

An evaluation of the effect of the IPO regulation reforms in China on IPOs of high-Tech firms

By

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Abstract

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After more than 20 years in developing, China stock market has become an essential market in the world. However, it is still not a mature market. There are still problems with IPO issues. The China Securities Regulatory Commission recently changed the IPO regulation in order to improve the IPO pricing. This paper examines the IPO underpricing level of Chinese high-tech firms from over the 10 years. Our study reveals that IPO underpricing is related to the lottery rate and initial turnover rate. The study also confirms that the IPO underpricing level decreases significantly after each reform, which means the IPO regulation reform has produced some positive effect on Chinese market. As a result, the degree of uncertainty surrounding IPO issue decreases with each reform.

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Chapter 1

Introduction

1.1 Purpose of study

In past 10 years, the Chinese IPO market has gone through series of transformation. Some new boards, such as Small and Medium Enterprise board (SME) and ChiNext, have been created in order to facilitate the availability of funds more conveniently for new growth companies. However, the regulations governing new boards and main boards do not seem to work well. Initial public offering (IPO), which plays an important role for private firms to go public, need be changed. The regulatory authorities have to improve the laws in order to reduce uncertainty surrounding IPO issues. The objective of this paper is to evaluate the effect of regulatory reforms on IPO in high-tech firms.

1.2 Background

IPO, as an essential avenue for firms to obtain equity financing, refers to a firm that for the first time issues its shares in primary market and later trades these shares in the secondary market. A reasonable IPO pricing will not only affect the financing of the new issue, but also it will affect the resource allocation of the securities market.

From the IPO practices in the world, there exists 3 phenomenon that is difficult to explain in the market. There are: “Underpricing of IPO”, “Long-run Underperformance” and “Hot Issue” market. This paper focuses on “Underpricing of IPO”.

Before 2005, due to the limitation of IPO requirements by the main board, a small number of high-tech firms were listed on the Chinese stock exchange. Nevertheless, after

2005, the Chinese government created the Small and Medium Enterprise board (SME) and ChiNext, similar to NASDAQ. This attracted high growth and high-tech firms to go public for the first time. Thus a number of high-tech firms got listed on the SME and ChiNext, which led to the realization of the creation of high-tech firms issuing share to the public.

However, there are problems associated, such as high degree of IPO underpricing, and corruption between firms and governments. Some investors found flaws in the laws and regulations and they were able to exploit these flaws to obtain the abnormal returns.

Therefore, the China Securities Regulatory Commission (CSRC) decided to modify these regulations to prevent these actions and improve the pricing of IPOs. There are four stages of regulation reforms that have occurred in past 10 years and the detail of these reforms will be showed in the next section.

1.3 The Change of IPO regulation

The first IPO regulation change occurred from August, 2004 to January, 2005. The CSRC announced the first IPO regulation reform. The purpose of the reform was that IPO inquiry was divided into the preliminary inquiry and bookbuilding two stages. The preliminary inquiry determined the range of issue price and bookbuilding determined the issue price. There would be no bookbuilding process for SME board firms. For the SME, the preliminary inquiry can directly determine the issue price.

The second IPO regulation change was from May, 2005 to June, 2006. The CSRC found some problems and issued the “Measures for the Administration of Initial Public Offering

and Listing of Stocks”, which fixed many problems, such as the unreasonable pricing and action of bad faith by underwriter.

The third IPO regulation change was from December, 2008 to July, 2009. The regulation improved the offering restraint mechanism of inquiry and subscription to format the more market-oriented pricing mechanism; optimized the online offering policy to divide the online and offline participants and limited the single online subscription account purchasing amount

The last regulation change happened in November, 2012 to January, 2014. The main target of the reform is that reducing administrative intervention to improve the IPO system; reflecting the internal value of new listing companies; increasing the number of IPO to reduce the inadequate stock supply and increasing the punishment of illegal actions to protect the investors.

After four times changes, the regulation becomes more reasonable. Some problems, such as high IPO underpricing, information asymmetries and agency problems, will be improved and the profits of small and medium investor can be protected by the regulation. Meanwhile, the stock market can attract more investors to be involve in trading stocks, which can improve the market trading activities.

1.4 Need for study

After 20 years of open policy, Chinese securities market has become an important stock market in the world. However, there exist many problems in the IPO pricing system and issuing efficiency. The huge price gap between primary market and secondary market still need to be improved. Therefore, studying the underpricing of IPO will help me to learn more about this phenomenon. To evaluate the effect of IPO reforms, this paper employs a sample of 256 IPOs from high-tech sector from 2004 to 2014.

1.5 Structure of the paper

This paper is organized into five chapters. The first chapter discusses the background and purpose of study. Chapter 2 reviews the regarding literatures about IPO or IPO underpricing. Then in chapter 3 discusses the methodology for analysis and model specification. In chapter 4, it illustrates and discusses the data analysis and result of regression. The final chapter is conclusion.

Chapter 2

Literature Review

2.1 Efficient Market Hypothesis

In 1970, Fama (1970) proposed the famous theory “Efficient Market Hypothesis” in the *Journal of Finance*, which includes three market efficiencies. According to the Efficient Market Hypothesis (EMH), stocks should be traded at their fair value on markets, which means it is impossible for investors to either buy undervalued stocks or short overvalued stocks. Therefore, many experts started to test relationship between the IPO underpricing and EMH. Stoll and Curley (1970) posted their research on the *Journal of Financial and Quantitative Analysis*, which stated that there existed significant rising from the offering price to initial day closing price in the US market based on 1957, 1959 and 1963 data. It seems to have violated the EMH. After that, IPO underpricing becomes a hot topic in economic world. Many researchers and professors are studying on this phenomenon. Until now there are no single hypothesis can explain the reason for different markets. Most of them explained it on asymmetric information.

2.2 The reason from asymmetric information

The asymmetric information is that some special people has more superior information to the others, which means someone can use the unique information to gain the abnormal return from the IPO.

2.2.1 Agency problem

Baron (1982) pointed out that the issuer wants to maximize their principal in the market, which means they hope the issuing price can be higher. Whereas the investment banks worry about that too high issuing price may cause issuing failing that their reputation will be reduced and they want to minimize their underwrite cost. Meanwhile the investment banks know more information on market demand and investors' interest than the issuer, which cause a conflict in the profit. Besides, the issuer cannot inspect the investment banks working for issuing. Therefore the issuer and investment banks make an agreement that allows the investment bank to issue with low price and to help the issuer improve the quality of issuing to meet their expected profit.

2.2.2 Winner curse hypothesis

In 1986, Rock (1989) thought that there are existing two types of investors, which are informed investor and uninformed investor, in the market. Since the informed investors know more information about the firm than uninformed investors. While uninformed investors will subscribe to every IPO, informed investors will only buy new shares that the issue price is less than the fair value. Then it makes a "winner's curse" for the uninformed investors. Therefore, shares must be offered at a discount to hold uninformed investors in the market because none of the investors group has enough money to absorb the IPO.

2.2.3 Dynamic information hypothesis

Benveniste and Spindt (1989) argued that in a book-building mechanisms market, the underwriter would like to ask the investment banks to inquire the real offer price of the firm. They found that the underpricing arises naturally as a cost of compensating the investors with positive information about the internal value of the stock for truthful disclosure with positive information.

2.2.4 Signaling Hypothesis

Allen and Faulhaber (1989) believed that IPO underpricing can be viewed as internal value of the firm. Due to asymmetrical information, investors are unable to identify the internal value in the blue chip stocks and underperformance stocks at IPO. Thus, the outperformance firms want to improve the confidence of their stocks and they would like use low IPO price to attract the investors to purchase their shares. Although they will lose profit in the short-term, they can issue high placing price to offset the difference. However, the underperformance firms, which could not offer low price to the investors, have to face discounted price in IPO. It's hard to make up the loss in the long-term, so underperformance firms cannot afford low price in the IPO.

2.3 The reason from non-asymmetric information

Except asymmetric information, there are some theories based on non-asymmetric information. Because the law from the government or the structure of the industry may cause the IPO underpricing happen.

2.3.1 Monopoly power hypothesis

Boehmer and Fishe (2001) found that the higher of the trading volume in aftermarket, the more serious IPO underpricing. They suggested that if the investment banks play as two roles in different markets, they may have monopoly power in the market. The investment bank can play as underwriter in the primary market, which means they can decide low offer price in IPO to attract other investors. After IPO, they can play as trader in secondary market, which means they can make profits from trading. In this condition, the investment banks can make profit from two sides.

2.3.2 Lawsuit avoidance hypothesis

Tinic (1988) believed that the underwriters and the issuers can reduce their legal liability using IPO underpricing. Due to the accounting policy of the United States, if the issuer and the underwriter hide the some operating accounts related to IPO, they will face huge legal risk from the investors who lost profit in the IPO and they also face huge amount fine from the court. Therefore, the issuer and underwriter would like to offer low price for investors to avoid the lawsuit and make investors obtain large abnormal return from IPO.

