New Rules of Refinancing and Investor Protection in China

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This paper studies how the new rules of refinancing, which changed the pricing benchmark date of private placement to the approval date, influenced the impact of private placement on stock price. We find that the new rules of refinancing conveyed positive information to the market, making the announcement effect of approval date better. Meanwhile, the new rules significantly reduced the issuance discount rate and restrained the possible arbitrage behavior of major shareholders. For companies which pricing benchmark date was not the first day of the issuance, the market would form reasonable expectations of the issuance discount rate and it had a significant negative correlation with the announcement effect on the approval date. Our results show that the new rules improve the announcement effect of approval by decreasing the discount rate of private placement, and strengthen the protection of investors' interests.

Keywords: new rules of refinancing, private placement, announcement effect, discount rate

INTRODUCTION

Refinancing is one of the key components in equity market. Taking China's market as an example, in 2016, 906 listed companies, accounting for 30% of the total listed companies, conducted refinancing with a total financing amount of about 1.96 trillion CNY, over 10 times the amount financed through IPO in the same year. In the meanwhile, however, emerging risks associated with speculation have been introduced. In response to this situation, on Feb 17th, 2017, the CSRC (China Securities Regulatory Commission) revised the "Implementation Rules for Non-Public Equity Issuance of Listed Companies" and issued the "Question and Answer for Issuance Supervision: Regulatory Requirements for Guiding and Regulating the Financing Behavior of Listed Companies", both of which are referred to as "new rules of refinancing". As a very typical regulatory reform to regulate the order of refinancing market, it is valuable to research on the impact of this new rules to China's refinancing market, for it can provide a lot of reference for the formulation of regulatory policies in many markets around the world.

Refinancing through non-public offering method, namely, private placement, is a commonly-seen practice among listed companies. Compared with other financing methods, equity private placement has the following characteristics: (1) The requirements for issuance qualification are relatively loose. In

particular, there are no clear requirements for listed company's financial indicators including profitability, growth, debt credit qualification, etc.; (2) Refinancing is only offered to a limited number (less than ten in general) of specific investors, who are pre-determined prior to get approval from the CSRC; (3) Refinance imposes on listed companies less disclosure obligations than other channels, resulting in a higher degree of information asymmetry and less transparency; (4) Private placement has a lock-in period. Moreover, in practice, those specific investors who participate in private placements tend to seek profits primarily generated by the difference between the discounted issue price and the market price in near future, instead of value investing and taking responsibility as shareholders or supervisors, which is not beneficial to the growth of a company and is unfair to individual investors who have no access to the private placements of the company.

The new rules of refinancing have enhanced requirements for the pricing mechanism and other details of public or non-public offerings, which has a wide impact on Chinese financial market. Among all the revisions, the most important one is the change of the pricing method of non-public offering, in hopes that it can strengthen the restrictive role of the market-based pricing mechanism and suppress speculation activities in private placements. Under the new rules of refinancing, it is required that the pricing base date to price the additional shares should be based on the first day of the issuance period, as oppose to the announcement date of the resolution of the boards' or shareholders' meeting. Given that the period between the announcement date of the resolutions of the boards' or the shareholders' meeting and the actual issuance time is long enough for large fluctuations in stock prices caused by many factors including price manipulation by shareholders and some investors, the actual discount rate tends to exceed the threshold of 10%, below which is considered reasonable. Therefore, by shortening the time interval between the pricing base date and the actual issuance date, the new rules suppress the speculation that takes advantage of the high discount rate in private placement issuances, in order to protect the interests of individual investors in the secondary market. Whether the new rules serve the intended purpose is worth investigation.

We use all successful equity private placement cases from January 1st, 2015 to March 1st, 2019, with February 2017 as cut-off date when the new rules were established, to examine the new rules' effect by using a multiple linear regression. Moreover, we test the relationship between the expected discount rate and real discount rate, and further examine the relationship between the cumulative abnormal return and the expected discount rate. Our results show that after the establishment of the new rules of refinancing, the stock price of listed companies increases significantly after the announcement date of the private placement is approved by the CSRC, and that the discount rate of issuance decreases significantly. Further analysis shows that the expected discount rate based on the announcement date of approval by the CSRC has a significant negative correlation with the accumulated abnormal return on the day, indicating that reducing the issuance discount rate of equity private placements could be an important reason for the new rules of refinancing to increase the announcement effect of private placements approved by the CSRC.

The contribution of this paper is two-fold. First, this paper provides an evidence on the new rules of refinancing to inhibit speculation and protecting the interests of small investors and enriches the existing literature on theories about the rules of equity private placement by systematically considering a series of problems among arbitrage, discount rate, announcement effect and the benefits of small investors in equity private placements, thereby building a correlation between the price in the primary market and the price fluctuation in the secondary market. Second, we are the first to define the discount rate of the announcement date of approval according to the definition of the issuance discount rate. Then, combining with other information that are available to investors on the announcement date of approval, we innovatively construct the expected issuance discount rate based on the information from the announcement date of approval.

The remaining part of this paper is organized as follows: "Theoretical analysis and assumptions" section briefly reviews literatures in the relative field, analyzes the theory and proposes hypotheses. "Data and research design" section introduces the data, variables and research methods. "Empirical results"

section presents and interprets the main findings of this paper and in the last section, we conclude the results.

THEORETICAL ANALYSIS AND ASSUMPTIONS

The Impact of the New Rules of Refinancing on the Short-term Announcement Effect

Although Many studies have shown that seasoned equity offering (SEO) weaken the long-term stock return due to overly optimistic expectations and adverse selection (Brous et al., 2001; Loughran and Ritter, 1995 and 1997; Spiess and Affleck-Graves, 1995), the announcement of equity private placements will instead have a positive announcement effect in short-term. Krishnamurthy et al. (2005) find that there is a positive announcement effect in the private placement of US stock market. The average abnormal return is about 2.21%. Tan et al. (2002) find that the abnormal return of announcement effect of equity private placements in Singapore market is about 6.27% and Wu et al. (2005) find that there is an abnormal return of about 1.97% after the announcements of private placements in Hong Kong market. In China's market, the research on the effect of private placement announcements is relatively limited, Wang and Xu (2017) believe that there will be a short-term positive price effect before the announcement date of the plan of private placements, and the stock price goes higher at first after the board resolution announcements and falls down later. There is a positive abnormal return of 4% on the first trading day after the board resolution announcements, but the cumulative abnormal return within 10 trading days is negative. Zhang (2007) also finds that companies that achieving a collective listing of whole enterprise group through equity private placement have a better short-term performance after announcements, and the group has a positive wealth effect as well. However, this result is not robust in China. Wu and Jiang (2013) find that, compared with other types of refinancing such as rights issue, subordinated debt and convertible debt, the announcement effect of equity private placement is more negative.

