

Research on the Investment and Financial Management Tendency of College Students from the Perspective of Behavioral Finance

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Keywords: Behavioral Finance, College Students, Investment and Financial Management, Cognitive Bias, Behavioral Bias, Herd Effect

Abstract: The phenomenon of college students engaging in investment and financial management is becoming increasingly common. However, this group lacks a stable source of income, making them susceptible to various irrational factors that can hinder their ability to make independent financial decisions, leading to unpredictable investment risks. This article, from the perspective of behavioral finance theory, utilizes questionnaire surveys and logistic regression models to analyze the process influencing investment and financial management among Chinese college students. The study reveals that in making investment and financial decisions, college students exhibit dual biases at both cognitive and behavioral levels. These biases include representativeness heuristic bias, emotional heuristic bias, mental accounting, loss aversion, and confirmation bias, but the herd effect of blindly following others is relatively weak. The empirical research contributes to our understanding of the formation of psychological biases in market investors and their impact on decision-making within an Eastern cultural context. Furthermore, it offers practical recommendations for college students on how to avoid falling into investment pitfalls.

1. Introduction

As the economy and society continue to develop, how to engage in investment and financial management correctly has become not only a social hot topic but also permeated into people of various ages, social classes, and income levels. Particularly among college students, stock trading, purchasing funds, and installment loans are prevalent, even though the majority of them have not yet achieved financial independence. According to a survey conducted in 2022 [1], nearly 90% of Chinese college students believe that it is necessary to engage in investment and financial management during their college years. The percentage of those who aim to learn financial knowledge and achieve wealth appreciation exceeds 60% (N=4065). Among them, 70.8% of college students have purchased money market funds, which is the most popular investment type (N=4262). Holding investments for a short period is a common characteristic among college students, with 59.6% of them holding funds for 3 months to 1 year, and less than 20% of college students holding investments for more than a year (N=3612)[2].

Due to the limitations imposed by their environment and personal circumstances, university students generally lack stable income sources and a strong economic foundation. However, they aspire to achieve financial independence at an early stage, leading to an increasing inclination towards investment. University serves as a crucial stage for the initial socialization of young people. Nonetheless, limited financial resources, impulsive decision-making, and susceptibility to peer influence are common characteristics of this group. Therefore, acquiring proper financial values and investment knowledge has become a compulsory course for university students. Understanding the factors influencing their investment decisions is crucial for educators and policymakers in order to effectively manage finances, enhance financial literacy, and promote responsible investment behavior.

There are many factors influencing university students' investment and financial management tendencies. Besides basic demographic characteristics such as gender, personality, and living expenses, some difficult-to-quantify and subtle variables also profoundly affect their decision-making, such as herd behavior, psychological bias, and risk preference. The flourishing of third-party internet financial platforms has also given some unscrupulous individuals an opportunity, and university students are one of their main targets for fraud. Given their impulsive, blind-following, and conforming characteristics, university students are easily misled in investment. For example, many university students blindly believe in so-called high-yield, low-risk financial products and fall victim to scams.

In conclusion, exploring the investment and financial management tendencies of contemporary university students is of great practical significance. On an empirical level, it is important to understand the situation of investment and financial management among university students. What are their beliefs? Are there any biases present? And what factors are they associated with? This paper, against this backdrop, aims to investigate the influencing factors of investment and financial management among Chinese university students using the methods of behavioral finance and survey research. Additionally, this study seeks to utilize empirical data to identify potential misconceptions that may arise during the investment and financial management process, and to provide recommendations and best investment strategies.

2. Literature Review

Traditional finance has developed many classic theories based on the assumption of rational individuals who can fully identify market information and make investment decisions to maximize utility. However, in actual economic life, especially when considering investment decisions in financial markets, individual behavior may deviate to a greater or lesser extent from this rationality assumption. As a result, traditional assumptions have been challenged, and behavioral finance has emerged as a new research topic. Specifically, behavioral finance is the incorporation of psychology, particularly behavioral psychology, into the study of finance. By analyzing the psychology and behavior of individuals throughout the investment process, it examines how irrational individuals make economic decisions [3].

