

Study on Short-term Market Response of Directional Additional Issuance of Listed Companies in Basic Chemical Industry

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Abstract

Directional augmentation is a relatively convenient financing method in refinancing of listed companies, which is favored by enterprises. The market reaction of 193 listed companies in basic chemical industry selected from A-share capital market in China from 2013 to 2017 is analyzed. It is concluded that the event has a short-term positive impact on capital market. In addition, it is concluded that the market reaction of private placement is not related to the nature of listed companies, but positively related to the size of private placement, the subscription ratio of major shareholders and related parties. The influence of subscription mode and asset size on the two event research points is different. Based on the above conclusions, this paper puts forward practical suggestions to regulate China's directional issuance events, in order to ensure the fair and sound development of the capital market.

Keywords

Directional augmentation, market reaction, Listed Companies.

1. Introduction

With the continuous development of China's capital market, the demand for capital of listed companies has risen sharply. As a relatively simple and fast financing method in refinancing of listed companies, directional additional issuance is favored by enterprises. The characteristics of low threshold and low cost make directional additional issuance the first choice for the fund demanders of Listed Companies in China. The scale of additional issuance has also increased year after year. Every time this event happens. The announcements have attracted much attention from the market. In addition, in order to stabilize the capital market, the Securities Regulatory Commission (SFC) has updated and revised the regulation many times, the main target of which is directional issuance. So, what impact does this capital operation have on the market? What factors lead to these effects? Studying the above problems can play a normative role in the capital market and protect the interests of small and medium-sized investors.

This paper studies the basic chemical industry which belongs to the representatives of all trades in the frequency or scale of directional issuance. By using the event study method and multiple regression analysis method, this paper chooses the pre-announcement day of directional issuance and the announcement day of issuance as the event research point for comparative study, and explores the time window of [-5,10], and chooses five possible market reactions. The influencing factors should be further studied.

2. Literature Review

2.1 Research on Market Response of Oriented Additional Offers

The section headings are in boldface capital and lowercase letters. Second level headings are typed as part of the suFinnerty^[1] (2013) studied 244 directional issuance cases in the U.S. market from 2009 to 2012, believing that directional issuance has a negative announcement effect during the period of positive stock price rise.

Xu Shoufu ^[2] (2010) studied the listed companies announcing the private placement plan from January 1, 2006 to September 30, 2008 in China's A-share securities market. The results show that the public private placement has a positive effect on the stock prices of these companies. At the same time, the higher the subscription ratio of the original major shareholders, the stronger the supervision of the management of the private placement company will be in the future. Therefore, it is conducive to improving the company's operating efficiency and market value.

Huang Jianjian and Yue Qiaoying ^[3] (2011) made an empirical analysis of 103 cases of directional issuance in Shanghai Stock Exchange from 2007 to 2010. The results showed that there would be positive cumulative abnormal return after the announcement of directional issuance.

2.2 Study on the factors influencing the market reaction of private placement

Floros ^[4] (2015) and others studied the cases of private placement in the United States from 2001 to 2013. They believed that private placement with insider participation had higher information confirmation effect, interaction with "supervisory effect" of external participants, and significantly higher impartial announcement effect than private placement without insider participation.

Hu Changgen ^[5] (2013) studied the market reaction of financial oriented additional issuance, and found that the discount rate of issuance, the change of earnings per share, the size of additional issuance, the subscription ratio of major shareholders, the P/E ratio and P/N ratio of issuance have significant effects on the stock price of listed companies.

Wang Aojun ^[6] (2014) found that the directed issuance of Listed Companies in China has a positive announcement effect in the short term, and is positively related to the size of the issuance, and is positively related to the issuance discount rate, but not to the return on net assets and asset-liability ratio.

Based on the above literature, we can see that different research results will be obtained for different time points of directed issuance. At the same time, most scholars neglect the characteristics of long period of directed issuance events and more announcement events. By studying the literature on the influencing factors of directional additional events, it is found that the selection of factors is different and different results are obtained. This is mainly related to the different time periods of the study. Therefore, this paper will take the events of the last five years as the research object, select the influencing factors with more frequency, and make a comparative analysis and Discussion on the different time points of directional additional events.

3. Theoretical Analysis and Research Hypothesis

1) Hypothesis of Market Response to Directional Additional Issuance of Listed Companies in Basic Chemical Industry

The capital market of our country belongs to a weak and effective market, so when listed companies issue relevant announcements to the capital market, the market will react according to the information transmitted in a certain period of time. Correspondingly, this reaction will be reflected in the stock price. If the announcement is positive, the market will react positively accordingly. In general, the stock price will rise, and vice versa. Directional issuance in listed companies has the purpose of obtaining a new round of financing to look forward to further development, which undoubtedly belongs to a good signal, so this paper puts forward the hypothesis:

H1: Listed companies in basic chemical industry have a positive short-term market reaction.