2.4 Other IPO underpricing hypothesis

Apart from asymmetric information and non-asymmetric information, some researchers also considered the IPO underpricing in other perspective. Such as mental activities, investors may influence other investors in IPO activities. Bikhchandani, Hirshleifer and Welch (1992) argued that some uninformed investors will followed other informed investors to subscript shares without any

information about the firm. Because they just see one stock is very popular during subscription and many professional investors purchase shares. Since issuers want their stock become popular, they will set low offer price to attract more informed investors.

Nowadays many Chinese researchers have studied IPO underpricing in Chinese market to examine the factors of IPO underpricing. Liu, Hu and Li (2009) thought that the higher reputation of the underwriter, the lower IPO underpricing. They used all stocks in Chinese securities market to analysis the initial return on IPO and they got that the initial return was decreasing each year. They also studied the reputation of the IPO underwriter as an important factor to examine and the result supported the asymmetric information has significant effect on IPO. Su and Fleisher (1999) found that the high initial return was related the total supply of stocks in early Chinese market, using the stock data from 1987 to 1995. Meanwhile they argued that the signaling hypothesis can explain the IPO underpricing in Chinese market very well.

Chapter 3

Data and Methodology

3.1 Data

In this paper, I collected the data from TDX software, which is authorized by Shanghai Stock Exchange and Shenzhen Stock Exchange. Data in high-tech sector in Chinese IPOs span from 2005 to 2014. The sample of IPO stocks is divided in four groups, according the IPO regulatory change periods (see table 3.1).

Table 3.1 the numbers of different period

| Period | Numbers of IPO |
|---------------------------------------|----------------|
| 1st Period 2004/8/26-2005/1/23 (G1) | 2 |
| 2nd Period 2005/5/25-2006/6/2 (G2) | 47 |
| 3rd Period 2008/12/6-2009/7/10 (G3) | 195 |
| 4th Period 2012/11/3-2014/1/20 (G4) | 12 |

These data includes Initial trading day, Offer Price, Issuing Size, Lottery Rate (%), Diluted EPS, Initial Turnover Rate (%), Initial Trading Day on Close, and Degree of underpricing. Due to IPO regulatory in 2013 changed the limit of increasing or decreasing on initial day, the initial return of all stocks are 44%, which means it cannot reflect the real return of the IPO after 2014. Therefore I decided to use the initial return on initial week to replace the initial day.

3.2 Methodology

3.2.1 The initial return of initial day

The formula of initial return (IR) is

$$IR_i = \frac{P_{i1} - P_{i0}}{P_{i0}}$$

In the formula, P_{i0} is offer price; P_{i1} is close price on initial day. The initial return also is the degree of underpricing.

The definition of underpricing as following:

If $IR > 0$, the IPO is underpricing;

If $IR = 0$, the IPO is reasonable price;

If $IR < 0$, the IPO is overpricing.

3.2.2 Model Design

According to the analysis of the variables, I got the following table:

| Variables | Name | Relation |
|------------------|------------------------------|-----------------|
| Y | Initial Return | |
| X ₁ | Offer Price | Negative |
| X ₂ | Issuing Size | Negative |
| X ₃ | Lottery Rate | Negative |
| X ₄ | Diluted PE | Negative |
| X ₅ | Initial Turnover Rate | Positive |

Then I use multiple regression model to analysis and my model is built as:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \varepsilon$$

Where

β_0 is the constant;

β_1 to β_5 are the coefficients of variables;

ε is the residual.

3.2.3 Explanatory variables

1) Offer Price (OP)

X1 = offer price

If the offer price is too high, the probability of increasing is very low. Therefore, the issuer would like to use low offer price to attract investors. The lower the offer price, the higher the initial return. The coefficient β_1 is expected to be negative.

Hypothesis 1: The relation between offer price and initial return is negative.

2) Issuing Size (IS)

X2 = issuing size

Issuing size reflects the size of firm. The larger the issuing sizes, the better the internal control policy and the lower the uncertainty. Investor would like to purchase more shares. The larger issuing size, IPO underpricing will lower. The coefficient β_2 is expected to be negative.

Hypothesis 2: The relation between issuing size and initial return is negative.

3) Lottery Rate (LR)

X3 = lottery rate

The lottery rate reflects the demand of the firm shares. A good condition firm has lower lottery rate, which means a lot of investors want to purchase. Since the investors hope the stocks can make extra expected return after IPO, the IPO underpricing will higher. The coefficient β_3 is expected to be negative.

Hypothesis 3: The relation between lottery rate and initial return is negative.

4) Diluted P/E (DPE)

X4 = Diluted P/E

General speaking, diluted P/E reflects the firm operation ability, which means lower diluted P/E firms need less capital to generate more profits. Therefore, a lower diluted P/E is more popular among investors. The coefficient β_4 is expected to be negative.

Hypothesis 4: The relation between lottery rate and initial return is negative.

5) Initial Turnover Rate (ITR)

X5 = initial turnover rate

Initial turnover rate can reflect the degree of speculation. Because of Chinese investors' special tradition, which is to get abnormal return from purchasing new stocks, they would like to sell their shares on initial day to get extra profit. The higher initial turnover rate, the higher IPO underpricing is. The coefficient β_5 is expected to be positive.

Hypothesis 5: The relation between initial turnover rate and initial return is positive.

Chapter 4

Regression Analysis

4.1 Descriptive statistics of variables

Table 4.1.1 (2004 – 2014)

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|-----------------|------------|-------------|------------------|------------|------------|
| IR | 256 | 0.63453 | 0.775571 | -0.15553 | 4.725191 |
| OP | 256 | 24.91824 | 14.21532 | 4.68 | 88 |
| IS | 256 | 548.9186 | 378.0177 | 95.42 | 2584 |
| LR | 256 | 0.879023 | 0.992139 | 0.0142 | 10.1422 |
| DPE | 256 | 47.56812 | 22.16061 | 12.94 | 131.49 |
| ITR | 256 | 70.305 | 19.19104 | 1.35 | 131.62 |

Table 4.1.2 (Group 1)

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|-----------------|------------|-------------|------------------|------------|------------|
| IR | 2 | 0.3211064 | 20.27% | 0.1777778 | 0.4644351 |
| OP | 2 | 7.79 | 425.68% | 4.78 | 10.8 |
| IS | 2 | 189.35 | 9878.28% | 119.5 | 259.2 |
| LR | 2 | 0.0518 | 0.41% | 0.0489 | 0.0547 |
| DPE | 2 | 22.63 | 18.38% | 22.5 | 22.76 |
| ITR | 2 | 51.525 | 152.03% | 50.45 | 52.6 |

Table 4.1.3 (Group 2)

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|-----------------|------------|-------------|------------------|------------|------------|
| IR | 47 | 1.687075 | 1.082219 | 0.233898 | 4.725191 |
| OP | 47 | 12.23936 | 5.522033 | 4.68 | 36 |
| IS | 47 | 311.0398 | 205.1067 | 95.42 | 1135.18 |
| LR | 47 | 0.158821 | 0.198715 | 0.0142 | 1.1254 |
| DPE | 47 | 27.58106 | 3.260779 | 18.69 | 30.43 |
| ITR | 47 | 73.20808 | 10.15849 | 44.85 | 89.82 |

Table 4.1.4 (Group 3)

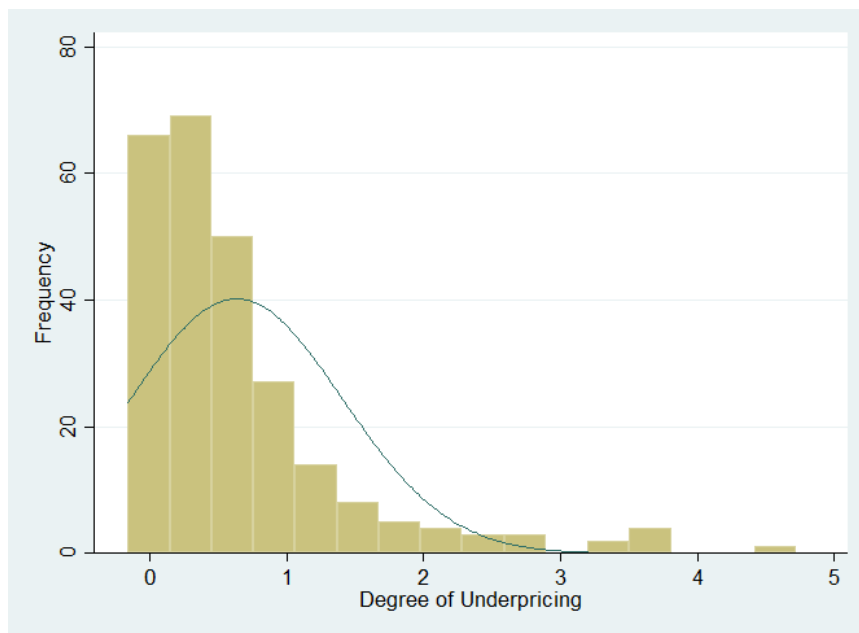
| Variable | Obs | Mean | Std. Dev. | Min | Max |
|-----------------|------------|-------------|------------------|------------|------------|
| IR | 195 | 0.381038 | 0.420012 | -0.15553 | 2.753333 |
| OP | 195 | 28.006 | 14.10234 | 7.6 | 88 |
| IS | 195 | 608.8381 | 388.4962 | 152.2 | 2584 |
| LR | 195 | 1.011268 | 1.035236 | 0.135 | 10.1422 |
| DPE | 195 | 53.64133 | 21.98043 | 12.94 | 131.49 |
| ITR | 195 | 71.19159 | 18.27018 | 18.2 | 95.07 |