Faced with the uncertainty of economic decision-making, both individual and societal differences can lead to behavioral biases, such as cognitive, psychological, and social pressures. On the cognitive front, individuals often resort to heuristic pathways to process information and address complex tasks due to constraints in resources and abilities. However, these heuristics can sometimes lead to serious systematic errors. People commonly use three heuristic methods: (1) representativeness, focusing on similarities in typical characteristics between different things; (2) availability of instances or scenarios, indicating the ease of accessing memory; and (3) adjustment from an anchor, representing the influence of initial impressions [4]. On the psychological front, the

role of rationality is difficult to guide, making it challenging for investors to make accurate decisions and improve returns using information. Common psychological biases include overconfidence, mental accounting, familiarity preference, loss aversion, hindsight bias, and confirmation bias. On the aspect of social pressure, herd behavior, also known as the "herd effect," influences individual decision-making judgments. Extensive research on financial markets indicates that investors' herd behavior is detrimental not only to achieving higher returns but also to the overall stability of the market, leading to increased systemic risk and the occurrence of irrational exuberance [5].

Concerning behavioral biases of individual investors, many scholars have conducted empirical research closely linked to different cultural contexts. In China, Li, Wang, and Fu (2002) analyzed transaction data from 7,894 individual investors between July 1998 and November 2001 [6]. They found that "policy dependence mentality," "overconfidence mentality," and "excessive trading" are cognitive biases prevalent among Chinese individual investors. Wang, Zheng, Shi, and Liu utilized a combination of interviews and questionnaires and discovered that Chinese stock investors place significant importance on policies [7]. Investors who possess a higher understanding of their investment targets, possess more investment knowledge, and exhibit greater independence and self-efficacy have a higher likelihood of profit. Shi, Li, and Chen (2009) found a correlation between investors' risk preferences during the trading process and their personal wealth levels [8]. Investors with lower wealth tend to be irrational, exhibit risk preference, and possess loss aversion mentality, while investors with higher wealth tend to be risk-averse.

Based on these studies, subsequent scholars have further narrowed down the survey population to college students. Fan, Liu, Zhong, and Zhang (2011) conducted a questionnaire-based investigation involving 746 college students [9]. The study found that the characteristics of college students' investment behavior include: (1) lack of funds, knowledge, and experience, leading to blind decision-making but stable sources of funds; (2) the primary objective is profit pursuit, with cautious risk control; (3) a lack of suitable investment platforms. Similarly employing questionnaire surveys and Logit models, Wang and Leng (2015) examined the investment and financial behavior of students from 39 universities in Wuhan, China, along with influencing factors. The results revealed that demographic characteristics, funding sources, financial atmosphere, payment methods, and profit handling all play significant roles [10].

Not every economic agent is entirely rational, and this fact actually challenges and questions traditional economic and financial models. In reality, individual decision-makers are not capable of considering all relevant information when it comes to investment and financial management, and they generally cannot make optimal choices under constrained conditions. Cognitive biases are one of these constraints. The main types of cognitive biases include representativeness heuristic bias and emotional heuristic bias. Representativeness heuristic bias occurs when people are faced with uncertainty and need to determine which category an object belongs to. They tend to focus on the similarity between that object and another object. If the object shares typical characteristics with another object, people tend to classify it accordingly. While this may have some degree of rationality and effectiveness, people often overlook the possibility of connections between this event and other events. Emotional heuristic bias refers to people making judgments and decisions based on their emotions rather than rational analysis. Decision-making can easily be influenced by one's own or others' emotions. Clearly, making decisions solely based on fleeting feelings and emotions can lead to biases in investment behavior. For instance, when investing in stocks, investors might buy a company's stock simply because they like the company, appreciate its corporate culture, or admire its leadership, without applying fundamental or technical analysis in stock selection.

Psychological biases refer to the inability of investors to rationally discern and process complex

market information, making it difficult to guide investment decisions accurately and enhance returns. Common psychological biases include overconfidence, mental accounting, familiarity bias, hindsight bias, confirmation bias, and more. Mental accounting involves individuals assigning different values to the same amount of funds, depending on how these funds are perceived in their minds. Traditional economics assumes that funds are interchangeable, but due to the presence of mental accounting in reality, this assumption may not always hold. For example, people tend to cherish income they've worked hard to earn, while they may not have the same attachment to an equal amount of gambling winnings. Loss aversion refers to the phenomenon where people react much more strongly to losses than to gains. When faced with a choice between certain gains and uncertain gains, individuals tend to choose certain gains, exhibiting risk aversion. However, when it comes to certain losses and uncertain losses, people often opt for uncertain losses, showing risk-seeking behavior. Confirmation bias occurs when individuals interpret certain phenomena as evidence that supports their preexisting beliefs, even when the correlation between these phenomena and their beliefs is minimal.

