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The effects of trading rights and ownership structures on the informativeness of accounting earnings: Evidence from China' split share structure reform

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ABSTRACT

This paper examines how the removal of trading restrictions and ownership structures affect earnings informativeness by investigating the changes in the earnings-return relation around China's split share structure reform. I find the reform has a negative impact on the relationship between controlling shareholders' ownership and earnings informativeness, which is consistent with the idea that the removal of trading restrictions gives controlling shareholders incentives to influence the stock price through managing earnings. I also find that earnings informativeness decreases with the reduction in controlling shareholders' ownership. This dilution effect is more significant for firms with non-state controlling shareholders or with controlling shareholders that are not monitored by other large shareholders. The results are consistent with the notion that controlling shareholders provide less informative earnings in response to the dilution of their ownership to avoid the constraints arising from the increased monitoring by outside investors.

1. Introduction

It has long been questioned to what extent stock price movements can reflect firms' fundamentals. Existing studies document that ownership structures and institutional characteristics can influence earnings informativeness – the earnings-return relation (see, for example, Boubaker and Sami, 2011; Fan and Wong, 2002; Francis et al., 2005; and Warfield et al., 1995). In this paper, I examine how trading rights and ownership structures affect earnings informativeness by investigating the changes in the earnings-return relation around China's split share structure reform.

Unlike firms in the US and the UK, those in Europe, Asia, and Latin America have highly concentrated ownership in the hands of controlling shareholders who are typically also top managers (La Porta et al., 1999). Fan and Wong (2002) find that high controlling shareholders' ownership is associated with less informative earnings. This result is consistent with the notion that high controlling shareholders' ownership can entrench them, giving them incentives to expropriate value from outside shareholders. To conceal their self-dealing behavior, controlling shareholders disclose low-quality financial information. Nevertheless, Boubaker and Sami (2011) find a positive relationship between earnings informativeness and controlling shareholders' ownership. This result suggests that when controlling shareholders' ownership increases after they obtain effective control, their incentives to expropriate value from outside shareholders diminish as their shares of expropriation costs increase. Further, Francis ; et al.; (2005) and Boubaker and Sami (2011) find that earnings are less informative when controlling shareholders have more voting rights than cash flow rights. To the best of my knowledge, no research has done to investigate how trading rights affect earnings informativeness.

Before the split share structure reform, China's capital markets had long been afflicted by the problem that non-tradable shares (shares

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that could not be traded on exchanges) comprised about two thirds of public firms' equity (Chen et al., 2008; Feinerman, 2007; and Li et al., 2011). To remove the trading restrictions on non-tradable shares and improve capital market efficiency, the Chinese Securities Regulatory Commission (CSRC) initiated the split share structure reform. The reform can have two effects on earnings informativeness. First, the removal of trading restrictions makes it possible for controlling shareholders to sell their shares at the market price on exchanges, which enhances their incentives to influence the stock price through financial reporting.[1] Therefore, the removal of trading restrictions on non-tradable shares can negatively affect the relationship between earnings informativeness and controlling shareholders' ownership. Second, at the time of the reform, holders of tradable shares (shares that could be traded on exchanges) were offered with additional shares as (a part of) compensation for the impact of the increased supply in the open market. As a result, controlling shareholders' ownership was significantly diluted, and the ownership of tradable shareholders was increased by the considerations (i.e., additional shares) after the reform. The reduction in controlling shareholders' ownership may affect earnings informativeness in two ways. On the one hand, according to Fan and Wong (2002), decreases in ownership concentration can reduce controlling shareholders' entrenchment and improve the credibility of financial information due to enhanced monitoring by outside investors. Therefore, the reduction in controlling shareholders' ownership can have a positive impact on earnings informativeness. On the other hand, according to Warfield et al. (1995), when controlling shareholders' ownership is lower, they can provide less informative financial results to outside investors to avoid the constraints from the increased monitoring, which predicts a negative impact on earnings informativeness.

My findings are consistent with some of the predictions. First, I find that the removal of trading restrictions has a negative impact on the relationship between earnings informativeness and controlling shareholders' ownership. This finding is consistent with the expectation that the removal of trading restrictions provides controlling shareholders with incentives to influence the stock price through financial reporting, and the incentives increase with their ownership. Second, I find that earnings informativeness decreases with the reduction in controlling shareholders' ownership. Consistent with Warfield et al. (1995), this finding suggests that controlling shareholders provide less informative financial information to outside shareholders to avoid the constraints from increased monitoring by these shareholders. Further examinations document results consistent with this interpretation and show the relationship is strengthened when controlling shareholders are not the state or when they are not monitored by other large shareholders.

This paper contributes to the literature in two important ways. Previous research examines the effects of voting rights and cash flow rights on earnings informativeness (e.g., Bae and Jeong, 2007; Boubaker and Sami, 2011; Fan and Wong, 2002; Francis et al., 2005; and Kwak and Armitage, 2009). This paper focuses on the third category of property rights – trading rights and provides evidence that controlling shareholders' rights to sell their shares in the open market affect their incentives for financial reporting. Also, it provides new evidence on the relationship between ownership structures and earnings informativeness. In this aspect, the paper is related to Fan and Wong (2002); Francis et al. (2005), and Warfield et al. (1995). Instead of using cross-jurisdiction data or the divergence between cash flow rights and voting rights, this paper examines the changes in ownership structures caused by a policy. This can effectively control for endogenous relations or institutional factors that can potentially explain the differences in earnings informativeness and ownership structures across different countries.

