the field of psychology was Oskamp (1965). Psychologists believe that a person with excessive confidence over-estimates events and how to control them, and reduces the time required to assess risk; this also means over-estimating a person's own ability to perform certain tasks (Seppälä et al., 2009), and showing more confidence in making decisions. When making a decision to buy and sell securities, the presence of an over-confidence bias leads to heterogeneity in the decisions of the dealers in securities (Scheinkman & Xiong, 2003). When investors in the markets and decision-makers are characterised by excessive confidence, it leads to excessive trading. People who experience this bias fail to understand information or make an effort to obtain it (Healy & Pate, 2007). Securities are generally bought at a high price and sold at a low price due to excessive confidence. This cycle leads to losses for the investor and bubbles in the financial markets (Sadi et al., 2011).

Excessive confidence explains anomalies in stock markets through financial psychology Hede (2012), which may be the most important behavioural element when trying to understand anomalies in stock markets because it increases people's confidence in their judgements compared with reality. To over-estimate their predictions (Al-Wattar, Almagtome & Al-



Shafeay, 2019; Ali, Almagtome & Hameedi, 2019), researchers have divided the over-judgement of people for this bias into two areas: over-estimation of subjective potential and over-estimation of the accuracy of one's knowledge and information (Wickens et al., 2015).

Representativeness Bias

This cognitive bias means people try to fit a new and unknown event into a current event. The nature of people is to judge something according to their ideas and what their memory retains. Kahneman and Tversky (1979) were the first scholars to describe this bias, which manifests when people prefer to generalise a phenomenon based on previous experience. This means that they depend on the similarity between the event and a similar previous event, and on the mental image generated, by allocating more weight to the latter phenomenon without taking an average of the phenomenon in the long term (Kubilay & Bayrakdaroglu, 2016). Thus, they ignore the random nature of events by linking current analysis periods with previous periods (Chang et al., 2008). This in turn leads to inaccuracies in investment decision-making because of the inaccuracy of the decision-maker in selecting the sample (Bodie, Kane & Marcus, 2013).

Availability Bias

Another important cognitive bias that appears when decisions are made on the basis of memory is estimating the probability of the latest event by adopting a mental event retrieval formula to increase the probability of event retrieval (Gal, 2006). This provides a rapid estimation and evaluation of the event for easy retrieval of examples, leading to speed decision-making (Barberis & Thaler, 2003).

Illusion of Control Bias

This bias means a person thinks they are capable of controlling the consequences of events, whereas they don't possess that ability. It reflects negatively on their future decisions (Chira, Adams, & Thornton, 2008). Such bias affects the relative importance of skill, the role of luck and the incentives a person has to control the investment environment of the financial market.

Confirmation Bias

Trading requires the availability and collection of information about the current assets and their basic characteristics, and anticipation of what other investors in the market will do in order to make a correct estimate of assets in the future. This bias leads to a tendency for investors to focus on information that agrees with their views, preventing them from responding to any



other information (Wickens et al., 2015); this can lead to the creation of bubbles in financial markets (Pouget, Sauvagnat & Villeneuve, 2017).

Hindsight Bias

Hindsight bias is a cognitive bias that makes a person convinced that the circumstances of an event after the occurrence of the event were expected based on historical data. There is a belief in predictability, which is seen as an ability to make investment decisions (de Miguel Guzmán et al., 2018).

Emotional Biases

Loss aversion bias

It is human nature to want to avoid loss, and this can play a big role when making an investment decision. Yet this bias can lead to irrational behaviour. This will affect the investment decision because investors retain investments to avoid loss when they should exit the market. Numerous psychological studies have shown that individuals do not view the results as the ultimate state of wealth or wellbeing, as but rather as gains and losses relative to a particular reference point, usually the status quo (Zamir & Ritov, 2012).