Table 4.1.5 (Group 4)

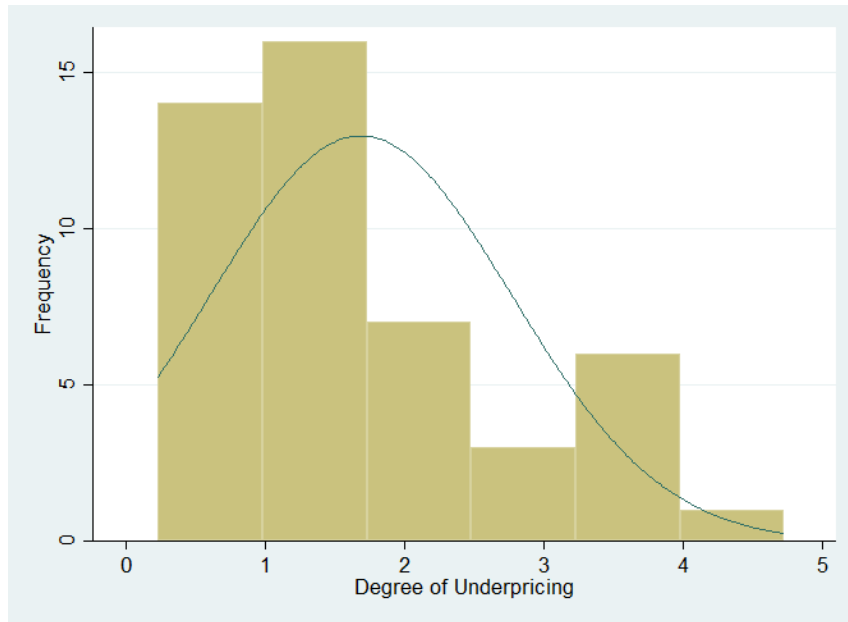
| Variable | Obs | Mean | Std. Dev. | Min | Max |
|-----------------|------------|-------------|------------------|------------|------------|
| IR | 12 | 0.68354 | 0.195578 | 0.470086 | 1.10856 |
| OP | 12 | 27.25583 | 11.51883 | 15.31 | 49.9 |

| | | | | | |
|------------|----|----------|----------|--------|--------|
| IS | 12 | 566.8481 | 380.3719 | 129.49 | 1377.9 |
| LR | 12 | 1.688707 | 0.621801 | 0.5442 | 2.591 |
| DPE | 12 | 31.3175 | 7.565311 | 16.57 | 42.16 |
| ITR | 12 | 47.6575 | 39.31152 | 1.35 | 131.62 |

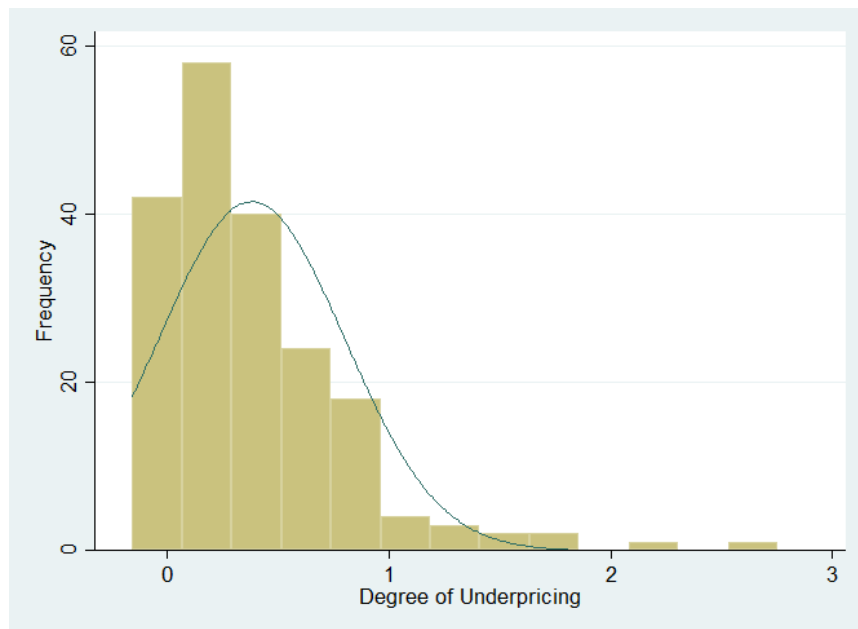
Graph 4.1.1 (2004 – 2014)



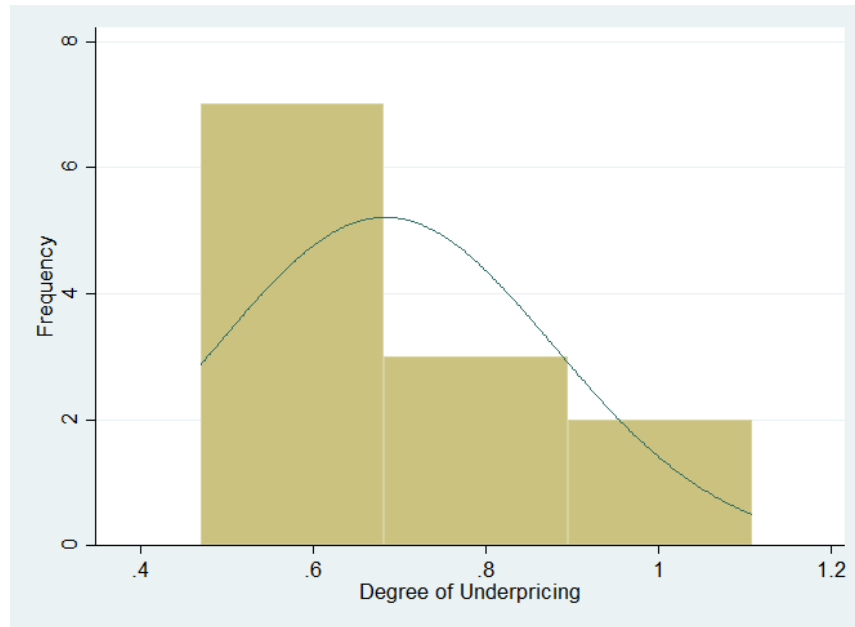
Graph 4.1.2 (Group 2)



Graph 4.1.3 (Group 3)



Graph 4.1.4 (Group 4)



From table 4.1.1, we can see that the average IPO initial return of high-tech firms is 63.453%, which is quite high compared with developed market. From table 4.1.2 to 4.1.4, we can conclude that the regulation reforms have significant effect on IPO underpricing. In group 2, the initial return is 168.7075%, which means many the high tech firms were very popular by the investors and the regulation of IPO need to be changed. After two time reforms, in group 3 and group 4, the initial return decreased obviously and average initial return are 38.1038% and 68.354%.

4.2 Autocorrelation Test

First, test data from 2004 – 2014

| Durbin's alternative test for autocorrelation | | | |
|--|-------------|-----------|-----------------------|
| lags(p) | chi2 | df | Prob > chi2 |
| 1 | 127.078 | 1 | 0.000 |

H0: no serial correlation

Second, test data from Group 2.

| Durbin's alternative test for autocorrelation | | | |
|--|-------------|-----------|-----------------------|
| lags(p) | chi2 | df | Prob > chi2 |
| 1 | 7.043 | 1 | 0.008 |

H0: no serial correlation

Third, test data from Group 3.

Durbin's alternative test for autocorrelation

| lags(p) | chi2 | df | Prob > chi2 |
|---------|--------|----|-------------|
| 1 | 89.623 | 1 | 0.000 |

H0: no serial correlation

Forth, test data from Group 4.

Durbin's alternative test for autocorrelation

| lags(p) | chi2 | df | Prob > chi2 |
|---------|-------|----|-------------|
| 1 | 0.018 | 1 | 0.893 |

H0: no serial correlation

From the Stata result, we can see that the total data, group 2 and group 3 pass the autocorrelation test (95% significant), which is no autocorrelation. However, too small samples in group 4 results in that U_i are not normally distributed, so that OLS estimator may not effect reasonably, which did not pass the test.

