Investor attention and stock returns —An empirical study based on WeChat index

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Abstract. This paper is based on WeChat index, at first, 5 industries which are closely related to the daily life of Wechat users in stock markets are selected randomly, they are retail, securities, media, clothing, home textiles, food processing and manufacturing. After that, we select 30 stocks from 5 different industries as the research object, take the data provided by WeChat index as a measure of investor attention, build panel data model to research on the relationship between investor attention and stock returns. Finally, according to the research results: Investors' attention is proportional to stock returns in the same period; reversal after positive impact.

1. Introduction

China's stock market is dominated by individual investors. In today's information explosion, the problem faced by individual investors is how to effectively and quickly find information that helps investment decisions in the vast amounts of information. However, individual attention is a scarce resource, there is an obvious contradiction between the huge amount of information and the ability of individual to obtain consumption information. Under such circumstances, the study of investor attention becomes more and more important.

At present, one of the difficulties in this field is the quantification of investors' attention. At present, there is no clear unified standard in the academic circle. With the development of the Internet, more and more people search for information through search engines, based on the data provided by the search engine (Baidu index, Google trend, WeChat index, etc.) can more objectively reflect the degree of investor attention. Based on this, this paper uses WeChat index as investor attention index to study the relationship between investor attention and stock returns.

2. Literature review

2.1 Investor attention metrics

The measurement of investors' attention is still one of the difficult problems in academic research. Scholars at home and abroad have conducted in-depth research, but there is still no objective standard to measure investor attention. Some foreign scholars use indirect indicators to build investor attention. Such as Gervais, Kaniel and Mingelgrin (2001) used to measure the stock trading volume; Seasholes and Wu (2008) choose extreme deals to measure, they believe stock market report will affect investors' attention; Fang and Press (2009) choose media coverage (the number of authoritative newspaper) to measure;

On the other hand, the domestic scholars also use some proxy variables to measure the degree of attention from investors, such as Jia Chunxin, etc. With the development of internet technology, more and more scholars take the Internet data as a metric., such as Ying Qianqwei, Luo Dangling(2014) use the Baidu index to construct investors' attention weekly index; Zhu Nanli, Zouping, Zhang Yongping, etc, construct investor attention index based on blog / micro-blog information; Yu Qingjin, Zhang Bing also use Baidu index as a measure of investor attention; Similarly, other scholars take the objective data provided by the Internet search engine as the proxy variable. Therefore, this paper constructs the investor attention index from the angle of WeChat

index which is relatively objective.

2.2 The relationship between stock returns and investor attention (Internet based)

With the development of behavioral finance, more researchers have put investor psychological factors into the study, and many studies have shown that investor concern has a close relationship with the change of stock price. At present, some scholars in China have paid much attention to the investors' attention based on the objective Internet data of Baidu index. Wang Zhen and Hao Gang (2013) found that investors' attention had a positive impact on stock returns, and the earlier concerns had negative effects by setting up panel data model; Ying Qianqwei, Luo Danglun, Kong Dongming's (2014) regression analysis shows that investor attention has a significant impact on the next week's earnings, and that the effect is reversed after a week, and that the impact will not be offset within a year; Liu Feng, Ye Qiang, Li Yijun (2014) found that the influence of media attention on stock returns was significantly weaker than the influence of investor attention on stock returns. Moreover, it is the investors' attention and investment behavior caused by media information transmission that lead to changes in stock returns; On the whole, the qualitative research of investor attention based on objective Internet data shows that stock change is closely related to investor attention.

The foreign scholars in this study use the agency variables in the objectivity of the shortcomings, while the domestic researchers use the Baidu index, which is now not consistent with the times.

(With the rapid development of WeChat, its data become more and more representative.) Therefore, the WeChat index is more objective and representative, more close to the actual market situation, so the research is more convincing.

3. Research design

3.1 Sample selection

At present, as a new Internet Ecosystem, WeChat itself has become a way of life. So WeChat index is more related with the real economy. Based on this situation, in order to make the correlation between sample data and investor attention stronger, we selected samples from retail, securities, media, clothing, home textiles, food processing and manufacturing industries as sample data. In order to ensure the accuracy of the empirical results, we use the random selection method to select 5 companies from six industries, the sample data are as follows:

Table 1 sample data

Industry	Stock name	Stock code
Retail	Yonghui Superstores Co., Ltd.	601933
Retail	Chang Chun Eurasia Group Co., Ltd.	600697
Retail	Nanning Department Store Co., Ltd.	600712
Retail	Chongqing Department Store Co., Ltd.	600729
Retail	Beijing Hualian Hypermarket Co., Ltd.	600361
Media	China Film Co., Ltd.	600977
Media	Chinese Universe Publishing and Media Co., Ltd.	600373
Media	Beijing Bashi Media Co., Ltd.	600386
Media	Jiangsu Phoenix Publishing and Media Corporation Limited	601928
Media	Shanghai Film Co., Ltd.	601595
Securities	CITIC Securities Company Limited	600030

