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Research on Stock Price Fluctuation Monitoring System Based on Investor Sentiment

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Abstract: ***Based on the behavioral finance theories such as investor bounded rationality and cognitive bias, this paper uses Python web crawler technology to obtain the stock related information in the stock online forum, and uses SnowNLP to conduct emotional analysis. Then, according to the obtained information, the paper constructs the investor sentiment index and the test model of investor sentiment and stock price volatility, and draws the conclusion through empirical analysis. Then according to the research results, this paper designs a stock price fluctuation monitoring system based on investor sentiment, which can forecast the fluctuation of stock price by monitoring the information of stock network forum, so as to remind investors to guard against risks and invest rationally.***

Keywords: stock online forum, investor sentiment, bounded rationality, stock price fluctuation monitoring system

1. Introduction

The stock market is an important part of the financial market and plays an important role in economic development. Since the establishment of China's stock market, it has made a lot of contributions to economic development, but it has also exposed many shortcomings. The main performances are: unstable stock market development, stock prices are very prone to skyrocketing and falling, the price-earnings ratio is relatively high, and the stock market's self-regulation ability is insufficient So, the price of individual stocks rises or falls rapidly in a short period of time, and even the market value of a large number of stocks suddenly drops, which often occurs in emerging capital markets like our country. For example, the famous "96 stock disaster", "01" stock disaster, "530 stock disaster", "55 stock disaster", "119 stock disaster" in the history of China's stock market. In order to restore the confidence of small and medium investors, reduce the irrational investment behaviors such as chasing ups and downs, blindly following the trend in the stock market, better protect the interests of small and medium investors, give them sufficient time to think, take measures toprevent risks, rational investment The China Securities Regulatory Commission decided to learn from foreign experience and implement an automatic trading stop mechanism, that is, a fuse mechanism. However, when the mechanism was first implemented, it was halted because of the suspension of trading in the stock market twice, and the application of the fuse mechanism in China was declared to have failed. This system has been implemented very well abroad, but it has died quickly in China because the participants in China 's stock market are very different from those abroad. The foreign stock market has developed for a long time and is relatively mature. The proportion of institutional investors is much higher than that of individual investors in small and medium-sized investment. In China, however, the situation is just the opposite. Individual and small investors account for a very high proportion. In general, institutional investors are more rational and professional, and can deal with risks well. However, small and medium-sized individual investors are not professional and impulsive, and most irrational investment behaviors are easily misled, chasing up and down, and ultimately damaging their own. Interests also make the stock market soar and plummet, the stability becomes worse, and the volatility of the stock market will also further damage investors' confidence and produce a series of negative effects.

In the context of the Internet and big data, the stock information forum, an open information platform, is increasingly popular with investors. Therefore, the information of the stock online forum can well reflect the opinions and investment sentiments of the stockholders, and should pay attention to the influence of the investor sentiment of the stock online forum on the volatility of stock prices.

This article mainly analyzes the short-term fluctuations in stock prices based on investor sentiment: First, it uses web crawler methods to obtain the posts posted by stockholders in the stock forum; second, it uses text processing and sentiment analysis to quantify investor sentiment and build sentiment Indicators and test models analyze the relationship between investor sentiment and stock price fluctuations.

2. Theoretical basis

Traditional financial theory has a complete theoretical system, but it is helpless when explaining some phenomena or problems encountered in real life. As more and more anomalies appear in the market, people begin to try to explain these anomalies from other angles, which has led to the development of behavioral finance. Compared with traditional finance, behavioral finance is more in line with reality, more able to explain the problems in China 's stock market, and more in line with the development status of China 's stock market. Must be based on bounded rationality and investor cognitive bias theory.

2.1 Bounded rationality

Simon's theory of bounded rationality has two interconnected components: one is the human mind, which is the limitation of thinking, and the other is the external environment or

conditions in which the human mind is located. That is to say, when people make decisions or choices, the limitations of individual thinking and the structure of the environment in which they are located make humans unable to be completely rational. Liu Qiao (2019) proposed that in the context of current big data, data is more open and transparent, which can optimize the external environment in which investors make decisions, but investors still have more or less thinking limitations, so, In the current environment, it is still impossible for policy makers to achieve complete rationality, but it can be closer to this idealized state [1].

