

The Effect of Open Market Repurchase on Company's Value

Xu Fengju Wang Feng

School of Management, Wuhan University of Technology, Wuhan, P.R.China, 430070

(E-mail:xfju@163.com, wangf1009@163.com)

Abstract This paper investigates on nine listed Companies in Shanghai and Shenzhen stock markets that have implemented the Open Market Repurchase (OMR) program. In this research, the event study method is employed to analyze the effect of the OMR on the Companies' value. At last the paper finds the rule of effect of OMR on listed company's value, and indicates that the effect needs a long-term process of gradual release.

Key words capital market, share repurchase, oen market repurchase, vlue of company

1 Introduction

Share Repurchase as an important financial instrument of capital operation is very popular in mature capital market. However, in Chinese stock market there are very few share repurchase, especially the Open Market Repurchase. Since May 2005 the China Securities Regulatory Commission publicized the "Listed Companies repurchase shares to the public management methods (Trial)". In December 2007, there are only a total of 9 listed companies announcing OMR. Allowing listed companies repurchase outstanding shares from the legal level as a long-term building of system is conducive to stabilizing the stock market, achieves a reasonable return of the company's value, and restores the confidence of investors^[1]. At the same time, it also provides a flexible means of capital operation for those listed companies who want to improve the capital structure by share repurchase. Whereas the share repurchase will bring what kind of impact on the value of company, this paper is proposed to discuss it through empirical analysis.

2 Theoretical Background

2.1 OMR Theory

The Open Market Repurchase means the company repurchases a certain number or range limit of the company's outstanding shares with a market price not exceeding an upper limit and at a certain time period in the secondary market. Because the OMR gives more decision-making rights to company managers, it has become a major form of repurchase. The data from the United State show that: from 1994 to 1999, with the relaxation of control and the diversity of repurchase motives, the OMR accounts for 95% to 98%, the Tender offers only occupy 1% to 1.5%, and Dutch auctions is the 3% to 7% of all share repurchases^[2]. This pattern has not changed nowadays.

2.2 Value of Company

The value of company is the present value of the company's future cash flows. It depends on the profitability of the company's assets and also is the foundation for forming the basis of stock price. The common methods for evaluating the company's value are the Discounted Cash Flow (as DCF), Price/Earning (as PE), and Price/Book Value (as PB), which assess whether the value of stock is undervalued in stock market^[3]. Once the company's value has been underestimated, the investment opportunities to this company is greater, as well as the probability of repurchase. Because it will not only bring losses to the company and its shareholders, but also to the managers, even threaten the jobs of managers. So the value underestimate is the fundamental reason and underlying motivation of stock repurchase, and is the starting point of studying the stock repurchase.

3 Sample of Research

3.1 The Sample of Listed Companies

After the "Listed Companies repurchase shares to the public management methods (Trial)" was announced in May 2005, there are only 9 companies adopting OMR in Shanghai and Shenzhen stock markets. This paper will regard all of those listed companies as study objects. Their repurchase programs are summarized in Table 1.

Table1 The repurchase programs of listed companies

Companies' full name	Short name	Price (yuan/unit)	Premium (%)	Proportion (%)	Funds (million)
HANDAN IRON & STEEL CO.,LTD.	HDIS	5.8	24.46	4.027	350
HUNAN VALIN STEEL TUBE & WIRE CO., LTD.	HLTW	4.5	24.31	5.67	450
SHEN YANG INGENIOUS DEVELOPMENT CO.,LTD.	INGIN	3.65	-1.08	7.41	73
AN HUI SHAN YING PAPER INDUSTRY CO.,LTD.	SYPI	3.5	9.03	7.49	70
HUADIAN ENERGY CO.,LTD.	HDECL	3.5	11.46	8.88	350
ZHE JIANG HUA HAI PHARMACEUTICAL CO.,LTD.	HHPH	12.10	26.97	4.27	121
JIU ZHI TANG CO., LTD.	JZT	5.30	4.54	13.75	160
JIANG SU SUNSHINE CO.,LTD.	JSSS	3	23.97	3.11	90
ZHENG ZHOU YUTONG BUS CO., LTD.	YTCO	7.3	42.86	7.50	219

3.2 Descriptive Statistics

It evaluates the listed companies' value by using the methods of DCF, PE and PB. The table below shows the value evaluation result of the companies t shows that the highest proportion of the stock price below the DCF valuation is -44.55% of HLTW, the lowest is -0.15% of YTCO, the average of stock price below DCF valuation is -17.51%. The values of those companies are below their real values from the DCF valuation.

