



# An Analysis on Influencing Factors of Stockholders Interests Redistribution from a Consideration View of Non-Tradable Shares Reform in Medicine Industry

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## Abstract

As the full-circulation reform is close to an end, this paper intends to study the influencing factors of probability at certain consideration level by an empirical analysis of medicine industry and constructing a discrete choice data model, by which to research the influencing factors of stockholders interest redistribution. Results show that factors that affect the choice of consideration intervals are different and different factors prefer various probabilities of consideration levels. The higher the proportion of non-tradable stocks, the more the consideration interval is in 2.5-3.4; the higher the ROE, the lower the consideration payment is; the larger the M1, the more the consideration interval is less 2.5.

**Keywords:** Stockholders interest redistribution, Non-trading shares reform, Medicine industry, Consideration

## 1. Introduction

Non-tradable shares are special historical things appeared in the transmission of China's capital market. The co-existence of tradable shares and non-tradable shares brings about many problems in China's capital market. Majority shareholders and minority shareholders are competing for interests instead of pursuing common interests. The pricing mechanism in capital market is distorted so that the stock price fails to reflect its true value. In 1997, scholars have noticed this problem and put forward some suggestions. The sales of state shares have adopted the share allotment, share allocation, and issuing method. However, all these measures do not settle the problem of non-tradable shares. Even in 2001, a bear market appeared and lasted for four years. In 2005, China Securities Regulatory Committee issued the "Notice for Relevant Problems in Pilot Listed Companies' Non-Tradable Shares Reform" that took interests of small and medium shareholders into consideration and advanced the consideration concept for the first time in the scheme.

Consideration refers to the payments or compensations paid by non-tradable shareholders to tradable shareholders in order to make non-tradable shares circulate in market. Consideration payment is the core of non-tradable shares reform. Although the non-tradable shares reform is over, the factors that affect the allocation of shareholders interests are still there and at work. Non-tradable shares reform is a great Chinese way that embodies shareholders interest redistribution. Therefore, it is still meaningful to study the consideration in non-tradable shares reform.

## 2. Review of literature

How to establish the consideration level has already aroused a wide discussion in theoretical field and drawn some useful conclusions. In general, these conclusions are derived from two types of study angles. The first type is the angle of theoretical deduction. With the precondition of a series of assumptions and requirements, put forward calculation formulas and theoretical frameworks for potential consideration schemes in non-tradable shares reform, which need to be carried out by listed companies later. This kind of studies is mostly done by listed companies' entrusted industry before or in the non-tradable shares reform.

As far as principles of non-tradable shares reform are concerned, some have already been accepted widely in academic field, such as protecting interests of minority shareholders and preventing against lose of state assets (Weidong Zhai, 2006; Xiaoqiu Wu, 2006). Concerning consideration payment, Xiaoqiu Wu thinks it should be various. In his opinion, there is an average consideration rate (30% or so) in market and all companies' considerations should fluctuate around this rate. Furthermore, non-tradable shares could be taken as a kind of shares issuance. Then, non-tradable shares, shares

allotment, and new issuance can serve as references one another (2006). Jinhui Qiu makes a comparative analysis on the consideration payments used by listed companies in China (2006). Jianqing Chen advances that the consideration needs a common standard and puts forward formulas respectively for theoretical maximum, minimum, balance standards (2006). In *Securities Guide*, a special report concludes the non-changeable theoretical value pricing, the super-normal P/E ratio pricing, and the analogical pricing. Weidong Zhai sets up a pricing model under the assumptions of full efficiency of market pricing, investors' same pricing predictions for circulation, and sufficient market capitals (2006). Changsong Jin analyzes consideration's influencing factors and gets a theoretical mode by means of correlation degree analysis according to the principle of same ownership for same share (Apr. 2006). Ying Zhou takes full circulation reform as a game process and constructs a game model based on two parties' effect functions and game rules, establishing optimal payment rate by calculating maximum effect (Jun. 2006).