Endowment Bias

The cost of giving away anything from a person's property is seen as a loss and the opportunity cost (not buying a commodity or financial asset) is seen as a prior profit. The first should be given greater weight, as investors resist change when they own a security. Pompian (2011) states that this bias:

1. affects investors in holding onto the securities they have inherited, regardless of whether it is financially wise to do so
2. results in investors holding the securities they have purchased, which is often the result of a decision deficit
3. results in investors retaining the securities they have inherited or bought because they do not want to bear the transaction costs associated with selling securities
4. leads to investors retaining the securities they have inherited or purchased because they are aware of the behavioural characteristics of these investments.

Self-control Bias

Restraint bias can lead to many mistakes for investment and thus affect investor decisions and profits, and create bubbles in the market; this bias leads to investors spending more today rather

than saving for tomorrow. Retirement can arrive so quickly that investors cannot provide enough; often, people assume an inappropriate degree of risk in their portfolios in an effort to make up for lost time. People who do not plan to retire are less likely to invest in securities. Restraint bias can lead investors to overlook basic financial principles (Pompian, 2011).

Regret Aversion Bias

Emotional biases describe people feeling sad about doing something. Grief may result from comparing the actual result with an alternative result and feeling responsible or blaming oneself for the negative outcome of a decision. Avoiding remorse is a psychological theory that shows regret when people see that their decisions are wrong, even if they seemed correct originally. Regret is associated with a sense of responsibility for the option, so it differs from the frustration of placing responsibility on external elements for bad outcomes (Michenaud & Solnik, 2008).

Status Quo Bias

Individuals who face a range of options tend to elect any option that maintains the status quo, rather than alternative options that might bring about change. That is, they make the decision only because it maintains the current situation (Bostrom & Ord, 2006). This bias means that people have a tendency to stay where they are, even if they have better alternatives (Schade & Koellinger, 2007). This bias may result from the search for comfort, because people resist change and fear the remorse of change if they take effective steps to change the status quo (Ackert & Deaves, 2009). This means people tend to retain their existing alternative rather than changing, which is linked to the researchers' view of ownership bias, but there is a difference (Kahneman & Tversky, 1979) between the two biases.

Analysis and Interpretation of Tests for the Availability of Behavioural Biases

In this article, a statistical analysis was conducted to measure the results of investors' answers about the nature of the biases studied, particularly regarding whether they are available in the Iraqi Stock Exchange. All biases and the tests used to detect them have been treated by calculating the statistical parameters of the weighted average, the intensity of the response, the standard deviation, the coefficient of variation, the variation Yeh and t-test relative to the spirits and the specimen. Following is a detailed explanation the results relating to each bias.

Cognitive biases

Excessive Trust Bias

Table 1 shows that all paragraphs related to the bias of overconfidence were positive and higher than the hypothetical mean, as they achieved (2.375, 2.56, 2.65, 2.4 and 2.62) successively with relatively low variation and variation, which reinforced this.

All the paragraphs achieved t values calculated at greater than the value of t tabular value of 2.63 at the level of significance 0.01 and the degree of freedom 79. This indicates the accuracy of the investors' responses, which clearly shows that individuals are characterised by overconfidence in two ways. First, they tend to be over-confident about their ability to predict what their investments and their situation will be, as well as the financial market situation in the near future. The results show that they are over=confident in their certainty about their investment decisions and the degree of optimism used in interpreting the information they get, even if there are indications to the contrary. This is due to their bias in giving more weight to the private information that they have obtained compared with new market information. Table 1 shows the statistical parameters of excessive confidence bias.

Table 1: Parameters of excessive confidence bias

Over-confidence	Average	Answer intensity (%)	deviation	variation	variance	relative importance	calculated t
X1	2.375	78	0.7004	0.2949	0.49051	0.78	4.7891
X2	2.5625	85%	0.6130	0.2392	0.37579	0.85	8.2072
X3	2.5625	8	0.6130	0.2392	0.37579	0.85	8.2072
X4	2.4	79	0.5648	0.2353	0.31899	0.79	6.3346
X5	2.625	87	0.4872	0.1856	0.23734	0.87	11.4746
total	2.505	83	0.6079	0.2427	0.36959	0.83	7.4297