For the reasons that the announcements of private placement will cause a positive announcement effect, currently there are a few assumptions. The first is the investment opportunity theory. McConnell and Muscarella (1985) find investors are willing to believe that the raised fund is used to invest in a valuable project when an equity refinancing announcement is accompanied with other announcement relative to investment proposes. It makes investors have an incentive to buy more company's stock so that the announcement will have a positive effect. Cooney and Kalay (1993) also believe that since equity financing is in a later choice in the regular financing order, companies choosing equity private placement as the financing method send a signal to the market that they have a good investment opportunity. The second theory is the information transfer effect theory. Hertzel and Smith (1993) find that due to the serious information asymmetry inside and outside the company, it is difficult for small investors and individual investors to find out when the company`s value is underestimated. However, when an equity private placement schedule is announced and institutional investors from external are willing to subscribe, it conveyed the information to individual investors that the value of the company was underestimated. Hence, they are more likely to buy the stock and increase the stock price. The third theory is the window of opportunity theory. Loughran and Ritter (1995) find that listed companies will seize the opportunity to conduct equity private placement when the market is in an optimistic sentiment. Helwege and Liang (2004) and Pastor et al. (2006) both find that during the bull market, the frequency of equity private placements becomes higher, so the positive announcement effect is a phenomenon caused by listed companies choosing to issue new shares. The fourth theory is earnings management theory. Goh et al. (1999) find that the revenue of companies is better in the year of secondary offering than in past years. Therefore, it is believed that the positive announcement effect of equity private placements is caused by the non-objective information published by companies due to their earnings management but not a response to the announcement of private placements.

Concerning the importance of steps of equity private placements, in terms of China's current issuance process, the review of the CSRC is the most important step. Only companies that have been approved by the CSRC and have received the approval letter from the CSRC are truly qualified to issue. Therefore, the announcement of getting approval by the CSRC is the most decisive and influential announcement in the

entire process. Based on the interpretation in the introduction, we believe that after the publication of the new rules of refinancing, the refinancing market is more regulated, which helping investors increase their confidence in the event of private placements, improving investors' sentiment and attracting more investors' attention. This can make the positive announcement effect more obvious. According to the above analysis, we propose the first hypothesis:

H1: *After the new rules of refinancing, the cumulative abnormal return near the announcement date of the approval of equity private placements from CSRC is higher than before.*

The Impact of the New Rules of Refinancing on the Issuance Discount Rate

In the actual refinancing cases, most of the equity private placements are discounted (Mola and Laughran, 2004), which is contrary to the interests of listed companies. Regarding the reasons for the discount, from the perspective of the cost of private placement investors, some literatures propose the supervision cost theory (Wruck, 1989) and the investigation cost theory (Hertzel and Smith, 1993; Hertzel et al., 2002). What is more identified is the liquidity supplement theory and the control power defense theory. The liquidity supplement theory holds that the issuing company should compensate the investors who buy the additional shares for the loss of liquidity. This is because the investors are restricted by factors such as lock-in periods and their stocks cannot be traded on market immediately. The control right defense theory was proposed by Barclay et al. (2007). They believe that, in order to prevent the companies' stock from being acquired by undesirable investors through equity private placement, companies will give priority to internal shareholders or managers to purchase the additional shares. On the one hand, companies tend to compensate for the efforts made by internal managers or shareholders to prevent the companies' control right from being redistributed. On the other hand, shareholders who subscribe the additional shares also have an incentive to arbitrage. As a result, the company will make a discount on the price of issued new shares, which leads to the discount phenomenon of equity private placements.

In China, major shareholders taking advantage of private placements to carry out arbitrage is considered to be the main reason for the discount phenomenon of private placements. Xu (2009) finds that the discount rate for equity private placements is related to the target investors. The discount rate of private placements with the participation of the largest shareholders is significantly higher than the discount rate without the participation of major shareholders. Moreover, the subscription ratio of the largest shareholder has a positive correlation with the discount rate. Zhang and Huang (2009) find that if the company's controlling shareholder or its related person participate in the subscription of equity private placements, the issuance discount rate will be greater than it without them, and the higher ratio they purchase, the greater the discount rate is. In addition to the discount rate, Zhao et al. (2011) find that listed companies with major shareholders participating in the subscription of new shares distribute significantly more cash dividends after the private placements, which also shows that it is common in China's market that major shareholders using equity private placement to arbitrage and make profits for themselves.

According to the regulations of the CSRC, whether before or after the new rules of refinancing, the issue price of private placements should not be lower than 90% of the average stock price in 20 days before the base date. That is to say, the CSRC hopes that the issuance discount rate should not be higher than 10%. However, before the new rules of refinancing, due to the long time distance between the resolution date of the meeting of boards or shareholders and the official issuance date, the real issuance discount rate might be much higher than 10% after a long time if the announcement date of the resolution of the board or shareholders' meeting is used as the pricing base date. This can easily lead to the mispricing problem and give major shareholders a chance to arbitrage. By investigating the timing to announce the schedule of equity private placements for listed companies from 2006 to 2016, Zhang and She (2018) find that they are more likely to announce the private placement schedules when the stock price is relatively low, especially when large shareholders participate in the private placement, and thus to promote the issuance discount rate. Therefore, we believe that the adjustment of the pricing base date by the new rules of refinancing can greatly shorten the interval between the pricing time period of additional

shares and the official issuance date, thereby it can reduce the range of stock price changes and increasing the difficulty for major shareholders or other internal investors to get benefits from rising the issuance discount rate. Based on the above analysis, we propose the second hypothesis:

H2: *The new rules of refinancing suppress the major shareholders' arbitrage, thereby making the issuance discount rate of private placements significantly lower than it before the new rules.*

The Impact of Discount Rate on the Announcement Effect of Private Placements

In the equity private placements, what is the relationship between the issuance discount rate in the primary market and the trend of stock price in the secondary market? Chen et al. (2010) believe that companies with poor operating conditions and higher risks are more likely to conduct equity private placements. This is because it is very difficult for these companies to refinance by public offering or rights issue in the market. Based on this fact, these companies can only attract private placement investors by a high discount rate. From this perspective, the high discount rate means low market value, which is a negative signal for individual investors in the secondary market.

