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# *Research on the Anchoring Bias in Stock Investment: Evidence from Chinese Stock Market*

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***Abstract:*** Under the influence of factors such as information loss, information asymmetry and personal experience, people can be easily affected by anchoring effect and make wrong decisions. The anchoring effect is a cognitive bias whereby an individual's decisions are influenced by a particular reference point or anchor. This influence can be reflected in many aspects, such as the promotion activities in shopping malls, the choice of insurance products, or the decision to sell or buy in the stock market. In recent years, scholars have gradually found that anchoring effect will influence various decisions made by investors in the stock market to a certain extent, and therefore affect the price of individual stocks in the stock market. Based on previous research experience, the paper summarizes the changes in investors' decisions caused by anchoring deviation in China's stock market and its impact on specific stock prices. Therefore, this study on anchoring bias in the stock market has important implications for investors, traders, and financial analysts. By understanding the ways in which cognitive biases can shape decision-making in the stock market, individuals can take steps to mitigate the effects of these biases and make more rational investment decisions.

***Keywords:*** anchoring bias, stock market, stock investment

## 1. Introduction

China's stock market was established in the late 1980s. After the economic reform, the Chinese government set out to establish the stock market and open the economy to foreign investment. In 1990, Shanghai Stock Exchange and Shenzhen Stock Exchange were established in 1991. Initially, trading volume on these exchanges was limited, with only a handful of companies listed. However, over the years, the Chinese government has taken steps to promote the development of the stock market and enhance its integration with global financial markets. Today, China's stock market is one of the largest in the world, worth more than $10 trillion. The market includes both domestic and foreign listed companies and has become an increasingly important source of funds for Chinese

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companies. Despite this growth, the market is still heavily regulated by the Chinese government, which has ultimate control over many aspects of the market.

Anchoring bias is a cognitive bias in which individuals over-rely on the first piece of information they receive when making decisions, and this initial information becomes the "anchor" for all subsequent judgments. For example, when someone negotiates the price of a used car with the seller, the seller said that the car was originally listed for $10,000, but they are willing to sell it for $8,000. The initial price of $10,000 is an anchor to people's negotiation, and if the initial price is lower, some people may be more likely to agree to a final price closer to $8,000. This bias can lead to ineffective or irrational decisions because it prevents individuals from considering other options or ignoring irrelevant information.

In the stock market, most inexperienced investors use the price and turnover rate of stock to build their knowledge of the market and the stock. In this case, inexperienced investors are easier to be affected by anchoring bias than experienced investors because inexperienced investors lack ack of skill and knowledge of stock market. Therefore, when stock prices fluctuate, inexperienced investors tend to anchor the price at a previous time, leading to misjudgments.

## 2. Research Significance and Literature Review

### 2.1. Research Significance

Compare to foreign markets, China's stock market starts late. The proportion of small individual investor is high. Most individual investors haven't received training about professional financial knowledge and skills, and be more rely on public information to make decisions. Therefore, they are more likely to be affected by cognitive bias and take irrational investment behaviors.

Anchoring bias is a cognitive bias in which an individual heavily relies on a single piece of information, or anchor when making decisions. This bias can have significant implications in the stock market, where decisions are often made based on incomplete or uncertain information. One way in which anchoring bias can affect the stock market is through the availability heuristic, which is a related cognitive bias. The availability heuristic is the tendency to rely on easily accessible information when making decisions. In the context of the stock market, investors may be more likely to make decisions based on recent news or events that they have heard about, rather than taking a more comprehensive look at market trends and data. Another way in which anchoring bias can impact the stock market is through the phenomenon of price anchoring. Price anchoring occurs when investors become fixated on a particular stock price as being representative of the stock's true value, regardless of whether or not that price is actually justified by market conditions. This fixation can lead investors to make irrational decisions, such as holding onto stocks for too long in the hopes that they will eventually reach the desired price, or selling stocks prematurely in response to short-term fluctuations in price. For example, investors may benefit from diversifying their portfolios and avoiding over-reliance on any single stock or sector. Additionally, financial analysts can use statistical models and other quantitative tools to analyze market trends and identify potential investment opportunities, rather than relying solely on anecdotal evidence or headlines in the news.

Overall, research on anchoring bias in the stock market underscores the importance of robust decision-making processes and a commitment to empirical analysis. By recognizing the ways in which cognitive biases can influence the perceptions and judgments, the investors can work to make better-informed investment decisions and improve the overall financial outcomes.

