

Stock Price Volatility from Change of Committed Investment Project---Evidence from China

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Abstract: Change of committed investment project may exert enormous influence on stock market, where the listed companies raised those capitals through IPO. With the data of Chinese stock market from January 16, 2000 -July 16, 2007, using econometric analysis models and methods, it empirically studied alternation of financing capital from IPO, and its impact to stock price volatility.

Keywords: IPO, changes of committed investment projects; stock price volatility; listed companies.

1. Introduction

Some listed companies in China's stock market may exaggerate the expected return of investment projects, economic and technical feasibility or even fiction investments in order to achieve the purpose of misappropriating. Once qualified to be listed and having huge financial resources, they make a variety of excuses to invest the money into other financial items, thus changing use of funds described in the equity financing prospectus. Therefore, it is useful to systematically study the impact of changes of committed investment projects of Chinese listed companies on stock price volatility, which will enhance management and control of invest risk in Chinese stock market to make a healthy, stable and sustainable development. This is of important theoretical significance and value.^[1-3]

According to domestic and foreign research literatures, in mature stock market of developed countries such Europe and America, listed companies rarely changes of committed investment projects. Hence, for use of financing funds, foreign scholars mainly focus on the managers' over-investment behavior and abuse of free cash flow, etc.; Meanwhile domestic scholars also focus on motives of changes in equity financing capital investment, use of financing funds and impact of IPO financing acts on company performance. However, research of the influence of financing investment changes on stock price volatility of listed companies is very little, which is very important for China's stock market. Therefore, samples in this analysis cover companies which were initial public offering on the A share Main Board in China from January 16, 2000 - July 16, 2007. Using Econometric analysis models and methods, it empirically studied alternation of financing capital from IPO, and its impact to stock price volatility.^[4]

2. Variable Selection and Introduction

2.1. Metrics on Changes of Committed Investment Projects

Changes of committed investment projects points that listed companies do not to invest its money strictly as what is described and promised in the prospectus and changes of committed investment projects. The degree of investment change is indicated by ratio of total funds which is changed and net capital of IPO financing within three years after the listing.

2.2. Metric on Listed Company's Stock Price Volatility

Stock market volatility is often measured by stock price variance (or standard deviation). In this analysis, standard deviation of closing prices of companies within three years after listing is used as a measurement of the are shown in Table 1.

Table 1. Metric on Listed Company's Stock Price Volatility

Variable nature	Variable listing time	Variable name	listing time and calculation of variables
Explained variable	volatility of stock prices	SD_i	Standard deviation of everyday closing prices within the first three years after listing.
Explanatory variable	Variable of changes of committed investment projects	TZ_i	ratio of total funds which is changed and net capital of IPO financing within three years after the listing
Control variables	State-owned property	G_i	Within three years if the company is state-controlled, it is 1; if non-state-owned, it is 0

	listing time	T_i	Listing in a bull market the value is 1, at other times 0.
	Company size	L_i	Average natural logarithm of the total share capital within three years.

3. Empirical Study

3.1. Data Selection

The analysis covered 252 companies which were initial public offering on the A share Main Board in China from January 16, 2000 - July 16, 2007. Main data related to Research includes: IPO financing net capital and the changed amount closing prices, everyday closing prices within the first three years after listing, company size and the ultimate controller types of the listed companies. Data is from the Shanghai Stock Exchange, Shenzhen Stock Exchange and China Securities Regulatory Commission.^[5]

3.2. Empirical Model Selection

According to research needs, choose the following model to study impact of Change of committed investment project of Chinese listed companies on stock price volatility.

$$SD_i = \lambda_0 + \lambda_1 TZ_i + \lambda_2 G_i + \lambda_3 T_i + \lambda_4 L_i + \mu_i$$

3.3. Empirical Test

1) *Statistics of Change of committed investment project*

It can be seen from Table 2 that 154 of the 252 companies implementing IPO financing have changed capital investment, up to 61% present, which indicates that the majority of companies implementing IPO financing have changed funds investment in varying degrees.