Representational Bias

Investors' response to tests for this bias showed that the majority of people choose diversification in an explicit reference to the absence of a role for previous experiences (previous views) in predicting the next results. In the normal experiment, each time the coin is thrown, and this is clearly unbiased towards the previous observations due to the fact that the probability is clear, in a similar context in the following four tests, respondents tended to be more conservative about their answer in a manner that made the results contradictory. The calculated t values for the four questions were less than the t-table of 2.63 at the level of significance of 0.01 and the degree of freedom 79, so this bias is of little relevance, since the answers contradict the principle of bias in ignoring the baseline data. On the other hand, the answers also contradict the small sample adopted in decision-making, as the results are not

given high importance. Thus, in the light of the irrelevance of the last four questions and the significance of the first question, which achieved a value of t calculated by 18.502, this implies that investors in the Iraqi market for securities tend not to overreact to new information received and that their decisions are based on historical data on stock price behaviour. Table 2 shows the statistical parameters of representative bias.

Table 2: Parameters of representative bias

Representativeness	Average	the answer Intensity	deviation	variation	variance	relative importance	calculated t
X6	2.8125	93	0.3928	0.1397	0.15427	0.93	18.5023
X7	1.875	62	0.4872	0.2598	0.23734	0.62	-2.2949
X8	1.8125	60	0.5973	0.3296	0.35680	0.60	-2.8076
X9	1.875	62	0.7004	0.3735	0.49051	0.62	-1.5964
X10	1.75	58	0.9071	0.5183	0.82278	0.58	-2.4651
total	2.025	67	0.7560	0.3733	0.57152	0.67	0.2958

Availability bias

The statistical results for available bias indicated that investors suffer from this bias clearly. This indicates the existence of bias and reinforces the validity of this result. All calculated t values were also higher than the tabular value of 2.63 at the level of significance 79 and a degree of freedom 0.01. This reinforces the idea that investors in the Iraqi market for securities tend to base their investment decisions on available information without resorting to deep research and investigation, and therefore are biased towards the information they already have or that they can easily retrieve. Furthermore, making successful decisions under this method can result in inaccurate decisions if there is no information available. Therefore, we find that the overall rate of this dimension is in line with the above explanation as it achieved an average of 2.57, which is higher than the hypothesis of the study of 2 with an answer strength of approximately 85 per cent and the value of t calculated at the level of 12.016. The t-table value of 2.63 at the level of significance was 0.01 with a degree of freedom of 79. Table 3 shows the outcome of statistical parameters of availability bias.

Table 3: Parameters of availability bias

Availability	Average	Answer Intensity (%)	Deviation	Variation	Variance	Relative importance	Calculated t
X11	2.8125	93	0.3928	0.1397	0.15427	0.93	18.5023
X12	2.375	78	0.8624	0.3631	0.74367	0.78	3.8894
X13	2.9125	96	0.3626	0.1245	0.13149	0.96	22.5079
X14	2.1875	72	0.5300	0.2423	0.28085	0.72	3.1645
total	2.571875	85	0.6472	0.2516	0.41882	0.85	7.9037

Confirmation Bias

According to the answers regarding this bias, investors in the Iraqi market for securities expressed their bias towards new information that fits what they expect from their initial perceptions. This was reflected in the three tests conducted. In the first test, investors answered that they would not interact with the new information. However, this was not accurate according to the statistical analysis data. The reason for this is that the answers were not significant because the test achieved a calculated t value of 0.3144, which is less than the t-value of 2.63 t at degree of freedom 79. The remaining answers clearly indicated a tendency for investors to pay attention to the new information received that corresponded to their assumptions and that supported their orientation and tendencies in light of the prejudices that had been established for them. This result is reflected in the overall results of this bias rate, which referred to an average of 2.23, which is higher than the hypothetical mean 2 strongly answered relatively high and reached about 75 per cent, which confirms the significance of this bias is that the value of t calculated was 2.7, with a t-value of 2.63. Table 4 shows the results of the confirmation bias tests.