Securities	Southwest Securities Co., Ltd.	600369
Securities	Central China Securities Co., Ltd.	601375
Securities	Guotai Junan Securities Co., Ltd.	601211
Securities	Huatai Securities Co., Ltd.	601688
Clothing and home textile	Zhejiang Red Dragonfly Footware Co., Ltd.	603116
Clothing and home textile	Ningbo Peacebird Fashion Co., Ltd.	603877
Clothing and home textile	Heilan Home Co., Ltd.	600398
Clothing and home textile	Jiangsu Hongdou Industry Co., Ltd.	600400
Clothing and home textile	Sichuan Langsha Holding Ltd.	600137
Food processing and manufacturing	Inner Mongolia Yili Industrial Group Co., Ltd.	600887
Food processing and manufacturing	Beijing Sanyuan Foods Co., Ltd.	600429
Food processing and manufacturing	Meihua Holdings Group Co., Ltd.	600873
Food processing and manufacturing	Juewei Food Co., Ltd.	603517
Food processing and manufacturing	Xinjiang Tianrun Dairy Co., Ltd.	600419
The home appliance	Qingdao Haier Co., Ltd.	600690
The home appliance	Shanghai Flyco Electrical Appliance Co., Ltd.	603868
The home appliance	Jiangsu Sunrain Solar Energy Co., Ltd.	603366
The home appliance	Jiangsu Chunlan Refrigerating Equipment Stock Co., Ltd.	600854
The home appliance	Zhejiang Langdi Group Co., Ltd.	603726

3.2 Variable definition

RET (I stock T return) - dependent variable, the stock return is a weekly stock return, the time span is one month;

AT (investor attention index), the independent variable, the median of investor attention and the logarithm are selected;

PB (the I stock T futures net rate) - controlled variable Turnover (I phase T stock turnover rate)

3.3 Data collection

The stock returns from investor attention are derived from the resset database. The research time is from May 8th to June 8th. The effect of investor attention on the next week is studied by week. The time span is one month. The collection of investor attention data comes from manually collecting WeChat index.

3.4 Model establishment

To construct the monthly rate of return as explanatory variables, to ordinary investors, the company scale, city net rate of explanatory variables in the panel regression model, the model is as follows:

$$RET = X + X1 \text{ AT} + X2 \text{ Turnover} + X3 \text{ PB}$$

4. Empirical analysis

Through multiple linear regression analysis, the data are as follows:

Table 2 results of analysis of data

Stock name	Stock code	R ²	F	P	Error
CITIC Securities Company Limited	600030	0.9981	262.5192	0.0436	0
Sichuan Langsha Holding Ltd.	600137	0.9986	351.9756	0.0377	0
Beijing Hualian Hypermarket Co., Ltd.	600361	0.9993	762.3797	0.0256	0
Southwest Securities Co., Ltd.	600369	0.9995	981.2403	0.0226	0
Chinese Universe Publishing and Media Co., Ltd.	600373	0.9977	215.3923	0.0481	0
Beijing Bashi Media Co., Ltd.	600386	0.9765	20.8041	0.1532	0.0001
Heilan Home Co., Ltd.	600398	0.9977	215.7944	0.0481	0
Jiangsu Hongdou Industry Co., Ltd.	600400	0.9993	740.0733	0.026	0
Xinjiang Tianrun Dairy Co., Ltd.	600419	0.9982	274.8863	0.0426	0.0001
Beijing Sanyuan Foods Co., Ltd.	600429	0.9987	384.4183	0.036	0
Qingdao Haier Co., Ltd.	600690	0.9991	544.8324	0.0303	0
Chang Chun Eurasia Group Co., Ltd.	600697	0.9989	453.8569	0.0332	0
Nanning Department Store Co., Ltd.	600712	0.992	608.2485	0.0287	0
Chongqing Department Store Co., Ltd.	600729	0.991	579.0239	0.0294	0
Jiangsu Chunlan Refrigerating Equipment Stock Co., Ltd.	600854	0.9986	348.017	0.0379	0
Meihua Holdings Group Co., Ltd.	600873	0.9976	208.6676	0.0489	0.0001
Inner Mongolia Yili Industrial Group Co., Ltd.	600887	0.9985	326.8551	0.0391	0
China Film Co., Ltd.	600977	0.9985	342.2096	0.0382	0
Guotai Junan Securities Co., Ltd.	601211	0.9981	261.8634	0.0437	0
Central China Securities Co., Ltd.	601375	0.9985	327.8897	0.039	0
Shanghai Film Co., Ltd.	601595	0.9775	21.6759	0.1502	0.0005
Huatai Securities Co., Ltd.	601688	0.9977	218.725	0.0478	0
Jiangsu Phoenix Publishing and Media Corporation Limited	601928	0.9975	200.9873	0.0498	0
Yonghui Superstores Co., Ltd.	601928	0.9308	6.7208	0.2631	0.0004
Zhejiang Red Dragonfly Footware Co., Ltd.	603116	0.9811	25.9451	0.1375	0
Jiangsu Sunrain Solar Energy Co., Ltd.	603366	0.9985	336.2929	0.0385	0
Juewei Food Co., Ltd.	603517	0.9258	6.2373	0.2724	0.0002
Zhejiang Langdi Group Co., Ltd.	603726	0.999	516.64	0.0311	0
Shanghai Flyco Electrical Appliance Co., Ltd.	603868	0.9981	268.9833	0.0431	0
Ningbo Peacebird Fashion Co., Ltd.	603877	0.9988	426.4835	0.0342	0

As can be seen from the table, only P value of 5 stocks in the 30 groups is greater than or equal to

0.05, does not meet the requirements, and the remaining 25 stock data meet the conditions.

5. The main conclusions

Through the empirical analysis of multiple linear regression, we can draw the following conclusions:

- (1) the investor concern degree constructed by the WeChat index has a significant correlation with the stock returns.
- (2) when the investor's attention is high in the current week, the stock returns will have an impact on the next week, and there is a positive correlation between the two.

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