4.3 Heteroscedasticity Test

Before doing heteroscedasticity test, I have to test whether the model exist multicollinearity problem. So I use “estat vif” command to do the test and get result as following:

Table 4.3.1 (Data from 2004 - 2014)

| Variable | VIF | 1/VIF |
|-----------------|------------|--------------|
| op | 1.94 | 0.516342 |
| dpe | 1.74 | 0.574752 |
| is | 1.51 | 0.660552 |
| lr | 1.28 | 0.782176 |
| itr | 1.14 | 0.878119 |
| Mean VIF | 1.52 | |

Table 4.3.2 (Group 2)

| Variable | VIF | 1/VIF |
|-----------------|------------|--------------|
| Lr | 2.07 | 0.482465 |
| Itr | 1.56 | 0.639671 |
| Is | 1.48 | 0.674063 |
| Dpe | 1.36 | 0.735378 |

| | | |
|-----------------|------|----------|
| Op | 1.28 | 0.780512 |
| Mean VIF | 1.55 | |

Table 4.3.3 (Group 3)

| Variable | VIF | 1/VIF |
|-----------------|------------|--------------|
| Op | 1.65 | 0.606718 |
| Dpe | 1.61 | 0.622825 |
| Is | 1.42 | 0.702268 |
| Lr | 1.32 | 0.759676 |
| Itr | 1.22 | 0.821981 |
| Mean VIF | 1.44 | |

Table 4.3.4 (Group 4)

| Variable | VIF | 1/VIF |
|-----------------|------------|--------------|
| lr | 2.26 | 0.441689 |
| itr | 1.99 | 0.503716 |
| dpe | 1.91 | 0.523297 |
| op | 1.68 | 0.593878 |
| is | 1.21 | 0.828472 |

| | |
|-----------------|------|
| Mean VIF | 1.81 |
|-----------------|------|

According to Stata identifying rule, which is that if mean VIF > 10, there exists multicollinearity problem, so from table 4.3.1 to table 4.3.4, the data pass the multicollinearity test, which didn't exist multicollinearity problem.

Then I did the heteroscedasticity test for each group.

Table 4.3.5 (2004 - 2014)

| Source | SS | df | MS | Number of obs | 256 |
|-----------------|----------|-----------|------------|----------------------|----------------------|
| | | | | F(2, 253) | 236.23 |
| Model | 8820.756 | 2 | 4410.37792 | Prob > F | 0 |
| Residual | 4723.395 | 253 | 18.669544 | R-squared | 0.6513 |
| | | | | Adj R-squared | 0.6485 |
| Total | 13544.15 | 255 | 53.1143156 | Root MSE | 4.3208 |
| usq | Coef. | Std. Err. | t | P>t | [95% Conf. Interval] |
| y | -20.4193 | .9407968 | -21.70 | 0 | -22.27205 -18.5665 |
| ysq | 12.9985 | .8746225 | 14.86 | 0 | 11.27603 14.72097 |
| _cons | 9.418882 | .5387258 | 17.48 | 0 | 8.357924 10.47984 |

Table 4.3.6 (Group 2)

| Source | SS | df | MS | Number of obs | 47 |
|--------|----|----|----|------------------|------|
| | | | | F(2, 44) | 3.01 |

| | | | | | | |
|-----------------|--------------|------------------|------------|----------------------|-------------------|------------------|
| Model | 4.761103 | 2 | 2.38055135 | Prob > F | 0.02 | |
| Residual | 103.23 | 44 | 2.34613744 | R-squared | 0.0441 | |
| | | | | Adj R-squared | 0.0006 | |
| Total | 107.9912 | 46 | 2.3476337 | Root MSE | 1.5317 | |
| usq | Coef. | Std. Err. | t | P>t | [95% Conf. | Interval] |
| y | 0.443547 | 3.02045 | 0.15 | 0.884 | -5.64377 | 6.530864 |
| ysq | 0.21225 | 1.123862 | 0.19 | 0.051 | -2.05275 | 2.477245 |
| _cons | -0.32722 | 2.042613 | -0.16 | 0.873 | -4.44384 | 3.789394 |

Table 4.3.7 (Group 3)

| | | | | | |
|---------------|-----------|-----------|-----------|----------------------|-----|
| Source | SS | df | MS | Number of obs | 195 |
|---------------|-----------|-----------|-----------|----------------------|-----|

| | | | | | |
|-----------------|--------------|------------------|------------|----------------------|-----------------------------|
| | | | | F(2, 192) | 4.72 |
| Model | 1.49725 | 2 | .748625065 | Prob > F | 0.01 |
| Residual | 30.453 | 192 | .158609367 | R-squared | 0.0469 |
| | | | | Adj R-squared | 0.0369 |
| Total | 31.95025 | 194 | .164692003 | Root MSE | 0.39826 |
| usq | Coef. | Std. Err. | t | P>t | [95% Conf. Interval] |
| y | -0.05821 | .1999786 | -0.29 | 0.771 | -0.45264 0.33623 |
| ysq | 0.819729 | .3967611 | 2.07 | 0.04 | 0.037159 1.602299 |
| _cons | -0.02438 | .0571198 | -0.43 | 0.67 | -0.13704 0.088283 |

For group 2004-2014, group 2 and group 3, they passed the heteroscedasticity test. In addition, in order to test group wise heteroscedasticity, I did robvar test and got result as following:

| Summary of Degree of Underpricing | | | |
|--|-----------|------------|-------------------------------|
| | Mean | Std. Dev. | Freq. |
| 1 | .6835397 | .19557791 | 12 |
| 2 | .38103837 | .42001179 | 195 |
| 3 | 1.6870746 | 1.082219 | 47 |
| 4 | .32110643 | .20269731 | 2 |
| Total | .63453 | .77557072 | 256 |
| W0 = 31.117084 | | df(3, 252) | Pr > F = 0.00000000 |
| W50 = 18.780725 | | df(3, 252) | Pr > F = 0.00000000 |

| | | |
|------------------------|-------------------|-------------------------------|
| W10 = 26.645470 | df(3, 252) | Pr > F = 0.00000000 |
|------------------------|-------------------|-------------------------------|

This test illustrates that each group has no heteroscedasticity.

4.4 Regression Analysis

Table 4.4.1 (2004 – 2014)

| Source | SS | df | MS | Number of obs | 256 | |
|-----------------|--------------|------------------|-------------|----------------------|-------------------|------------------|
| | | | | F(5, 250) | 15.32 | |
| Model | 35.9674 | 5 | 7.19348054 | Prob > F | 0.0000 | |
| Residual | 117.4176 | 250 | 0.46967053 | R-squared | 0.2345 | |
| | | | | Adj R-squared | 0.2192 | |
| Total | 153.385 | 255 | 0.601509942 | Root MSE | 0.68533 | |
| dou | Coef. | Std. Err. | T | P>t | [95% Conf. | Interval] |
| op | -0.00503 | .0042015 | -1.20 | 0.232 | -0.0133088 | 0.003241 |
| is | 2.50E-10 | 1.40e-08 | 0.02 | 0.986 | -2.73E-08 | 2.78E-08 |
| lr | -0.22481 | .0489105 | -4.60 | 0.000 | -0.3211427 | -0.12848 |
| dpe | -0.00746 | .0025545 | -2.92 | 0.004 | -0.0124923 | -0.00243 |
| itr | 0.005395 | .0023864 | 2.26 | 0.025 | 0.0006944 | 0.010095 |
| _cons | 0.931867 | .2136254 | 4.36 | 0.000 | 0.5111323 | 1.352602 |

From table 4.2.1, we can see that the R squared is 0.2345 and adjusted R squared is 0.2192, which means five variables have 23.45% explanation on dependent variable.

The F test is $F=15.32$ and $\text{Prob} > F=0.000$, which means there exist linear relationship between initial return and five variables. Hence, the model has passed the significant test.

Explanations of regression results:

1. The β_1 of the offer price is -0.00503 , which means the relationship between DOU and OP is negative. The higher offer price, the lower degree of underpricing, which means the offer price is close to the internal value of the stock. However, The P value of offer price is 0.232 , which doesn't pass 95% significant test. Therefore offer price hasn't effect on the initial return and reject hypothesis 1.
2. The β_2 of the issuing size is $2.50E-10$, which means the relationship between DOU and IS is positive. The higher issuing size, the higher degree of underpricing, which means issuing size cannot reflect the firms has a good internal control of information disclosure. However, the higher The P value of issuing size is 0.986 , which doesn't pass 95% significant test. Therefore issuing size hasn't effect on the initial return and reject hypothesis 2.
3. The β_3 of the lottery rate is -0.22481 , which means the relationship between DOU and LR is negative. The higher lottery rate, the lower degree of underpricing, which means the high demand of shares can make investors believe the public information reveals the internal value of firm. Meantime, The P value of lottery rate is 0.000 , which passes the significant test.
4. The β_4 of the diluted PE is -0.00746 , which means the relationship between DOU and DPE is negative. The higher diluted PE, the lower degree of underpricing, which means the investors believe the potential of firm is bright and they would

like to hold the firm's stock for a long time. At the same time, the P value of diluted PE is 0.04, which passes the significant test.

5. The β_5 of the offer price is 0.005395, which means the relationship between DOU and ITR is positive. The higher initial turnover rate, the more popular of the stock. It also increases the liquidity of the stock and it is benefit for investors to find the true value of the stock. Meanwhile, The P value of initial turnover rate is 0.25, which passes the significant test.

From the general regression, it has illustrated that offer price and issuing size haven't effect on initial return, which means the regulation changes about offer price and issuing size has no important factor on IPO underpricing.