Table 4: Parameters of confirmation bias

Confirmation	Average	Answer intensity (%)	Deviation	Variation	Variance	Relative importance	Calculated t
X15	2.025	67	0.7111	0.3512	0.50570	0.67	0.3144
X16	2.4375	80	0.8692	0.3566	0.75554	0.80	4.5019
X17	2.3125	76	0.8508	0.3679	0.72389	0.76	3.2852
total	2.258333	75	0.8318	0.3683	0.69191	0.75	2.7778

Hindsight Bias

We initially thought investors did not suffer from late perception bias, but the results actually suggest the opposite. Despite the negative response from investors, their answers were not significant. It was higher than the hypothetical mean of the study 2 which was not significant at all of them also achieved a calculated t-test value less than the tabular value of 2.63 at degree of freedom 79 and a level of significance 0.01; therefore, the overall results of the statistical parameters for this bias were not above average The actual average of this bias was 4.18. This is due to an inability to process new information when it is logically received, despite the existence of experience. See Table 5.

Table 5: Parameters of hindsight bias

Hindsight	Average	Answer intensity (%)	deviation	variation	variance	relative importance	calculated t
X18	1.625	54	0.8624	0.5307	0.74367	0.54	-3.8894
X19	2	66	1.0063	0.5032	1.01266	0.66	0.0000
X20	1.625	54	0.8624	0.5307	0.74367	0.54	-3.8894
total	1.75	58	0.9261	0.5292	0.85774	0.58	-4.1818

Illusion of Control Bias

We found this kind of bias shown clearly in the pattern of investors' responses in the Iraq Stock Exchange. It is noticeable that the tests of this bias achieved all the mean arithmetic scores (2.31, 2.31 and 2.37) respectively This is higher than the hypothetical mean of the study, which is estimated at 2. On the other hand, we note that the significance of the answers was also high, so the value of t calculated in all tests exceeded the value of t tabular of 2.63 at the level of significance 0.01 and the degree of freedom 79. Thus the total results indicate the average parameters of this bias are 2.33 The mean of the computed statistical parameter t was recorded at 3.964, which is higher than the t-tab value of 2.63 at the 0.01 level of significance and the degree of freedom 79. The statistical results therefore suggest that investors in the Iraqi market for securities suffer from illusion of control bias control, as they tend to select securities that they see as semi-specific results in the future as a result of their feeling that they can judge the results of investment better than brokerage firms and advisers. Table 6 shows these tendencies.

Table 6: Parameters of illusion of control bias

Illusion of Control	Average	Answer intensity (%)	deviation	variation	variance	relative importance	calculated t
X21	2.3125	76	0.9222	0.3988	0.85047	0.76	3.0308
X22	2.3125	76	0.6861	0.2967	0.47073	0.76	4.0739
X23	2.375	78	0.7004	0.2949	0.49051	0.78	4.7891
total	2.333333	77	0.7777	0.3333	0.60478	0.77	3.8338

Emotional Biases

Loss Aversion Bias

The investment environment tends to be entirely probabilistic, and the presence of near-certain results may lead investors to accept their adoption against the potential results. This is particularly the case if they promise a high return, in which investors favoured the possibility of loss – albeit a substantial versus a definite loss – which is consistent with the theory of probability. Although the first test and the second test answers indicated their preference for speculation to obtain the highest return, those answers were not significant, as the first and

second paragraphs achieved t-values calculated at less than the t-value of 2.63 at the level of 0.01 and the degree of freedom 79, so investors in the Iraqi market for securities enjoy bias, and evidenced by the overall rate of adoption of risk-avoidance bias.

This is due to a low amount of the calculated t value compared with its tabular counterpart, which was 2.63 at the level of 0.01 and degree of freedom 79. The results of this dimension may be somewhat confusing, as the first and second tests were not significant. Thus, with bias implied, the third and fourth tests explicitly indicated bias. Table 7 shows the overall and sub-results of loss aversion bias.