In the stock market, there are three main reasons for investors' limited rationality:
(1) From the perspective of cognitive psychology, limited rationality depends on the psychological mechanism of human beings, and the rationality of human behavior is restricted by conditions such as environment and resources. Due to the complexity of the stock market and affected by various factors, the relevant information that stock investors can collect when selecting stocks is limited. In this limited available information, investors cannot consider all the information to do To make a choice, you must make a choice. For the remaining information after screening, investors cannot judge whether it is true or false, nor can they integrate this information to extract useful information. It is impossible to be rational and optimal.

(2) Since the stock market is not a completely efficient market and the information is not completely open and transparent, investors need to pay for some undisclosed information or even inside information. For example, consulting fees for consulting experts, commission fees for entrusted experts, and some irregular stock trading groups also need to pay to enter. In order to reduce investment costs, investors are often reluctant to consult, commission, etc., so they based on their own experience, Plus speculation, make reasonable decisions that you think are satisfactory.

2.2 Cognitive bias

Cognitive bias means that people's understanding of something deviates from the expectation of rational people in traditional finance.

Investors' cognitive deviations in the stock market usually manifest as the following:

(1) Representative bias. Representativeness deviation means that when people want to judge an event, they do not make a rational analysis, but look for events similar to the event, and make sloppy decisions based on past experience and analogy. In the stock market, there are several reasons for the deviation of representativeness: First, investors are not sensitive to the relevant information in the stock market and cannot quickly respond correctly, but rely too much on past experience; second, Unexpected accidental incident information of individual stocks of investors is not obtained in time, the response is not timely, and the best investment opportunity is missed; third, the stock is unprofessional, and the stock investment is regarded as gambling or speculation, always based on previous results Simple decision judgment, not rational and scientific analysis to make decisions.

Li Lianqi (2011) found through experiments and surveys that investors in China's stock market generally have representative deviations when making investment decisions, and in a bull market, such deviations are more significant, and the stock market 's risk decisions will be corresponding. Increase [2]. Festinger (1950) pointed out through research that when people make decisions based on their own experience and knowledge, because everyone 's experience is different, the living environment is different, and the way of thinking is different, so the same thing will Make different people have different perceptions. Therefore, the study of stock price volatility should pay attention to this cognitive bias [3].

(2) Anchor and adjust heuristics. Anchoring is when people need to quantitatively estimate a thing, they will choose a specific value as the initial reference value. In the stock market, there are usually three kinds of deviations in the anchor effect: one is that the adjustment is not sufficient or excessive based on the reference value, that is, the "anchor"; the second is that investors are more inclined to invest in stocks with continuous daily limits In order to avoid continuous stocks falling, that is, chasing up and down; thirdly, when investors estimate the price fluctuation range of a certain stock, they tend to be narrow, but the actual fluctuation is relatively large, and the risk is relatively large. Plous (1989) research found that the "anchoring and adjusting" effect is based on the initially selected reference value, with varying degrees of upward or downward adjustment to form a prediction interval. All around the reference value is changing [4].

(3) Dilution effect. Psychological dilution effect refers to information that is not related to decision-making or neutral information weakens the impression and role of related information or important information. In the stock market, when an investor wants to choose a stock to invest in, or the stock that has been selected does not obtain the expected return, he will think that the reason for the inability to make a decision or the failure of the decision is that he has no more information. . However, they overlooked a problem, that is, when they have more information, whether the information is valid information, that is to say, the information is not necessarily useful information. If you have more information, it is basically useful information, it will help decision-making; if you have more information, it is useless information, not only will not help it make better decisions, but will reduce Decision makers 'attention to those useful information, these messy information may change the decision makers' understanding, this is the so-called "dilution effect". Nisbeet, Zukier, Lemley (1981) believe that in real life, when people make decisions, they often encounter a lot of information that is not helpful for their decision-making, that is, non-diagnostic information. More information, but how to exclude those that are not useful and integrate those valid information to make a choice [5].

(4) Overconfidence. Psychologists have found through a lot of experimental observations and empirical studies that once people have a judgment, they will be very confident, firmly believe that this judgment is correct, unable to listen to the opinions of others, stubborn, and put this judgment into practice. In life, overconfidence is very common, especially when decision makers are more confident in their areas of expertise and expertise. Appropriate self-confidence can motivate people to move forward, face setbacks, and meet challenges, but excessive self-confidence is very dangerous, especially when making decisions.

In the stock market, overconfident investors often show that they believe that the information they own is very accurate, and that they have better ability to analyze information and stocks than others. Once a confident investor has an investment goal, he will look for more information to prove that his choice is correct, and will automatically ignore information that is not conducive to his judgment. Therefore, overconfidence will cause investors to have cognitive deviations, thereby hurting their own interests.

