ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202006_3(6).0021

Research Design on the Influence of Internet Media Attention Attitudes and Stock Return Rate

-- The Mediating Effect of Based on Irrational Investment Behavior

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Abstract

With the rapid development of the Internet and mobile Internet technology, social media software such as WeChat and Douyin have become important tools for people's daily communication and exchange, and the capital market is still the same. Stock information on social media such as stock bars and forums has also become an important basis for investors to make decisions. Internet media's attention to the capital market has become an important basis for investors to study the market. They can correctly understand the information in stock bars and financial forums, and identify the relationship between them with stock prices, and use this information to predict stock market trends. Based on this, using irrational investment behavior as an mediating variable, this paper proposes a research design on the influence of Internet media attention attitudes and stock returns, thereby laying a foundation for subsequent empirical research.

Keywords

Media attitude, stock return rate, irrational investment.

1. Introduction

In 2015, Premier Li Keqiang proposed a strategy of combining "Internet +" with traditional industries to upgrade the traditional industries and the whole industrial structure of Chinese society. Based on this, the in-depth development of the Internet has been elevated to a new strategic level. In addition to using the Internet to meet basic needs, people also use the Internet to obtain capital market information. However, due to the asymmetry of information in the capital market, investors cannot use the Internet to obtain all stock information on the market (Merton, 1987), and different investors have different stock information.In other words,the distribution of the stock information is also asymmetric among investors (Easley, 2004). Therefore, according to the investor cognitive hypothesis and excessive attention to the disadvantaged hypothesis, the use of online media to collect, organize, process and disseminate stock information, that can help alleviate information asymmetry and change investor perceptions.

For example, Gree Electric Appliances Inc(000651) disclosed its annual report on the evening of April 25, 2018. Gree's 2017 operating income was 148.286 billion yuan and net profit was 22.402 billion yuan. The former was increased by 37% ,and the latter was increased by 45%. Gree Electrical Appliances achieved a record high in 2017. However, Gree Electric announced that the company had no dividend plan in 2017. This is the second time that Gree Electric Appliances had not paid any dividends since 2007. According to Gree Electric's historical dividend data, Gree Electric went public in 1996. Since its listing, Gree has made 19 times cash dividends and undivided dividends 3 times(in 1996, 2007, and 2017), totaling dividend payment 41.7 billion yuan and its dividend rate reached 40.96%. Therefore, in 2017, Gree's net

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profit reached a historical high without dividends, which had attracted widespread attention from online media. The spread of this information through online media had attracted investors' attention, causing some investors to panic. on Weibo and Snowball web ,Netizens had posted to express their dissatisfaction with Gree's non-dividend incident. The results were predictable. On April 26, 2018, Gree Electric Appliances opened close to the limit. This is the result of the attention of online media attracting investors' attention. Schiller (2007) believes that market participants' judgments on investment stem from changes in attention, and even the shift of attention would cause the capital market to collapse. Furthermore, before the Chinese stock market did not have circuit-breakers, there had been thousands of strands of wonders of a thousand-share limit and a thousand-share suspension. In addition, the Chinese psychology of "buy in rising and not buy in lowering" is common.

The above-mentioned situations indicate that the Chinese capital market and investors have the following problems: Firstly, the attention of the Internet media has become the main source of information in the capital market, and the media's attitude to the incident has profoundly affected the psychology of investors; Secondly,"Buy in rising and not buy in lowering" and the thousands of strands of wonders,which have fully explained that the irrationality of investors, that is, the behavior of irrational investors in buying and selling stocks, especially in the Internet era, may be exacerbated by media attention. Thereby, that causes the stock price to fluctuate greatly, and the price violates the intrinsic value of the stock, and affects the stock return rate. Attention attitude of the Internet media is an important channel for investors to obtain stock information, and investors take actions on the basis of the obtained information, which in turn affects the fluctuation of stock price and the stock return rate. However, investors can be divided into rational investors and irrational investors. In particular, when online media has become the mainstream media, online media's attention to listed companies affects irrational investor behavior, which in turn affects the fluctuation of stock price and the stock return rate. Therefore, this issue needs further in-depth study.