As the non-tradable shares reform is deepening, more and more companies achieve the reform. In theoretical fields, some research results based on statistical analysis of large samples appear which contribute a lot to some final conclusions. Lihong Xiao, a graduate from North China Electric University, makes a regression analysis on listed companies that have already pay for considerations and concludes that the consideration is determined by various factors and it is hard to explain it by certain unified explanatory variables. Furthermore, different listed companies have different standards for evaluating consideration rate because of their different market values (2007). Xiaoli Li and Jianping Yang advance that the non-tradable shares reform process has characters of diversified consideration ways, various consideration bases, unbalanced consideration levels, and frequent adjustments (2006). Xinhong Chen makes an empirical analysis on ST listed companies' consideration payment ways and points out that ST listed companies can pay for considerations by multiple institutional innovative ways, such as imputing well performing assets (2007). Jianshen Zhao makes a multiple regression analysis on listed companies' non-tradable shares reform consideration, finds out four practical decisive factors, and concludes that bilateral consideration payment is a win-win strategy (2007). Pengchao Wu performs an empirical analysis on 330 listed companies' non-tradable shares reform and finds that the market game mechanism adopted by non-tradable shares reform can guarantee the rationality of consideration scheme and interests of two types of shareholders to certain degree (2006). Xuesong Qian and Wei Zou analyze the consideration issue by constructing a signal transmission mode. They find that the consideration is not only a compensate mechanism for tradable shareholders but a channel that transmits companies' private information to investors.

As the non-tradable shares reform is close to an end, this paper, from the second angle, analyzes the factors that affect listed companies' consideration payments in medicine industry by means of an empirical analysis method based on the discrete data variable model, with the hope of drawing useful conclusions.

### 3. Theoretical assumptions and selection of explanatory variables

In this paper, select main explanatory variables from three angles: market index, listed companies' situation, and macro economy.

(1) Share capital structure: be replaced with proportion of non-tradable shares

Relevant articles show that the larger the proportion of non-tradable shares, the bigger the changes of supply-and-demand relation after circulation, and then the higher the consideration payments. The two have a positive correlation. That is an important variable of listed companies' situation.

(2) Relevant financial index: In general, listed companies will release some important financial indexes of recent three years in their non-tradable shares reform instructions. Besides, quite a few of companies takes these financial indexes as explanatory variables in establishing their consideration payments. Therefore, select two most important financial indexes. In this paper, data of the two indexes is the average during three years before the non-tradable shares reform.

ROE/profit margin on net assets: A stock's intrinsic value depends on the discount value of its future cash flow. ROE/profit margin on net assets is an important index used to evaluate companies' former business performances and also a financial index used to predict the stock tendency.

Assets-liabilities ratio: Financial indexes affect listed companies' performances in capital market and their market values. Therefore, here include this index into the analysis mode.

(3) Stock's rate of return and stock index's rate of return

In theory, one stock's performance in market and the whole market performances relate with the distribution of shareholders' interests. The higher the rate of return, the stronger the bargaining ability of majority shareholders should be. And the consideration level will be lower. This paper selects the average rate of return in ten exchange days before establishing the consideration.

(4) M1: Money supply is an important macro economic index influencing the operation of capital market. The non-tradable shares reform happens in a background of global over supply of money. Therefore, the impacts of money supply on consideration payment are not ignorable.

#### 4. Model selection

##### 4.1 Selection of variables and data

A Consideration payment level (delivery rate) K

According to the formula, convert the payment levels under different payment ways into proportions of share allocation for the sake of convenient comparison (formula is in appendix).

Considerations have different payment levels. Relevant articles have also pointed out the existence of consideration payment levels' clustering effect. Therefore, group data according to certain standard and get four different cluster intervals. Because of different values of K, the variable Y is different.

$$Y=1 (K \leq 2.5)$$

$$=2 (2.5 < K \leq 3.0)$$

$$=3 (3.0 < K \leq 3.4)$$

$$=4 (K > 3.4)$$

##### 4.2 Modeling method

Considering the fact that more than 100 listed companies have different situations, the OLS regression may lead to the heteroscedasticity issue that will affect the exactness of estimation. Therefore, this paper adopts the multi-variable discrete choice model to study the probability of listed company i selecting certain consideration interval and the influencing factors.

In other words, the explained variable  $y_i$  has S discrete choices ( $S > 2$ ).

Namely,  $y_i = S$

Suppose the sample company selects S,  $S \in A = \{1, 2, \dots, S\}$ ;  $i=1, \dots, n$ .

Also, introduce a virtual continuous random variable  $U_{is}$ , define:

$$y_i = S, \text{ suppose } U_{is} = \max_{k \in A} \{U_{ik}\}.$$

Meanwhile,  $U_{is} = V_{is} + \varepsilon_{is}$ ,

Here  $V_{is}$  is the explanatory variable of the model.  $\varepsilon_{it}$  is the residual item response to different statistic distribution.

