Can Institutional Shareholding Affect the Timing of Stock Buybacks? — Evidence from Stock Buybacks of A-share Listed Companies

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Abstract: This paper selects China's A-share market share repurchase data during the period 2007-2022 as a sample, and takes the actual share repurchase behaviour of A-share listed companies as the research object, it constructs a multiple regression model to empirically test the effect of institutional investor's stockholding on the timing ability of corporate share repurchase. Specifically, the higher the proportion of institutional shareholding, the stronger the firm's stock timing ability; Heterogeneity analyses show that institutional investors in firms with lower Tobin's Q can enhance the stock repurchase timing ability more significantly; overseas experience of executives does not enable institutional investors to help firms to enhance the stock repurchase timing ability significantly. This paper provides theoretical support for listed companies to analyse and judge the influencing factors of market timing, and enriches the connotation and utility of market timing theory.

***Keywords*:** stock buybacks; market timing theory; institutional shareholdings

1. Introduction

The theoretical system of market timing is mainly based on the stock mispricing timing model and the dynamic asymmetric information timing model. [1]In order to reduce the undervaluation of stock prices due to information asymmetry, managers usually choose to issue shares at a time when the information asymmetry is low, so as to reduce the impact of information asymmetry on stock prices. The market timing theory system is mainly constructed on the basis of the stock mispricing timing model and the dynamic information asymmetry timing model. The former involves irrational behavioural patterns of investors or managers: when sentiment is high, investors tend to push stock prices up, leading to overvaluation, while when sentiment is low, they push stock prices down, leading to undervaluation. When managers perceive stock prices to be overvalued, they will choose equity financing to take advantage of the relatively low cost of equity financing, while when they perceive stock prices to be undervalued, they will choose debt financing (also known as "debt financing") or repurchase shares to avoid losses due to the high cost of equity financing. The latter assumes that both investors and managers are rational. In order to reduce undervaluation due to information asymmetry, managers usually choose to issue shares at a time when the information asymmetry is low, so as to reduce the impact of information asymmetry on the stock price. [2-3]

Findings from the foreign literature suggest that market timing has a consistent impact on corporate finance decisions in mature capital markets such as Europe, America and Japan. This suggests that market timing plays a key consideration in the formulation of corporate finance strategies. These studies validate the existence of the market timing effect and demonstrate its substantial impact on firms' capital structure, thus further confirming the soundness of the market timing theory. [4]At the same time, these studies also reveal the existence of certain timing behaviours in both share repurchases and tender offer repurchases in open market bidding. [5]

The contribution of this paper is that institutional shareholding can significantly improve the timing ability of share repurchase by improving the level of executive incentives, which further enriches the research on the factors influencing the timing ability of repurchase in China.

2. Research Hypothesis

Stock buybacks require a large amount of resource support, and institutional investors, with their huge capital scale, can not only improve the transparency of corporate information and promote the transmission of private information, but also effectively alleviate the financing pressure in stock buyback activities, providing financial and information support for corporate buybacks. In addition, institutional investors also have the advantage of keen information perception and acquisition, and are able to identify factors that may affect share prices in a timely manner, and are more sensitive to market changes. As an external governance body, institutional investors also play an important role in external monitoring and governance. According to the theory of effective monitoring, institutional investors are able to monitor the behaviour of

management at a lower cost and play a role in corporate governance through voting. When institutional investors hold a high percentage of shares, the benefits of their monitoring will outweigh the costs, helping to curb management's opportunistic behaviour and reduce corporate's poor decision-making and timing in share buybacks. As the percentage of shareholding increases, the external monitoring role and corporate governance effectiveness of institutional investors will be further enhanced, and they will have more incentive and ability to play an active governance role to help enterprises make the right repurchase decisions and seize the right timing in order to realise more profits.

Accordingly, Hypothesis 1 is formulated in this paper:

H1: Institutional investor shareholdings can facilitate the timing of corporate buybacks.

3. Research design

3.1 Sample selection and data sources

This study focuses on the share repurchase transactions conducted by A-share listed companies from 2007 to 2022. The relevant listed companies' financial data and share repurchase data are mainly obtained from the CSMAR database. To ensure the validity of the sample, we excluded ST and *ST stocks, PT stocks, and companies in the financial industry. For continuous variables, we performed 1% two-way tailing to avoid outliers from affecting the results. Finally, we obtained a total of 8138 valid samples.

3.2 Variable Definition

(1) Stock repurchase relative price (Price): This paper uses the average repurchase price (APR_0) and the average market price ($ATP_{-t,+t}$) to measure the timing ability of managers to repurchase shares. This variable is defined in this paper as the relative repurchase price:

$$Price = \frac{APR_0}{ATP_{-t,+t}} 1 \tag{1}$$

where APR_0 is the average repurchase price paid for the repurchase in the month of the repurchase, and is the comparative price (average market transaction price) in t months before and after the repurchase. If firm managers are able to time the market, this paper expects that a one-sample t-test should yield a relative repurchase price that should be significantly less than zero.

(2) Institutional shareholding (Ins): drawing on Wang Yao's(2021) methodology, institutional investor shareholding is measured using the number of shares held by institutional investors at the end of the period as a percentage of the total equity, including funds, QFIIs, brokerage firms, insurance, social security funds, trust companies, and finance companies.[6]

(3) Executive pay incentives (TMTPay): this paper draws on Shen Dayong (2017) and uses the natural logarithm of the top three executives' total compensation to measure executive pay incentives.