Based on the above analysis, using irrational investment behavior as an intermediary variable to study the influence of online media attention attitudes on stock return rate.To some degree,we can understand the impact of Internet media attention attitudes and irrational investments on China's capital market fluctuations ,which could provide the basis for formulating policies for regulators, and also escort the healthy development of China's capital market.

2. Research Design

2.1. Research Hypothesis

Internet media is a digger of listed company information. It plays a very important complementary role in the disclosure of listed company information and provides a certain amount of information for the capital market. Objective independence is the basic principle of media ethics, but online media rarely or hardly adhere to this principle. The attention of Internet media is mainly divided into two aspects, positive and negative, that is, positive and negative.

For the measurement of online media attention, some researchers use relevance, or attitude tendency values, and some researchers combine factors such as the article's page importance and media influence to construct a media attention index and report sentiment index. Measure media attention. In order to better measure the attitudes of various online media to the attention of listed companies, this study divides the attitudes of online media attention into positive and negative from the perspective of emotion. Therefore, the research results of loughran and Mcdonald(2009) are used to classify the attention Create a special database, and classify emotional words during construction, as shown in Table 1.

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Table 1. Financial vocabulary sentiment analysis vocabulary

Semantic type	Examples of words
Positive evaluation	On schedule, not slack, consistent
Positive emotions	Standard exhibition, best wishes, very satisfied
negative comment	Exceeding standards, flashy, not perfect
Negative emotions	Dissatisfied, disapproved, disappointed

Both positive evaluations and positive emotions are attributed to positive, and negative evaluations and negative emotions are attributed to negative. At the same time, considering the differences between the two, the difference between the two is set as the network media divergence to explain the difference between positive and negative.

Media attention can affect the judgment of the public and investors on the value of the reported company. The positive and negative effects of the report on the investor are completely opposite. Any report with emotional factors may mislead investors. Therefore, hypothesis 1 and Assumption 2:

H1: The more online media pays more attention to the attitude of listed companies, the greater the upward fluctuation of the company's stock price and the greater the increase in stock yield.

H2: The more online media negatively focus on the attitude of listed companies, the greater the downward fluctuation of the company's stock prices and the greater the decline in stock returns.

Investor behavior is divided into rational investment behavior and irrational investment behavior, but when the investor's mood is high, it shows irrational investment behavior. When investors in the "normal" market show irrational investment behavior, they may violate Bayes' rule and subjective expected utility. This kind of investor is called "investor sentiment" by researchers Non-fully rational investment behavior. Therefore, this study uses investor sentiment to represent irrational investment. Of course, as a core provider of historical, current or inside information related to asset price changes-the manager of a listed company, its limited rational behavior has an impact Impact, which may lead to misleading stock prices. The two-way limited rationality of investors and managers in the stock market together causes the stock price to deviate from its basic value. This article only considers the impact of investors' imperfect rational behavior on stock prices.

There are many ways to measure investor sentiment under the online media. Direct investor sentiment is a direct survey of investor expectations in the form of a questionnaire survey. An index is constructed based on the survey results, while indirect investor sentiment is collected and organized by capital Relevant market data, such as trading volume, IPO quantity and other indicators, use these as indicators to measure investor sentiment, but these investor sentiment indicators are relatively simple. In the "Internet +" era, some American scholars used the number of posts as an indicator of investor sentiment, and some scholars used the number of replies and clicks as relevant information on investor sentiment, and this has also been greatly recognized. Therefore, this article considers to use software (R software) or python software to extract, use software to capture the number of posts, replies and clicks on the website for the stock sector or stock market trends. The main source of crawling is Oriental Fortune Net stocks, etc. Based on the above analysis, Hypothesis 3:

H3: Catch the number of posts, replies, and clicks on the website regarding the stock market trends. The greater the sum of posts, replies, and clicks on posts with more positive or negative words, the higher the investor sentiment. The more investors show irrational investment behavior, the greater the stock price volatility, and the greater the fluctuation of stock returns.