2) The influence of influencing factors on short-term market reaction

Listed companies are divided into state-owned enterprises and private enterprises. With the rapid development of private enterprises and the implementation of the "split share structure reform" in recent years, some state-owned enterprises have gradually changed in the nature of enterprises. The development momentum of private enterprises is adequate, and directional issuance is an important means to obtain development.

H2: The short-term market reaction of Listed Companies in basic chemical industry is positively correlated with the nature of private enterprises.

Directional additional issuance in basic chemical industry mainly includes cash subscription and asset subscription. There exists the possibility of large shareholders injecting inferior assets into listed companies, which will increase the operating costs and agency costs of listed companies, and then reduce the profitability of companies. In contrast, cash subscription is more flexible, and can help enterprises to obtain new funds, which is conducive to further development of enterprises. This is undoubtedly a good signal. Therefore, this paper assumes that:

H3: The short-term market reaction of Listed Companies in basic chemical industry is positively correlated with cash subscription.

The discount rate of private placement is a discount for private placement to investors. Michael J. Barclay ^[7] (2013) and others believe that there is a 12-month or 36-month lock-in period for shareholders' shares acquired through private placement, and the discount rate is the compensation for the lock-in period. Listed companies may use discount issuance to convey benefits, and the higher the discount rate, the greater the possibility of such benefits conveying. This is undoubtedly a negative signal to the market. Therefore, this paper assumes that:

H4: The short-term market reaction of the listed companies in basic chemical industry is negatively correlated with the subscription discount rate.

Based on the information asymmetry theory, the major shareholders and management of listed companies and their related parties have more information than the small and medium investors, and the less information party can only make investment decisions through reasoning. Therefore, for the scale of directional issuance, because the financing of listed companies is for the future to obtain better business performance, it is considered that the scale of issuance reflects to a certain extent. The extent to which future performance of listed companies may improve, therefore, hypotheses are made:

H5: The short-term market response of Listed Companies in basic chemical industry is positively correlated with company size.

Based on the information asymmetry theory mentioned in the previous hypothesis, the higher proportion of directional issuance involved by the related parties means that the party who has more information has more confidence in the effect of directional issuance. Therefore, the hypothesis is put forward:

H6: The short-term market response of Listed Companies in basic chemical industry is positively correlated with the subscription ratio of large shareholders and related parties.

4. Research Methodology Design

1) Selection of research samples

The main research object of this paper is the basic chemical industry companies which have made directional additional offerings in Shanghai and Shenzhen A shares from 2013 to 2017. A total of 221 cases were selected and 193 samples were selected as the object of study. The sample coverage rate was 87.33%, which is illustrative.

2) Identification of Event Research Points and Window Periods

Because there are more announcement days for directional issuance, this paper chooses two time points of event announcement day and issue announcement day as event research points, and makes comparative analysis. In addition, because the market reaction is studied in a short time, specifically five trading days before the announcement day and ten trading days after the announcement day, the event window totals 16 days.

Selection and Definition of Variables

The variables designed in this paper are as follows: the dependent variable is excess cumulative return (CAR), the independent variable is enterprise nature (OWN), shareholder subscription mode (MAN),

additional offer discount rate (PRI), additional issue size (SCL), large shareholder and related party subscription ratio (PER), and the controlling variable is price-earnings ratio (PE) and enterprise size (SIZE).

5. Modeling

1) Model for Accumulative Abnormal Return Rate

Usually in order to study the impact of an event on the market, the most direct method is to measure the abnormal return after the event, according to the actual return = expected normal return + abnormal return. That is.

$$K_{i,t} = R_{i,t} + \varepsilon_{i,t} \tag{Formula 1}$$

Among them, $K_{i,t}$ denotes the real rate of return of securities I at time t in the event window period, $R_{i,t}$ denotes the normal rate of return of securities I at time t, i.e. $R_{i,t} = P_{i,t}/P_{i,t-1}$, P is the closing price of the first sample company on the T trading day, $\varepsilon_{i,t}$ is the corresponding abnormal rate of return.

$$E(r_m) = E(r_i) \tag{Formula 2}$$

$E(r_m)$ is the expected market return of market M and $E(r_i)$ is the expected return of securities I.