The remainder of this paper proceeds as follows. Section 2 reviews the related literature and develops hypotheses. Section 3 describes the sample and summarizes the methodology used in this study. Section 4 reports the empirical results of my analysis. The paper concludes in Section 5.

2. Literature review and hypothesis development

Investors rely on quality information to make decisions, and the information provided by firms is affected by factors such as legal institutions, ownership structures, and the entrenchment of managers. This paper focuses on trading rights and ownership structures as the influential factors of the quality of financial information.

2.1. Previous research on ownership characteristics and earnings informativeness

Berle and Means (1932) claim that the major characteristics of modern corporations are the wide dispersion of ownership among small shareholders and managers' control of the firm. Nevertheless, La Porta et al. (1999) investigate ownership structures in 27 economies and find corporate ownership is highly concentrated in the hands of controlling shareholders who are typically also top managers in Western and Eastern Europe, Asia, and Latin America. In these economies, the major corporate governance issue is the conflict between controlling shareholders and minority shareholders. Controlling shareholders have incentives to expropriate value from minority shareholders by i) transferring resources from the firm for their own benefits (tunneling); ii) increasing their shares of the firm through financial transactions that discriminate against minority shareholders (Johnson et al., 2000) ; and iii) perquisite consumptions. As controlling shareholders are entrenched by their ownership and effective control of the firm, traditional corporate governance measures such as boards of directors and the market for corporate control can be ineffective in limiting their self-serving behavior (e.g. Johnson et al., 2000; La Porta et al., 1999, 2000; and Shleifer and Vishny, 1997).

Concerned about their private benefits of control, controlling shareholders have incentives to exert influence over the financial information of their firms. If controlling shareholders' private benefits are detected by outside shareholders, outside shareholders are likely to take disciplinary actions against them and demand compensations (for example, Shleifer and Vishny, 1997; and Zingales,

[1] Before the reform, controlling shareholders' ownership mostly consisted of non-tradable shares, and transfers of these shares happened privately at a negotiated price, which was usually based on the book value.

1994). Leuz et al. (2003) argue that insiders who intend to protect their private benefits associated with their control manage earnings to conceal firm performance from outside shareholders. They find that strong investor protection limits insiders' ability to acquire private benefits and reduces insiders' incentives to mask firm performance.

Previous studies examining the relationship between ownership structures and earnings quality focus on cash flow rights, voting rights, and the divergence between them. Fan and Wong (2002) argue that controlling shareholders' financial reporting incentives can be subject to the entrenchment effect, the alignment effect, and the information effect. The entrenchment effect suggests that controlling shareholders are more able to expropriate value from minority shareholders when they are entrenched with their ownership (after accumulating enough shares). Entrenched controlling shareholders are unwilling to fully disclose the firm's economic substance to outside shareholders, resulting in lower earnings informativeness. However, when controlling shareholders' ownership continues to increase after they obtain effective control, their incentives to expropriate from minority shareholders diminish as their shares of expropriation costs increase, and the benefits of expropriation decrease.[2] Thus, the entrenchment effect can be mitigated by this alignment effect. The information effect implies that it can be in the interest of both controlling shareholders and minority shareholders to release little financial information because withholding proprietary information can reduce competition and avoid the high costs of making concerted decisions. Both the entrenchment and the information effects predict that high controlling shareholders' ownership is related to low earnings informativeness. The alignment effect predicts that high controlling shareholders' ownership is related to high earnings informativeness. Their empirical analysis using data from seven East Asian countries provides evidence consistent with the entrenchment and the information effects.

Also, Francis ; et al.; (2005) compare the earnings informativeness of dual-class firms with that of single-class firms. Dual-class firms allow controlling shareholders to have concentrated voting rights with smaller equity ownership, enhancing their entrenchment and their incentives to expropriate value from minority shareholders. They find that earnings are less informative for dual-class firms than single-class firms, which is consistent with the idea that the divergence of voting rights and cash flow rights increases controlling shareholders' incentives to expropriate value from minority shareholders. Similarly, Boubaker and Sami (2011) find that earnings informativeness is negatively related to the excess control of controlling shareholders, which suggests that controlling shareholders have greater incentives to obscure accounting figures when expropriation is likely. They also find that the presence of multiple large shareholders can mitigate this problem and enhance earnings informativeness.

Warfield et al. (1995) provide an explanation under an agency framework and examine the relationship between managerial ownership and earnings informativeness.[3] They argue that low managerial ownership is associated with a more stringent contract based on accounting information. This gives managers incentives to exert discretion under the accounting standards in their financial reporting. High managerial ownership aligns the interest of managers with that of shareholders, making a stringent contract unnecessary. They find that earnings informativeness is positively related to managerial ownership, which is consistent with this explanation.

Besides the papers discussed above, previous studies investigate the relationship between ownership structures and earnings informativeness in different countries. Bae and Jeong (2007) find that the value relevance of earnings is lower for Korean firms affiliated with business groups. They also find that cross-equity ownership reduces value relevance, while foreign ownership increases value relevance. Kwak and Armitage (2009) investigate the relationship between institutional ownership and the quality of financial information for Japanese firms. They find that institutional ownership is positively related to earnings informativeness. Bona-Sánchez et al. (2014) examine the effect of political connections on earnings informativeness in Spain and find that the presence of politicians on the board negatively affects earnings informativeness. They also find that the divergence between controlling shareholders' voting rights and cash flow rights has a positive impact on earnings informativeness in politically connected firms.