The explanatory variable  $V_{is}$  includes: (1) The variable  $X_i$  that has nothing to do with the value of explained variable; (2) The variable  $Z_{is}$  that has a correlation with the value of explained variable. Then,  $V_{is}$  can be represented as:

$$V_{is} = x_i' \beta_s + z_{is}' \gamma.$$

Here, the coefficient  $\beta_s$  is correlated to the choice of explained variable, but  $\gamma$  not.

Define  $p_{is}$  is the probability of sample i selecting s. Namely:

$$p_{is} = P(y_i = s) = P(U_{is} = \max_{k \in A} \{U_{ik}\}) = P(V_{is} + \varepsilon_{is} > V_{ik} + \varepsilon_{ik}, k \neq s).$$

Then the logarithm likelihood function is:

$$l(\theta) = \log L(\theta) = \sum_{i=1}^n \sum_{s=1}^S Y_{is} \log p_{is}(\theta),$$

Thereof, suppose  $y_i = s$ ,  $Y_{is} = 1$ ; Under other conditions,  $Y_{is} = 0$ .

For a multi-variable logit model, then:

$$p_{is} = \frac{\exp(V_{is})}{\sum_{k=1}^S \exp(V_{ik})} = \frac{1}{1 + \sum_{k=1, k \neq s}^S \exp(V_{ik} - V_{is})}.$$

Finally:  $\log(p_{is} / p_{ik}) = V_{is} - V_{ik} = x_i'(\beta_s - \beta_k) + (z_{is} - z_{ik})' \gamma$ .

##### 4.3 Model's parameter estimation and test result

In this model, estimated parameters are  $\hat{p}_{is}$  and explanatory variable parameter  $\hat{\beta}_s$  and  $\hat{\gamma}$ . If there are constants in the model, the maximum likelihood value estimation and test are similar to normal F test. The referenced model in test

includes just constants. Namely:

$$V_{is} = \alpha_s, \quad s = 2, \dots, S.$$

Suppose there are K parametric variables in explanatory variable interval  $x_i'$  and C parametric variables in  $z_{is}'$ . K(S-1)

+ C parametric variables need to be estimated in the model. And the logarithm likelihood function is  $l(\hat{\theta})$ . The

reference model has S-1 parametric variables. Its logarithm likelihood function is  $l(\hat{\alpha})$ . Then, statistic

$$2l(\hat{\theta}) - 2l(\hat{\alpha}) \text{ distributes in form of } \chi^2 [(K-1)(S-1) + C].$$

In addition, we can use logit model to analyze the impacts of explanatory variables on possibilities  $p_s$  of explained variables. The partial derivative results are:

$$\frac{\partial p_s}{\partial x_m} = \hat{p}_s (\hat{\beta}_{sm} - \sum_{k=1}^S \hat{\beta}_{km} \hat{p}_k),$$

$$\frac{\partial p_s}{\partial z_{sm}} = \hat{\gamma}_m \hat{p}_s (1 - \hat{p}_s),$$

$$\frac{\partial p_s}{\partial z_{rm}} = \hat{\gamma}_m \hat{p}_s \hat{p}_r, \quad r \neq s.$$

The quasi elasticity coefficient is  $\frac{\partial p_s}{\partial \log x_m} = \frac{\partial p_s}{\partial x_m} \bar{x}_m$ . Thereof,  $\bar{x}_m$  is the sample average of explanatory variable  $x_m$ .

Suppose  $x_m$  rises by q percent,  $p_s$  will increase by  $q \times \partial p_s / \partial \log x_m$  percent.

The elasticity coefficient is:  $\frac{\partial p_s}{\partial x_m} \frac{x_m}{p_s}$ .

In calculating the t statistic of series of parametric variables, we take  $\hat{p}_s$  as a non-random variable. It proves that the partial derivatives, quasi elasticity coefficients, and elasticity coefficients have completely same t distributing statistic.

### 5. The discrete choice model's parameter estimation and test result

In this model, we select 119 samples.

In medicine industry, there are 132 listed companies. Two of them do not perform the non-tradable shares reform and five of them adopt the warrant method. Because warrant has different delivery conversion formulas that can lead different results, the five listed companies are excluded from samples in this paper. Five listed companies adopt the afterward conditional super-addition consideration way that needs certain triggering conditions. This way is few and hard to make quantization. Therefore, for the sake of convenient calculation, these life companies are also deleted from samples in this paper.