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2.2. Variable Definition and Model

In this research, the online media's attitude of attention comes from mainstream websites such as Sohu. It filters statistics through the designed financial database. The measurement data of investors' irrational investment behavior comes from Dongfang Wealth Net Bar, and other relevant data comes from Guotai Junan Database.

Rol (1988) decomposed the stock return rate into two parts, namely the market common return and the company-specific return. Among them, the market's common returns are affected by system risk factors, and the company's unique returns are reflected in the market information's unexplained rate of return, which is the impact of the company's specific information on the stock returns. Therefore, the excess return rate replaces the stock return rate.

For other control variables, considering that the fluctuations in the capital market are affected by various factors, several control variables are set. The main variables are defined as follows:

Table 2. Definition of main variables

Type	Name	Meaning
Dependent variable	CAR	Cumulative excess return
Independent variable	Positive	The proportion of positive words in the network to the total words
	Negative	Negative vocabulary of online media accounts for the proportion of total vocabulary
	Disag	Internet media disagreement, the standard deviation of the ratio of positive ratio and negative ratio
Intermediary variable	Sentive	The number of posts, replies, and clicks made by the stock i on the trading day t in the Oriental Fortune Internet Stocks on the stock market trend.
Control variable	PEM	A-share average price-earnings ratio
	MCAR	The recent trend of the broader market, expressed in terms of cumulative returns for the first three months
	Aturn	Monthly turnover rate is equal to monthly cumulative transaction amount / monthly cumulative market value

According to assumptions 1 and 2, the following regression equation is established:

$$CAR_{it} = \alpha_0 + \alpha_1 Positive_{it} + \alpha_2 Negative_{it} + \alpha_3 Disag_{it} + \alpha_4 Pem_{it} + \alpha_5 Mcar_{it} + \alpha_6 Aturn_{it} + \varepsilon_{it}$$

This equation is used to test the effect of positive and negative online media and media divergence on excess returns, that is, stock returns. According to Hypothesis 3, establish the following regression equation:

$$Senti_{it} = \beta_0 + \beta_1 Positive_{it} + \beta_2 Negative_{it} + \beta_3 Disag_{it} + \beta_4 Pem_{it} + \beta_5 Mcar_{it} + \beta_6 Aturn_{it} + \varepsilon_{it}$$

ISSN: 2637-6067 DOI: 10.6918/IJOSSER.202006_3(6).0021

This equation is used to test the influence of online media attention on irrational investment behavior.

Finally, based on Hypotheses 1 and 2 and Hypothesis 3, establish the following regression equation,

$$CAR_{it} = \gamma_0 + \gamma_1 Positive_{it} + \gamma_2 Negative_{it} + \gamma_3 Disag_{it} + \gamma_4 Senti_{it} + \gamma_5 Pem_{it} + \gamma_6 Mcar_{it} + \gamma_7 Aturn_{it} + \varepsilon_{it}$$

This equation is used to test that online media are concerned about positive and negative attitudes and the impact of irrational investments on stock returns. When testing, it is necessary to pay attention to whether the online media's attention attitude and investment sentiment have multi-collinearity.

3. Conclusion

According to the above design, the expected results of this study: First, the negative online media attention attitude can attract investors' attention, causing the stock price to fluctuate greatly, resulting in a large fluctuation in stock yields; Rational behavior, which greatly affects stock price fluctuations and stock yield fluctuations. The research of online media's attention to listed companies belongs to the scope of behavioral finance. Especially in the Internet era, investor attitudes significantly affect the volatility of listed companies' stock prices and stock returns. Therefore, the application value of this study is reflected in: First, media public opinion provides methodological guidance for the supervision and management practice of the regulatory department, and give full play to the Internet media information intermediary and supervision functions, thereby improving the efficiency of the capital market; Second, listed companies use Internet media delivery The company's basic information is given to investors, reducing the degree of information asymmetry between the company and investors, attracting more investors to buy the company's stock, thereby increasing the value of the company; third, investors can use Internet media to mine related Effective information, reduce irrational behavior to obtain higher investment income.

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