(5) Regret and disgust. Regret aversion is also a very common psychological activity. In the process of decision-making, people will inevitably regret the decisions they have made, and they also need to be responsible for the decisions they make, so regrets are more painful than losses, so decision-makers often fear themselves to regret Instead, avoid regretting yourself. Zeelenberg (2006) believes that because people often feel regretful and disgusted, the size of the expected regret of each scheme will affect people 's decision-making. Among many schemes, people usually choose the one that minimizes their regret, This choice may be risk-averse or risk-seeking [6].

In the stock market, investors are often reluctant to give up stocks whose prices have been falling, even though he has realized this measure. This is because investors are afraid that once their stocks are thrown out at a low price, the stock price will start to rise. They are afraid that they will regret their decision, so they have not stopped losses in time; They will blindly invest in stocks whose stock prices are rising and realize rapid cash outs. These irrational behaviors ultimately damage the investors 'own interests.

3. Empirical test

3.1Data collection

This article selects the stocks of listed companies on the Shanghai Stock Exchange and excludes the following types of company samples: First, the average daily turnover rate calculated on the basis of free circulating capital during the period from June 1, 2019 to December 31, 2019 A sample of companies with less than 7%; second, a sample of companies that cannot obtain relevant valid transaction data; third, a company sample of related posts cannot be obtained by the Stock Network Forum from June 1, 2019 to December 31, 2019. On this basis, this article selects 80 company stocks as samples for research. The relevant stock market data are all from the wind financial database, and the investor sentiment data are all from the Oriental Fortune Net stock forum.

The data of individual stock posts in this article are all from Oriental Fortune Stock Forum. Using the python web crawler technology, 79 posts were extracted from June 1, 2019 to December 31, 2019, a total of 1043066 articles. The basic framework flow chart of the web crawler is shown in the following figure 1.

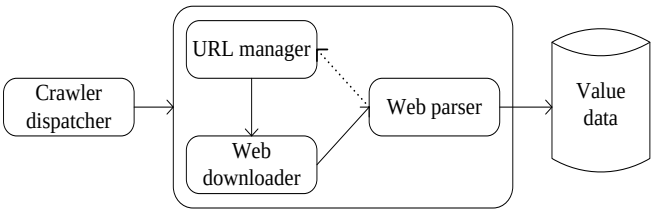

Figure 1: Basic structure of web crawler

3.2 Emotion analysis

This article uses the SnowNLP class library. SnowNLP is a sentiment analysis module designed for Chinese text by Python. It has functions such as Chinese word segmentation, part-of-speech tagging, sentiment analysis, text classification, keyword extraction, abstract extraction, and text similarity. The word segmentation vocabulary and sentiment lexicon are mainly aimed at online shopping evaluation, so we need to expand the sentiment lexicon. This article first manually categorizes the content of some of the posts that were crawled out, statistics and summarizes some of the common emotional vocabulary in the stock forum, and then expands the SnowNLP word segmentation dictionary, positive emotion dictionary and negative emotion dictionary to build a more suitable stock forum Emotional dictionary and word segmentation dictionary.

The flow chart of sentiment analysis based on machine learning is shown in Figure 2:

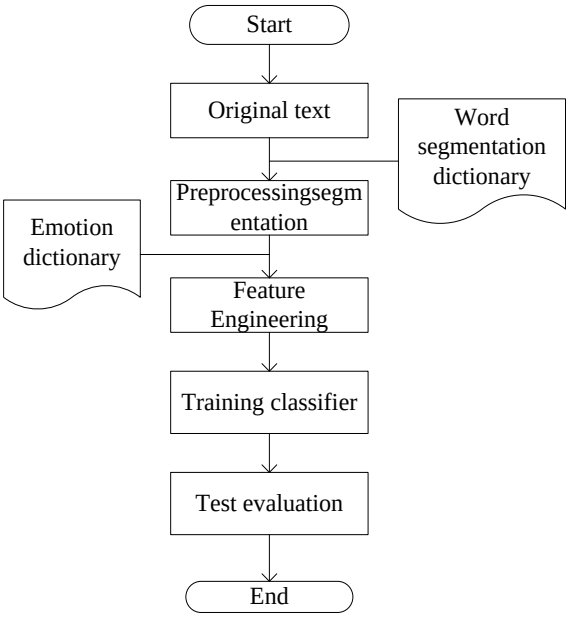

Figure 2: Basic Flow chart of sentiment analysis based on machine learning

This article uses web crawler programs to obtain post content, readings, comments, posting time and other relevant information from the webpage, and reads the content of each post through the SnowNLP module, and performs sentiment analysis in turn. The analysis result is a value of 0-1. Output values greater than 0.666 as positive emotions, values less than 0.333 as negative emotions,and the rest as neutral emotions. Figure 3 shows the emotion recognition process of stockforum posts:

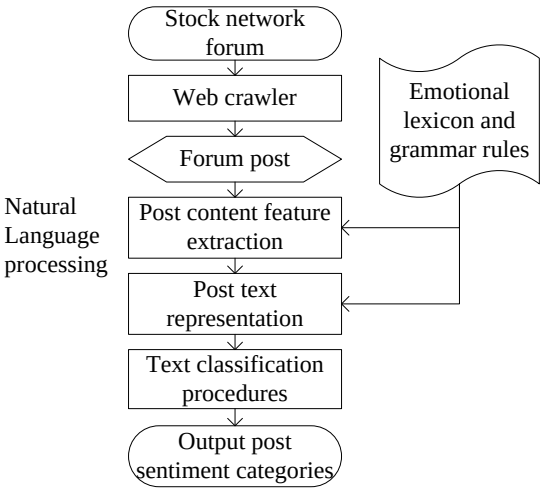

Figure 3: Flow chart of emotion recognition in stock forum posts

3.3 Investor sentiment index construction

This article believes that the volatility of the stock market has a certain correlation with the investor's attention to the stock, the investor's emotional tendency, and the degree of emotional divergence. Therefore, the following investor sentiment indicators are constructed.

The number of individual stock posts in the stock network forum can reflect the market attention of the stock. Therefore, the calculation formula of the attention index in this article is shown in ①, where $Numbbs_{i,t}$ represents the stock i day t of forum posts:

$$Attention_{i,t} = ln(1 + Numbbs_{i,t}) \quad ①$$

Based on the sentiment analysis of the post content of the stock online forum, without considering the impact of the total number of posts on the investor sentiment index, the investor sentiment index of individual stocks can be calculated using the following formula, as shown in ②:

$$MIbbs_{i,t} = \frac{Q^{pos} - Q^{neg}}{Q^{pos} + Q^{neg}} \quad ②$$

In the formula, Q^{pos} represents the number of positive posts of stock i's emotional tendency, and Q^{neg} represents the number of posts of stock i's emotional tendency.

In the previous formula, the influence of the total number of posts in the stock forum is not taken into account. Therefore, to calculate the individual investor sentiment index, the formula can be used, as shown in③:

$$SSIbbs_{i,t} = MIbbs_{i,t} \times ln(1 + Numbbs_{i,t}) \quad ③$$

In the formula, $SSIbbs_{i,t}$ represents the stock investor sentiment index on the t day of the stock i. According to the investor sentiment index, the investor sentiment consistency index on day i of the stock i can be constructed. The formula is shown in ④:

$$EDIbbs_{i,t} = 1 - \sqrt{1 - MIbbs_{i,t}^{\ 2}} \quad ④$$

This formula reflects the consistency of investor sentiment in the stock online forum and also reflects the degree of emotional disagreement. The maximum value of $EDIbbs_{i,t}$ is 1, indicating that all posts in the stock forum are bullish or bearish; the minimum value is 0, indicating that the posts in the stock forum have the most emotional divergence, and there are as many bullish and bearish sentiments. In the actual stock market, due to the existence of irrational trading behavior, the more concentrated the investor sentiment of the stock online forum is to be positive or negative, that is, the closer the value of $EDIbbs_{i,t}$ is, the more concentrated the investor sentiment, The smaller the divergence, the greater the stock market turnover and stock price volatility.

3.4 Model building

In the test model of this paper, the dependent variables are stock volatility, trading volume and return rate; the independent variables are the number of individual stock forum posts, individual stock sentiment index and sentiment consistency index; the control variables include market index return rate, market index,individual stock Including the market value of restricted stocks and the dependent variable value of stocks lagging one period. The variable names and meanings used in the model test in this paper are shown in Table 1:

Table 1: Variables and meaning

variable name	meaning
$Numbbs_{i,t}$	Number of posts in the stock forum on day i of stock i
$Attention_{i,t}$	Investor attention on day i of stock i
$SSIbbs_{i,t}$	The sentiment index calculated on the t day of the stock
$EDIbbs_{i,t}$	Emotional consistency index calculated on day i of stock i
$Mktindex_t$	Shanghai Stock Market Index on day t
$Mktreturn_t$	Shanghai Stock Market Index Return on Day t
$Volatility_{i,t}$	Stock price volatility on day i
$Volume_{i,t}$	Stock i day t volume
$Return_{i,t}$	The rate of return calculated based on the closing price on day i of the stock
$value_{i,t}$	Stock i does not include the market value of restricted shares on day t