Then, 120 listed companies are right for samples in this paper. However, one company can not provide with complete data. So, the final samples are 119 listed companies.

The model estimation follows an order from the common to the special (table 1).

Parameter estimation and test result is in table 2.

From the test results in the table above, the model passes the F test.

Firstly, according to the test results, considerations' choice probabilities distribute uniformly. In the medicine industry, the convergence effect, namely centering on 3.5, mentioned in former articles does not appear.

Secondly, factors have different impacts on different consideration. In the state 4, impacts of constants are most prominent. Proportion of non-tradable shares has significant impacts on all considerations. As the consideration rises, the impacts of ROE/profit margin on net assets on probability of certain consideration increases significantly. The money supply has significant negative impacts on all conditions. In conclusion, the more the money supply, the higher the nominal value of financial assets, the stronger the bargaining ability of majority shareholders. Then the majority shareholders will be more capable of decreasing consideration payments.

Thirdly, the prominent factors do not include indexes of market performance. It means performances of one stock and market do not have impacts on distribution of shareholders' interests.

Next, we will further analyze the influencing factors' partial derivatives, elasticity coefficients, and quasi elasticity coefficients on probabilities of all considerations (table 3).

From the table above, we can conclude:

(1) If the ROE/profit margin on net assets rises by 1%, the probability of consideration less 2.5 will rise by 0.00102%, the probability of consideration between 2.5 and 3.0 will rise by 0.000239%, the probability of consideration between 3.0 and 3.4 will drop by 0.00036%, and the probability of consideration larger than 3.4 will drop by 0.00058%.

(2) If the proportion of non-tradable shares rises by 1%, the probability of consideration less 2.5 will drop by 0.19855%, the probability of consideration between 2.5 and 3.0 will rise by 0.22246%, the probability of consideration between 3.0 and 3.4 will rise by 0.45654%, and the probability of consideration larger than 3.4 will drop by 0.00410%.

(3) If the money supply rises by 1%, the probability of consideration less 2.5 will rise by 1.6119%, the probability of consideration between 2.5 and 3.0 will drop by 0.22588%, the probability of consideration between 3.0 and 3.4 will drop by 0.31107%, and the probability of consideration larger than 3.4 will drop by 1.0749%.

## 6. Results analysis

This paper analyzes the factors that affect the probabilities of considerations by constructing a discrete choice data Logit model based on 118 listed companies' data in medicine industry. The model study results are as follow:

Firstly, for different considerations, the main influencing factors are different. Especially, the proportion of non-tradable shares, namely the share ownership structure, has significant impacts on each consideration interval.

Secondly, in the aspect of market factors, the rate of return in stock market and the rate of return of one stock do not have significant effects. In theory, the two rates are supposed to affect the bargaining ability of majority shareholders to a great degree. But the result is contrary. It proves that there is no significant correlation between choice of consideration in non-tradable shares reform and one stock's market performance. Companies' situations and macro variables are the significantly influencing factors that affect the distribution of shareholders' interests.

Thirdly, impacts of macro factors are not ignorable. Some impacts of M1 on probability are over 1%. It means that macro economic factors are also important in determining the consideration. As M1 rises, the consideration begins to drop gradually. In this case, overage of money supply forces money to pursue for lesser assets. Under this background, shares, as a kind of financial assets, become relatively scarce, what will greatly enhance the majority shareholders' bargaining ability.

Fourthly, in the aspect of companies' situation, higher ROE/profit margin on net assets will make listed companies tend to choose lower consideration. The impacts of assets-liabilities ratio are not significant.

ROE/profit margin on net assets is an important index to evaluate listed companies' market values. The higher it is, the better the listed company' performances are. Then its majority shareholders possess stronger bargaining ability.

In theory, the assets-liabilities ratio can affect listed companies' market values. However, because the correlation between assets-liabilities ratio and market value is not simply positive or negative and every listed company is different in certain aspect and each has different optimal leverage rate, the positive impacts and the negative impacts may cause a zero impact among amounts of samples.

Fifthly, the rise of the proportion of non-tradable shares will make consideration center to an interval from 2.5 to 3.4. Taking the state 1 as the basic state, then the higher the proportion of non-tradable shares, the higher the probability of low consideration. It is in accord with the normal logics and the empirical tests and theoretical analyses in most articles. The smaller the proportion of non-tradable shares, the fewer the supply for market after the non-tradable shares reform, the smaller the capital pressure, the lesser the drop of price, and the lesser the consideration payment.