Due to only 2 stocks in group 1, it is meaningless to do regression on group 1. But it can reflect that high-tech firms haven't been focused by capital market during 2004 – 2005. Furthermore, Most of high-tech firms are still very young. They need capital to develop and government aid to become big companies.

Table 4.4.2 (Group 2)

| Source | SS | df | MS | Number of obs | 47 |
|-----------------|----------|----|-------------|----------------------|--------|
| | | | | F(5, 41) | 17.78 |
| Model | 4.69487 | 5 | 0.938973911 | Prob > F | 0.000 |
| Residual | 49.18024 | 41 | 1.19951803 | R-squared | 0.2871 |
| | | | | Adj R-squared | 0.2642 |
| Total | 53.87511 | 46 | 1.17119802 | Root MSE | 0.1952 |

| dou | Coef. | Std. Err. | T | P>t | [95% Conf. | Interval] |
|--------------|--------------|------------------|----------|---------------|-------------------|------------------|
| op | 0.005585 | .0331006 | 0.17 | 0.867 | -0.06126 | 0.072433 |
| is | -0.00022 | .0009589 | -0.23 | 0.817 | -0.00216 | 0.001713 |
| lr | -1.26828 | 1.169933 | -1.08 | 0.028 | -3.63101 | 1.094449 |
| dpe | 0.041057 | .0577495 | 0.71 | 0.481 | -0.07557 | 0.157684 |
| itr | 0.00799 | .0198755 | -0.40 | 0.039 | -0.04813 | 0.032148 |
| _cons | 1.342342 | 2.501446 | 0.54 | 0.594 | -3.70943 | 6.394114 |

From table 4.2.2, we can see that the R squared is 0.2871 and adjusted R squared is 0.2642, which means five variables have 28.71% explanation on dependent variable. The F test is F=17.78 and Prob > F=0.000, which means there exist linear relationship between initial return and five variables. Hence, the model has passed the significant test.

Explanations of regression results:

1. The β_1 of the offer price is 0.005585, which means the relationship between DOU and OP is positive. The higher offer price, the higher degree of underpricing, which means the offer price set too high to avoid high IPO underpricing. However, The P value of offer price is 0.867, which doesn't pass 95% significant test. Therefore offer price hasn't effect on the initial return and reject hypothesis 1.
2. The β_2 of the issuing size is -0.00022, which means the relationship between DOU and IS is negative. The higher issuing size, the lower degree of underpricing, which means issuing size can reflect the firms has a good internal control of

information disclosure. The higher The P value of issuing size is 0.817, which doesn't pass 95% significant test. Therefore issuing size hasn't effect on the initial return and reject hypothesis 2.

3. The β_3 of the lottery rate is -1.26828, which means the relationship between DOU and LR is negative. The higher lottery rate, the lower degree of underpricing, which means the high demand of shares can make investors believe the public information reveals the internal value of firm. Meantime, The P value of lottery rate is 0.028, which passes the significant test.
4. The β_4 of the diluted PE is 0.041057, which means the relationship between DOU and DPE is positive. The higher diluted PE, the higher degree of underpricing, which means the investors don't believe the potential of firm is bright and they wouldn't like to hold the firm's stock for a long time. At the same time, The P value of diluted PE is 0.481, which didn't pass the significant test. Therefore diluted PE hasn't effect on the initial return and reject hypothesis 4.
5. The β_5 of the offer price is 0.00799, which means the relationship between DOU and ITR is positive. The higher initial turnover rate, the more popular of the stock. It also increases the liquidity of the stock and it is benefit for investors to find the true value of the stock. Meanwhile, The P value of initial turnover rate is 0.039, which passes the significant test.

From the regression, it has showed that after second reforms, offer price and issuing size still have any effect on IPO underpricing. And diluted PE is also haven't any effect on IPO underpricing. Only lottery rate and initial turnover rate have some

effect on IPO underpricing, which means the supply and demand between high-tech firm stocks and investors need to be improved.

Table 4.4.3 (Group 3)

| Source | SS | df | MS | Number of obs = | 195 | |
|-----------------|----------|-----|-------------|----------------------|-------------------|-------|
| | | | | | F(5, 189) | 18.01 |
| Model | 11.04243 | 5 | 2.20848548 | Prob > F | 0.0000 | |
| Residual | 23.18109 | 189 | 0.122651291 | R-squared | 0.3227 | |
| | | | | Adj R-squared | 0.3047 | |
| Total | 34.22352 | 194 | 0.176409904 | Root MSE | 0.35022 | |

| dou | Coef. | Std. Err. | T | P>t | [95% Conf. | Interval] |
|--------------|----------|-----------|-------|-------|------------|-----------|
| op | -0.00087 | .002289 | -0.38 | 0.704 | -.0053877 | 0.003643 |
| is | 7.08E-06 | .0000772 | 0.09 | 0.927 | -.0001453 | 0.000159 |
| lr | -0.05991 | .0278664 | -2.15 | 0.033 | -.1148761 | -0.00494 |
| dpe | 0.000713 | .0014495 | 0.49 | 0.623 | -.002146 | 0.003573 |
| itr | 0.011263 | .001518 | 7.42 | 0.000 | .0082688 | 0.014257 |
| _cons | -0.37835 | .1489808 | -2.54 | 0.012 | -.6722307 | -0.08447 |

From table 4.2.3, we can see that the R squared is 0.3227 and adjusted R squared is 0.3047, which means five variables have 32.27% explanation on dependent variable. The F test is F=18.01 and Prob > F=0.000, which means there exist linear relationship between initial return and five variables. Hence, the model has passed the significant test.

Explanations of regression results:

1. The β_1 of the offer price is -0.00087, which means the relationship between DOU and OP is negative. The higher offer price, the lower degree of underpricing, which means the offer price is close to the internal value of the stock. However, The P value of offer price is 0.704, which doesn't pass 95% significant test. Therefore offer price hasn't effect on the initial return and reject hypothesis 1.
2. The β_2 of the issuing size is 7.08E-06, which means the relationship between DOU and IS is positive. The higher issuing size, the higher degree of underpricing, which means issuing size cannot reflect the firms has a good internal control of information disclosure. However, the higher The P value of issuing size is 0.927, which doesn't pass 95% significant test. Therefore the issuing size hasn't effect on the initial return and reject hypothesis 2.
3. The β_3 of the lottery rate is -0.05991, which means the relationship between DOU and LR is negative. The higher lottery rate, the lower degree of underpricing, which means the high demand of shares can make investors believe the public information reveals the internal value of firm. Meantime, The P value of lottery rate is 0.033, which passes the significant test.
4. The β_4 of the diluted PE is 0.000713, which means the relationship between DOU and DPE is negative. The higher diluted PE, the higher degree of underpricing, which means the investors don't believe the potential of firm is bright and they wouldn't like to hold the firm's stock for a long time. Nevertheless, the P value of diluted PE is 0.623, which didn't pass the significant test. Therefore diluted PE hasn't effect on the initial return and reject hypothesis 4.

5. The β_5 of the offer price is 0.011263, which means the relationship between DOU and ITR is positive. The higher initial turnover rate, the more popular of the stock. It also increases the liquidity of the stock and it is benefit for investors to find the true value of the stock. Meanwhile, The P value of initial turnover rate is 0.000, which passes the significant test.

After the third reform, the lottery rate and initial turnover rate still have significant effect on IPO underpricing, which means the supply of high-tech firms stocks need to increase to meet the market demand.

Chapter 5

Conclusion

5.1 conclusion

The purpose of this paper is to examine the effect of the IPO regulation reforms on IPO of Chinese high-tech firms. According to my regression analysis, the regulation reform has some positive effect on IPO underpricing. The IPO underpricing is decreasing from group 2 (168%) to group 3 (38%), which is a significant decreasing and closed to a normal level of IPO underpricing. Meanwhile these explanatory variables have some changes on IPO underpricing due to the regulation reforms, which means the CSRC have improved the IPO market pricing through the IPO reforms.

In my regression model, the lottery rate and initial turnover rate have significant effect on IPO underpricing. The lottery rate increased from 0.15% to 1.01%, which means more and more investors have opportunities to get the new stocks in the IPO. This can attract more investors to invest Chinese high-tech firms. The initial turnover rate decreased from 75% to 71%, which means the investors are willing to hold Chinese high-tech firms and reflect that they have confidence on obtaining more returns from these firms growth. The purpose of IPO reform is to establish a healthy market to protect the investors' profits and help Chinese small and medium enterprises to get a way to finance capital. After 10 years reforms some problems have been solved, some still need to be improved. I hope the Chinese stock market can attract more foreign investors to invest small and medium companies to help them growing up.