(4) Control variables. Drawing on existing related studies, the following control variables are selected: return on equity (ROE), nature of ownership (SOE), size of the board of directors (Board), two positions (Dual), book-to-market ratio of the company (BM), financing constraints index(WW, WW=-0. 091CF-0. 062DIVPOS+0. 021TLTD-0. 044LNTA+0. 102ISG-0. 035SG. CFis the ratio of cash flow to total assets; DIVPOS is a dummy variable that takes the value of 1 at the time of dividends; TLTD is the ratio of long-term liabilities to total assets; LNTA is the natural logarithm of total assets; ISG is the sales growth rate of the industry in which the firm operates; SG is the sales), whether it is a Big 4 accounting firm (Big4), and whether the executives have financial background (FinBack).

4. Empirical results and analyses

4.1 Basic regression test

Table1 presents the results of the regressions testing Hypothesis1. (Robustness standard errors are used to mitigate the effect of heteroskedasticity.) Column (1) shows the regression results without adding control variables, the coefficient of institutional investor shareholding (Ins) is 177. 3 and is significant at the 10 per cent level, which suggests that institutional investor shareholding is able to effectively enhance the timing ability of corporate share repurchase. Column (2) shows the regression results after adding the control variables, the coefficient of institutional investors' shareholding (Ins) is 180. 7 and is significant at the 10 per cent level. The test results show that there is a significant positive relationship between institutional investors' shareholding and the timing ability of corporate share repurchase, thus verifying Hypothesis1.

Table 1. Benchmark regression results

	(1)	(2)
	Price	Price
Ins	177.3*	180.7*
	(71.39)	(73.25)
Constant	-45.07*	226.8*
	(18.74)	(97.04)
Controls	NO	YES
R^2	0.002	0.011
N	8138	8138

4.2 Robustness check

4.2.1 Replacement of explanatory variables

The previous paper used Ind (the ratio of the total number of shares held by institutional investors to the total number of shares of the firm) as a proxy variable for institutional shareholding. For robustness, this paper uses another variable measuring institutional shareholding, INST (the ratio of the total number of shares held by institutional investors to the number of outstanding shares of the firm), in the regression. The results of the regression are presented in Table4. As can be seen from Table4 the test results of the baseline regression model do not change substantially, and the percentage of firms' shareholding still contributes significantly to the repurchase timing ability. The conclusions are robust.

4.2.2 Controlling the impact of the 2015 stock market crash

The stock market crash occurred in China's A-share market in 2015 due to factors such as highly leveraged financing and short-selling transactions. During the special period of the stock market crash, the effective mechanism of the financial market is destroyed and the financial order is disrupted, which is not conducive to identifying the true ability of the timing of corporate share repurchase, for this reason, the article excludes the sample of 2015 and regresses it again. The regression results are shown in Table2, and the results of the benchmark regression model have not been substantially changed.

Table 2. Robustness tests

	Excluding the 2015 sample	Excluding the 2015 sample	Replacement of explanatory variables
	(1)	(2)	(3)
	Price	Price	Price
Ins	178.0*	184.0*	
	(71.71)	(74.60)	
INST			184.5*
			(74.78)
Constat	-45.29*	216.7*	238.8*
	(18.84)	(92.19)	(100.7)
Controls	No	Yes	Yes
R^2	0.002	0.011	0.011
N	7104	7104	8138

4.3 Heterogeneity analysis

In order to explore the impact of the high and low valuation of a company and the difference in the background of the company's executives that makes the company's shareholding ratio on the timing ability of stock repurchase. In this paper, the Tobin's Q value of the companies is divided into two groups according to higher than the mean and lower than the mean, and the companies are also divided into two groups according to whether the executives have overseas study background or not. The heterogeneity test is shown in Table3, which shows that the institutional shareholding ratio of the group with lower Tobin's Q has a more significant effect on the repurchase timing ability, which indicates that institutional investors in the firms with relatively lower valuation are more able to influence the repurchase decision of the firms, and that the institutional investors are more able to bring more benefits to the firms. In addition, Table3 also shows that when executives do not have overseas study background, institutional investors are more likely to help firms to make share repurchase decisions, and more likely to choose the right timing for share repurchases to create value for the firm.

Table 3. Heterogeneity Analysis - Based on Executive Background and Firm Market Capitalisation

	Executives have overseas backgrounds	Executives have no overseas background	Tobin's Q is above average	Tobin's Q is below average
	(1)	(2)	(3)	(4)
	Price	Price	Price	Price
Ins	0.0102	286.9*	-0.0154	283.7*
	(0.0121)	(115.7)	(0.0133)	(114.8)
Constant	0.156**	427.9*	0.103	410.5*
	(0.0585)	(192.1)	(0.0603)	(174.9)
Controls	Yes	Yes	Yes	Yes
R^2	0.029	0.022	0.008	0.014
N	4963	3175	4216	3922

5. Conclusion

This paper selects China's A-share market share repurchase data during the period 2007-2023 as a sample, and takes the actual share repurchase behaviour of A-share listed companies as the research object, firstly, it verifies that the share repurchase behaviour of China's A-share market has an obvious timing behaviour by using the t-test of a single sample, and then constructs a multiple regression model and intermediary effect model to empirically test the effect of institutional investor's stockholding on the timing ability of corporate share repurchase and the mediating role of executive incentives between the two. and the mediating role of executive incentives in the relationship between the two. Specifically, the higher the proportion of institutional shareholding, the stronger the firm's stock timing ability; in addition, executive compensation incentives play a part of the mediating effect, i.e., institutional investors can promote the improvement of the firm's repurchase timing ability by enhancing the level of executive incentives. Heterogeneity analyses show that institutional investors in firms with lower Tobin's Q can enhance the stock repurchase timing ability more significantly; the overseas experience of executives does not enable institutional investors to help firms to enhance the stock repurchase timing ability significantly.

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