Before the issuance of the new rules of refinancing, companies whose pricing of additional shares is based on the announcement date of the resolution of the boards' or shareholders' meeting, the stock price will be different at the approval date. Therefore, based on the stock price on the approval date, investors can estimate an expected discount rate of issuance. Since a high discount rate generally means lower market value and an arbitrage motivation of major shareholders, it forms a conflict of interest with investors in the secondary market. Therefore, it is reasonable to believe that the higher the expected discount rate on the approval date, the worse the secondary market responds to the announcement of approval. The new rules of refinancing systematically prohibit pricing the new shares of private placements in advance and avoid the investors from secondary market receiving the bad information that the expected discount rate is too high in the approval date, thus improve the announcement effect of approval by the CSRC. According to the above analysis, we propose the third hypothesis:

H3: *For companies whose pricing benchmark date is not the first day of issuance , the market can estimate a reasonable expectation of the issuance discount rate on the announcement date of approval. This expected discount rate has a significant negative correlation with the announcement effect on the approval date.*

DATA AND RESEARCH DESIGN

Sample and Data

The samples of this paper are all successful private placement cases of A-shares from January 1, 2015 to March 1, 2019. Among these samples, we drop the private placement cases that the new funds are raised for purchasing assets or conducting asset restructuring, since the new rules don't affect those cases. Besides, stocks marked as ST, *ST[1] or stocks of financial companies are also excluded, mainly because the accounting standards of financial companies are different from other listed companies. Financial companies also have obviously different operating cash flow and asset-liability structure, which may have a great significant influence on some control variables in the subsequent regression models. All sample data are from WIND and CSMAR databases.

Based on the date that the CSRC received the requests, we divide all cases into two sub-samples: T1 and T2. Private placement Cases received by the CSRC before February 17, 2017 belong to T1, while other cases belong to T2. All cases in sub-sample T1, a total of 1286, are not affected by the new rules of refinancing, while all cases in T2, a total of 130, are strictly regulated by the new rules. These samples are used to study the effect of new rules of refinancing on the approval date announcement effect. As for investigating the impact of the new rules on discount rate, to make sure the influence of the new rules, we further divide the cases in T1 into two categories: T1-1 and T1-2. Private placement cases belong to T1-1 if the pricing base date is on the first day of the issuance period, and they belong to T1-2 if the pricing

base date is the announcement date of the resolution of the board or shareholders' meeting. According to this classification, there are 204 cases in T1-1 and 1082 cases in T1-2. From here, we can find that, before the new rules of refinancing, most companies chose the announcement date of the resolution of the board or shareholders' meeting as the pricing benchmark date of the additional shares, which is consistent with the theoretical analysis mentioned above.

Variables

Independent Variables

According to the date that the CSRC receives the private placement requests is before or after February 17, 2017, which is the date that the new rules of refinancing is published, we introduce a dummy variable $Newreg$ as the core independent variable, which equals 1 if the CSRC receives a private placement request after the new rules are published, otherwise it equals 0.

Dependent Variables

Cumulative Abnormal Return. We use the market prediction model to calculate the normal return of stocks and further calculate the cumulative abnormal return. 155 to 6 trading days prior to the announcement of approval is used as the window period to estimate the normal return of stocks. According to the daily stock price changes of this 150 days, we forecast the theoretical normal return for individual stocks:

$$\widehat{r_{i,t}} = \alpha_i + \beta_i R_{mt} \tag{1}$$

In Eq. (1), $\widehat{r_{i,t}}$ is the proxy of estimated normal return of stock i; R_{mt} is the return of the whole A-share market during the same period. Whether Shanghai Composite Index (000001.SH) or Shenzhen Component Index (399001.SZ) is used as the proxy to calculate the market return is determined by which stock exchange does the company trade its stock. Different from the CAPM model, α_i and β_i are obtained by fitting from the stock price in window period. We avoid adding risk-free return in the model.

According to the normal rate of return of stocks obtained by Eq. (1), we can obtain the daily abnormal rate of return AR_{it}:

$$AR_{it} = r_{i,t} - \widehat{r_{i,t}} \tag{2}$$

In Eq. (2), $r_{i,t}$ is the return of stock I on that day.

Adding abnormal returns during the window period of the approval date together, we get the cumulative abnormal return CAR_{it}:

$$CAR_{it} = \sum_{i=1}^{n} AR_{it} \tag{3}$$

Discount Rate. We use two Discount rates in this paper. One is the real discount rate of issuance, denoted as $Discount$, and the other one is the expected discount rate calculated by the information at the approval date, denoted as $HDiscount$. The calculation method of the two is as follows:

$$Discount = \frac{P_1 - P}{P_1} \tag{4}$$

$$HDiscount = \frac{P_2 - P}{P_2} \tag{5}$$

In Eq. (4) and (5), P is the issue price of additional shares. P_1 and P_2 are the closing price of the stock on the last trading day before the issuance of the additional shares and the closing price on the last trading day before the private placement is approved by the CSRC, respectively.

Control Variables

This paper introduces a series of control variables, which can be divided into three categories: variables related to the offering, variables related to company fundamentals and variables related to the market situation. Table 1 gives a brief introduction of all control variables.

TABLE 1
DEFINITION OF CONTROL VARIABLES

Meaning of variables	Name of Variables	Variable Description
Issue size	*Scale*	The ratio of additional shares to the total shares of the company
Purpose of issuance	*Aim*	Dummy variable, equals 1 if the new fund is used to invest in a new project, otherwise 0
Way of subscription	*Type*	Dummy variable，equals 1 if investors subscribe the new shares only by cash, otherwise (by assets or debts, etc.) 0
Major shareholders' participation	*SSH*	Dummy variable，equals 1 if the largest shareholders participate in the subscription, otherwise 0
Company size	*Size*	The logarithm of company's total asset (CNY) at the end of the year
Financial leverage	*Lev*	The ratio of liabilities and total assets of the company
Financial investment	*Fin*	Financial investment (100,000,000 CNY) of the company. It is calculated based on the definition of the CSRC.
Profitability	*ROA*	The ROA of the company at the year
Institutional shareholding ratio	*Ins*	The institutional shareholding ratio of the company
Level of cash dividend payment	*DR*	The ratio of cash dividend per share and earnings per share of the company
Tobin's Q value	*TQ*	Tobin's Q value of the company
PE of the company	*PE*	PE value at the closing time of the day
Level of risk	*Beta*	The correlation coefficient between daily return of the stock and daily return of the market for the last 100 weeks before the appointed day.