Because the research object of this paper is a specific industry, in order to make the estimated normal rate of return unaffected by many other industry factors, while maintaining the original characteristics of the industry, it is most reasonable to choose a specific industry market rate of return.

The cumulative abnormal rate of return (CAR) of a period is the sum of abnormal rate of return for every single day.

2) Establishment of regression model

To verify the previous hypothesis, this paper establishes two regression models. $CAR_{1[-5,10]}$ represents the cumulative abnormal return during the period of [-5,10] on the announcement day of the plan, and $CAR_{2[-5,10]}$ represents the cumulative abnormal return during the period of the announcement day.

$$CAR_{1[-5,10]} = \alpha + \beta_1 own_i + \beta_2 man_i + \beta_3 SCL_i + \beta_4 PER_i + \beta_5 PE_i + \beta_6 SIZE_i \tag{Formula 3}$$

$$CAR_{2[-5,10]} = \alpha + \beta_1 own_i + \beta_2 man_i + \beta_3 SCL_i + \beta_4 PER_i + \beta_5 PE_i + \beta_6 SIZE_i + \beta_7 PRI_i \tag{Formula 4}$$

6. Empirical Analysis

1) Research results of cumulative abnormal return

In this paper, Excel and Spss are used to process and analyze the overall sample data, and the cumulative average abnormal return CAR in the whole time interval is obtained. The results are tested by T test to judge the market reaction of events.

Form 1

Window period	Pre announcement CAR	t	Issue date CAR	t
[-5,10]	0.021995	1.788**	0.008328	1.977*
*. There was a significant correlation at 0.1 level (bilateral).				
**. There was a significant correlation at 0.05 level (bilateral).				

Whether it is the pre-announcement day or the issue announcement day, there is a positive market reaction in the window period [-5,10] of this study, and the value has passed the T-test in the degree

of 5% or 10% respectively, that is to say, this conclusion is completely consistent with the hypothesis in the earlier period of this paper.

2)Multivariate Linear Regression Analysis

Multivariate Regression Analysis on the Date of Oriented Additional Issuance Announcement

Form 2

Pre-announcement of multiple regression results							
Model		Non-standardization coefficient		t	Sig.	Collinearity statistics	
		B	Standard error			Tolerance	VIF
1	(constant)	0.11	0.031	3.547	0.000		
	OWN	0.023	0.034	0.684	0.495	0.871	1.149
	MAN	0.037	0.03	1.225	0.022	0.999	1.001
	SCL	0.059	0.035	1.665	0.098	0.899	1.112
	PER	0.044	0.044	0.984	0.326	0.962	1.04
	PE	0.00	0.00	6.761	0.000	0.976	1.025
	SIZE	-0.06	0.03	-1.957	0.042	0.911	1.097
R		R ²		Adjustment R ²		Error of Standard Estimation	
.476a		.226		.201		.19260245798	
a. Dependent variable: CAR1[-5,10]							

The regression analysis results show that the coefficient of enterprise nature is 0.023, that is, the directional additional issuance of state-owned enterprises has a positive impact on the market, but it has not passed the significance test, that is to say, the strength is weak. This may be due to the uncertainties about the approval and implementation of the audit on the pre-announcement day. At this time, the market is more optimistic about the directional additional issuance of state-owned enterprises.

The coefficient of subscription mode is 0.037, which indicates that in the basic chemical industry, the subscription mode of directional additional issuance of listed companies is positively correlated with cash and market reaction, and has passed the significance test of 5% level, and the hypothesis has been verified. The scale of private placement of listed companies is positively correlated with the market reaction, which has passed the significance test of 10% level, and the hypothesis has been verified. The coefficient of the subscription ratio of major shareholders and related parties is 0.044. That is to say, the subscription ratio of major shareholders and related parties of Listed Companies in basic chemical industry is positively correlated with the market reaction, but the result has not passed the significance test, which shows that the influence is not significant and consistent with the hypothesis.

(1) Multivariate Regression Analysis of Directional Additional Issuance Announcement Date

Since the announcement date has determined the specific price of the directional offering, the discount rate of the additional offering is added to the regression equation.

Based on the regression analysis of CAR2 [-5,10], we can draw a similar conclusion as that in the pre-announcement CAR1 [-5,10], that is, the nature of the enterprise is negative correlation between the response of state-owned enterprises and the directional additional issuance market of basic

chemical industry, and the payment method, the scale of the additional issuance, the subscription ratio of major shareholders and related parties are positively correlated with the response of the directional additional issuance market. Among them, the payment method and the size of the enterprise have passed the importance level Significance test shows that the size of additional issuance has passed the significance test of 10% significance level. Among them, the negative correlation between the nature of enterprises and the short-term market response of private placement is consistent with the previous forecast, but the results are not consistent with the forecast date, and also failed to pass the significance test. In a word, there is no absolute correlation between the market response of private placement and the nature of enterprises.