The highest of PE below the industrial average is -61.48% of YTCO, the lowest is 448.73% of JSSS, and the average level is 33.15%. There only are the values of HDIS, HDECL and JSSS not underestimated, and the values of other companies are underestimated from the PE level.

The highest of PB below the industrial average is -53.25% of HHPH and JZT, the lowest is 43.79% of YTCO, the average level is -26.79%. The values of all the companies except YTCO are undervalued from the PB level. All of the results indicate that the values of those companies who announced the OMR programs are below their real values.

Table2 alue evaluation of sample

Companies' name	Stock price (yuan/unit)	DCF valuation (yuan/unit)	Underestimated proportion (%)	PE	PE of industrial average	PE Underestimated proportion (%)	PB	PB of industrial average	PB Underestimated proportion (%)
HDIS	5.08	6.9	-26.38%	8.16	6.36	28.30%	0.92	0.982	-6.31%
HLTW	3.97	7.16	-44.55%	6.78	7.02	-3.42%	0.97	1.05	-7.62%
INGIN	3.44			12.63	13.32	-5.18%	0.8	1.33	-39.85%
SYPI	3	3.82	-21.47%	16.78	24.88	-32.56%	0.91	1.54	-40.91%
HDECL	3.39	3.84	-11.72%	19	16.8	13.10%	1.1	2	-45.00%
HHPH	9.8	11.2	-12.50%	16.22	22.58	-28.17%	1.08	2.31	-53.25%
JZT	5.06	5.37	-5.77%	11.71	30	-60.97%	1.08	2.31	-53.25%
JSSS	2.42			134.44	24.5	448.73%	0.98	1.6	-38.75%
YTCO	6.46	6.47	-0.15%	15.3	39.72	-61.48%	2.2	1.53	43.79%
Average			-17.51%			33.15%			-26.79%

4 Methodology of the Research

To test the effect of OMR on those listed companies' values, the paper employs the Event Study. This method is helpful to find out whether there is abnormal stock price effect linking the not expected specific events.

In order to estimate the abnormal yield of stock in the period of OMR, it needs to estimate the normal yield firstly. The so-called normal yield is the expected rate of return when the event does not happen. This paper chooses the corresponding industry's index as a stock's expected yield (μ_i). The abnormal yield (AR_{it}) is defined as the difference between the real rate of return (R_{it}) and expected yield (μ_i)^[4]. To get the all effect of OMR event, the abnormal yield can be accumulated along the two-dimensional path: the time path and single stock path.

The model is following:

$$AAR_t = \frac{1}{N} \sum_{i=1}^N AR_{it} \quad (1)$$

$$Var(AAR_t) = \frac{1}{N^2} \sum_{i=1}^N S_i^2 \quad (2)$$

$$t = \frac{AAR_t - \mu}{\sqrt{\frac{S^2}{N}}} \quad (4)$$

$$AAR_t \sim N(0, Var(AAR_t)) \quad (3)$$

The statistical test adopts test of two-tailed, so comparing $\frac{\alpha}{2}$ and $\frac{p}{2}$, all the statistics are calculated by SPSS automatically. The significant level (α) is given as 0.05, and compared with the probability of test measures (p). If p is less than α , then it should refuse H_0 , and there is a significant difference between the overall average and the test. Conversely if p is greater than α , it should not refuse H_0 , there is no significant difference between the overall average and the test^[5].

5 Analysis

This study investigates on all the 9 listed companies above-mentioned. In order to research the reaction of stock price after the repurchase program announce-day, it is divided into different time period for reveal the different reaction of stock price in the short-term, medium-term and long-term. The delineation of the specific time is in Table 3.

Table 3 Time Period of Stock Price

Time period	Base price	Stock price	Event	Event window
Announce-day and a week before and after it	A daily closing price before announce-day	Daily closing price	Day $t_{d=0}$	[0], [-1, 1], [-2, +2]day
A month after announce-day	A weekly closing price before announce-day	weekly closing price	Week $t_w=0$	[0, +3]week
A quarter after announce-day	A monthly closing price before announce-day	monthly closing price	Month $t_m=0$	[0, +2]month
Half year after announce-day	A monthly closing price before announce-day	monthly closing price	Month $t_m=0$	[0, +5]month
A year after announce-day	A monthly closing price before announce-day	monthly closing price	Month $t_m=0$	[0, +11]month

The calculated results are showed in Table4, which describes the accumulated abnormal yields in different time periods.