Table 7: Parameters of loss aversion bias

Loss aversion	Average	Answer intensity (%)	deviation	variation	variance	relative importance	calculated t
X24	1.5	50	0.8715	0.5810	0.75949	0.50	-5.1316
X25	1.625	54	0.9329	0.5741	0.87025	0.54	-3.5955
X26	2.5	83	0.8715	0.3486	0.75949	0.83	5.1316
X27	2.625	87	0.7004	0.2668	0.49051	0.87	7.9818
total	2.0625	68	0.9885	0.4793	0.97706	0.68	0.5655

Endowment Bias

The results of the acquisition bias survey clearly show that individuals in the three tests were inclined to retain assets and forms, so this behaviour makes it easy to say that investors in Iraq Stock Exchange exhibit endowment bias. Their answers in tests achieved an arithmetic average of 2.43, 2.56 and 2.25, which is greater than the hypothesis of the study of 2. The significance of the results was confirmed by the achievement of t values, calculated higher than the value of t 2.63 at the level of significance 0.01 and the degree of freedom 79. In all three tests, this resulted in the overall results of the acquisition bias recording an overall average of 2.41, which is greater than the hypothetical mean of 2. The total value of t of 5.06 at the same time was higher than the tabular value of 2.63 at the level of significance 0.01 and the degree of freedom 79. Table 8 shows the statistical parameters of endowment bias.

Table 8: Parameters of endowment bias

Endowment bias	Average	Answer Intensity (%)	deviation	variation	variance	relative importance	calculated t
X28	2.4375	80	0.7088	0.2908	0.50237	0.80	5.5209
X29	2.5625	85	0.6130	0.2392	0.37579	0.85	8.2072
X30	2.25	74	0.8344	0.3708	0.69620	0.74	2.6799
total	2.416667	80	0.7359	0.3045	0.54149	0.80	5.0645

Self-control Bias

The results of the tests for this bias indicate that individuals tend to save and do not suffer from self-control bias. The hypothetical mean of 2 (except for the first test) and the calculated t values were also less than the t-tabular value. Thus, the results of the statistical bias indicate that the mean was 1.875, which is less than 2. The hypothesis of the study and the calculated t value were also lower than its tabular counterpart of 2.63 at the level of significance 0.01 and the degree of freedom 79. Table 9 shows these results.

Table 9: Parameters of self-control bias

Self-control	Average	the answer Intensity (%)	deviation	variation	variance	relative importance	calculated t
X31	2	66	0.8715	0.4357	0.75949	0.66	0.0000
X32	1.75	58	0.6656	0.3803	0.44304	0.58	-3.3594
X33	1.875	62	0.7855	0.4190	0.61709	0.62	-1.4233
total	1.875	62	0.7855	0.4190	0.61709	0.62	-1.4233

Regret Aversion Bias

Regret aversion bias specifically indicates that people tend to take a certain investment position in order to avoid remorse from making a decision that turns out to be inaccurate; they are biased towards reducing pain suffered as a result of blaming themselves. In the variation, the relative importance of each test, in a way that gave significant significance through the calculated t value, which also surpassed the t-table value of 2.63 at the level of 0.01 and the degree of freedom 79, made the total bias yield achieved an average of 2.316. Therefore, the calculated t value of 3.73 was higher than the tabular counterpart of 2.63 at the level of 0.01 and the degree of freedom 79. Table 10 shows the results of the responses to tests for regret aversion bias.

Table 10: Parameters of regret aversion bias

Regret Aversion	Average	Answer intensity (%)	deviation	variation	variance	relative importance	calculated t
X34	2.25	74	0.7547	0.3354	0.56962	0.74	2.9627
X35	2.2625	75	0.7915	0.3498	0.62642	0.75	2.9665
X36	2.4375	80	0.7088	0.2908	0.50237	0.80	5.5209
total	2.316667	76	0.7573	0.3269	0.57356	0.76	3.7399

Status Quo Bias

The statistical results could not prove the existence of this bias. The value of t calculated for the three tests was lower than the tabular value of 2.63 at the level of significance 0.01 and the degree of freedom 79, and these results are in the overall result of bias, which also reflects the results of the tests, where the average of 1.6 and thus less than 2 hypothesis average.