A related stream of literature examines the relationship between institutional characteristics and earnings informativeness. DeFond et al. (2007) find that earnings announcements are more informative in countries with better-enforced insider trading laws and stronger investor protection institutions. Their results suggest that better investor protection has a positive impact on earnings informativeness. Haw et al. (2004) also document that earnings management is significantly lower in countries with better minority shareholder protection.

2.2. *The ownership characteristics of public firms in China and the split share structure reform*

Chinese stock markets (i.e., the Shanghai Stock Exchange and the Shenzhen Stock Exchange) were established in 1990, as an important step towards privatization. After that, many firms were carved out from state-owned enterprises (SOEs) and went public. Before the split share structure reform, public firms' equity was generally divided into tradable shares and non-tradable shares, which had the same cash-flow rights and voting rights.[4] Tradable shares, held by individuals or institutional investors, comprised approximately one-third of the total number of shares for public firms in China and could be traded on exchanges. Non-tradable shares represented ownership obtained before IPO and were restricted from trading on exchanges. Shares owned by controlling shareholders were mostly non-tradable in the open market. Also, the state still retained a substantial portion of equity and the effective control of many public firms.

The split share (tradable vs. non-tradable shares) structure had long afflicted Chinese capital markets before the reform. Since

[2] As an extreme example, when a controlling shareholder holds 100% of equity, she has no incentives to expropriate, as she takes all the losses of expropriation.

[3] In economies other than the US and the UK, controlling shareholders are typically both major shareholders and managers. Therefore, they also share characteristics of management and play an important role in agency problems.

[4] In China, A-shares are the dominant class of common shares issued by public firms and consisted of tradable A-shares and non-tradable A-shares before the reform. Besides A-shares, public firms also issue B-shares, which are denominated in US dollars, and H-shares, which are denominated in Hong Kong dollars. In this paper, I only discuss A-shares. B-shares and H-shares in aggregate constitute only a small proportion of common equity.

most shares were not tradable in the open market, it was difficult for non-tradable shareholders to diversify their investments, and it was hard to carry out corporate control transactions in the market. Also, tradable shareholders could not exert influence over corporate decisions. As a result, the conflict between tradable shareholders and non-tradable shareholders was intense before the reform (see, for example, Chen et al., 2006, 2008; Feinerman, 2007; He and Kyaw, 2018; and Li et al., 2011).[5]

Recognizing this problem, the Chinese Securities Regulatory Commission (CSRC) initiated the split share structure reform in April 2005. The CSRC required that publicly listed firms take steps to convert non-tradable shares into tradable shares. Specifically, non-tradable shareholders were required to negotiate a compensation plan with tradable shareholders of the same firm and implement the plan. As compensation for the adverse price impact from an increase in the supply of shares in the market, non-tradable shareholders offered tradable shareholders considerations such as stocks, stock dividends, warrants, and cash. Most often, the compensation involved non-tradable shareholders giving shares to tradable shareholders. After the reform, the ownership and the control of non-tradable shareholders were generally diluted by the considerations offered to tradable shareholders.[6] After the reform, trading restrictions on non-tradable shares were removed in steps, and non-tradable shares became fully tradable three years after the reform was completed.

2.3. Hypothesis development

According to the property right literature, owners of corporate shares have three categories of rights: i) the voting right; ii) the cash flow right; iii) the right to transfer the share and the associated voting and cash flow rights to another party (see, for example, Alchian, 1965; Cheung, 1970, 1983; and Demsetz, 1964, 1974). Previous studies focus on the effects of cash flow rights and voting rights on earnings informativeness. Little work has been done to examine the impact of trading rights on earnings informativeness.

The purpose of the split share structure reform is to remove trading restrictions and convert non-tradable shares into tradable shares. The reform can have two effects on controlling shareholders' incentives for financial reporting.

The first effect is related to trading rights. Before the reform, shares held by controlling shareholders were mostly non-tradable in the open market. Transfers of non-tradable shares happened infrequently and privately, and the transaction price was negotiated based on the book value, representing a significant discount relative to the market price of tradable shares (Chen et al., 2008). Firth et al. (2007) argue that since controlling shareholders hold non-tradable shares, these shares' lack of liquidity and their disconnection with the market price make controlling shareholders less concerned about the stock price at which tradable shares are traded in the open market. After the removal of trading restrictions on non-tradable shares, controlling shareholders can sell their shares on exchanges at the market price. The value of their holdings becomes closely related to the stock price, which gives them incentives to influence the stock price through earnings management. The more shares they hold, the greater the value change they can experience when the stock price moves. Therefore, I expect that controlling shareholders' incentives to influence the stock price through earnings management increase with their ownership.

Hypothesis 1. Other things being equal, the removal of trading restrictions has a negative impact on the relationship between earnings informativeness and controlling shareholders' ownership.

The second effect is related to the dilution of controlling shareholders' ownership. One important feature of China's split share structure reform is that non-tradable shareholders and tradable shareholders were required to negotiate and implement a compensation plan that usually involved non-tradable shareholders offering shares to tradable shareholders. As a result, controlling shareholders' ownership was significantly diluted after the reform. The reduction in controlling shareholders' ownership may have two conflicting effects on earnings informativeness.

Increases in outside shareholders' ownership can enhance these shareholders' incentives to monitor controlling shareholders. According to the entrenchment explanation in Fan and Wong (2002), decreases in controlling shareholders' ownership can reduce their entrenchment and limit their ability to expropriate value from outside shareholders, diminishing their incentives to mask firm performance. This predicts that earnings informativeness improves when controlling shareholders' ownership is diluted.

Hypothesis 2a. Other things being equal, earnings informativeness is negatively related to the change in controlling shareholders' ownership.

