

An Empirical Analysis of Bellwether Stock in Chinese Stock Market

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Abstract. This paper acquires following results through empirical analysis: The accumulative increase amount of the sample sector is 35%, the accumulative increase amount of respective Bellwether Stock is 323% and the accumulative increase amount of Shanghai securities composite index in the same period is 5%. The first two numbers mentioned above is 7 times and 64.6 times of that of the market; The highest increase amount of sample sector II is 174%, averaging 0.2% daily. The highest increase amount of respective Bellwether Stock is 1,132%, averaging 4% daily. The highest increase amount of Shanghai securities composite index in this period is 128%, averaging 0.1% daily. The first two groups of numbers mentioned above is 1.36 times and 8.84 times, 2 times and 40 times of that of the market.

Keywords: Empirical Analysis; sector Linkage; Bellwether Stock.

1. Introduction

The demonstration effect of the Bellwether Stock is one of its important functions. There is a clear connected effect in A share market. Many Chinese scholars also notice the sector linkage phenomenon in the stock market. It can date back to 2001 when He Cheng ying initiated the theoretical research of the “sector effect”. She referred to the CR index, the relative yield rate which Western scholars use to study the trend of IPO stocks, concluded quantified indexes that could help us observe the strength of the sector effect and other heat of the market and applied the modern Western capital market theory and knowledge of financial investment to have sufficient research and analysis of rotating fluctuation phenomenon of different sectors in A share market. It drew the conclusion that the sector phenomenon in China is a special phenomenon of market speculation. The reason of it was related to the behavior characteristics of investors in China. The linkage of sector and individual stock is a reflection of the phenomenon of market speculation[1-4]. In 2002, Song Feng ming and Tang Jun divided stock into two categories according to the difference in information structure: Bellwether Stock and following stock. Moreover, they constructed the source of information and conduction method. Meanwhile, they made use of historical data in Chinese stock market to draw three conclusions: There were crossed autocorrelation between Bellwether Stocks and following stocks; the crossed autocorrelation between individual stocks would increase the correlation coefficient between the yield rate of individual stock and that of the market and that correlation coefficient is larger for the following stock than that of the Bellwether Stock; There were obvious over reactions for the following stock as the investor of following stock mistakenly set the price according to the stock information of the Bellwether Stock[7]. In 2006, Chen Peng and Zheng Yicun had coordinated and integrated inspection to the linkage phenomenon in Chinese stock market. The result of the inspection showed that the sector linkage is periodic. They discussed the reason for the sector linkage phenomenon from the financial perspective and thought the sector linkage phenomenon is the most fundamental reason for the insane behaviors of the noise investor[5-6].

2. Data and Analysis

Bellwether Stock is the stock that can outstrip other stocks of the same sector in the increase amount when the sector is on a sustainable strong run and resist the influence of the market and reverse the decreasing trend of the market. When coming to the sensationalization of heat point in the

market, Bellwether Stock is the one that would have impact on other individual stocks of same concept or same sector. The ups and downs of it would often plays the role of guide and demonstration to the trend of the individual stocks of same concept or same sector. Usually, Bellwether Stocks would have the background of large capital inflow, a substantive topic as the concept or good business performance as their supporting power. For example: OLED sector, Xiong'an New Area sector, venture board and etc (in Table 1). As long as there is sustainable heat point, there would be periodic heat Bellwether Stocks.

Table 1. Summary of Bellwether Stock in Each Heat Sector

Heat Sector	Xiong'an New Area	Venture	OLED
One	Eastern Hebei Equipment	Northern City High Technology	Guofeng Plastic Industry
Two	HanjianHeshan	Minfeng Special Paper	Kaisheng Science Technology
Three	Qinglong Tube	Hongye Holding	Lingyi Manufacturing

As Chinese stock market is a gambling market, it needs capital to be pushed. Meanwhile, Bellwether Stock must have large scale and large volume capital participation in group. Because of the lasting involvement of mainstream capital, the increasing amount of the Bellwether Stock is huge with little risk of call-back. So, it is nearly the best category for short-term trade of the investor.