### 2.2. Literature Review

The concept of anchoring effect originated from behavioral finance. Behavioral finance scholars Tversky and Kahneman point out that when people estimate unknown things, they usually choose an

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anchor value first, and then make adjustments, which are always insufficient based on the anchor value [1]. Therefore, estimates are not accurate and biased towards the anchor values.

For the anchoring effect, scholars continuously point out the flaws in the original theory. Wilson et al. discusses the correlation between fixed validity and other machine-made and formal valid [2]. Mussweiler questions the persistence of the anchoring effect, arguing that the anchoring effect would weaken over time [3]. Strack and Mussweiler argue that the theory proposed by Tversky and Kahneman has certain limitations on the explanatory power of the anchoring effect [4]. An insufficient adjustment can only reasonably explain the anchoring effect when the anchoring value is more extreme than the borderline of possible results. In addition, Mussweiler and Englich further question the existence of the adjustment process in the original theory. They demonstrated that anchoring value can influence people's estimates subconsciously, which means anchoring effect can occur without an adjustment process [5].

After long-term improvement, according to Wegener et al., the current mainstream research on anchoring effects focuses on confirmatory hypothesis testing [6]. With the gradual improvement of the anchoring effect theory, the scope of application of anchoring effect has expanded to various fields of economics. Simonson et al. discusses the impact of anchoring effects on market pricing [7]. Chang et al. explain the anchoring effect on the stock market. They point out that when estimating an ex-day stock price, many stockholders will use the cum-day stock price as an anchor point, so that the estimated value will be wrongly biased towards the cum-day stock price [8]. Dobbelstein and Renzing explore the role of the anchoring effect when purchasing health insurance. They argue that when consumers only have incomplete information or have difficulty processing excessive information, the consumers will use incomplete information as an anchor, leading to inaccurate estimates [9]. Furthermore, in commodity pricing, Park et al. point out that the anchoring effect will cause consumers' willingness to consume to change with different price tags [10].

However, many studies stop at the analysis of the anchoring effect itself, ignoring the discussion on how to avoid or exploit this bias. It is meaningful to do further study on it. Therefore, focusing on the stock market, the authors of this article will use economic practical applications to verify the existence of the anchoring effect, explain its occurrence process, and discuss methods to avoid or utilize the anchoring effect.

## 3. Research Framework and Result

### 3.1. Methodology and Design

Studies in cognitive psychology and behavioral finance found that in complex situations, an individual's forecast results deviate from the initial information, which is the reference point or anchor point, from which the individual makes a subjective judgment. As a result, this adjustment based on one point of insufficient information has a large impact on financial markets. Based on the research on the stock market, in this section, determines the impact mechanism of anchoring bias on the stock market in the Chinese financial market. and apply to check how Anchoring bias effect on stock investment market from market forecast.

This study is based on primary data. The data comes from Forecast.com, which includes weekly stock trading data from 2019 to 2022 and weekly trading data for selected businesses since their listing. This Data was aiming to analyze the influence of anchoring bias on macro level from stock market pricing through big data. Analyze whether people use short-term data as an anchor point and make trading decisions based on short-term ups and downs. That is, whether the change rate will affect the trading volume. Meanwhile the stock data of some enterprises are analyzed to observe whether it conforms to the anchoring effect and analyze its reasons. The change rate was used as the independent variable and trading volume was used as the dependent variable for data analysis. The

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study determines the impact of anchoring bias on the market through regression analysis of the relationship between stock trading volume and the change rate.

### 3.2. The Effect of Anchoring Bias on Stock Market Price

This chapter focuses on interpretation of the data. The main study is the correlation coefficient between anchoring bias and investment decisions.

Table 1 shows Chinese stock market data analysis for the four years of 2019, 2020, 2021 and 2022, and the analyses presents the linear regression results. This study takes trading volume as the dependent variable and only considers change rate as the independent variable. In order to assess the fitness of the model, the results of the model were evaluated. In the model summary, R-square shows that in the four years from 2019 to 2022, the variation of trading volume explained by the model is 0.009 in 2019, 0.004 in 2020, 0.002 in 2021 and 0.006 in 2022 respectively. Nevertheless, the adjusted R-squared is consistent with R-squared, indicating that the model is reliable. The results show a low level of predictability. However, this may be due to the fact that other variables are not considered in the model.

Table 1: Model Summary.

| Time | Model | R | R square | Adjustment R square | Std. Error of the estimate |
|---|---|---|---|---|---|
| 2019 | 1 | 0.096a | 0.009 | 0.009 | 145807818.935102200 |
| 2020 | 1 | 0.061a | 0.004 | 0.004 | 170747406.430841150 |
| 2021 | 1 | 0.045a | 0.002 | 0.002 | 207624085.971423750 |
| 2022 | 1 | 0.079a | 0.006 | 0.006 | 150069332.607871100 |

Note: Predictors: Change Rate.