According to Warfield et al. (1995), effective monitoring by outside investors relies on quality financial information provided by the firm. To avoid the constraint imposed by the enhanced monitoring, controlling shareholders have incentives to provide low-quality financial information to outside investors. Thus, the quality of financial information can deteriorate when controlling shareholders' ownership is diluted, resulting in a positive relationship between earnings informativeness and the change in their ownership.

Hypothesis 2b. Other things being equal, earnings informativeness is positively related to the change in controlling shareholders' ownership.

Therefore, how the dilution of controlling shareholders' ownership affects earnings informativeness is an empirical question. If the dilution of controlling shareholders' ownership has a significant impact on the quality of financial information, I expect this effect is strengthened for firms with non-state controlling shareholders and firms whose controlling shareholders are not effectively monitored.

[5] He and Kyaw (2018) find evidence that state block shareholders with non-tradable shares in China encourage overinvestment and discourage underinvestment, consistent with the notion that these shareholders are more committed to their sociopolitical agenda than shareholder wealth maximization.

[6] See Firth et al. (2010) and Li et al. (2011) for further information on the split share structure reform.

State controlling shareholders can be more entrenched than individuals and non-state-owned entities, due to their connections with the central and local governments and their influence over the firm's suppliers, customers, financial institutions, etc. Thus, the entrenchment of state controlling shareholders is less likely to be affected by the dilution of ownership. Also, controlling shareholders who are effectively monitored by other large shareholders may have limited ability to influence financial reporting and can be less affected by the dilution of ownership. Thus, I expect that the dilution of controlling shareholders' ownership has a greater impact on firms with non-state controlling shareholders or firms whose controlling shareholders are not effectively monitored before the reform.

3. Data and model

3.1. Data

I obtain data on Chinese public firms from the China Stock Market and Accounting Research (CSMAR) database. The sample consists of financial and stock return data, as well as information on ownership structures and the split share structure reform from 2003 to 2010. To be consistent with the previous literature, I drop observations of financial firms as they are highly regulated.

In my analysis, I focus on firms that completed the split share structure reform. Firms started the program in batches, and each firm had to come up with its own compensation plan. Two-thirds of all shareholders (tradable and non-tradable shareholders) and two-thirds of tradable shareholders should approve the compensation plan for it to be implemented. Therefore, firms initiated and completed the reform at different times.[7] By the end of 2007, firms with 97% of the total Chinese A-share market capitalization had completed the reform.[8] Panel A of Table 1 shows the number of firms that completed the reform each year. As we can see, more than 70% of firms completed the reform in 2006.

Panel B of Table 1 presents the average percentages of non-tradable shares and controlling shareholders' ownership each year from three years before the reform (-3) to three years after the reform (+3). As we can see, before the reform, non-tradable shares comprise 60% of equity. Starting from the year of the reform (0), the percentage of non-tradable shares declines steadily over time. To mitigate the short-run price pressure caused by a sudden increase in the supply of shares in the market, the CSRC required that non-tradable shares be restricted from trading within one year after the reform. No more than 5% could be traded in the second year after the reform, and no more than 10% in the third year. Non-tradable shares became fully tradable only three years after the completion of the reform. Therefore, non-tradable shares still comprised a high percentage of equity for some time after the completion of the reform.

Considerations offered to tradable shareholders result in the dilution of controlling shareholders' cash flow rights and voting rights.[9] As we can see in Panel B of Table 1, controlling shareholders' average voting rights are stable at 42% in the three years before the reform. After the reform, their voting rights drop to around 36%. Panel C shows that the change in voting rights after the reform is highly significant, both statistically and economically. At the same time, controlling shareholders' cash flow rights drop by a larger amount than the change in their voting rights.[10] *CV*, defined as the ratio of controlling shareholders' cash flow rights to voting rights, decreases significantly after the reform. Therefore, controlling shareholders' voting rights and cash flow rights are both significantly diluted, and the divergence between them increases after the reform.

The final sample consists of 9929 firm-year observations from 2003 to 2010. To retain the maximum number of observations, I do not drop observations due to missing values in control variables. Therefore, the number of observations may vary in my analysis. To limit the influence of outliers, I winsorize continuous variables at the 1st and the 99th percentiles.

Table 2 presents the summary statistics of the sample. Firms in the sample have the mean (median) book value of 4520 million (1660 million) RMB Yuan and the mean M/B ratio of 2.53. Chinese public firms generally have a low level of debt, with the mean book leverage ratio of 0.07. On average, 35% of board members are independent directors. Also, firm executives hold an average of 0.3% of equity, with a median value of 0. Thus, Chinese public firms can be characterized by high stock valuation, low leverage, and low management ownership.

3.2. Model specification

To test the hypotheses and investigate earnings informativeness around the split share structure reform, I perform the OLS regressions by following Fan and Wong (2002) and Francis et al. (2005).

$$R_{it} = a_0 + a_1 Earn_{it} + a_2 ControlVote\_Earn_{it} + a_3 ControlVote\_Earn\_Reform_{it} + \sum a_j X_j\_Earn + (Fixed\ effects) + u_{it} \quad (1)$$

$$R_{it} = a_0 + a_1 Earn_{it} + a_{24rior\ to\ the\ reformeir\ incentives\ to\ influence\ the\ et\ price\ through\ financial\ reporting.}\ ControlVoteM\_Earn_{it} + a_{34rior\ to\ the\ reformeir\ incentives\ to\ influence\ the\ et\ price\ through\ financial\ reporting.}\ ControlVoteM\_Earn\_Reform_{it} + a_4 \Delta ControlVoteM\_Earn\_Reform_{it} + \sum a_j X_j\_Earn + (Fixed\ effects) + u_{it} \quad (2)$$

[7] Firms did not complete the reform all at once but in batches. The CSRC announced two pilot batches in April and June 2005 and was in full swing in August 2005.