Table 2. Table of Increasing Amount of Individual Stock, Sector Index and Shanghai Securities Composite Index

Index Name	Point before Increase	Periodic Peak	Accumulative Increase Amount(%)	Last Day before Increase(month/day)	Time of Periodic Peak(month/day)
Shanghai Securities Composite Index	3016.53	3165.92	5	5/12	6/9
Index of Xiong'an New Area	1092.42	1476.53	35	4/6	4/12
Eastern Hebei Equipment	14.14	45.8	323	4/5	5/15

According to Table 2, we know that the stock price of Eastern Hebei Equipment, the Bellwether Stock of Xiong'an New Area, was 14.14 yuan on April 7th, 2017. On May 15th, it reached its highest price, 45.8 yuan. It witnessed an accumulative increase amount of 323% with only 25 trade days. And during that process, Shanghai securities composite index dropped for 1% with the largest range of drop of 5%. It was totally unaffected by the dropping trend of the market. If we look at the time stamp, we can see that Eastern Hebei Equipment, the Bellwether Stock of Xiong'an New Area sector curbed the dropping trend to stabilize in April and started the predominating increasing wave. Meanwhile, the index of Xiong'an New Area set off from April 4th and the index of the market couldn't curb the dropping trend to stabilize till May 12th.

Computing Method:

$$\text{Average increase amount} = \text{Accumulative increase amount} / \text{days of increase} * 100\% \quad (1)$$

$$\text{Largest increase amount} = \text{highest price} / \text{set-off price} * 100\% \quad (2)$$

Table 3. Table of Increase Amount of Eastern Communication, Dongxin Peace, 5G Concept Index and Market Index

Name of Index	Starting Point of Increase	Peak	Average Increase Amount (%)	Largest Increase Amount(%)	Name of Index
Shanghai securities composite index	2449.20	3129.94	0.1	128	Shanghai securities composite index
5G Concept Index	404.78	703.47	0.2	174	5G Concept Index
Eastern Communication	3.7	41.88	4	1132	Eastern Communication
Dongxin Peace	4.65	22.67	2	488	Dongxin Peace

Table 3 selects two Bellwether Stocks of 5G concept as the sample: Eastern Communication and Dongxin Peace. Since reaching the lowest price of 3.7 yuan on October 19th, 2018, Eastern Communication had been on the rising trend in the following 102 trade days and finished with the stock price of 41.88 yuan/share on March 8th, 2019, a 12 times increase. This price is also the highest price in the history of Eastern Communication. The accumulative increase amount of Eastern communication reached 1132%, making the total market value of it leap from 4.54 billion yuan to 50.28 billion yuan. Intrigued by the large-scale increase of the Bellwether Stock Eastern Communication, Dongxin Peace of the same 5G concept also set off. It started with the price of 4.65 yuan/share and reached the highest price of 22.67 yuan/share on March 8th, 2019, registering an accumulative increase amount of 488%. The performance of Dongxin Peace was only second to Eastern communication, making it the stock with second-highest increase amount in the sector. However, the increase amount for other following stocks were way fewer. It proves that only the stock with top increase amount on the sector can bring money-making effect. The index of 5G sector also experienced a strong serve of increase led by the performance of Eastern Communication with the highest increase amount at 174% and 128% for the market index. In general, on a hot market, the increase amount of the Bellwether Stock is way more obvious than that of its belonging sector and that of following stocks on the same sector.

According to the analysis of historical experience, the Bellwether Stock has following characters:

2.1 Feature

Driven by heat point or policy. The bigger is the policy, the more possibility for the emergence of bulls; Demonstration effect to drive the increase of individual stocks in the same sector; The Bellwether Stock has co-movement feature. The large-scale increase of it would always provide momentum to the relative sectors and stocks in the same sector. Making use of the co-movement feature of the sector and buying in other stocks of strong co-movement feature in the same sector in time when the Bellwether Stock becomes the universal target of market investors for increase is an important method to acquire short-term yield. The Bellwether Stock has the ability to reverse the market. The dropping amount of it would be lower than that of the stock market as a whole. When coming to bounce back, it is always one step ahead of the market. The large participation of capital of the Bellwether Stock means high turnover rate. The stock with early activation and high turnover rate is usually the Bellwether Stock of the sector.

2.2 Market Value

Analyzing from the perspective of operation: Judging the value of the market trend. Since the scale and developing level of the heat market trend might be closely related to Bellwether Stocks in the market, we can get hold of the developing direction of the market trend through analyzing the category and features of the Bellwether Stock. So the investor can make responsive investment strategy to that; Acquiring the value of profit. Compared to other individual stocks in the same sector, the Bellwether Stock is with earliest activation, fastest increasing speed and largest increase amount. It provides market investor enough room for profit; The value of driving the rise of the market as a whole. Under the money-making effect of the Bellwether Stock, the external capital would be strongly attracted, resulting in constant inflow of additional capital to the market. The sector effect would be easily triggered and brings a wave of increase.