The regression formulas of the current stock forum investor attention, sentiment index and sentiment consistency index on stock price volatility, stock trading volume and yield during the same period are shown in ⑤, ⑥ and ⑦ respectively:

$$Volatility_{i,t} = \alpha_0 + \alpha_1 Attention_{i,t} + \alpha_2 SSIbbs_{i,t} + \alpha_3 EDIbbs_{i,t} + \alpha_4 \ln(Mktindex_t) + \alpha_5 \ln(value_{i,t}) + \alpha_6 Volatility_{i,t-1} \quad ⑤$$

$$Volume_{i,t} = \alpha_0 + \alpha_1 Attention_{i,t} + \alpha_2 SSIbbs_{i,t} + \alpha_3 EDIbbs_{i,t} + \alpha_4 \ln(Mktindex_t) + \alpha_5 \ln(value_{i,t}) + \alpha_6 Volume_{i,t-1} ⑥$$

$$Return_{i,t} = \alpha_0 + \alpha_1 Attention_{i,t} + \alpha_2 SSIbbs_{i,t} + \alpha_3 EDIbbs_{i,t} + \alpha_4 Mktreturn_t + \alpha_5 \ln(value_{i,t}) + \alpha_6 Return_{i,t-1} ⑦$$

The regression formula of the impact of the previous stock forum investor attention, sentiment index and sentiment consistency index on the current stock price volatility, stock trading volume and yield rate The regression formulas for the effects of volatility, stock turnover, and yield are similar, except that the variables are taken over different periods.

3.5 Empirical Research

(1) An Empirical Test of the Correlation between Investor Sentiment and Stock Price Fluctuation over the Same Period The daily data of stocks and forums are used in the study of the correlation between current investor sentiment and stock price volatility during the same period. Table 2 shows the regression results without control variables. It can be seen from Table 2 that the current stock forum investor sentiment index is significantly positively correlated with the current stock yield, indicating that in this hypothesis 1, the investor sentiment reflected by the stock online forum will have an impact on stock returns; current investors are concerned The degree is significantly positively correlated with the current stock volatility and trading volume, indicating that the second hypothesis of this article is established; the current stock forum investor sentiment consistency index is positively correlated with the stock trading volume and stock price volatility, that is, the stock forum investor sentiment divergence and the stock There is a negative correlation between trading volume and stock price volatility. The more consistent the investor sentiment reflected in the stock online forum, the greater the stock trading volume, resulting in greater stock price volatility. This result is probably caused by irrational investment behaviors such as individual investors chasing ups and downs.

Table 2: Regression result

independent	dependent		
	$Volatility_{i,t}$	$Volume_{i,t}$	$Return_{i,t}$
	Sig.	Sig.	Sig.
$Attention_{i,t}$	0.000	0.000	0.000
$SSIbbs_{i,t}$	0.000	0.000	0.000
$EDIbbs_{i,t}$	0.033	0.005	0.000
adjusted R^2	0.409	0.809	0.591

(2) An Empirical Test of the Correlation between Investor Sentiment and Stock Price Fluctuation. The research on the correlation between the investor sentiment of the last period and the fluctuation of stock prices in the current period uses the stock data of the current period and the investor sentiment data of the stock network forum of the previous period. Table 3 is the result of predictive regression analysis without control variables.

Table 3: Regression result

Independent	dependent		
	$Volatility_{i,t}$	$Volume_{i,t}$	$Return_{i,t}$
	Sig.	Sig.	Sig.
$Attention_{i,t}$	0.000	0.001	0.341
$SSIbbs_{i,t}$	0.029	0.804	0.029
$EDIbbs_{i,t}$	0.732	0.840	0.654
adjusted R^2	0.239	0.765	0.061

It can be seen from Table 3 that the investor sentiment index of the previous stock network forum has no effect on the current stock yield, indicating that the short-term impact of assumption 1 is established; the investor attention of the previous stock network forum and the current stock volatility and transactions The volume is positively correlated, assuming that the second is still true; the relationship between the investor sentiment consistency index of the previous period and the current stock trading volume and stock price volatility is not significant, indicating that the stock future forum investor sentiment consistency index has a relationship to the stock trading volume and volatility. The impact is short-lived

Through the above empirical test of the impact of investor sentiment on stock price volatility, the relationship between the two found in this article is shown in Figure 4 below, as can be seen from Figure 4: the current stock network forum investor sentiment has a short-term impact on stock returns; The number of forum posts reflects the investor's attention to the stock, and the investor attention of the previous and current periods has a positive impact on the stock's trading volume and volatility on the day; the Stock Network Forum's investor sentiment consistency index on the stock's trading volume on the day And volatility effects have short-term effects.