Regression Model

To verify hypothesis H1, we use the event study method to test the impact of the new rules of refinancing on the announcement effect of the approval date by comparing the cumulative abnormal return of stocks near the approval date before and after the new rules. To verify hypothesis H2, we use multiple linear regression to investigate the effect of new rules on the discount rate of additional shares. The multiple linear regression model is as follow:

$$\begin{aligned} Discount_{it} = {} & \beta_0 + \beta_1 Newreg_{it} + \beta_2 SSH_{it} + \beta_3 Aim_{it} + \beta_4 Type_{it} + \beta_5 Scale_{it} + \beta_6 Size_{it} \\ & + \beta_7 Lev_{it} + \beta_8 Fin_{it} + \beta_9 ROA_{it} + \beta_{10} Ins_{it} + \beta_{11} DR_{it} + \beta_{12} TQ_{it} + \beta_{13} PE_{it} \\ & + \beta_{14} Beta_{it} + \sum Industry + \varepsilon_{it} \end{aligned} \quad (6)$$

where $\sum Industry$ indicates that industry fixed effect is conducted, and the industry classification is based on the first-level industry classification of WIND database. Hypothesis H2 predicts a negative coefficient for $Newreg_{it}$.

To test H3, we first regress the real discount rate of issuance against the information observed on the approval date to construct a formula for calculating the expected discount rate of issuance. The regression model is as follow:

$$Discount_{it} = \beta_0 + \beta_1 HDiscount_{it} + \beta_2 SSH_{it} + \beta_3 Aim_{it} + \beta_4 Type_{it} + \beta_5 Scale_{it} + \beta_6 Size_{it} + \beta_7 Lev_{it} + \beta_8 Fin_{it} + \beta_9 ROA_{it} + \beta_{10} Ins_{it} + \beta_{11} DR_{it} + \beta_{12} TQ_{it} + \beta_{13} PE_{it} + \beta_{14} Beta_{it} + \varepsilon_{it} \quad (7)$$

Different from Eq. (6), all independent variables in Eq. (7) are from the data of the announcement date of approval, but not the data of the first day of issuance.

If the R-squared of Eq. (7) is high enough, we can estimate the expected discount rate of issuance based on the announcement date of approval by using the estimated coefficients from Eq. (7). The expected discount rate is calculated as:

$$EDiscount_{it} = \widehat{\beta_0} + \widehat{\beta_1} HDiscount_{it} + \widehat{\beta_2} SSH_{it} + \widehat{\beta_3} Aim_{it} + \widehat{\beta_4} Type_{it} + \widehat{\beta_5} Scale_{it} + \widehat{\beta_6} Size_{it} + \widehat{\beta_7} Lev_{it} + \widehat{\beta_8} Fin_{it} + \widehat{\beta_9} ROA_{it} + \widehat{\beta_{10}} Ins_{it} + \widehat{\beta_{11}} DR_{it} + \widehat{\beta_{12}} TQ_{it} + \widehat{\beta_{13}} PE_{it} + \widehat{\beta_{14}} Beta_{it} + \varepsilon_{it} \quad (8)$$

where $EDiscount_{it}$ is the proxy of the expected discount rate of issuance.

At last, we use the multiple linear regression model to study the relationship between the expected discount rate based on the approval date and the cumulative abnormal return of the stock price during the period around the approval date. Eq. (9) is the regression model of the study.

$$CAR_{it} = \beta_0 + \beta_1 EDiscount_{it} + \beta_2 SSH_{it} + \beta_3 Aim_{it} + \beta_4 Type_{it} + \beta_5 Scale_{it} + \beta_6 Size_{it} + \beta_7 Lev_{it} + \beta_8 Fin_{it} + \beta_9 ROA_{it} + \beta_{10} Ins_{it} + \beta_{11} DR_{it} + \beta_{12} TQ_{it} + \sum year + \sum Industry + \varepsilon_{it} \quad (9)$$

In Eq. (9), $\sum year$ indicates that year fixed effect is conducted, and other variables are the same as in Eq. (6) and (7). All the data of control variables in Eq. (9) are from the first day of private placement issuance, which is the same as that in Eq. (6). Hypothesis H3 predicts a negative coefficient for $EDiscount_{it}$.

EMPIRICAL RESULTS

Descriptive Statistics

Table 2 reports summary statistics for all major variables. Panel A of Table 2 displays the descriptive statistics of main variables for all sample and the subsample with large shareholders' participation. Panel B shows the statistical results of samples with the announcement date of the resolution of the board or the shareholders' meeting as the pricing base date.

TABLE 2
DESCRIPTIVE STATISTICS

Panel A: All samples

	Full sample				Major shareholders			
variables	N	mean	Max	Min	N	mean	Max	Min
Discount	1416	21.74%	0.76	-0.30	628	26.47%	74.58%	-30.12%
Newreg	1416	0.08	1.00	0.00	628	0.06	1.00	0.00
SSH	1416	0.45	1.00	0.00	/	/	/	/
Aim	1416	0.41	1.00	0.00	628	0.35	1.00	0.00
Type	1416	0.99	1.00	0.00	628	0.99	1.00	0.00
Scale	1416	0.18	5.31	0.03	628	0.21	5.31	0.03
Size	1399	22.11	27.25	15.98	625	22.05	27.25	15.98
Lev	1399	0.47	1.28	0.03	625	0.49	1.28	0.03
Fin	1399	2.71	667.16	0.00	625	3.54	667.16	0.00

ROA	1399	0.07	0.60	-0.23	625	0.06	0.55	-0.23
Ins	1399	0.38	1.52	0.00	625	0.38	0.89	0.00
DR	1399	0.23	10.00	-5.00	625	0.24	4.50	-0.40
TQ	1399	4.32	983.49	0.32	625	5.15	983.49	0.34
PE	1399	109.53	44349.01	-67200.00	625	60.80	11268.89	-67200.00
Beta	1399	0.94	2.14	-0.32	625	0.93	2.14	-0.32

Panel B: Samples that the pricing based on the announcement date of the board or the shareholders' meeting

Variable	N	Mean	SD	Max	Min
HDiscount	1082	0.242	0.188	0.760	-0.299
SSH	769	0.514	0.500	1.000	0.000
Aim	769	0.369	0.483	1.000	0.000
Type	769	0.991	0.095	1.000	0.000
Scale	769	0.213	0.339	5.306	0.003
Size	769	22.117	1.308	27.250	15.979
Lev	769	0.489	0.212	1.548	0.028
Fin	769	3.378	28.507	667.161	0.000
ROA	769	0.059	0.066	0.515	-0.669
Ins	769	0.396	0.227	0.970	0.000
DR	769	0.227	0.379	4.500	-5.000
TQ	769	4.630	35.460	983.491	0.953

Notes: (- 3, + 3) / (- 5, + 5) respectively means that the statistical interval is within 3 or 5 trading days before and after the approval announcement date.