2.3 Market Performance

Market trend often shows itself in the form of heat sector. Stocks in the sector can be divided into two parts: driving stock and following stock. The driving stock with top increase amount would be the Bellwether Stock. The feature of the Bellwether Stock is: leading the increase when the market is on the rise and resisting the drop when the market is on the downturn. When the market trend is good, it would have an even bigger increase amount; when the market call backs to avoid risk, the Bellwether Stock would issue the signal for call-back earlier than the market or the sector; when the market trend is bad, it would not start to drop until stocks on the same sector have prominently dropped. On the early period of the sensationalization, the Bellwether Stock can make an earlier set-off than the market. This leading effect would provide convenience for investors to judge the trend of the market and operate stocks in their hands. The Bellwether Stock can also stabilize first in a market downturn and sieve chips on hand at the periodic bottom. At that time, the Bellwether Stock would be ready for issuing a wave for the increase of the market, if not all the market.

3. Conclusion

We can learn from the data analysis and the calculation that the accumulative increase amount of sample section I is 35%, the accumulative increase amount of the relative Bellwether Stock is 323% and Shanghai securities composite index accumulative increase amount in the same period is 5%; The highest increase amount of sample sector II is 174%, averaging 0.2% daily. The highest increase amount of respective Bellwether Stock is 1132%, averaging 4% daily. The highest increase amount of Shanghai securities composite index in this period is 128%, averaging 0.1% daily. The Bellwether Stock starts to increase earlier than the market and is relatively resistant to stock price drop. Operating Bellwether Stocks is of high yield and low risk. The earlier the Bellwether Stock sets off, the higher of its value to buy in. A Bellwether Stock can only establish its position after large-scale increase. The investment suggestion is: When a heat sector is formed, the correct operation method for the investor in that moment is buying in after the Bellwether Stock has kicked off the increase.

Acknowledgements

This research work was supported by Guangdong Higher Education Teaching Revolution Project: Experiencing Teaching and Mode Design of Cultivation of Internet Finance Talents under the Background of Financial Science Technology, project number: 2018SJXGG01; Guangzhou College of Commerce Higher Education Teaching Revolution Project: Teaching Reform and Practice of Securities Investment under the Cultivation Method of Applied Talents, project number: 2018XJXGG01. Foundation projects: Guangdong Undergraduate Higher Education Teaching Quality Engineering project: "Guangzhou College of Commerce — Applied Training Base of Mobile Commerce and E-commerce Logistics, project number: SJJD201501; Guangdong College Characteristic Innovative Project (humanities and social sciences category): "Virtual Reality

Experimental Teaching Center of Guangzhou College of Commerce”, project number: 2015WTSC X114.

References

- [1]. Brooks R, Del Negro M. Firm-level evidence on international stock market comovement. Discussion Paper Series 1: Economic Studies, 2005.
- [2]. Phylaktis K, Ravazzolo F. Stock market linkages in emerging markets: implications for international portfolio diversification. *Journal of International Financial Markets Institutions & Money*, 2005, Vol. (15) No. 2, p. 0-106.
- [3]. Chien Y W C, Chen Y L. Mining associative classification rules with stock trading data – A GA-based method[J]. *Knowledge-Based Systems*, 2010, Vol. (23) No. 6, p. 605-614.
- [4]. He Chengying. Analysis of “Sector Phenomenon” in Chinese Stock Market. *Economic Research*, 2001, Vol. (12) No. 2, p. 82-87.
- [5]. Chen Peng, Zheng Yicun. Analysis of “Sector Linkage” Phenomenon in Chinese Stock Market Theory Discussion. 2006. Vol. (10) No. 2, p. 31-32.
- [6]. Lv Jihong, Zhao Zhenquan. The Influence of Raising Limit and Limit Down to the Fluctuation of the Stock Market. *Jilin University Journal Social Science*, 2000, Vol. (5) No. 2, p. 15-19.
- [7]. Song Fengming, Tang Jun. Source of Information of Individual Stock and Bellwether Stock Effect. *Financial Research*, 2002, Vol. (6) No1. p. 1-11.