[8] See Firth et al. (2010) and Li et al. (2011) for more information on the Chinese split share structure reform.

[9] Dual-class shares that have different voting rights are rare in China. Cash-flow rights represent shareholders' equity ownership. Controlling shareholders can elevate their voting power through pyramids or cross-shareholding, which give them more voting rights than cash flow rights (see, for example, La Porta et al., 1999).

[10] Some controlling shareholders have more voting rights than cash flow rights through pyramids or cross-shareholdings. The dilution impact on their cash flow rights from the considerations offered to tradable shareholders can be greater than the impact on their voting rights.

Table 1
The Split Share Structure Reform in China.

Panel A: Number of firms that completed the reform each year

Year	Number of Firms	Percentage
2005	210	16.59
2006	885	69.91
2007	118	9.32
2008	33	2.61
2009	17	1.34
2010	3	0.24
Total	1,266	100

Panel B: The percentage of non-tradable shares and controller ownership around the reform:

	Non-tradable Shares		Controlling Shareholders' Ownership (Voting Rights)	
Year	Number of Obs.	Percentage	Number of Obs.	Percentage
−3	977	0.60	989	0.42
−2	1169	0.61	1174	0.42
−1	1217	0.61	1219	0.42
0	1229	0.52	1229	0.37
1	1225	0.43	1225	0.36
2	1207	0.38	1208	0.36
3	1168	0.19	1173	0.36

Panel C: The change in controlling shareholders' ownership:

	Voting Right		Cashflow Right		CV	
	N	Mean	N	Mean	N	Mean
Before the reform	3752	0.4145	3752	0.3577	3750	0.8337
After the reform	6100	0.3610	6100	0.2968	6097	0.7986
Change		−0.0534*** (p-value < 0.001)		−0.0610*** (p-value < 0.001)		−0.0350*** (p-value < 0.001)

This table summarizes information about the split share structure reform in China. Panel A presents the number and the percentage of firms that completed the reform each year. Panel B reports the percentages of non-tradable shares and controlling shareholders' ownership (voting rights) across the time of the reform. 0 denotes the year when the firm completed the reform, and information is reported from 3 years before the reform to 3 years after the reform. In Panel C, I partition the sample into two groups according to whether the observation is before the reform or after the reform and examine the difference in controlling shareholders' voting rights, cash flow rights and the divergence between them. *CV* is defined as the ratio of controlling shareholders' cash flow rights to voting rights.

Table 2
Summary Statistics.

Summary statistics

	Obs.	Mean	Std dev.	25th	50th	75th
CAR	9929	0.09	0.52	−0.14	0.04	0.29
EARN	8,599	0.02	0.07	−0.007	0.02	0.05
Total Assets (mil)	9912	4520	20,400	855	1660	3,500
Lev	9898	0.07	0.10	0.0009	0.03	0.11
M/B	9841	2.53	2.01	1.36	1.86	2.88
BoardInd	9849	0.35	0.05	0.33	0.33	0.36
Exehold	9763	0.003	0.03	0	0	0.00008

This table summarizes the statistics of the sample. The sample covers firm-year observations of the firms that experience the split share structure reform from 2003 to 2010. *CAR* is defined as the net-of-market stock return from the ninth months before the reform to the third month after the reform. *Earn* is defined as net income scaled by the market value of equity at the beginning of the year. *Lev* is the ratio of long-term debt to the book value of assets. *M/B* is the ratio of the sum of the book value of debt and the market value of equity to the book value of total assets. *BoardInd* is the ratio of the number of independent directors to the total number of directors, and *Exehold* is the ownership of the firm' equity by the firm's top executives.

In the above models, R_{it} is defined as the 12-month net-of-market stock return (CAR) of firm *i* from nine months before the end of year *t* to three months after the end of year *t*. *Earn* is net income in year *t* scaled by the market value of equity at the beginning of year *t*. *Reform* is a dummy variable, which equals to one in or after the year the firm completes the reform, and zero otherwise. In Eq. (1), *ControlVote* is defined as controlling shareholders' ownership in terms of voting rights, and *ControlVote_Earn* is the interaction variable of *ControlVote* and *Earn*. Further, *ControlVote_Earn_Reform,* the interaction variable of *ControlVote*, *Earn,* and

Reform, allows us to examine how the relationship between controlling shareholders' ownership and earnings informativeness changes after the reform.

ControlVote, a measure of controlling shareholders' voting rights, incorporates the change in their ownership due to the considerations offered to tradable shareholders after the reform. For this reason, in Eq. (2), I replace *ControlVote* with *ControlVoteM* and *ΔControlVoteM*. *ControlVoteM* assumes that controlling shareholders' ownership after the reform is not diluted but held constant at the pre-reform level (measured in the year before the reform). *ΔControlVoteM* is defined as the change in controlling shareholders' ownership from the pre-reform level, scaled by the pre-reform level of ownership. Thus, *ΔControlVoteM* captures the dilution effect of the considerations offered to tradable shareholders. In this way, I can separate the trading right effect from the dilution effect on earnings informativeness.

To control for the influence of other factors on earnings informativeness, I include the interaction variables of *Earn* and the influential factors documented in the previous literature in the regressions. The influential factors include *Size* (natural logarithm of total assets), *Lev* (book leverage), *M/B, BoardInd* (the ratio of the number of independent directors to the total number of directors), and *ExeHold* (top executives' ownership). I also control for year and industry fixed effects in all regressions, and test statistics are based on White-adjusted standard errors clustered at the firm level.