Herd effect refers to investors making decisions by following the behavior of others, rather than conducting their own research and making judgments after thorough information gathering. The existing studies have all achieved good results, and they are more or less associated with behavioral biases, but none of them have clearly pointed out or elaborated on these biases. Based on this, this study proposes the following research questions:

RQ1: What cognitive biases do college students exhibit in investment decision-making? To what extent?

RQ2: What psychological biases do college students exhibit in investment decision-making? To what extent?

RQ3: Does herd behavior affect the investment decisions of college students? To what extent?

3. Methods

This article employs a survey questionnaire approach to measure three variables: cognitive biases, psychological biases, and herd effect. Considering the difficulty level of the questionnaire and participants' acceptance, it is essential to keep the questions reasonably concise. The questionnaire covers information about the current investment situation and demographic data. There are a total of 12 questions in the questionnaire. The scale is adapted from Kahneman (2011) and Pan (2016), taking into account the characteristics of the Chinese stock market and investor behavior [11-12].

The questionnaire was distributed in July 2023 to undergraduate students at a university in Beijing, China. A total of 165 responses were collected. After filtering out 11 questionnaires with response times of less than 30 seconds, the final effective sample size was 154, with 92 female participants, and ages ranging from 18 to 22. Obtaining a substantial amount of primary data through the questionnaire survey underscores the importance of scientifically and effectively processing the data. The results will be combined with both qualitative discussion and quantitative analysis. Regarding qualitative analysis, the focus will primarily revolve around cognitive biases and psychological biases, with specific details elaborated upon in the subsequent sections. Concerning quantitative analysis, the main emphasis will be on the dimension of the herd effect. The goal is to explore whether contemporary college students' tendencies in investment and financial management are easily influenced by the people around them.

The questionnaire's questions exhibit discrete characteristics. Therefore, to quantitatively assess the impact of college students' investment psychology and objective factors such as gender, living expenses, etc., on their investment and financial inclinations, a statistical logistic model is employed

for exploration. The results will also be interpreted in economic terms. Additionally, in order to enhance the effectiveness of the empirical analysis, gender and living expenses are included as independent variables in the model.

4. Findings

4.1 Cognitive biases

Regarding the representativeness heuristic bias, it is evident that among the surveyed college students, there is a pronounced tendency to overemphasize the role of representativeness, leading to erroneous judgments, indicating a clear representativeness heuristic bias. The results for Q1 show that out of the 154 interviewed college students, 74 considered the individual in question to be a lawyer, accounting for 48%, while 80 considered the individual to be an engineer, making up 52%. Similarly, for Q2, 147 participants chose option B, indicating that they believed the person to be both a bank teller and a feminist activist, with only 7 choosing option A. The notable feature in both of these questions is the presence of interference information, where the descriptions of individual characteristics do not actually reveal any relevant information. Therefore, if respondents were acting rationally, in Q1, they should have judged based on the proportion of engineers mentioned in the narrative. The results indicate that roughly an equal number of college students chose both options, suggesting that a significant portion of college students made relatively rational choices. However, the results differ for Q2. It is apparent that almost 95% of respondents fell into the so-called "conjunction fallacy," where they believed that the probability of two events occurring simultaneously is higher than the probability of one event happening alone. However, this phenomenon contradicts rational thinking.

Regarding emotional heuristic bias, it is noticeable but not prominent within the college student population. In other words, college students sometimes make impulsive decisions that are related to their current emotions. The results of Q3 indicate that 55.76% of the college students in the sample believe that their emotions occasionally influence their decisions. Only 17.58% consider themselves as individuals who are relatively less influenced by emotions or not influenced by emotions at all, making absolute rational judgments. Around one-quarter of the students view themselves as impulsive decision-makers who are easily influenced by emotions.