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Appendix A: Data of high-tech firm

| code of stock | Offer Price | Issuing Size | Lottery Rate (%) | Diluted P/E | Initial Turnover Rate (%) | Degree of underpricing /overpricing |
|----------------|-------------|--------------|------------------|-------------|---------------------------|-------------------------------------|
| Group 4 | | | | | | |
| 603328 | 15.31 | 1377.9 | 1.7008 | 23.2 | 0.83 | 91.77% |
| 300386 | 33.13 | 662.93 | 0.5442 | 16.57 | 1.06 | 58.41% |
| 603005 | 19.16 | 1085.88 | 1.3187 | 33.76 | 6.61 | 110.86% |
| 300367 | 49.9 | 314.869 | 2.2305 | 37.75 | 2.9 | 58.42% |
| 300369 | 41 | 867.15 | 2.0278 | 37.96 | 1.71 | 58.39% |
| 300380 | 23.4 | 402.01 | 1.8756 | 40.06 | 1.7 | 47.01% |
| 300379 | 22 | 141.53 | 1.0426 | 30.27 | 2.97 | 74.27% |
| 300378 | 20.77 | 597.857824 | 2.591 | 27.37 | 6.4 | 50.60% |
| 300377 | 21.58 | 298.88 | 2.4214 | 33.1 | 2.48 | 72.66% |
| 300366 | 18.11 | 129.49 | 1.0797 | 27.08 | 2.4 | 87.19% |
| 300373 | 19.5 | 401.7 | 1.383086398 | 26.53 | 11.49 | 59.69% |
| 300365 | 43.21 | 521.98 | 2.0491 | 42.16 | 7.87 | 50.98% |
| Group 3 | | | | | | |
| 300353 | 20.75 | 278.05 | 0.7495 | 35.17 | 68.1 | 6.02% |
| 300351 | 31 | 620 | 2.1526 | 36.47 | 40.42 | -10.77% |
| 300352 | 25 | 417.5 | 0.7078 | 39.37 | 74.81 | 27.84% |
| 300348 | 20 | 260 | 0.9614 | 29.85 | 76.51 | 17.00% |
| 300346 | 66 | 829.62 | 3.0899 | 18.86 | 82.77 | 23.97% |
| 300342 | 17 | 425 | 3.5391 | 26.98 | 33.98 | -6.35% |
| 300340 | 48 | 600 | 1.5604 | 12.94 | 84.68 | 52.40% |
| 300339 | 20.39 | 391.28 | 0.6791 | 41.21 | 78.67 | 17.21% |
| 300333 | 23 | 644 | 3.2927 | 31.51 | 53.46 | 9.65% |
| 300331 | 20 | 310 | 1.9211 | 34.48 | 46.92 | 2.05% |
| 300330 | 15 | 300 | 0.779 | 35.71 | 51.91 | 0.20% |
| 300327 | 12.5 | 400 | 0.7069 | 26.6 | 33.54 | -3.68% |
| 300324 | 27 | 378 | 2.2828 | 36.99 | 35.92 | -5.22% |
| 300322 | 14.3 | 333.83 | 1.1076 | 37.63 | 39.06 | -2.17% |
| 300323 | 20 | 1000 | 2.0593 | 34.42 | 39.36 | -0.40% |
| 300319 | 15.3 | 204.1 | 0.8622 | 27.82 | 59.11 | 7.19% |
| 300317 | 11 | 385 | 0.6977 | 27.5 | 57.27 | 18.45% |
| 300315 | 16 | 524.08 | 0.8261 | 48.16 | 57.93 | 50.00% |
| 300312 | 20 | 427.4 | 3.121 | 26.67 | 60.25 | 14.80% |
| 603000 | 20 | 1340.47 | 1.5039 | 46.13 | 86.01 | 73.60% |

| | | | | | | |
|--------|-------|--------|--------|-------|-------|--------|
| 300311 | 15 | 265.5 | 0.6668 | 30.61 | 57.21 | 4.80% |
| 300310 | 17 | 299.2 | 0.9959 | 23.24 | 65.58 | 16.47% |
| 601012 | 21 | 1260 | 2.0863 | 24.71 | 23.66 | -5.95% |
| 300302 | 21 | 252 | 0.4058 | 39.62 | 57.56 | 29.05% |
| 300301 | 20 | 432.8 | 0.5576 | 32.79 | 55.38 | 6.55% |
| 300303 | 25 | 511.5 | 0.4274 | 27.53 | 58.37 | 14.68% |
| 300300 | 18 | 316.8 | 0.7941 | 37.5 | 60.31 | 24.17% |
| 300299 | 16 | 272 | 0.32 | 34.7 | 65.99 | 46.00% |
| 300297 | 16 | 392 | 0.5435 | 32.65 | 66 | 93.63% |
| 300296 | 16 | 320 | 0.9703 | 31.37 | 60.32 | 56.13% |
| 300295 | 34 | 363.8 | 1.0443 | 25.19 | 63.75 | 74.71% |
| 300292 | 12 | 160.8 | 0.2993 | 23.67 | 89.43 | 69.25% |
| 002657 | 22 | 308.22 | 0.3614 | 29.73 | 91.91 | 82.09% |
| 601231 | 7.6 | 811.68 | 1.4636 | 23.03 | 93.78 | 53.03% |
| 002655 | 11 | 264 | 0.7932 | 29.73 | 84.78 | 33.91% |
| 002654 | 12 | 211.2 | 0.5399 | 30 | 87.6 | 36.83% |
| 300290 | 11.11 | 188.87 | 0.7136 | 23.15 | 90.83 | 57.70% |
| 300288 | 22.44 | 300.7 | 2.2952 | 34 | 95.07 | 82.53% |
| 300287 | 15 | 252 | 1.5355 | 37.5 | 74.29 | 4.33% |
| 002649 | 22 | 440 | 0.6995 | 39.86 | 40.05 | -9.41% |
| 300282 | 17.2 | 197.97 | 0.4534 | 32.45 | 92 | 32.67% |
| 300279 | 15.6 | 241.8 | 0.5271 | 31.33 | 79.75 | 3.14% |
| 002642 | 25 | 500 | 0.8666 | 49.09 | 86.13 | 15.88% |
| 002638 | 24 | 900.84 | 1.1787 | 55.81 | 74.65 | 2.33% |
| 002636 | 11.2 | 784 | 0.5258 | 32 | 77.53 | 11.07% |
| 002635 | 23 | 690 | 1.0333 | 50 | 90.3 | 23.91% |
| 300277 | 23 | 391 | 0.4383 | 32.86 | 89 | 35.65% |
| 300275 | 26 | 381.42 | 0.8224 | 37.14 | 91.18 | 54.04% |
| 300271 | 30.8 | 569.8 | 1.3286 | 33.85 | 81.92 | 20.65% |
| 300270 | 35 | 280 | 0.8608 | 42.68 | 88.66 | 27.43% |
| 300269 | 20 | 296 | 0.5822 | 38.31 | 78.49 | 12.30% |
| 002618 | 13 | 416 | 0.4009 | 46.43 | 90.67 | 35.38% |
| 300264 | 16.5 | 346.5 | 0.6386 | 50 | 83.12 | 13.15% |
| 601908 | 42 | 252 | 0.9706 | 53.47 | 81.47 | 11.02% |
| 300256 | 21 | 420 | 1.0392 | 39.62 | 82.38 | 19.24% |
| 300253 | 27.5 | 297 | 0.577 | 43.65 | 86.03 | 56.25% |
| 002609 | 14.5 | 348 | 0.6042 | 35.37 | 82.44 | 44.55% |
| 300250 | 25 | 250 | 0.3004 | 32.89 | 89.33 | 79.68% |
| 300248 | 30 | 336 | 0.5046 | 40.6 | 89.02 | 50.50% |