## 7. Conclusion

By analyzing the sample data of 119 listed medicine companies that listed in the A board in Shanghai and Shenzhen Stock Markets, this paper finds that:

(1) The money supply, the proportion of non-tradable shares, and the ROE/profit margin on net assets have most significant impacts on the choice of consideration. And different factors have different impacts on the probability of consideration choice. Each choice results from integrated effects of all factors.

(2) One stock's market performance and whole capital market's performance do not have significant impacts on certain listed company's consideration. Their impacts mainly focus on the company's situation and macro environment.

(3) Macro economic factors have certain effects on the choice of consideration, whether the market participators realize it or not, and the effects are objective and should not be neglected.

We can further draw these conclusions:

(1) The proportion of non-tradable shares is an important influencing factor that affects the distribution of shareholders' interests. Although its influences disappear on the surface, as the non-tradable shares reform is closed, it is evolved into the quantity and proportion of newly tradable shares. Therefore, we can still take this factor as the basis for protecting interests of small and medium shareholders.

(2) Listed company's condition is still an important influencing factor. Better conditions and higher ROE/profit margin on net assets mean small and medium shareholders can obtain relatively direct interests. In re-distributing interests, such as consideration payment, the trend to be lower is rational.

(3) Macro factors, especially money supply, have great impacts on shareholders' behaviors. According to studies above, tight monetary policy is still appropriate. At present, an appropriate tight monetary policy can help to create a favorable macro environment for China's capital market.

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Table 1.

Explained variable Y				
Coefficient	Standard deviation	t-statistic	t-statistic's P	
Constant(S2)	3.24262	4.147	0.782	0.436
NON(S2)	0.0520244	0.02305	2.26	0.026
ROE(S2)	-0.00965126	0.01497	-0.645	0.520
M1(S2)	-5.79455e-005	3.618e-005	-1.60	0.112
Constant(S3)	2.40020	4.441	0.540	0.590
NON(S3)	0.0717504	0.02599	2.76	0.007
ROE(S3)	-0.0213216	0.01482	-1.44	0.153
M1(S3)	-6.28142e-005	3.869e-005	-1.62	0.107
Constant(S4)	8.10068	5.179	1.56	0.121
NON(S4)	0.0379071	0.02444	1.55	0.124
ROE(S4)	-0.0283987	0.01474	-1.93	0.057
M1(S4)	-9.71538e-005	4.605e-005	-2.11	0.037

Table 2.

Logarithm likelihood value	-152.963987	Number of states	4
Sample observe value	119	Number of estimated parameters	12
Zero line logarithm likelihood value	-163.9155	F test $\chi^2(9)$	21.903 [0.0092]**
AIC	329.927973	AIC/T	2.77250398
Y sample average	1.35294	Sample variance	1.23678
Newton estimation method (esp1=0.0001; esp2=0.005): strong convergence			

State	Frequency	Probability	estimation	Logarithm likelihood value
State 1	35	0.29412	0.29412	-37.79
State 2	32	0.26891	0.26891	-40.55
State 3	27	0.22689	0.22689	-37.34
State 4	25	0.21008	0.21008	-37.29
Total	119	1.00000	1.00000	-153.0

Notice: In this table, state 1 means consideration is less 2.5. State 2 means consideration is between 2.5 and 3.0. State 3 means consideration is between 3.0 and 3.4. State 4 means consideration is larger than 3.4.

Table 3.

State choice probability					
State 1		0.29412			
State 2		0.26891			
State 3		0.22689			
State 4		0.21008			

Partial derivative					
	Sample average	State 1	State2	State 3	State 4
Constant	1.0000	-0.91717	0.033411	-0.16295	1.0467
NON	60.033	-0.011245	0.0037086	0.0076048	-6.8446e-005
ROE	0.88276	0.0039409	0.0010078	-0.0017975	-0.0031512
M1	1.0907e+005	1.4778e-005	-2.0709e-006	-2.8520e-006	-9.8549e-006

Quasi elasticity coefficient				
	State 1	State 2	State 3	State 4
Constant	-0.91717	0.033411	-0.16295	1.0467
NON	-0.67507	0.22264	0.45654	-0.0041090
ROE	0.0034789	0.00088966	-0.0015868	-0.0027818
M1	1.6119	-0.22588	-0.31107	-1.0749