The average private placement scale of the sample involving large shareholders is 21% of the total shares, which is not only higher than 18%, the average scale of the overall data, but also higher than 20%, the maximum scale stipulated by the new rules of refinancing. The issuance discount rate of the sample with major shareholders' participation is nearly 5% higher than the overall sample (almost 10% higher than the sample without major shareholders). The above results show that there are significant differences between the subsamples with or without major shareholders, indicating that major shareholders are likely to arbitrage from participating in the subscribe of the new shares. The proportion of major shareholders participating in private placements reached 51.4% in Panel B, which is significantly higher than 45% in Panel A. This indicates that the change in the pricing base date indeed boosts the participation of major shareholders in private placements. These results partially support the hypothesis in this article.

As for other control variables, for the subscription method, we can see that the vast majority of data (99%) are subscribed in cash. In terms of the purpose of the issuance, 41% of the overall sample is financing for the purchase of new assets. Additionally, it is worth noting that, on average, the financial investment held by companies in the year before they conduct private placements was about 271 million CNY, with a maximum of 66.7 billion CNY. The average financial investment of subsamples with major shareholders' participation and the average financial investment in Panel B are 354 million CNY and 338 million CNY in the previous year of private placements, which are even higher than the average financial investment in overall sample. This proves that many companies that conduct private placement have purchased a lot of financial products, and their motivation for conducting private placement is suspicious. This result also supports the previous view that large shareholders may arbitrage by participating in the private placement which its pricing base date is much earlier.

Event Study and Regression Result

Event Study Results of H1

For the study on the announcement effect of the approval date of the CSRC, this paper selects two window periods (-3, +3) and (-5, +5) (representing 7 and 11 trading days around the approval date,

respectively), and the event study method is used to investigate the impact of the new rules of refinancing on CAR. Table 3 shows the statistical results of CAR.

TABLE 3
THE COMPARISON OF *CAR*

	Time	CAR	P-value
Window period （-3,+3）	T1 (before the new rules of refinancing)	0.0024 (0.95)	0.342
	T2 (after the new rules of refinancing)	0.0178** (2.54)	0.013
Window period （-5,+5）	T1 (before the new rules of refinancing)	0.0019 (0.58)	0.565
	T2 (after the new rules of refinancing)	0.0223* (1.95)	0.055

Notes: *, **and *** indicate that the coefficients are significant at the statistical level of 10%, 5% and 1%, respectively.

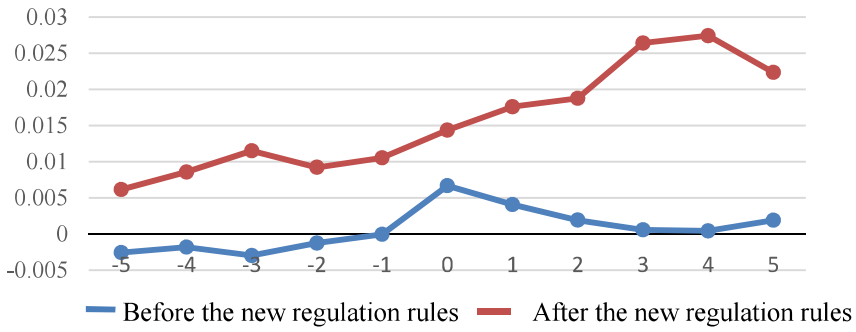
From the results, we can see that the value of CAR increases significantly during the window period after the promulgation of the new rules, regardless of whether the window period is (- 3, + 3) or (- 5, + 5). After the new rules, the average cumulative abnormal return reaches 1.78% and 2.23% respectively in the window period (- 3, + 3) and (- 5, + 5), which are several times higher than the CAR before new rules was promulgated, and this improvement is significant at the statistical level of 5% and 10%, respectively.

To make a detail analysis of the impact of the new rules on the stock return in the whole window period, we not only calculate the cumulative abnormal return of the whole window period, but also calculate the cumulative abnormal return day by day. Through Table 4 and figure 1, we can find that the sub-sample before the new rules only has a significant positive announcement effect on the approval date by the CSRC, and it has a negative cumulative abnormal return on the trading day after the announcement date. However, after the new rules, the cumulative abnormal return shows an increasing trend and remains positive for all 11 trading days. During the first 4 trading days after the announcement, it rises significantly and rapidly. This shows that, after the new rules of refinancing, the positive announcement effect of the announcement date of approval is more significant. There is also weak positive abnormal return during the five days before the announcement, which may be caused by the leaking of the news in advance that the CSRC will approve the private placement.

TABLE 4
DAY BY DAY CHANGES OF CAR IN THE WINDOW PERIOD

Trading day	Before *CAR*	After *CAR*
-5	-0.002566	0.006156
-4	-0.001820	0.008563
-3	-0.002987	0.011497
-2	-0.001256	0.009220
-1	-0.000055	0.010541
0	0.006676	0.014362
1	0.004069	0.017592
2	0.001915	0.018754
3	0.000569	0.026397
4	0.000425	0.027420
5	0.001907	0.022338

FIGURE 1
DAY BY DAY CHANGES OF CAR IN THE WINDOW PERIOD



Based on the results of Table 3, Table 4 and Figure 1 above, we believe that the new rules of refinancing have indeed conveyed positive information about private placements to the market, making the approval date of private placement have a more obvious positive announcement effect. The cumulative abnormal return in the window period of the approval date after the new regulation is higher than that before the new regulation is issued, and after the announcement of the approval date, the cumulative abnormal return will gradually rise for at least four consecutive trading days. This shows that the announcement effect is not only more significant, but also lasts longer. Therefore, our results support hypothesis H1.