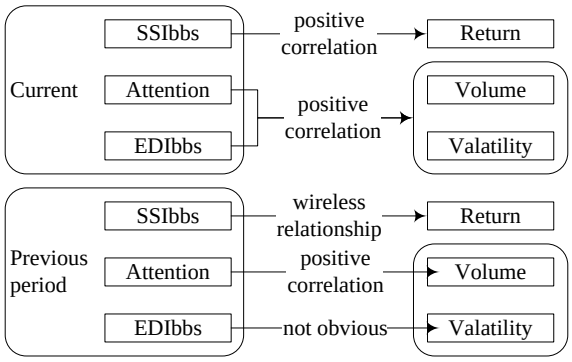

Figure 4: Relationship between investor sentiment and stock price volatility in the stock online forum

4. Monitoring system design

Based on the empirical analysis results of this article, in order to discover irrational sentiment and investment behavior in the stock market in a timely manner, this article intends to design a stock price fluctuation monitoring system to predict stock price fluctuations and individual stock risks.

(1) Investor sentiment data mining and preprocessing module Investor sentiment data mining and preprocessing module uses python web crawler technology or other web page

information collection technology to collect relevant information of stock network forums and stock market trading information, such as individual stock The forum's daily posting number, posting time, individual stock's daily closing price, trading volume, amplitude and other data, and preliminary cleaning and sorting of the obtained data. As shown in Figure 5.

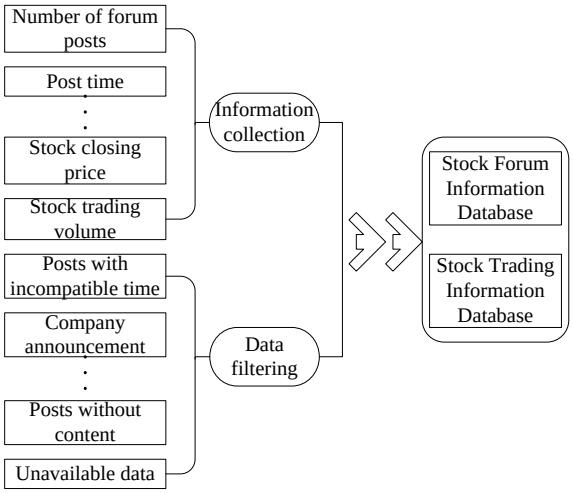

Figure 5: Investor sentiment data mining and preprocessing module design

Information collection: The post information of the stock network forum is the basis and basis for calculating the investor sentiment index. According to the number of posts, you can know the attention of individual stocks, and according to the emotional tendency of the post content, you can get the sentiment index and emotional consistency index of individual stocks. Therefore, it is important to collect the number of posts per day, post content, and posting time for each stock forum, followed by collecting transaction data for each stock per trading day, such as closing price, volume, amplitude, etc.

Data screening: The network data is complex and complicated, and the information data obtained by the crawler technology has more or less problems, so data screening is very important. First, determine whether the time of the obtained post information is correct, and clean up the posts at other times; second, exclude official information such as announcements issued by some listed companies themselves; and finally, filter the unavailable individual stock transaction data, such as suspended trading For some stocks, etc., there is no trading information on some dates and calculations cannot be performed. The data after cleaning is saved in the database again for calling and analysis.

(2) Investor sentiment analysis and classification summary module. Investor sentiment analysis and classification summary module mainly analyzes the post content information collected in the data mining module for sentiment tendency analysis, and divides the information in each stock database according to the sentiment tendency There are three types: positive, negative and neutral. As shown in Figure 6.