| | | | | | | |
|--------|-------|---------|---------|--------|-------|---------|
| 300245 | 20 | 272 | 0.4189 | 34.13 | 86.4 | 40.40% |
| 002600 | 8 | 636 | 0.5888 | 32 | 91.13 | 149.38% |
| 300242 | 10 | 152.2 | 0.5264 | 37.04 | 87.35 | 62.30% |
| 300241 | 10.8 | 233.28 | 0.3922 | 26.54 | 87.29 | 74.54% |
| 300235 | 19.6 | 172.48 | 1.2694 | 26.13 | 91.48 | 44.59% |
| 300232 | 18.57 | 297.31 | 2.5089 | 28.14 | 55 | -7.38% |
| 300231 | 19.62 | 196.2 | 0.9846 | 30.99 | 89.15 | 28.29% |
| 300229 | 15 | 450 | 0.9957 | 31.91 | 83.95 | 12.33% |
| 002587 | 16 | 272 | 1.1201 | 29.64 | 87.49 | 7.38% |
| 300227 | 12.98 | 220.66 | 0.8831 | 45.54 | 88.27 | 26.58% |
| 300226 | 23 | 230 | 1.4468 | 38.33 | 86.13 | 19.35% |
| 300224 | 21.09 | 843.6 | 2.2417 | 32.45 | 87.52 | 14.70% |
| 300223 | 43.8 | 700.8 | 10.1422 | 42.86 | 38.1 | -5.91% |
| 002583 | 19.9 | 1393 | 6.0224 | 52.37 | 28.55 | -11.81% |
| 300220 | 23.36 | 210.24 | 0.7409 | 33.86 | 90.43 | 51.97% |
| 300219 | 16 | 400 | 0.9634 | 32.04 | 77.61 | 14.44% |
| 002579 | 17 | 332.35 | 1.037 | 42.5 | 81.25 | 6.47% |
| 300213 | 22 | 369.6 | 1.1022 | 53.66 | 33.09 | -9.86% |
| 300212 | 30.46 | 414.26 | 2.7924 | 68.76 | 27.88 | -9.06% |
| 300211 | 25.75 | 321.88 | 1.4809 | 55.98 | 85.14 | 14.33% |
| 002577 | 38 | 972.8 | 2.8444 | 44.92 | 18.2 | -15.55% |
| 300209 | 34.28 | 685.6 | 2.6339 | 61.21 | 21.19 | -11.79% |
| 300207 | 18.66 | 877.02 | 0.7049 | 58.94 | 78.18 | 12.27% |
| 300205 | 40 | 638 | 2.9409 | 66.89 | 20.94 | -7.40% |
| 300188 | 40 | 432 | 0.8987 | 80 | 86.5 | 25.25% |
| 300184 | 20 | 268 | 1.449 | 68.97 | 69.83 | 23.40% |
| 300183 | 41.45 | 1036.25 | 2.4007 | 59.23 | 65.42 | 6.73% |
| 300182 | 55 | 616 | 3.9229 | 74.32 | 84.32 | 22.18% |
| 002547 | 16 | 460.8 | 0.9641 | 34.04 | 80.38 | 37.56% |
| 300177 | 46.8 | 585 | 3.0241 | 73.13 | 75.11 | 24.00% |
| 300170 | 25.32 | 611.48 | 2.2356 | 72.4 | 23.22 | -3.59% |
| 601519 | 23.2 | 2041.6 | 1.8295 | 88.89 | 77.7 | 9.40% |
| 002544 | 28 | 616 | 0.8744 | 68.29 | 71.33 | 7.68% |
| 300168 | 28 | 840 | 0.4384 | 87.5 | 25.01 | -12.14% |
| 300167 | 51.28 | 457.42 | 0.617 | 77.7 | 23.48 | -14.20% |
| 300166 | 55.36 | 563.34 | 0.7387 | 92.65 | 24.37 | -13.39% |
| 300162 | 38 | 514.9 | 0.6361 | 131.49 | 69.14 | 11.08% |
| 300155 | 49 | 705.6 | 1.3773 | 69.01 | 32.54 | -2.65% |
| 300154 | 38.5 | 862.4 | 0.8209 | 98.72 | 63.25 | 3.12% |

| | | | | | | |
|--------|-------|---------|--------|-------|-------|---------|
| 002528 | 53.8 | 1594.09 | 1.1861 | 99.63 | 64.95 | 7.12% |
| 300150 | 32.99 | 926.03 | 0.4997 | 105.4 | 86.31 | 80.05% |
| 002519 | 36.8 | 647.68 | 0.627 | 41.35 | 78.31 | 41.09% |
| 002512 | 26 | 624 | 0.3587 | 76.47 | 80.9 | 65.46% |
| 002504 | 16 | 432 | 0.2629 | 87.78 | 78.75 | 82.75% |
| 300139 | 62.5 | 856.25 | 1.2109 | 55.56 | 74.23 | 30.99% |
| 300136 | 31.75 | 529.27 | 0.6444 | 85.35 | 87.47 | 63.37% |
| 300134 | 49.5 | 1584 | 2.5064 | 58.24 | 65.2 | 6.81% |
| 002491 | 14.5 | 777.2 | 0.5346 | 46.77 | 70.7 | 31.38% |
| 300131 | 36 | 428.4 | 0.5766 | 65.45 | 75.71 | 22.97% |
| 300130 | 43.33 | 554.62 | 0.7742 | 69.7 | 70.25 | 10.43% |
| 300128 | 35 | 700 | 0.6399 | 67.44 | 65.11 | 6.63% |
| 300127 | 18 | 590.4 | 0.3651 | 72.87 | 75.44 | 44.28% |
| 002484 | 20.5 | 656 | 0.5792 | 52.03 | 76.18 | 17.02% |
| 002475 | 28.8 | 1261.44 | 0.8777 | 71.18 | 88.59 | 38.85% |
| 002474 | 37 | 962 | 0.5962 | 81.32 | 73.68 | 25.97% |
| 300118 | 42 | 1512 | 0.8212 | 67.52 | 74.57 | 37.19% |
| 300115 | 43 | 924.5 | 0.6402 | 70.49 | 68.51 | 34.60% |
| 002465 | 38 | 2584 | 1.5117 | 71.2 | 79.53 | 31.39% |
| 300114 | 25 | 500 | 0.3465 | 58.14 | 73.83 | 57.16% |
| 300113 | 42.98 | 515.76 | 0.6727 | 82.65 | 88.18 | 63.29% |
| 300111 | 16.8 | 856.8 | 0.5003 | 74.67 | 74.75 | 43.21% |
| 002463 | 16 | 1280 | 0.9677 | 35.56 | 75.99 | 26.38% |
| 300104 | 29.2 | 584 | 0.5447 | 66.36 | 76.51 | 47.12% |
| 300102 | 45 | 1327.5 | 0.8207 | 70.31 | 81.21 | 77.07% |
| 300101 | 32 | 448 | 0.3818 | 59.26 | 87.83 | 118.47% |
| 002456 | 30 | 720 | 0.3848 | 58.69 | 86.24 | 54.33% |
| 300098 | 36 | 615.6 | 0.6966 | 44.72 | 70.85 | 12.36% |
| 300096 | 19.8 | 435.6 | 0.563 | 63.87 | 86.58 | 47.63% |
| 002449 | 28 | 1540 | 1.7684 | 53.85 | 58.54 | 1.29% |
| 002446 | 17.82 | 463.32 | 0.6149 | 46.53 | 79.93 | 17.56% |
| 002439 | 25 | 625 | 0.5185 | 58.97 | 79.52 | 28.32% |
| 002396 | 23.2 | 1020.8 | 0.7213 | 40.38 | 85.14 | 33.75% |
| 002436 | 36.5 | 815.56 | 2.0878 | 53.68 | 61.62 | 1.18% |
| 002426 | 13.99 | 448.8 | 0.9002 | 34.89 | 85 | 30.09% |
| 002421 | 20.5 | 328 | 0.3654 | 64.06 | 88.23 | 53.07% |
| 002417 | 20 | 480 | 0.562 | 54.05 | 78.24 | 25.05% |
| 300088 | 24 | 604.8 | 0.9939 | 52.17 | 87.71 | 50.50% |
| 300085 | 28 | 336 | 1.1069 | 60.87 | 76.17 | 10.43% |

| | | | | | | |
|--------|-------|---------|--------|--------|-------|---------|
| 002410 | 58 | 1450 | 0.6738 | 59.79 | 33.58 | -2.26% |
| 300083 | 36 | 720 | 1.2553 | 53.73 | 24.91 | -5.67% |
| 300081 | 38.78 | 659.26 | 1.0676 | 62.55 | 61.75 | 1.29% |
| 002405 | 25.6 | 1433.6 | 0.6191 | 80 | 73.56 | 12.38% |
| 002402 | 35 | 584.5 | 0.7126 | 77.78 | 85.94 | 34.66% |
| 002401 | 26.4 | 351.12 | 0.2558 | 52.8 | 86.27 | 70.45% |
| 300079 | 59.9 | 1341.76 | 0.9144 | 78.82 | 50.86 | 4.04% |
| 300078 | 58 | 986 | 0.7635 | 72.5 | 55.51 | 10.43% |
| 300077 | 87.5 | 1904 | 1.0487 | 98.33 | 82.01 | 79.78% |
| 300076 | 65 | 886.6 | 0.8025 | 73.86 | 50.81 | 5.02% |
| 300075 | 54 | 604.8 | 1.0131 | 73.97 | 60.47 | 25.93% |
| 300074 | 72 | 576 | 1.0266 | 68.57 | 66.5 | 42.51% |
| 002389 | 30 | 408 | 0.5125 | 50.85 | 82.06 | 172.67% |
| 002388 | 15 | 420 | 0.493 | 55.56 | 85.27 | 275.33% |
| 002384 | 26 | 1040 | 0.4816 | 57.78 | 83.87 | 167.58% |
| 002383 | 37 | 1110 | 0.3944 | 59.68 | 79.68 | 147.30% |
| 300065 | 32.8 | 454.28 | 0.3753 | 74.55 | 78.3 | 76.10% |
| 002376 | 22.58 | 686.43 | 0.2744 | 46.08 | 83.45 | 61.74% |
| 300059 | 40.58 | 1420.3 | 0.8387 | 116.93 | 70.49 | 43.79% |
| 002373 | 28 | 392 | 0.2592 | 42.42 | 75.51 | 71.18% |
| 002371 | 33 | 437.18 | 0.4811 | 47.83 | 83.59 | 78.79% |
| 002369 | 22.58 | 451.6 | 0.5106 | 53.76 | 74.64 | 34.63% |
| 002368 | 29 | 580 | 0.3703 | 46.77 | 84.39 | 107.62% |
| 002362 | 41.9 | 905.04 | 1.313 | 68.69 | 85.59 | 95.97% |
| 300053 | 17 | 398.9 | 0.5414 | 73.87 | 76.63 | 25.24% |
| 300052 | 30 | 750 | 1.2365 | 93.75 | 69.49 | 15.00% |
| 300051 | 34 | 367.2 | 0.6032 | 65.38 | 71.04 | 10.03% |
| 002351 | 33.5 | 1239.5 | 0.6442 | 76.14 | 41.5 | 0.51% |
| 002339 | 25 | 440 | 0.5173 | 60.98 | 72.64 | 36.36% |
| 300050 | 88 | 985.6 | 1.3539 | 123.94 | 72.66 | 30.94% |
| 300047 | 30 | 648 | 0.5747 | 78.95 | 56.1 | 17.57% |
| 300046 | 41.3 | 619.5 | 0.7146 | 66.61 | 68.52 | 23.37% |
| 300045 | 30.7 | 521.9 | 0.665 | 76.75 | 59.21 | 27.00% |
| 300044 | 22 | 352 | 0.3728 | 81.48 | 58.9 | 29.09% |
| 300042 | 39 | 655.2 | 0.6468 | 76.47 | 65 | 34.49% |
| 300038 | 26 | 598 | 0.5606 | 61.9 | 65.07 | 38.46% |
| 002331 | 27 | 378 | 0.3593 | 58.52 | 74.61 | 60.11% |
| 300036 | 19.6 | 297.92 | 0.3141 | 81.67 | 69.73 | 64.29% |
| 300033 | 52.8 | 887.04 | 0.6904 | 92.57 | 71.89 | 33.30% |