However, this result is not significant according to the t test. The calculated value of t was less than the table value of 2.63 at the level of significance 0.01 and the degree of freedom 79, and therefore the answer shows no existence of bias; as it is not significant, we can say that the bias already exists and this means that investors in the Iraqi market for securities tend to view the gains as not outweighing the risk of leaving the current situation and that going to the new situation may exacerbate the feeling of remorse. Table 11 shows the statistical results.

Table 11: Parameters of status quo Bias

status quo bias	Average	the answer Intensity	deviation	variation	variance	relative importance	calculated t
X37	1.25	41%	0.4357	0.3486	0.18987	0.41	-15.3948
X38	1.6875	56%	0.4664	0.2764	0.21756	0.56	-5.9924
X39	1.875	62%	0.6033	0.3217	0.36392	0.62	-1.8533
total	1.604167	53%	0.5715	0.3562	0.32656	0.53	-6.1954

Conclusions

1. The investors in the Iraqi market for securities expressed bias towards the new information that corresponds to what they expected in the light of their information and their initial perception, as demonstrated in the three tests conducted in this bias.
2. Investors are already suffering from late perception bias, and therefore tend to make optimistic judgements about expected events similar to events in which they have previously achieved successful returns.
3. Investors in the Iraqi market for securities suffer from the bias of control explicitly, as they tend to select securities that they see with semi-specific results in the future as a



result of their feeling that they are have better knowledge about predicted investment results compared with the experience of brokerage firms and advisers; this drives them to modify their portfolios and influences their investment decisions.

4. Investors in the Iraqi market for securities experience risk-aversion bias, shown in the overall rate of adoption of the risk-avoidance bias.
5. Investors in the Iraqi market for securities experience behaviour bias of ownership in a way that affects their investment decisions.
6. Investors in the Iraqi market for securities tend to take a certain investment approach to avoid remorse resulting from their decision, which may then turn out to be inaccurate.



REFERENCES

- Ackert, L., & Deaves, R. (2009). *Behavioral finance: Psychology, decision-making, and markets*: Cengage Learning.
- Al-Wattar, Y. M. A., Almagtome, A. H., & AL-Shafeay, K. M. (2019). The role of integrating hotel sustainability reporting practices into an Accounting Information System to enhance Hotel Financial Performance: Evidence from Iraq. *African Journal of Hospitality, Tourism and Leisure*, 8(5), 1-16.
- Ali, M. N., Almagtome, A. H., & Hameedi, K. S. (2019). Impact of accounting earnings quality on the goingconcern in the Iraqi tourism firms. *African Journal of Hospitality, Tourism and Leisure*, 8(5), 1-12.
- Arnott, D. (1998). A taxonomy of decision biases. *Monash University, School of Information Management and Systems, Caulfield*.
- Barberis, N., & Thaler, R. (2003). A survey of behavioral finance. *Handbook of the Economics of Finance*, 1, 1053-1128.
- Bodie, Z., Kane, A., & Marcus, A. J. (2013). *Essentials of investments*: McGraw-Hill/Irwin Taipei.
- Bostrom, N., & Ord, T. (2006). The reversal test: eliminating status quo bias in applied ethics. *Ethics*, 116(4), 656-679.
- Chang, F., Dean, J., Ghemawat, S., Hsieh, W. C., Wallach, D. A., Burrows, M., . . . Gruber, R. E. (2008). Bigtable: A distributed storage system for structured data. *ACM Transactions on Computer Systems (TOCS)*, 26(2), 4.
- Chira, I., Adams, M., & Thornton, B. (2008). Behavioral bias within the decision making process.
- de Miguel Guzmán, M., Campdesuñer, R. P., Rodríguez, A. S., Vidal, G. G., & Vivar, R. M. (2018). Determination of qualitative and quantitative personnel requirements in hotel organizations. *International Journal of Business & Management Science*, 8(1), 1-19.
- David, L., F. Paul, S. Ken, T. David and Y. Tony, 2018. Towards an effective model for whole of school blended learning: A conceptual paper. *International Journal of Innovation, Creativity and Change*, 4(1): 29-51.
- Gal, D. (2006). A psychological law of inertia and the illusion of loss aversion.
- Hawkins, J. M., & Allen, R. E. (1991). *The Oxford Encyclopedic English Dictionary*: Oxford University Press, USA.