In Table 2, significance levels for the four years of 2019-2022 are less than 0.05, which indicates that the trading volume in China's stock market is directly affected by the change rate and the change rate have a significant impact on the trading volume.

Table 2: Analysis of variance.

| Time | Model | | Sum of squares | DF | Mean square | F | Sig. |
|---|---|---|---|---|---|---|---|
| 2019 | 1 | Regression | 37383578679615950000.000 | 1 | 373835786796 15950000.000 | 1758.406 | 0.000b |
| | | Residual | 40154248819856 31000000.000 | 188873 | 212599200626 11548.000 | | |
| | | Total | 40528084606652 46700000.000 | 188874 | | | |
| 2020 | 1 | Regression | 22429031118091060000.000 | 1 | 224290311180 91060000.000 | 769.312 | 0.000b |
| | | Residual | 59110524124260 27000000.000 | 202748 | 291546768028 58852.000 | | |
| | | Total | 59334814435441 18000000.000 | 202749 | | | |

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Table 2: (continued).

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2021 | 1 | Regression | 20162999943346258000.000 | 1 | 20162999943346258000.000 | 467.735 | 0.000b |
| | | Residual | 9779038707731254000000.000 | 226851 | 43107761075469160.000 | | |
| | | Total | 9799201707674600000000.000 | 226852 | | | |
| 2022 | 1 | Regression | 34163826215559890000.000 | 1 | 34163826215559890000.000 | 1516.990 | 0.000b |
| | | Residual | 5409519783171706000000.000 | 240201 | 22520804589371840.000 | | |
| | | Total | 5443683609387265000000.000 | 240202 | | | |

Note: Dependent variable: Volume; Predictors: Change Rate.

According to the regressions in Table 3, there was a significant relationship between change rate and volume, with sig. values less than 0.05. Constant value shows the value of trading volume when the independent variable having zero value and B value under the unstandardized coefficients tells the value of volume when there is a unit change in change rate.

Table 3: Regression analysis.

| | | | Unstandardized coefficients | | Standardized coefficients | | |
|---|---|---|---|---|---|---|---|
| Time | Model | | B | Std. Error | Beta | t | Sig. |
| 2019 | 1 | Constant | 65212969.851 | 336766.274 | | 193.645 | 0.000 |
| | | Change Rate | 206302971.165 | 4919782.004 | 0.096 | 41.933 | 0.000 |
| 2020 | 1 | Constant | 81840384.480 | 379842.210 | | 215.459 | 0.000 |
| | | Change Rate | 101241709.471 | 3650129.970 | 0.061 | 27.736 | 0.000 |
| 2021 | 1 | Constant | 81449852.723 | 436814.880 | | 186.463 | 0.000 |
| | | Change Rate | 74886089.756 | 3462591.936 | 0.045 | 21.627 | 0.000 |
| 2022 | 1 | Constant | 77111990.450 | 306248.444 | | 251.796 | 0.000 |
| | | Change Rate | 164974169.723 | 4235694.709 | 0.079 | 38.949 | 0.000 |

Note: Dependent Variable: Volume.

### 3.3. Research Result

From the results of data analysis, the change rate on the volume of no doubt has a significant impact. Investors will use the weekly rise and fall as an anchor to decide whether to trade. Investors must consider this anchoring bias as a risk factor associated with their portfolios when making investment decisions. Investor cognition factors are affected by anchoring bias, especially the uncertainty in

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investment. Emotional and personality factors need to be considered when developing investment strategies for individual investors.

## 4. Conclusion

This study explored whether the anchoring bias will affect the Chinese stock investment, and analyzed if investors will be influenced by the short-term data as the anchor. Through the change rate and the trading volume, the paper compared the four years data of Chinese market to find out the effect of change rate on the volume is significant. Therefore, there is effect of anchoring bias on investor cognitions factors and Chinese stock investment. This will cause high risk when making investment decision. In addition, people also influenced by emotional and personality that are important for making investment decision.

In terms of present research, this study explored one effect of anchoring bias on Chinese stock investment that the short-term data influences the decision of investors. However, many effects that about anchoring bias on Chinese investment are included for different situations. So further study of this topic which can be analyzed in the future that are not included in this paper. Moreover, the trend of the data of the investment and the reputation of the companies can also be the anchors that influence investors' decision and have diverse effects on Chinese stock investment.

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