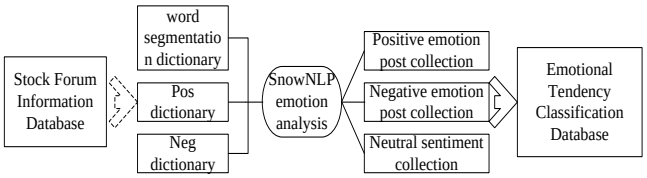

Figure 6: Investor sentiment analysis and classification summary module design diagram

There is a SnowNLP sentiment analysis module, which is mainly trained on the basis of online shopping data. The word segmentation dictionary, Pos dictionary that is a positive sentiment dictionary, and Neg dictionary that is a negative sentiment dictionary in this module are not very suitable for stock online forums, so according to the stock Market data and online forum language habits require the training of dictionaries specific to the sentiment analysis of stock online forums.

When using the SnowNLP class library to perform sentiment analysis on the post content in the database, the sentiment score interval is [0, 1], and the post content with a sentiment score greater than 0.666 is marked as "positive sentiment" text; the post with a sentiment score less than 0.333 The content is marked as "negative emotion" text; posts with scores between 0.333 and 0.666 are marked as "neutral emotion" text. Based on this, the forum information collection of three different emotions of positive, negative and neutral can be obtained, forming a database classified according to emotion tendency.

(3) Investor sentiment index and stock price volatility database construction module. Quantification of investor sentiment in the forum. As shown in Figure 7.

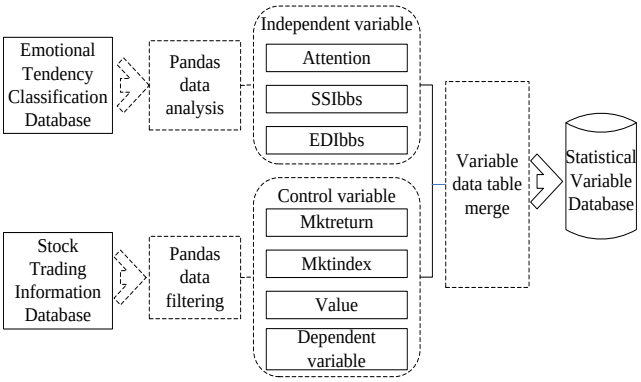

Figure 7: Investor sentiment indicators and design chart of stock price fluctuation database building module

Pandas is a third-party data analysis package in Python, which cananalyze time series data, especially financial data. In addition, Pandas also contains a large number of libraries and somestandard data models, which can efficiently operate massive data. This article uses Pandas to process the relevant post content of individual stock network forums and individual stock market transaction data, to obtain quantitative emotional indicators that can be statistically calculated.

First, using Pandas data analysis tools, combined with the investor sentiment index calculation formula constructed in this article, calculate the investor attention, sentiment index and sentiment consistency index for each stock every day; The required control variable data is generated; finally, the two parts of data are merged, and the relevant statistical variable database used to calculate stock price volatility, trading volume and rate of return is output.

(4) Intelligent prediction module for stock price volatility based on investor sentiment

The intelligent prediction module for stock price volatility based on investor sentiment uses the data in the database of relevant statistical variables to visualize the investor's attention of stocks and investor's emotional divergence data and predict Out of stock volatility. As shown in Figure 8.

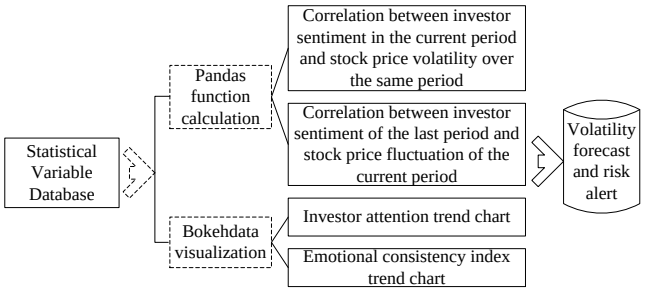

Figure 8: Design diagram of intelligent prediction module for stock price fluctuation based on investor sentiment

Pandas function statistical calculation: using Pandas function statistical analysis function, combined with the same period regression and predictive regression formula of this article, based on the relevant emotional index of the stock network forum on the day, calculate the stock return rate, volatility, trading volume, and times The stock's volatility and trading volume on the day, as for the stock return rate, based on the previous research results, can only get the current day's return rate, can not predict the future day, so no prediction is calculated.

Bokeh data visualization: Bokeh is an interactive visualization third-party library that can be seamlessly combined with NumPy data or Pandas table format data. The most important thing is that the image output by Bokeh technology can be designed according to your needs, and It is more beautiful and easy to understand. Using Bokeh data visualization, investors who use the system can be provided with a daily trend chart of stock attention and investor sentiment divergence, which is intuitive and easy to understand, and irrational sentiments and risks in the market are clear at a glance. Of course, you can also choose visualization tools such as Matplotlib and Seaborn.