| | | | | | | |
|----------------|-------|---------|--------|--------|-------|---------|
| 300032 | 19 | 542.64 | 0.5897 | 126.67 | 74.91 | 47.89% |
| 300029 | 18.18 | 909 | 0.3986 | 62.69 | 69.11 | 48.46% |
| 002316 | 18.8 | 451.2 | 0.2028 | 60.65 | 73.44 | 91.49% |
| 002315 | 42 | 1233.96 | 0.3913 | 66.67 | 69.8 | 71.86% |
| 002313 | 24.8 | 496 | 0.2477 | 74.22 | 83.02 | 114.92% |
| 002312 | 28.6 | 343.2 | 0.2137 | 47.57 | 84 | 130.77% |
| 002308 | 23.8 | 1017.69 | 0.2712 | 46.34 | 69.7 | 43.57% |
| 300028 | 11.3 | 334.48 | 0.4436 | 45.2 | 86.36 | 209.73% |
| 300025 | 19.66 | 157.28 | 0.5252 | 45.18 | 89.82 | 128.89% |
| 300020 | 20 | 320 | 0.5867 | 52.63 | 88.25 | 82.00% |
| 300014 | 18 | 316.8 | 0.7 | 54.56 | 89.41 | 140.44% |
| 300010 | 18 | 381.6 | 0.6532 | 51.49 | 87.94 | 87.50% |
| 300002 | 58 | 1466.24 | 1.2249 | 68.8 | 89.48 | 77.41% |
| 002296 | 25 | 310 | 0.1425 | 35.71 | 69.81 | 35.20% |
| 002289 | 15.88 | 293.78 | 0.1557 | 33.79 | 78.81 | 39.92% |
| 002288 | 12.1 | 266.2 | 0.135 | 34.57 | 82.04 | 54.38% |
| 002281 | 16 | 640 | 0.1419 | 35.37 | 84.86 | 86.19% |
| 002280 | 22.8 | 307.8 | 0.2406 | 34.03 | 74.61 | 61.40% |
| 002279 | 27 | 413.1 | 0.1747 | 36.14 | 78.59 | 108.48% |
| Group 2 | | | | | | |
| 002273 | 15.28 | 255.34 | 0.041 | 23.63 | 89.82 | 232.46% |
| 002268 | 12.12 | 206.04 | 0.053 | 24.24 | 86.8 | 116.17% |
| 002261 | 15.37 | 245.92 | 0.0449 | 19.81 | 89.09 | 101.69% |
| 002253 | 14.75 | 191.75 | 0.1052 | 29.32 | 83.81 | 23.39% |
| 002241 | 18.78 | 563.4 | 0.179 | 29.98 | 80.52 | 65.39% |
| 002231 | 8.46 | 182.74 | 0.0524 | 29.17 | 82.58 | 70.21% |
| 002230 | 12.66 | 271.43 | 0.0432 | 29.98 | 84.95 | 139.42% |
| 002232 | 9.44 | 241.66 | 0.0475 | 29.97 | 82.85 | 85.91% |
| 002222 | 7.79 | 370.03 | 0.0194 | 29.96 | 76.95 | 167.01% |
| 002218 | 10.79 | 431.6 | 0.0271 | 29.97 | 83.79 | 378.41% |
| 002199 | 8.8 | 140.8 | 0.0142 | 29.83 | 68.35 | 170.57% |
| 002195 | 10.49 | 121.68 | 0.0161 | 29.97 | 78.91 | 234.13% |
| 002194 | 21.1 | 1135.18 | 0.0561 | 29.97 | 68.13 | 106.26% |
| 002189 | 5.1 | 204 | 0.0219 | 29.83 | 71.54 | 116.67% |
| 002188 | 10.07 | 201.4 | 0.0537 | 29.97 | 76.42 | 144.59% |
| 002185 | 10.55 | 464.2 | 0.1159 | 29.97 | 75.99 | 104.93% |
| 002184 | 12.9 | 288.96 | 0.0617 | 29.98 | 72.71 | 84.34% |
| 002179 | 16.19 | 388.56 | 0.0368 | 29.98 | 70.05 | 181.41% |
| 002177 | 13.79 | 209.61 | 0.0572 | 29.98 | 81.22 | 370.49% |

| | | | | | | |
|----------------|-------|--------|--------|-------|-------|---------|
| 002174 | 5.68 | 95.42 | 0.1297 | 29.89 | 69.35 | 199.30% |
| 002161 | 13.3 | 214.13 | 0.1199 | 29.25 | 66.59 | 329.32% |
| 002156 | 8.82 | 472.75 | 0.3162 | 26.36 | 65.85 | 256.01% |
| 002153 | 21.5 | 301 | 0.1258 | 21.29 | 61.9 | 287.49% |
| 002152 | 16.88 | 607.68 | 0.1383 | 27.67 | 75.8 | 363.74% |
| 002151 | 12.18 | 164.43 | 0.1034 | 29.99 | 72.05 | 380.71% |
| 002148 | 18 | 226.8 | 0.2323 | 29.03 | 65.7 | 264.44% |
| 002141 | 8.51 | 172.75 | 0.1585 | 29.96 | 62.46 | 197.88% |
| 002139 | 10.48 | 189.48 | 0.0811 | 29.94 | 81.85 | 472.52% |
| 002138 | 13.6 | 326.4 | 0.075 | 29.89 | 68.06 | 152.21% |
| 002137 | 10.3 | 344.02 | 0.0584 | 29.68 | 76.4 | 212.14% |
| 002134 | 8.28 | 331.2 | 0.2282 | 22.28 | 52.35 | 114.98% |
| 002129 | 5.81 | 581 | 0.1319 | 21.52 | 64.72 | 198.97% |
| 002119 | 11.1 | 277.5 | 0.6165 | 27.21 | 61.98 | 97.75% |
| 002115 | 9.15 | 183 | 0.0818 | 28.59 | 61.6 | 114.75% |
| 002106 | 20 | 976 | 1.1254 | 18.69 | 44.85 | 58.40% |
| 002104 | 8.43 | 242.78 | 0.6775 | 24.79 | 53.8 | 63.70% |
| 002095 | 14.09 | 211.35 | 0.1219 | 29.98 | 73.7 | 345.71% |
| 002090 | 14.2 | 241.4 | 0.153 | 28.1 | 63.49 | 87.11% |
| 002089 | 8.66 | 122.63 | 0.1967 | 26.24 | 62.74 | 80.48% |
| 002079 | 6.39 | 242.82 | 0.1105 | 30.43 | 68.92 | 86.38% |
| 002073 | 36 | 468 | 0.1737 | 28.45 | 70.88 | 40.31% |
| 002065 | 14.5 | 250.85 | 0.1171 | 21.64 | 85.36 | 65.52% |
| 002063 | 5.8 | 127.6 | 0.1358 | 24.68 | 85.9 | 127.93% |
| 002057 | 4.68 | 140.4 | 0.2727 | 27.57 | 85.02 | 124.36% |
| 002056 | 10.6 | 508.8 | 0.369 | 24.03 | 79.89 | 52.45% |
| 002055 | 7.88 | 132.38 | 0.0565 | 29.33 | 79.41 | 138.58% |
| 002052 | 16 | 352 | 0.3115 | 24.32 | 75.68 | 122.69% |
| Group 1 | | | | | | |
| 002049 | 4.78 | 119.5 | 0.0489 | 22.76 | 50.45 | 46.44% |
| 002045 | 10.8 | 259.2 | 0.0547 | 22.5 | 52.6 | 17.78% |