4.2 Psychological biases

In the aspect of mental accounting, the choices in questions Q4 and Q5 are completely opposite. 65.45% of college students are willing to go to another store to save 5 RMB on a 200-RMB item of clothing, while 61.82% of college students are willing to save 5 RMB on the purchase of a 15-RMB calculator, and this number has significantly increased. In theory, facing the same 5-RMB savings, people should make the same choice in both scenarios. However, the results reveal that college students have different perceptions of these two 5-RMB savings. The presence of mental accounting may lead college students to make judgments based on relative values rather than absolute values. When the price decreases from 200 RMB to 195 RMB, buyers may hardly feel the extent of the price reduction, whereas when the product price drops from 15 RMB to 10 RMB, there is a noticeable difference.

Regarding loss aversion, the results from Q6 and Q7 align with the hypothesis. 74.55% and 72.12% of college students chose certain gains over potential losses. Based on the sample data, it can be concluded that loss aversion is prevalent among college students.

In terms of confirmation bias, according to the results of Q8, college students tend to deliberately overlook new information that contradicts their views, exhibiting a "out of sight, out of mind"

tendency. When their predicted stock trends align with the actual trends, 49.09% of college students believe that this confirms their judgment capability or forms a sense of self-awareness that their judgment is good. Therefore, the data suggest that nearly half of college students also exhibit confirmation bias, although it is not prominent.

4.3 Herd effect

This section analyzes the relationship between college students' inclination towards investment and financial management, gender, monthly living expenses, and the herd effect. Considering that the sub-sample size of the dependent variable is too small, a multivariate logistic regression model fit cannot pass the test. Therefore, a binary logistic regression model is chosen for analysis. Specifically, the investment and financial management inclination variable is adjusted to a binary variable, with "P1=0 indicating non-participation in investment and financial management" and "P1=1 indicating participation in financial investment."

All variables are ordinal scale variables. To better understand the model's performance before regression, a chi-square distribution test using contingency table analysis is employed to assess whether the two variables are independent. The results are shown in Table 1. From the results, the p-value (Sig) for the monthly living expenses variable is greater than 0.05, which is not significant, indicating that this variable is independent. For gender and the herd effect variable, the chi-square p-value is less than 0.05, rejecting the null hypothesis, suggesting that the variables are not independent. However, gender is not significantly related to the herd effect variable.

Table 1: Chi-squared test

| Indicator | Variables | Value | df | Asymp.Sig.(2-sided) |
|-------------------|--|---------------------|----|---------------------|
| Person Chi-Square | Inclination*Gender | 4.161 ^a | 1 | 0.041 |
| | Inclination* Monthly living expenses level | 12.776 ^a | 3 | 0.173 |
| | Inclination*Herd effect | 13.656 ^a | 3 | 0.003 |

The independence test results indicate that the existing variable for monthly living expenses is mutually independent of the dependent variable and makes a minimal contribution. Therefore, it has been removed. Subsequently, a stepwise regression is performed, and the parameter estimation information is shown in Table 2. Compared to the model without explanatory variables, the model with these variables increases the percentage of correct predictions from 54.5% to 62.3%, indicating that the model has a good predictive performance. The Hosmer-Lemeshow test yields a Sig value of 0.579, which is greater than 0.10, supporting the null hypothesis in the Logistic model and demonstrating that the model fits the data well. The coefficient for the herd effect variable in the model is significant at a level below 0.05, passing the test, while the gender variable is not significant and does not pass the test at the 95% confidence level.

Table 2: Regression results

| Variables | B | Standard error | Wald | Degrees of freedom | Significance | Exp(B) |
|-------------|--------|----------------|--------|--------------------|--------------|--------|
| Herd effect | .863 | .264 | 10.706 | 1 | .001 | 2.371 |
| Gender | .603 | .351 | 2.952 | 1 | .086 | 1.827 |
| Constant | -2.103 | .656 | 10.291 | 1 | .001 | .122 |