Based on the investor sentiment of the stock forum, the overall design of the stock risk monitoring system to be designed in this chapter is shown in Figure Figure 9.

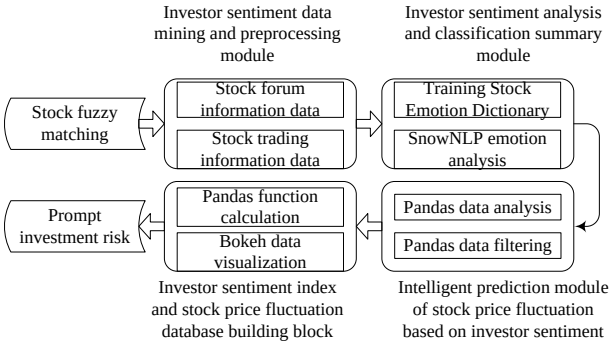

Figure 9: Overall design drawing of stock price fluctuation monitoring system

5. Conclusions and Suggestions

5.1 Conclusion

This article extracts sentiment indicators from the content of individual stocks on the Internet Stock Forum, based on bounded rationality and relevant theoretical foundations of behavioral finance to test the mechanism of stock information in online forums on stock price volatility. Through empirical analysis, the following conclusions can be drawn:

First, the stock sentiment index reflected in the current stock online forum, especially during the daily stock trading period, that is, the intraday stock sentiment index, only has a certain predictive effect on the current return of the stock, and it will have a future return. The rate has no effect, so the stock network forum sentiment index cannot predict future stock returns.

Second, the number of posts in the current stock online forum reflects the investor ’s attention to the stock. This indicator can not only positively affect the current stock trading volume and volatility, but also have a great impact on the future stock trading volume and volatility. Good predictive ability.

Third, the current stock online forum sentiment consistency index positively affects the current stock trading volume and volatility, and has no significant effect on the next period, but the current after-hour sentiment consistency index will positively affect the future period of stock price volatility. Sex can be used as a reference indicator.

In short, this article believes that the number of stock online forum posts is the best indicator for predicting future stock trading volume and volatility. The sentiment consistency index can be used as a reference indicator; the future yield of the stock cannot be predicted, but it can be reflected using the stock sentiment index. The current stock yield.

Through the research in this article, we can find that the influence of stock network forum information on stock price volatility cannot be ignored. At present, the stock network forum is the main platform for investors to obtain information, express opinions and communicate. It is easy to

get the investor's emotional state and attention to each stock here.

5.2 Suggestions

Without the company's new major news and fundamental information, the impact of the stock online forum on the stock market cannot be ignored, providing a direct and effective way for investor sentiment and investor concern to obtain and measure.

Securities market regulators can use this information to improve regulatory efficiency. First, we must pay attention to the monitoring of the number of forum posts. Stock market regulators can obtain a prophetic signal of future stock price fluctuations in a relatively easy-to-monitor environment such as the stock network forum, and can take appropriate measures to prevent the risk of stock price surges and plunges before stock prices fluctuate sharply. Second, we must pay attention to the monitoring of forum post sentiment. Judging from the impact of post sentiment consistency on stock trading volume and volatility, investor sentiment with high consistency will increase trading volume, increase stock price volatility, and increase risk. At this time, investors' irrational sentiment is strong, and through the monitoring of sentiment, the risk of stock manipulation in the forum can be prevented.

References

[1] Liu Qiao.Rethinking the theory of limited rational decision under the background of "big data" [J] .Future and Development, 2019,43 (11): 42-45.
[2] Li Lianqi.Empirical research on the influence of emotional heuristic on risk decision-making behavior [D]. Jinan University, 2011.
[3] Festinger L .Informal social communication [J]. Psychological Review.1950, 57:271-282.
[4] Plous, S.Thinking the unthinkable: The effects of anchoring on likelihood estimates of nuclear war[J].Journal of Applied Social Psychology, 1989,19:67-91.
[5] Nisbett, R. E., H. Zukier, and R. E. Lemley. The dilution effect: Nondiagnostic information weakens the implications of diagnostic information[J].Cognitive Psychology,1981,13:248-277.
[6] ZeelenbergM,Nijstad B A, Putten M V, et al. Inactioninetia,regret,andvaluation:A closer look[J].Organizational Behavior and Human Decision Processes,2006,101:89-94.

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