Table 4 Accumulated Abnormal Yields in Different Time Periods

The results	Abnormal yield in [0] day	Accumulated abnormal yields in [-2, +2] day	Accumulated abnormal yields in [0,+2] week	Accumulated abnormal yields in [0,+2] month	Accumulated abnormal yields in [0,+5] month	Accumulated abnormal yields in [0, +11] month	
Minimum	-0.026	-0.140	-0.032	-0.119	-0.208	-0.191	
Maximum	0.044	0.087	0.107	0.127	1.231	1.030	
Average	0.009	0.001	0.015	0.027	0.181	0.250	
Standard deviation	0.023	0.064	0.041	0.075	0.433	0.361	
T-statistics	1.150	0.026	1.063	1.080	1.254	2.076	
probability of two tailed P	0.283	0.980	0.319	0.312	0.245	0.072	
95% Confidence interval	Min	0.009	0.048	0.017	0.031	0.152	0.028
	Max	0.027	0.050	0.046	0.085	0.514	0.528

Table 4 shows that the abnormal yield of a week before and after Announce-day has no respond, the maximum is 4.40%, the minimum is -2.60%, the average is 0.90%, the standard deviation is 0.02, T=1.15, P=0.283, so $p > \alpha$, it should not refuse H_0 , there is no significant difference between the overall average and the test. The no effect in announce-day and a week before and after it explain that the repurchase has not been paid enough attention in stock market. The main reasons may are the repurchase share is new things in China and the market is bear market.

The short-term effect of stock price includes the abnormal yields in a month and a quarter after announce-days. From table 5 p is greater than α , so it should not refuse H_0 . There are market reactions in a month and a quarter after announce-days, and it has a gradually upward trend. Because the stock market has begun to improve, and the investors have begun to learn the shares repurchase. After a quarter the accumulated abnormal yield is relatively significant.

The medium-term effect of stock price is explained by the abnormal yield in half year after announce-day. It shows that the market reacts to the repurchase continually, and the upward trend is more significant. On one hand the share-trading reform has started, and the stock market further improved, on the other hand the investors have a better understanding of the share repurchase and those companies' values. Until to half a year, the accumulated abnormal yield is very significant and the difference of effect is increasing.

The long-term effect of stock price is described by the abnormal yield in a year after announce-day. The market reacts to the repurchase continually like the medium-term effect. At this time the share-trading reform has started completely, and the stock market enters a new round of bull market. The significant accumulated abnormal yields indicate those companies announcing OMR do have investment value.

Then it compares the assessment value, repurchase premium and effect of stock price. The accumulated abnormal yield of the whole year after the repurchase share program announced is in the trend Figure1. The accumulated abnormal yield is increasing with the time passed. In the half of a year it has exceeded the average of repurchase premium (13.19%), and after a year it is very close to PE slip (33.15%).

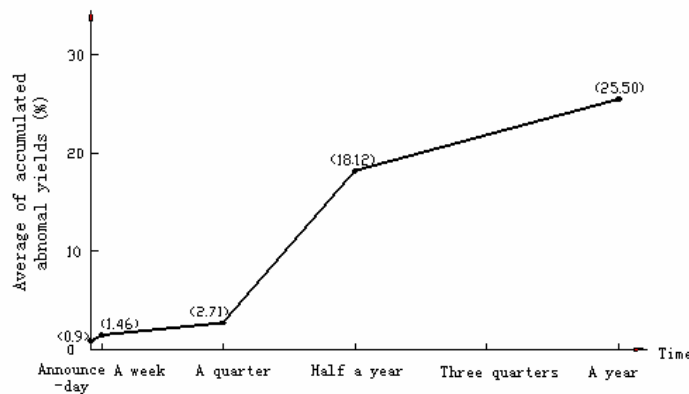


Figure1 The Trend of Accumulated Abnormal Yield

The paper has carried an empirical study about the abnormal yield through Event Study, and explains the effect of OMR on the short-term, medium-term and long-term stock prices of those 9 listed companies. The average of accumulated abnormal yield of quarter is 2.71% and the average of accumulated abnormal yield of year is 25%, which indicate that the OMR has a weak short-term effect and a strong long-term effect on stock price in the Shanghai and Shenzhen stock markets. The reaction of stock price to the OMR has a long-term process for gradual release.

6 Conclusions

The effect of OMR on listed company's value has a long-term process of gradual release. The values of all the listed companies who announced the OMR programs in Shanghai and Shenzhen stock markets are underestimated, and improving the stock price is their most fundamental motivation of adopting OMR. Because of too few samples and the volatility of Chinese capital market, the finding of this paper needs to be further examined. Although there are only 9 cases, some of the reactions of stock price are over-react, some of them are lack of reactions, and most of them are long-term reactions. These phenomena can not be studied by using the classic method of economics, but it should use the modern behavioral economics to conduct research.

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