Elasticity coefficient				
	State 1	State 2	State 3	State 4
Constant	-0.26976	0.0089846	-0.036971	0.21990
NON	-0.19855	0.059869	0.10358	-0.00086324
ROE	0.0010232	0.00023924	-0.00036003	-0.00058440
M1	0.47407	-0.060740	-0.070579	-0.22582

t-statistic				
	State 1	State 2	State 3	State 4
Constant	-1.2807	0.045264	-0.23391	1.3417
NON	-2.8271	0.95123	1.9217	-0.019388
ROE	1.4369	0.44685	-1.0588	-2.0225
M1	2.3470	-0.32253	-0.47161	-1.4195

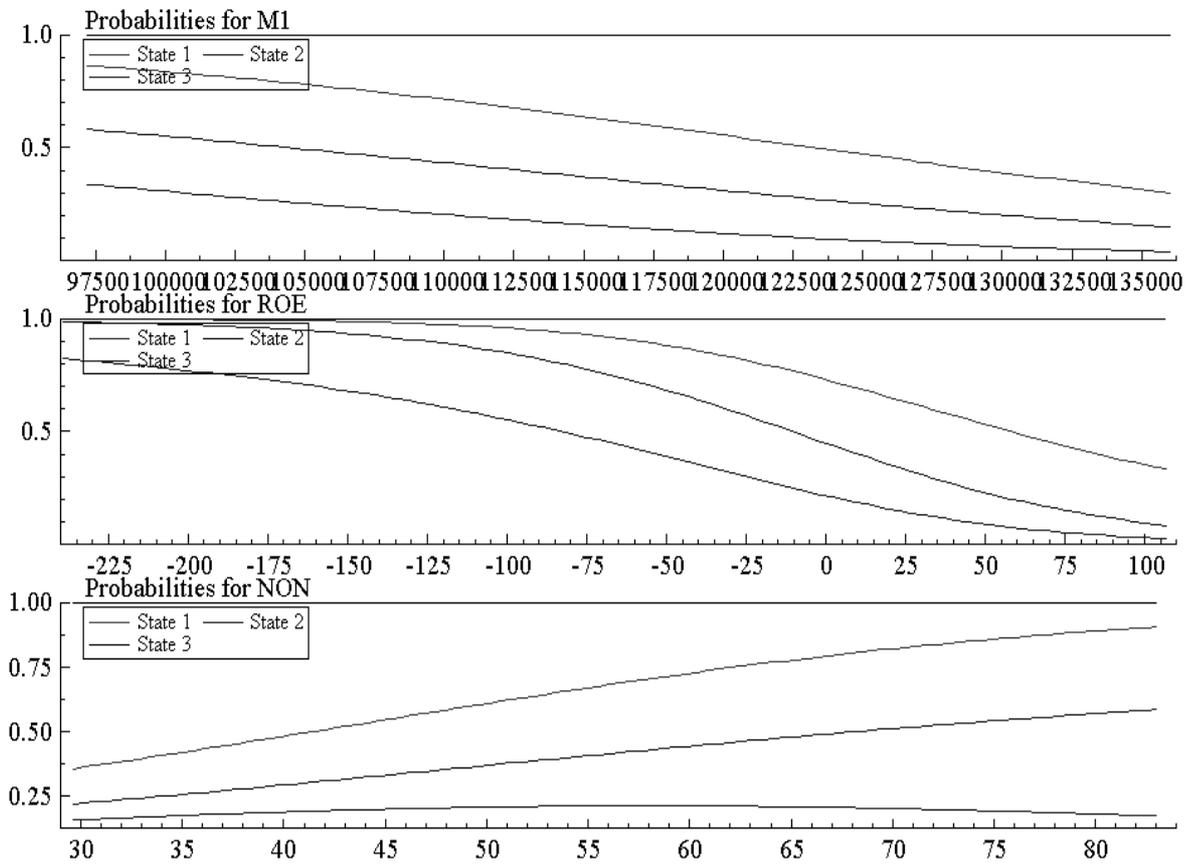


Figure 1.