Regression Results of H2

Table 5 presents the results of multiple linear regression analysis of Eq. (6). It can be seen from the results that the implementation of the new rules has a significant negative correlation with the issuance discount rate. After the new rules of refinancing, the issuance discount rate of private placement was significantly reduced. The new rules of refinancing reduce the issuance discount rate by 10.7%, and the coefficient is significant at the 99% confidence interval (t=-5.16).

TABLE 5
THE EFFECT OF THE NEW RULES OF REFINANCING ON ISSUANCE DISCOUNT RATE

Discount as dependent variable		
variable	Full sample	major shareholders participate in the subscription
Newreg	-0.107^{***} (-5.16)	-0.157^{***} (-4.05)
SSH	0.088^{***} (7.74)	×
Aim	0.048^{***} (3.82)	0.070^{***} (3.10)
Type	0.003 (0.04)	0.023 (0.26)
Scale	0.101^{***} (4.91)	0.091^{***} (3.06)
Size	-0.039^{***} (-6.08)	-0.062^{***} (-5.92)
Lev	0.115^{***} (3.10)	0.126^{**} (2.05)
Fin	0.000	0.000

	(0.16)	(0.74)
ROA	-0.055	0.183
	(-0.59)	(1.20)
Ins	0.021	0.006
	(0.77)	(0.13)
DR	0.012	-0.013
	(0.88)	(-0.48)
TQ	-0.000^{*}	-0.000^{*}
	(-1.67)	(-1.94)
PE	0.000	0.000^{*}
	(1.22)	(1.75)
Beta	-0.024^{*}	-0.031
	(-1.90)	(-1.39)
_Constant	1.175^{***}	1.737^{***}
	(4.65)	(5.30)
Industry	control	control
R^2	0.225	0.329
Number of observations	1399	625

Notes: *, **and *** indicate that the coefficients are significant at the statistical level of 10%, 5% and 1%, respectively. The t values in brackets are calculated based on the heteroskedasticity-robust standard error.

From Table 5, we also find that for the sub-sample only considering the participation of major shareholders in the private placement, the impact of the new rules of refinancing on the issuance discount rate is more obvious from the perspective of coefficient value, which can reduce the discount rate by 15.7%, and the coefficient is significant at the 99% confidence interval (t=-4.05). In addition, we find that the participation of major shareholders can significantly increase the issuance discount rate, as the estimated coefficient of SSH in the first column is significantly (t=7.74) positive (0.088). Based on the above results, we can draw the following conclusions: the largest shareholder arbitrage by participating in the subscription of private placements and managing to increase the issuance discount rate is an important reason to cause the excessive issuance discount rate before the new rules of refinancing. The implementation of the new rules forces most companies to change the pricing base date, shortens the window period in which companies can manipulate stock prices, restrained the arbitrage space for large shareholders, and made the discount rate for private placement significantly lower than that before the new rules. Therefore, the research supports the hypothesis H2.

In terms of control variables, some variables also show a significant correlation with the issuance discount rate. Some variables related to the offering, such as Aim and Scale, have a significantly positive correlation with the issuance discount rate. This phenomenon may be due to asset M & A, compared with project financing and supplementary liquidity, has greater uncertainty. The larger the issue size is, the more difficult it is to find enough investors. So, the discount rate will increase. Among the company variables, company size, Tobin's Q and Beta have a significant negative correlation with the company's issuance discount rate. In contrast, the debt ratio has a significant positive correlation with the issuance discount rate. These results are all consistent with intuition.

Regression Results of H3

Using the stock price and other data of subsample T1-2 (pricing based on the announcement date of the resolutions of the board or the shareholders' meeting) on the announcement date of approval, we conduct the multiple linear regression of the Eq. (7) to estimate the real issuance discount rate based on the information from the announcement date of approval. The R^2 of the equation reaches 0.70, which indicates the variables selected in the equation have a good explanation for the real issuance discount rate. The coefficients of Eq. (7) are shown in Table 6.

TABLE 6
THE ESTIMATION COEFFICIENTS OF EXPECTED DISCOUNT RATE

EDiscount as dependent variable			
variable	coefficient	variable	coefficient
_constant	0.2721	*Fin*	-0.0001
HDiscount	0.6967	*ROA*	-0.0295
SSH	0.0003	*Ins*	0.0001
Aim	0.0089	*DR*	-0.0044
Type	-0.0084	*TQ*	-0.0001
Scale	0.0128	*PE*	$0.0000(3.59 \times 10^{-6})$
Size	-0.0071	*Beta*	-0.0367
Lev	0.0243		

The coefficients in Table 6 are brought into Eq. (8) to calculate the expected discount rate EDiscount based on the discount rate and other information on the approval date. Then we conduct the multiple linear regression of Eq. (9). Table 7 shows the results of this regression. As the information on the approval date is more important, it will affect the stock price on the approval date and the following trading days. We have additionally selected two time intervals (0, +3) and (0, +5) as the window period for the announcement effect on the approval date, and the cumulative abnormal return of the above window period is also used as the explained variable to regression. From the results, we can see that the expected discount rate has a negative correlation with CAR in each window period, and the regression coefficients are significant at the 99% confidence interval. Under various window periods, the regression coefficients of Ediscount are all around -0.10, indicating that if the discount rate increases 10%, the cumulative abnormal return will decrease by about 1%.

TABLE 7
THE EFFECT OF EXPECTED DISCOUNT RATE ON THE ANNOUNCEMENT EFFECT OF THE APPROVAL DATE

variable	（1） CAR (-3, +3)	（2） CAR (-5, +5)	（3） CAR (0, +3)	（4） CAR (0, +5)
EDiscount	-0.116^{***}	-0.108^{***}	-0.094^{***}	-0.102^{***}
	(-6.42)	(-4.41)	(-6.53)	(-5.28)
SSH	0.008	0.005	0.000	0.001
	(1.25)	(0.62)	(0.07)	(0.19)
Aim	-0.011	-0.016^{*}	-0.010^{*}	-0.016^{**}
	(-1.63)	(-1.77)	(-1.75)	(-2.17)
Type	0.025	0.052	0.007	0.027
	(0.79)	(1.23)	(0.30)	(0.82)
Scale	0.011	0.005	0.005	0.002
	(1.24)	(0.36)	(0.74)	(0.18)
Size	-0.002	-0.004	-0.002	-0.002
	(-0.47)	(-0.93)	(-0.76)	(-0.57)
Lev	-0.013	-0.013	-0.005	-0.009
	(-0.67)	(-0.49)	(-0.33)	(-0.43)
Fin	-0.000	-0.000	-0.000	-0.000
	(-0.50)	(-0.14)	(-0.28)	(-0.13)