Form 3

Regression Analysis of Issuance Announcement Date							
Model		Non-standardization coefficient		t	Sig.	Collinearity statistics	
		B	Standard error			Tolerance	VIF
1	(constant)	-0.022	0.011	-3.547	0.000		
	OWN	-0.009	0.009	-0.684	0.495	0.871	1.149
	MAN	-0.073	0.016	1.225	0.022	0.999	1.001
	SCL	0.055	0.01	1.665	0.098	0.899	1.112
	PER	0.022	0.013	0.984	0.326	0.962	1.04
	PE	0.000	0.000	6.761	0.000	0.976	1.025
	SIZE	0.020	0.000	3.009	.003	.972	1.029
	PRI	-.0732	0.016	-4.648	0.000	.939	1.065
R		R ²		Adjustment R ²		Error of Standard Estimation	
.494a		0.244		0.219		0.055210553	
a. Dependent variable: CAR _{2[-5,10]}							

Secondly, the subscription mode is negatively correlated with CAR₂, and is significant at 5% importance level, which is not consistent with the forecast date and assumptions. In addition, in the study of market reaction on the issue announcement day, the additional offer discount rate is a special dependent variable of the event point. According to the results, the discount rate and the market reaction coefficient are negative, and the results are significant at the 1% importance level. This conclusion is consistent with the hypothesis.

7. Research Conclusions and Suggestions

Directional additional issuance of basic chemical industry has a positive market reaction to capital market, and this reaction is stronger on the pre-announcement day than on the issue announcement day. In addition, the nature of the firm is not the main factor affecting the market reaction of the directed issuance. On the pre-announcement day, cash subscription is positively correlated with market reaction, while on the issue announcement day, it is just the opposite, mainly because cash subscription is more flexible for listed companies and the way of asset subscription may involve the possibility of injecting non-performing assets. However, by the issue announcement day, the auditing department has passed the event, and the purpose and result of additional issuance to some extent. It has been approved by the regulatory authorities, so the negative situation such as transportation interests, which the market is worried about, has been alleviated to a certain extent. Even in the market, it can be considered that asset subscription after strict review by the regulatory authorities is more credible.

In addition, the asset size is negatively correlated with the market reaction on the pre-announcement day, whereas on the announcement day, the opposite is true. Because we generally believe that the

larger the scale of assets, the stronger the overall strength of basic chemical manufacturing enterprises. However, directional issuance signals the need for capital replenishment to the outside world, which will have a certain negative impact on the directional issuance events. However, on the day of directional issuance, the directional issuance events have basically passed, leaving only the follow-up. In the issuance link, the market will pay more attention to the event itself, so the directional increase has a positive correlation on the issuance announcement day.

For the size of private placement, the subscription ratio of major shareholders and related parties are positively correlated with market reaction, which means that the market is more inclined to private placement with larger scale and related parties. Finally, on the issue announcement day, this paper studies the discount rate of private placement, and concludes that the discount rate of private placement is negatively correlated with the market reaction, that is, the higher the discount rate of private placement, the greater the possibility of profit transmission through private placement, so there is a negative correlation.

Therefore, based on the above conclusions, this paper draws the following suggestions: First, strengthen the auditing of directional issuance approval.

Secondly, the securities regulatory authorities should formulate a more comprehensive set of disclosure criteria for directed issuance. Although there are mandatory information disclosure requirements for directional issuance in China, there are no in-depth requirements for important issues that may affect the capital market, such as the risk assessment of subscribers, the risk and quality evaluation of subscribed assets when non-cash assets are purchased. For the scheme that the first largest shareholder's share-holding ratio has increased after the issuance, it is required to disclose its business and M&A plan for the next three years in the plan, and to give certain police or punishment for serious violations after the event. For the asset management plan or financial products as the object of issuance, it is required that the object of issuance be disclosed to the final holder in the plan. Third, increase the cost of violation. The illegal phenomena such as interest transmission and insider trading through directional issuance are strictly dealt with, the level of violation is formulated, and the punishment intensity is determined according to the level. There can be no hierarchical income arrangement with a lock-in period of two years. For the scheme that the first largest shareholder's share-holding ratio has increased after the issuance, it is required to disclose its business and M&A plan for the next three years in the plan, and to give certain police or punishment for serious violations after the event.

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