**Appendix:** Samples of listed companies

Conversion formula:

000004STShenzhen CAU Technology	000028Accord Pharmaceutical	000078Neptunus Bioengineering	000153Fengyuan Pharmaceutical	000411Int'l Group
000415Huitong Group	000416Huaxin Industry	000423Dong-E E-Jiao Group	000518Sihuan Bioengineering	000538Yunnan Baiyao
000545Jilin Pharmaceutical	000566Hainan Haiyao	000590Ziguang Guhan	000591Tongjunge	000597Northeast General Pharmaceutical
000603 STWeida	000605 STSihuan	000607Huali Pharmaceutical	000623Jilin Aodong	000626Ruyi Group
000627Tianmao Group	000650Renhe Pharmaceutical	000628 STGaoxin	000705Zhejiang Zhenyuan Pharmaceutical	000739Puluo Kangyu Natural Medicine
000765Xinhua Pharmaceutical Chemical	000766Tonghua Golden-Horse Pharmaceutical	000788Southwest Synthetic Pharmaceutical	000790Hoist Group	000796Baoshang Group
000809Zhonghui Pharmaceutical	000819Yueyang Xingchang	000915Shanda Wit Science and Technology	000919Jinling Pharmaceutical	000963Huadong Medicine
000979ST Keyuan	000989 Jiuzhitang	000990Chengzhi	002001NHU Company	002004Huapont Pharmaceutical
002007Hualan Biological Engineering	002016Well Science and Technology	002020Jingxin Pharmaceutical	002022Kehua Bio-Engineering	002030Daan Gene
002038Shuanglu Pharmaceutical	600055Wandong Medical Equipment	600062Double-Crane Pharmaceutical	600079Renfu Science and Technology	600080ST Jinhua
600085Tongrentang	600095Haerbin High-Tech	600129Taiji Group	600133East Lake Hi- tech	600146Dayuan Chemical
600161Tiantan Biological Products	600196Fuxing Pharmacy	600200Jiangsu Wuzhong	600201Jinyu Group	600211Tibet Pharmaceutical
600216Zhejiang Medicine	600222Tailong Pharmaceutical	600223ST Wanjie	600226Shenghua Biok Biology	600252Zhongheng Group
600253Tianfang Corporation	600267Haizheng Pharmaceutical	600276Hengrui Medicine	600285Lingrui Pharmaceutical	600297Meiluo Pharmaceutical
600329 ST Zhongxin	600332Guangzhou Pharmaceutical	600351Yabao Pharmaceutical	600380Health Investment Holdings	600385 ST Jintai
600420Modern Pharmaceutical	600421Guoyao Technology	600422Kunming Pharmaceutical	600436Pientzhuang Pharmaceutical	600466 ST Dikang
600479Qianjin Pharmaceutical	600488Tianyao Pharmaceutical	600490Synica Corporation	600511Guoyao Group	600518Kangmei Pharmaceutical
600530Jiaoda Only	600535Tasly Group	600556 ST Beisheng	600557Kangyuan Pharmaceutical	600568 ST Qianyao
600572Conba Pharmaceutical	600587Xinhua Medical Instrument Factory	600594Yibei Pharmaceutical	600607Shanghai Industrial Pharmaceutical Investment	600613Wingsung Data Technology
600624Fudan Forward	600645ST Wangchunhua	600666Southwest Pharmeceutical	600668Jianfeng Group	600706 ST Changxin
600713Nanjing Medical	600730China High-Tech	600750Jiangzhong Pharmaceutical	600771Dongsheng Science & Technology	600773 ST Yalong
600778Friendship Group	600779Swell Fun	600789Lukang Pharmaceutical	600797Zheda Innovation Technology	600812North China Pharmaceutical
600829Sanchine Pharmaceutical	600833No.1 Pharmacy	600842Zhongxi Pharmaceutical	600851Haixin Group	600866Star Lake Bioscience
600867Tonghua Dongbao Pharmaceutical	600869S&P Pharmaceutical	600976Wuhan Jianmin Pharmaceutical	600993Mayinglong Pharmaceutical	

K: Allotment proportion N1: Proportion of non-tradable shares N2: Proportion of tradable shares

1. The converted rising shares taking tradable shares as the cardinal number (expanding shares)

$$K = bN1 / (N1 + N2 + bN2)$$

Thereof, b refers to the proportion of expanded shares.

2. Shrinking shares

$$K = N1(1-a) / (aN1 + N2)$$

Thereof, a refers to the proportion of shrunk shares.

3. Cash issue

$$K = c/p$$

Thereof, c means cash and p means the stock price in the cash issue day.