4. Empirical results

In this section, I first explain the multivariate regression results. Then, I examine market reactions to earnings announcements and test the hypotheses for firms with different ownership and governance characteristics. I also run additional tests to check the robustness of the results.

4.1. Tests of earnings informativeness around the split share structure reform

Table 3 reports the multivariate regression results. In the first regression, the coefficient of *ControlVote_Earn* is positive and statistically significant at the 1% level. This result shows that, before the reform, controlling shareholders' ownership strengthens the earning-return relationship, which is consistent with the alignment effect in Fan and Wong (2002). When controlling shareholders' ownership increases after they obtain effective control, their incentives to expropriate value from outside investors diminish as their shares of expropriation costs increase with their ownership and can dominate the benefits. Controlling shareholders' incentives to mask firm performance also decrease. This alignment effect can explain the positive relationship between earnings informativeness and controlling shareholders' ownership before the reform. Nevertheless, the coefficient of *ControlVote_Earn_Reform* is negative and statistically significant at the 1% level. This result is consistent with *Hypothesis 1* that the reform has a negative impact on the relationship between earnings informativeness and controlling shareholders' ownership. The removal of trading restrictions makes it possible for controlling shareholders to sell their shares in the open market at the market price, which gives them incentives to influence the stock price through financial reporting, thus reducing earnings informativeness.

In the first regression, the measure of controlling shareholders' ownership, *ControlVote,* incorporates the change in their ownership due to the considerations offered to tradable shareholders. In the second regression, I replace *ControlVote* with a modified variable that has controlling shareholders' ownership after the reform equal to the pre-reform level (*ControlVoteM*) and a variable measuring the change in the ownership after the reform from the pre-reform level (*ΔControlVoteM*). In this way, I can separate the dilution effect from the trading right effect in the regression. Consistent with *Hypothesis 1*, the coefficient of *ControlVoteM_Earn_Reform* is still negative and significant at the 1% level, indicating that the removal of trading restrictions gives controlling shareholders incentives to manage earnings, and the incentives increase with their ownership. Further, the coefficient of *ΔControlVoteM_Earn_Reform* is positive and significant at the 10% level. This result is consistent with Hypothesis 2b and shows that firms whose controlling shareholders' ownership is more diluted experience a greater reduction in earnings informativeness. Thus, consistent with Warfield et al. (1995), this result implies that the dilution of ownership gives controlling shareholders incentives to provide less informative earnings to avoid the constraint imposed by increased monitoring by outside investors.

4.2. Stock price reactions to earnings announcements

To further test the trading right and the dilution effects on earnings informativeness, I investigate stock price reactions to earnings surprises and compare them before and after the reform. In this investigation, I employ two measures of market reactions, *CAR_3* and *CAR_11*. CAR_3 is the 3-day cumulative abnormal return over the period [-1, +1] around earnings announcement dates estimated by the market model. Similarly, CAR_11 is the 11-day cumulative abnormal return over the period [-5, +5] around earnings announcement dates. In this test, I use abnormal earnings per share (*abEPS*), calculated as the change in earnings per share from the same quarter a year ago. Again, all regressions control for year and industry fixed effects, and the results are reported in Table 4.

The first and the second regressions in Table 4 show stock price reactions to earnings surprises around the split share structure reform. As I expect, before the reform, stock price reactions are positively related to earnings surprises. However, the coefficient of *abEPS_Reform* is negative and significant, implying that investors do not find earnings surprises as credible after the reform. In the third and fourth regressions, I include the interaction variables of *abEPS* and controlling shareholders' ownership. Consistent with the previous results, earnings informativeness increases with controlling shareholders' ownership before the reform. Nevertheless, the removal of trading restrictions on non-tradable shares has a negative impact on this relationship and reduce earnings

Table 3
Earnings Informativeness around the Share Split Structure Reform.

	(1)	(2)
Earn	1.9284	2.1172
	(1.46)	(1.58)
ControlVote_Earn	2.0167***	
	(4.71)	
ControlVote_Earn_Reform	−2.2256***	
	(5.44)	
ControlVoteM_Earn		1.7539***
		(3.95)
ControlVoteM_Earn_Reform		−2.1870***
		(5.39)
ΔControlVoteM_Earn_Reform		0.3727*
		(1.69)
Size_Earn	−0.0594	−0.0607
	(0.97)	(0.98)
Lev_Earn	−0.1026	0.0379
	(0.18)	(0.06)
M/B_Earn	0.0973*	0.0914
	(1.73)	(1.61)
BoardInd_Earn	−0.5493	−0.7080
	(0.63)	(0.79)
Exehold_Earn	3.7438	3.5629
	(1.27)	(1.20)
Y2007_Earn	0.3499**	0.4033**
	(2.02)	(2.26)
Constant	−0.0167	−0.0149
	(0.85)	(0.75)
Year	Yes	Yes
Industry	Yes	Yes
N	8141	8032
Adj. R^2	0.1365	0.1365