- Healy, A., & Pate, J. (2007). Overconfidence, social groups, and gender: Evidence from the lab and field. *Social Groups, and Gender: Evidence from the Lab and Field (April 14, 2007)*.
- Hirschey, M., & Nofsinger, J. R. (2008). *Investments: Analysis and behavior* (Vol. 281): McGraw-Hill Irwin New York, USA.
- Kahneman, D., & Tversky, A. (1979). Tversky A.(1979). *Prospect theory: an analysis of decision under risk*, 263-292.
- Kubilay, B., & Bayrakdaroglu, A. (2016). An empirical research on investor biases in financial decision-making, financial risk tolerance and financial personality. *International Journal of Financial Research*, 7(2), 171-182.
- Mayo, H. B. (2013). *Investments: an introduction*: Nelson Education.
- Michenaud, S., & Solnik, B. (2008). Applying regret theory to investment choices: Currency hedging decisions. *Journal of International Money and Finance*, 27(5), 677-694.
- Mohd, N. A., Rahman, A. A., & Yaacob, M. H. (2018). THE IMPACT OF ASYMMETRIC INFORMATION ON FOREIGN PORTFOLIO INVESTMENT FLOWS. *International Journal of Business & Management Science*, 8(2), 475-494.
- Parik, P. (2009). Value Investing and Behavioral Finance: Insights into Indian Stock Market Realities. *New Dehli*.
- Pompian, M. M. (2011). *Behavioral finance and wealth management: how to build investment strategies that account for investor biases* (Vol. 667): John Wiley & Sons.
- Pouget, S., Sauvagnat, J., & Villeneuve, S. (2017). A mind is a terrible thing to change: confirmatory bias in financial markets. *The Review of Financial Studies*, 30(6), 2066-2109.
- Sadi, R., Asl, H. G., Rostami, M. R., Gholipour, A., & Gholipour, F. (2011). Behavioral finance: the explanation of investors' personality and perceptual biases effects on financial decisions. *International Journal of Economics and Finance*, 3(5), 234-241.
- Safa, M. (2018). Cost Efficiency and Liquidity Risk in Banking: New Evidence from OIC Countries. *International Journal of Business & Management Science*, 8(2), 255-276.
- Schade, C., & Koellinger, P. (2007). Heuristics, biases, and the behavior of entrepreneurs. *Entrepreneurship, the engine of growth*, 1, 141-163.
- Scheinkman, J. A., & Xiong, W. (2003). Overconfidence and speculative bubbles. *Journal of political Economy*, 111(6), 1183-1220.



- Shiller, R. J. (1999). Human behavior and the efficiency of the financial system. *Handbook of macroeconomics, 1*, 1305-1340.
- Shleifer, A. (1997). Government in transition. *European Economic Review, 41*(3-5), 385-410.
- Skala, D. (2008). Overconfidence in psychology and finance-an interdisciplinary literature review. *Bank I kredyt*(4), 33-50.
- Titisari, P., Susanto, A. B., & Prajitiasari, E. D. (2018). Performance through Innovation: An Analysis of Small and Medium-Sized Enterprises in Developing Country. *International Journal of Business & Management Science, 8*(3), 615-629.
- Wickens, C. D., Hollands, J. G., Banbury, S., & Parasuraman, R. (2015). *Engineering psychology and human performance*: Psychology Press.
- Zamir, E., & Ritov, I. (2012). Loss aversion, omission bias, and the burden of proof in civil litigation. *The Journal of Legal Studies, 41*(1), 165-207.