Table2 Statistics of changes in financing of listed companies

Change situation	investment changed	Unchanged
Samples number	154	98
Samples of proportion	61%	39%

As for specific reasons for Change of committed investment project, some Listed Companies may have it's objectively "have to change" reasons, such as changes of market conditions, industrial policy and industrial restructuring and technological conditions. While most of the Change of committed investment project are for sub-

jective reasons, such as making up nonexistent items to achieve the purposes of listing, deliberately exaggerating future return and technical and economic feasibility of projects in the prospectus, reducing the uncertainty of high-risk projects and increasing the probability of success of the project. In this case, the company will to large extent invest funds for other purposes.

2) *Descriptive statistics of indicator variables*

Table3 Descriptive statistics of indicator variables

vari- able	Maxi- mum	Mini- mum	Mean	Me- dian	Standard deviation
SD_i	23.67	0.43	3.83	3.22	2.41
TZ_i	1.00	0.00	0.24	0.16	0.27
G_i	1.00	0.00	0.72	1.00	0.39
T_i	1.00	0.00	0.46	0.00	0.47
L_i	22.83	17.74	19.18	19.07	0.76

As can be seen from Table 3, the maximum of stock price volatility is 23.67, the minimum 0.43, the average 3.83, indicating that the overall risk in Chinese market is relatively high, which is consistent with the ups and downs in the stock market. Standard deviation of stock price volatility is 2.41, indicating that there is great difference between stock prices; the maximum ratio of Change of committed investment project is 1.00, average 0.24, indicating that change of committed investment project accounts for a relatively large proportion, up to 24% on average; the average of state-owned property is 0.72, indicating that the majority of listed companies in China are state-owned company; as for the listing time, there are about 46% of companies selecting the bull market.

3) *Autocorrelation and heteroskedasticity test*

Autocorrelation and heteroskedasticity test are applied in order to ensure the accuracy and reasonableness of the empirical model.

Table4 10 Order of the lag order Portmanteau-Q Statistics with Probability

Order	Pvalue	Order	Pvalue
1	0.056	6	0.141
2	0.089	7	0.061
3	0.161	8	0.057
4	0.188	9	0.065
5	0.259	10	0.067

It can be seen from Table 4 that Statistics with Probability of 1-10 lag order Portmanteau-Q regression residuals is greater than 0.05 significance level accepting null hypothesis. There is no significant autocorrelation in the model.

Table5 White Heteroscedasticity Test

Statistics	Statistics value	With Probability P value
F-statistic	0.91	0.52
Obs*R-squared	5.43	0.48

It can be seen from Table 5 that in the White heteroskedasticity test, the statistic Obs * R-squared value is 5.43, the Statistics with Probability is 0.48, higher than the critical value of 0.05, so accept the null hypothesis and there is no heteroscedasticity.

4) Empirical study results

Using Eviews5.1 software, OLS regression is applied for analysis of IPO financing investment change and stock price volatility, which is shown in Table 6.

Table6 Empirical results of impact of change of committed investment project on stock price fluctuation

Regression coefficient	regression results	Regression coefficient	regression results
A constant	17.13 (7.69)***	samples	252
TZ_i	-0.35(-1.07)	R^2	0.088
G_i	-0.41(-1.92)**	Adjusted- R^2	0.084
T_i	0.86(4.93)***	DW-value	1.87
L_i	-0.65(-5.98)***	F-value	17.96

Note: t test values in the brackets, ***, ** and *separately stand for 1%, 5% and 10% confidence level.

As can be seen from table 6, influence of Change of committed investment project on stock price fluctuation is not significant. Company scale will significantly reduce the volatility of the stock price of the company. State-controlled listed company's stock price volatility is significantly lower than non-state-owned listed companies. Stock price volatility of companies listing in a bull

market through IPO of is significantly higher than that listing in other times with the first three years.^[6]

4. Policy Suggestions

Based on the above results and according to China's stock market actual situation and investors, Some policy suggestions are proposed as follows: (1) Strengthening cultivation of institutional investors, giving full play to its role in guiding the market. (2) Strengthening education of investors to help them use all kinds of effective information for rational investment decisions. (3) Strengthening IPO financing review efforts, cracking down on IPO frauds and financing funds used for the stock market investment, increasing punishment of financing investment change and perfecting the delisting system. (4) Strengthening supervision of financing investment, improving the funding of relevant laws and regulations, making the financing and investment behavior is effectively constrained in order to promote the healthy development of the stock market.

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