The final binary logistic model, derived from the coefficients in column B, is as follows. In binary logistic regression, the coefficients in the Exp(B) column are easier to interpret in economic

terms. Based on the final model within the current sample range, the following conclusions can be drawn: For the gender variable, a one-unit change results in a change in the odds ratio (OR) of 0.603. In other words, the odds of male students choosing to invest are 1.827 times higher than female students. For the herd effect variable, a one-unit change results in a change in the odds ratio (OR) of 0.863. This means that if a college student has many friends with a high enthusiasm for investment in their surroundings, their odds of choosing to invest are 2.371 times higher than those of college students with friends who have no interest in investment.

$$P = \frac{1}{1 + e^{-z}}$$

$$z = -2.103 + 0.603X_1 + 0.863X_3$$

5. Discussion

The research results indicate that among Chinese college students, there is a clear presence of the representative heuristic bias, while the emotional heuristic bias exists but is not very severe. The surveyed college students tend to exaggerate the role of representativeness, leading to erroneous judgments, demonstrating a noticeable representative heuristic bias. However, the emotional heuristic bias only appears occasionally, leading to impulsive decisions related to emotions.

The existence of mental accounts leads college students to have different attitudes toward income from different sources, resulting in a "casino fund effect." This effect suggests that people treat money earned from gambling or windfalls differently from regular income earned from work, primarily manifesting in spending tendencies and risk attitudes [13]. When they have windfall gains or unexpected income, they are more inclined to take risky investment approaches. It can be anticipated that investors who profit in the stock market may become more adventurous in their next investments, leaning toward riskier stocks to achieve higher returns. In contrast, they tend to value income from work more and have a lower risk tolerance. To a significant extent, the phenomenon of loss aversion is also prevalent among college students. The data shows that nearly half of college students exhibit a significant confirmation bias, although it is not particularly pronounced.

Regarding the herd effect, 19.13% of investors believe they will follow the investment behavior of the masses, indicating that they perceive themselves as not engaging in herd behavior. However, in actual markets, when investors are faced with such situations, it may be challenging to avoid following the crowd. Investors might overestimate their ability to remain independent from the actions of others.

In summary, the qualitative discussion results indicate that current Chinese college student investors, despite having relatively high levels of knowledge, exhibit certain irrational behaviors. These include evident representative heuristic bias, noticeable but not prominent emotional heuristic bias, and psychological biases such as mental accounting, loss aversion, and confirmation bias. The quantitative analysis results show that for the gender variable, a one-unit change results in a change in the odds ratio (OR) of 0.603. Specifically, this means that males have a higher likelihood of choosing to invest compared to females. Additionally, the presence of herd behavior increases the odds of college students choosing to invest in financial management, and this effect is statistically significant.

This paper, based on the perspective of behavioral finance, utilizes a combination of survey questionnaires and econometric methods to conduct research. However, there are still certain limitations that need improvement. Firstly, the questionnaire design is not comprehensive, as it only superficially explores some of the factors influencing college students' investment tendencies. Beyond the aspects mentioned above, there may be additional factors affecting college students'

inclination towards financial management that were not thoroughly investigated due to data constraints and limitations. Secondly, there are shortcomings in the limited variables used. For example, the selected variable for the level of living expenses may not have been included in the final model due to issues such as overly concentrated response options, lack of differentiation, or insufficient sample size. Additionally, the regression results for the gender variable did not show a particularly significant impact, and the model's accuracy did not meet the expected standards. Lastly, the questionnaire also suffers from issues related to sample size insufficiency and lack of representativeness.

In conclusion, this article offers the following recommendations to address the irrational tendencies of college students in investment and financial management: (a) Strengthen investment education for college students. College students lack awareness of risk control in investments, tend to be less cautious, and lack financial resources and investment experience. The survey results highlight various psychological and behavioral biases among Chinese college student investors. To prevent them from making costly mistakes in their investment decisions, it is essential to provide investment strategy education to college student investors and promote knowledge of behavioral finance. (b) Currently, college students tend to invest blindly, and there are limited formal and suitable investment channels. Large financial institutions can provide platforms for college student investments based on market demand, or develop specialized investment and financial products tailored to the investment behavior characteristics of college students. (c) While college students are acquiring investment and risk management knowledge, it is crucial for them to maintain a clear and rational mindset. They should avoid blind following and herd behavior. To be rational investors, they should understand the investment environment, seize investment opportunities, and independently choose investment and financial strategies that suit their needs.

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