ROA	0.032	-0.023	0.009	-0.013
	(0.61)	(-0.33)	(0.21)	(-0.23)
Ins	0.002	0.021	-0.009	-0.013
	(0.14)	(1.09)	(-0.76)	(-0.87)
DR	0.008	0.002	0.005	0.000
	(0.98)	(0.19)	(0.70)	(0.04)
TQ	-0.000	-0.000	-0.000	0.000
	(-0.40)	(-0.02)	(-0.48)	(0.50)
_constant	0.361^{***}	0.437^{***}	0.258^{***}	0.237^{***}
	(3.26)	(2.90)	(2.93)	(1.99)
Year	control	control	control	control
industry	control	control	control	control
R^2	0.198	0.160	0.175	0.150
Number of observations	769	769	769	769

Notes: *, **and *** indicate that the coefficients are significant at the statistical level of 10%, 5% and 1%, respectively. The t values in brackets are calculated based on the heteroskedasticity-robust standard error.

To make a more comprehensive analysis of the results, we also carry out two groups of comparative studies: One is only considering samples of large shareholders participating in the private placement, which can more intuitively reflect the conflict of interest between large shareholders and individual investors in equity private placements; The other is using real discount rate as the dependent variable, which makes it convenient to compare the explanatory ability of the expected Discount rate and the real discount rate for the accumulated abnormal return on the approved day of the CSRC. Table 8 presents these regression results.

TABLE 8
COMPARISON RESULTS OF DISCOUNT RATE ND THE ANNOUNCEMENT EFFECT OF THE APPROVAL DATE

Variable	*Discount* as dependent variables		Only major shareholders	
	（1）	（2）	（3）	（4）
	CAR(-3,+3)	CAR(-5,+5)	CAR(-3,+3)	CAR(-5,+5)
EDiscount	×	×	-0.147^{***}	-0.182^{*}
			(-5.30)	(-4.88)
Discount	-0.065^{***}	-0.040^{*}	×	×
	(-4.16)	(-1.92)		
SSH	0.004	-0.000	×	×
	(0.64)	(-0.00)		
Aim	-0.014^{**}	-0.020^{**}	−0.011	−0.016
	(-2.01)	(-2.13)	(-1.01)	(-1.15)
Type	0.028	0.057	0.047	0.050
	(0.90)	(1.34)	(1.38)	(1.08)
Scale	0.007	-0.001	0.020	0.023
	(0.78)	(-0.06)	(1.60)	(1.40)
Size	-0.000	-0.003	-0.011^{**}	-0.017^{**}
	(-0.13)	(-0.60)	(-2.18)	(-2.45)
Lev	-0.015	-0.016	0.019	0.041
	(-0.80)	(-0.61)	(0.69)	(1.08)
Fin	-0.000	-0.000	0.000	0.000
	(-0.42)	(-0.08)	(0.15)	(0.29)

ROA	0.027	-0.028	-0.024	-0.053
	(0.50)	(-0.40)	(-0.33)	(-0.52)
Ins	0.003	0.023	-0.011	0.005
	(0.24)	(1.18)	(-0.49)	(0.16)
DR	0.008	0.003	0.009	-0.000
	(1.00)	(0.24)	(0.57)	(-0.01)
TQ	-0.000	0.000	-0.000	-0.000
	(-0.22)	(0.13)	(-0.99)	(-0.89)
_constant	0.327***	0.390***	0.559***	0.732***
	(2.91)	(2.56)	(3.88)	(3.76)
Year	control	control	control	control
industry	control	control	control	control
R^2	0.170	0.140	0.327	0.319
Number of observations	769	769	395	395

Notes: *, **and *** indicate that the coefficients are significant at the statistical level of 10%, 5% and 1%, respectively. The t values in brackets are calculated based on the heteroskedasticity-robust standard error.

From the regression results in columns (1) and (2) of Table 8, it can be found that the absolute value of the coefficient of the Discount term and its t value are significantly smaller than those of the corresponding explanatory variable EDiscount in Table 7, and the R^2 in Table 7 is higher than the corresponding regression model in Table 8. All the above results show that the expected discount rate can better explain the rise of cumulative abnormal return comparing to the real discount rate. For individual and other small investors, they can only speculate the discount rate and the behavior of large shareholders based on the stock price information on the approval date, which make the result consistent with the intuition. From the column (3) and (4) of Table 8, for samples with the participation of major shareholders, the absolute value of the estimated coefficient of EDiscount is even higher than the estimated coefficient of EDiscount in column (1) and (2) of Table 7. This indicates that the major shareholders participation is the main reason for the negative correlation between the expected discount rate and the cumulative abnormal rate of return in the window period of the approval date.

We can conclude from the Table 7 and Table 8 that, for private placements that their pricing base date is not the first day of the issue period before the new rules of refinancing, the market will form an expectation on the issuance discount rate on the approval date, which has a significant negative correlation with the announcement effect. This negative correlation is mainly caused by the major shareholders' participation in the subscription. Accordingly, our study supports hypothesis H3. Meanwhile, our results hold that by shortening the time interval between the pricing base date and the issue period, the new rules of refinancing make major shareholders more difficult to arbitrage through choosing the timing to price new shares or manipulate the stock price. Thereby, it can reduce the issuance discount rate of private placement. This is an important mechanism that the new rules of refinancing can improve the announcement effect of the approval date.

Robustness Test

In the previous part of the paper, we have used various methods to ensure the robustness of the results, including taking into account a variety of window periods, considering samples of large shareholders participating in private placement separately, and adding multiple control variables to the regression model. In addition, since all discount rates in the previous part are calculated by using only one day's price, to prevent the impact of the sharp fluctuations in stock prices on that day, we also repeat the above study by adjusting the P_1 and P_2 from the closing prices of the last day to the average closing prices of the last five trading days before the issuance day and approval day.

Same as the previous research method, the Eq. (7) is also used to estimate the coefficient to calculate the expected discount rate, and the Eq. (8) is used to calculate the expected discount rate based on the

average closing price of the last five days before the approval date. We use EDiscount_5 as the proxy of the new expected discount rate. Meanwhile, we use Discount_5 as the proxy of the real issuance discount rate based on the average closing price of the five trading days before the issuance of new shares. These two variables are used to replace the EDiscount and Discount for the regression analysis of Tables 7 and 8. The new regression results of Eq. (9) are shown in Table 9.