This table presents the regression results of earnings informativeness and controlling shareholders' ownership across the time of the split share structure reform in China. The dependent variable is *CAR*, defined as the net-of-market stock return from the ninth month before the year-end to the third month after the year-end. *ControlVote* is defined as the controlling shareholders' ownership in terms of voting rights. *Earn* is net income scaled by the market value of equity at the beginning of the year. *Reform* is a dummy variable indicating in or after the year of the reform. *ControlVoteM* is a modified variable of *ControlVote,* by assuming that after the reform, controlling shareholders' voting rights remain at the same level as right before the reform. *ΔControlVoteM* is defined as the change in the voting right after the reform from the level right before the reform, scaled by the level right before the reform. *Y2007* is a dummy variable indicating that the year is in or after 2007. *Size* is defined as the natural logarithm of the total assets of the firm. All the other control variables are defined in Table 2. The regressions include interaction variables with *Earn*. Year and industry fixed effects are included in all regressions, and robust standard errors are clustered by firm. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

informativeness, as the coefficient of *ControlVote_abEPS_Reform* is negative and statistically significant at the 10% level. This is consistent with *Hypothesis 1*. I also replace *ControlVote* with *ControlVoteM* and *ΔControlVoteM* and report the results as the fifth and sixth regressions in Table 4. The coefficient of *ControlVoteM_abEPS_Reform* is still negative and statistically significant at the 10% level. However, the coefficient of *ΔControlVoteM_abEPS_Reform* is positive but not statistically significant. Therefore, I do not find evidence in support of *Hypothesis 2a* or *2b* that the dilution of controlling shareholders' ownership has a significant impact on earnings informativeness.

4.3. The effects of ownership and governance characteristics

Next, I examine how ownership and governance characteristics affect the results. According to *Hypothesis 2b*, the dilution of controlling shareholders' ownership reduces earnings informativeness as the reduction in their entrenchment gives them incentives to manage earnings to avoid the constraint from the increased monitoring. The effect can be different for firms whose controlling shareholders are entrenched in different ways before the reform. I put firms into groups according to whether their controlling shareholders are the state or not and whether there exists an effective monitor. Table 5 reports the regression results.

Gunasekarage et al. (2007) and He and Kyaw (2018) provide evidence consistent with the notion that state controlling shareholders in China make decisions to achieve their social and political goals rather than to maximize shareholder value. State controlling shareholders' commitment to their social and political goals can influence their financial reporting behavior. The first two

Table 4
Price Reactions to Earnings Announcements.

Variable	CAR_3 (1)	CAR_11 (2)	CAR_3 (3)	CAR_11 (4)	CAR_3 (5)	CAR_11 (6)
abEPS	0.0231***	0.0423***	−0.0041	0.0022	−0.0111	−0.0049
	(6.24)	(6.25)	(0.44)	(0.14)	(1.38)	(0.36)
abEPS_Reform	−0.0410***	−0.0420**				
	(3.97)	(2.19)				
ControlVote_abEPS			0.0670***	0.1043***		
			(2.86)	(2.62)		
ControlVote_abEPS_Reform			−0.0443*	−0.0745*		
			(1.80)	(1.70)		
ControlVoteM_abEPS					0.0815***	0.1177***
					(4.46)	(3.93)
ControlVoteM_abEPS_Reform					−0.0382*	−0.0813**
					(1.88)	(2.29)
ΔControlVoteM_abEPS_Reform					0.0890	0.0998
					(1.39)	(0.82)
dm_2007_abEPS	0.0401***	0.0377**	0.0181*	0.0237	0.0208**	0.0337**
	(3.90)	(2.00)	(1.80)	(1.31)	(2.44)	(2.29)
Constant	0.0026	0.0006	0.0012	−0.0017	0.0025	0.0005
	(1.35)	(0.15)	(0.56)	(0.34)	(1.30)	(0.12)
Year	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes
N	30808	31341	23467	23869	30808	31341
Adj. R^2	0.0111	0.0106	0.0115	0.0107	0.0115	0.0110

This table presents regression results of stock price reactions to earnings announcements around the split share structure reform in China. The dependent variable is cumulative abnormal returns over 3 or 11 days around earnings announcement dates, estimated by using the market model. *abEPS* is earnings surprises, defined as the change in earnings per share (EPS) from the same quarter a year ago. *abEPS_Reform* is an interaction variable of *abEPS* and a dummy variable indicating that the year is in or after the year of the reform. *ControlVote* is defined as controlling shareholders' ownership in terms of voting rights. *Reform* is a dummy variable indicating that the year is in or after the year of the reform. *ControlVoteM* is a modified variable of *ControlVote,* by assuming that after the reform, controlling shareholders' voting rights remain at the same level as right before the reform. *ΔControlVoteM* is defined as the change in the voting rights after the reform from the pre-reform level, scaled by the pre-reform level. Year and industry fixed effects are included in all regressions, and robust standard errors are clustered by firm. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

regressions in Table 5 show the results for the groups with state controlling shareholders and non-state controlling shareholders, respectively.[11] For firms with state controlling shareholders, earnings informativeness is more sensitive to controlling shareholders' ownership before the reform, and the sensitivity drops more significantly after the removal of trading restrictions than firms with non-state controlling shareholders. The different effects can be explained by the fact that many public firms in China were carved out from state-owned enterprises. In the process of privatization, state ownership is more likely to decrease further in the future, which makes state controlling shareholders more sensitive to the market price and the removal of trading restrictions. Non-state controlling shareholders rely on their ownership to retain effective control of the firm and are less willing to sell their shares and lose control of the firm. Thus, the removal of trading restrictions has a less significant impact on the relationship between earnings informativeness and controlling shareholders' ownership for firms with non-state controlling shareholders.

Furthermore, the coefficient of *ΔControlVoteM_Earn_Reform* is not statistically significant for state controlling shareholders and is highly significant for non-state ones. The reason can be that state controlling shareholders are entrenched not only by their ownership but also by their influence over the firm's suppliers, customers, financing sources, etc. Therefore, the dilution of ownership can have a smaller impact on the entrenchment of state controlling shareholders than on that of non-state controlling shareholders.