TABLE 9
DISCOUNT RATE AND ANNOUNCEMENT EFFECT ON APPROVAL DAY BASED ON 5 DAYS' AVERAGE PRICE

	CAR (0, +3)			CAR (0, +5)		
	（1）	（2）	（3）	（4）	（5）	（6）
EDiscount_5	−0.082*** (-5.81)	×	−0.115*** (-5.16)	−0.089*** (-4.66)	×	−0.139*** (-4.77)
Discount_5	×	−0.037*** (-2.94)	×	×	−0.025 (-1.48)	×
SSH	-0.000 (-0.078)	-0.004 (-0.78)	×	0.000 (0.06)	-0.005 (-0.80)	×
Aim	−0.010* (-1.78)	−0.012** (-2.20)	−0.018** (-2.08)	−0.016** (-2.20)	−0.020*** (-2.63)	−0.024** (-2.11)
Type	0.008 (0.33)	0.012 (0.47)	0.017 (0.62)	0.028 (0.84)	0.034 (0.99)	0.034 (0.91)
Scale	0.004 (0.57)	0.001 (0.11)	-0.000 (-0.03)	0.000 (0.04)	-0.004 (-0.43)	0.007 (0.50)
Size	-0.002 (-0.63)	-0.001 (-0.26)	−0.008* (-1.77)	-0.002 (-0.47)	-0.000 (-0.09)	−0.008 (-1.49)
Lev	-0.005 (-0.35)	-0.008 (-0.51)	0.016 (0.68)	-0.009 (-0.45)	-0.013 (-0.61)	0.027 (0.90)
Fin	-0.000 (-0.24)	-0.000 (-0.19)	0.000 (0.29)	-0.000 (-0.10)	-0.000 (-0.06)	0.000 (0.17)
ROA	0.006 (0.15)	0.004 (0.09)	-0.043 (-0.70)	-0.016 (-0.28)	-0.019 (-0.33)	-0.054 (-0.67)
Ins	-0.009 (-0.75)	-0.007 (-0.60)	−0.031* (-1.71)	-0.013 (-0.86)	-0.011 (-0.70)	−0.034 (-1.47)
DR	0.005 (0.72)	0.005 (0.76)	-0.001 (-0.08)	0.001 (0.06)	0.001 (0.12)	-0.003 (-0.18)
TQ	0.000 (0.023)	0.000 (0.17)	-0.000 (-0.32)	0.000 (0.56)	0.000 (0.70)	-0.000 (-0.16)
_constant	0.246*** (2.78)	0.218** (2.41)	0.395*** (3.34)	0.223* (1.87)	0.182 (1.51)	0.382** (2.47)
Year	control	control	control	control	control	control
industry	control	control	control	control	control	control
R^2	0.164	0.132	0.307	0.142	0.116	0.299
Number of observations	769	769	395	769	769	395

Notes: *, **and *** indicate that the coefficients are significant at the statistical level of 10%, 5% and 1%, respectively. The t values in brackets are calculated based on the heteroskedasticity-robust standard error.

From Table 9, we find that no matter we use EDiscount_5 or Discount_ 5 as the core dependent variable, or if we only consider the subsamples that large shareholders participating in private placement subscription, the regression results are all the same as those in Table 7 and Table 8: the expected discount rate has a significant negative correlation with the cumulative abnormal return at the window period of

the approval date, and large shareholders' participation in the subscription of new shares is a crucial reason for this phenomenon. Moreover, the expected discount rate can better explain the announcement effect on the approval date than the real discount rate. Therefore, we consider that the results of this study have strong robustness.

CONCLUSIONS

In February 2017, the new rules of refinancing issued by the CSRC made clear stipulates on the financing scale, pricing mechanism, time interval and companies' qualifications of refinancing. Among them, the revision of pricing mechanism of private placements prohibits listed companies from using the announcement date of the board`s or shareholders' meeting decision as the pricing base date, making the first day of the issuance period as the only pricing base date. This amendment greatly shortens the interval between the pricing date and the issue date, and the CSRC hopes that it can regulate the refinancing market and protect the interests of individual investors. But in practice, what impact do the new rules of refinancing have on private placements, and do the new rules really play the role that the CSRC hopes?

To answer this question, by using all successful equity private placement cases from 2015 to March 1, 2019 as the sample, we compare the short-term stock performance of listed companies that announce the approval of a private placement by the CSRC before and after the new rules. We also study the changes in the issuance discount rate brought by the new rules and the mechanism that affects the announcement effect of the approval date. According to our analysis, we come to the following conclusions: (1) After the new rules of refinancing, stocks have a more significant positive announcement effect after the announcement date of the CSRC's approval. Their average cumulative abnormal return is several times higher than it before the new rules of refinancing was published, and the average cumulative abnormal return goes higher for at least four trading days after the announcement; (2) Before the new rules of refinancing, major shareholders' participation in the subscription of additional shares is a key factor that causes a higher issuance discount rate. The new rules greatly lower the chance of major shareholders' arbitrage by participating in the subscription of private placements, thus significantly reduce the issuance discount rate; (3) For companies whose pricing base date is not the first day of the issuance before the establishment of the new rules, the market can form a reasonable expectation of the issuance discount rate at the announcement date of the approval by the CSRC. The expected discount rate has a significant negative correlation with the announcement effect of the approval, indicating that reducing the expected discount rate at the approval date is an important factor why the new rules can strengthen the positive announcement effect of the approval by the CSRC.

This paper contributes a lot both in theory and reality. On the one hand, we provide evidence for the effect of the new rules of refinancing. On the other hand, by studying the issuance discount rate of private placements, we find the phenomenon that major shareholders using private placement to arbitrage, which reveals the conflict of interests between major shareholders and small or individual investors. Moreover, we explain how this conflict is reflected to stock prices. Our research not only enriches the theoretical study in equity private placement field but also provides a reference for the policy-making of the regulatory agencies.

ENDNOTE

1. In China's market, a stock name starting with "ST" indicates that this company has a deficit for two consecutive years; a stock name starting with "*ST" indicates that this company has a deficit for three consecutive years. Any company that has a deficit for more than three consecutive years is asked to delist.

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