In firms with concentrated ownership, monitoring by other large shareholders can reduce controlling shareholders' opportunities for self-dealing activities and make them less entrenched. Also, influential investors with substantial ownership may have incentives to pressure controlling shareholders to disclose more truthful financial information. Next, I examine whether the existence of an influential shareholder can affect the results.

I divide the sample into two groups: a group with above-median z-scores and the other one with below-median z-scores, and run regressions with the groups separately. Z-score is defined as the ratio of the largest shareholder's ownership to the second-largest shareholder's ownership. A low z-score implies the existence of a shareholder with substantial ownership and great incentives to monitor the controlling shareholder and vice versa.

As we can see in Table 5, the coefficients of *ControlVote_Earn* and *ControlVote_Earn_Reform* are smaller in magnitude and less significant for firms with low z-scores than firms with high z-scores. This result implies that when controlling shareholders are monitored by other large shareholders, earnings informativeness is less affected by their ownership. Even though controlling shareholders may have incentives to influence the stock price through earnings management, their ability to do so is constrained by these monitors.

[11] State controlling shareholders can be the central government, local governments, government agencies, and state-owned enterprises.

Table 5
The Effects of Ownership and Governance Characteristics.

	State Controlling Shareholders		Z-score	
Variable	Yes (1)	No (2)	Low (3)	High (4)
Earn	−0.4026	3.4035	0.3453	3.3061*
	(0.20)	(1.60)	(0.18)	(1.73)
ControlVoteM_Earn	2.1208***	1.4607*	−0.0287	3.3004***
	(3.12)	(1.74)	(0.05)	(5.72)
ControlVoteM_Earn_Reform	−3.1554***	−1.2484	−1.5395**	−2.8420***
	(6.43)	(1.57)	(2.22)	(6.13)
ΔControlVoteM_Earn_Reform	−0.3476	0.8586***	0.0864	0.6776**
	(0.89)	(3.25)	(0.26)	(2.35)
Size_Earn	0.0182	−0.0842	0.0583	−0.1649*
	(0.20)	(0.85)	(0.67)	(1.87)
Lev_Earn	−0.1465	0.3447	0.6591	0.0001
	(0.20)	(0.26)	(0.69)	(0)
M/B_Earn	0.1699	0.0577	0.2128**	0.0122
	(1.54)	(0.87)	(2.57)	(0.18)
BoardInd_Earn	1.2045	−2.5980*	−1.9189*	0.7881
	(1.11)	(1.77)	(1.72)	(0.71)
Exehold_Earn	−4.962	5.0939	2.9364	14.5213
	(1.33)	(1.44)	(0.98)	(1.23)
Y2007_Earn	0.6962***	0.0817	−0.1193	0.9968***
	(3.10)	(0.26)	(0.48)	(4.29)
Constant	−0.0057	−0.0415	0.0029	−0.0438***
	(0.19)	(0.96)	(0.09)	(2.63)
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
N	4558	3077	4032	4000
Adj R^2	0.1299	0.1377	0.15	0.1303

This table presents regression results on subsamples partitioned based on ownership and governance characteristics. I run the first regression on the subsample of firms with state controlling shareholders and the second regression on the subsample with non-state controlling shareholders. The third regression is on the subsample of firms with z-scores below the median, and the fourth regression is on the subsample of firms with z-scores higher than the median. Z-score is defined as the ratio of the largest shareholder ownership to the second largest shareholder ownership. All the other variables are defined in Tables 2 and 3. Year and industry fixed effects are included in all regressions, and robust standard errors are clustered by firm. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Furthermore, for firms without effective monitors (firms with high z-scores), the coefficient of *ΔControlVoteM_Earn_Reform* is positive and statistically significant at the 5% level, while it is not significant for firms with effective monitors (firms with low z-scores). This result shows that the dilution of ownership has a stronger effect on controlling shareholders who have the ability to manage earnings. The dilution of ownership has little impact on controlling shareholders who are under the scrutiny of powerful and motivated shareholders, as the incremental effect of the enhanced monitoring by outside shareholders is insignificant.

4.4. The divergence between controlling shareholders' voting rights and cash flow rights

Fan and Wong (2002) and Francis ; et al.; (2005) find that the divergence between controlling shareholders' voting rights and cash flow rights can reduce earnings informativeness as it enhances controlling shareholders' entrenchment with fewer shares and gives them incentives to expropriate value from outside investors. Pyramidal shareholding and cross-shareholding are prevalent in China, which can result in the divergence between cash flow rights and voting rights. As we can see in Table 1, the divergence between controlling shareholders' voting rights and cash flow rights increases after the reform. To examine whether the change in the divergence drives the result, I include an interaction variable of *CV* and *Earn* and an interaction variable of *CV, Earn*, and *Reform* in the regressions. The first and the second regressions in Table 6 report the results. As we can see, the coefficients of *CV_Earn* and *CV_Earn_Reform* are not significant, and the inclusion of *CV_Earn* and *CV_Earn_Reform* does not significantly affect the results.

Further, I divide the sample into groups according to whether *CV* is less than one or not. The third regression in Table 6 reports the result for firms with *CV* less than one before the reform – firms whose controlling shareholders have more voting rights than cash flow rights. The fourth regression reports the result for firms with *CV* equal to one – firms whose controlling shareholders have the same voting rights as cash flow rights. As we can see, the removal of trading restrictions has a stronger and more significant impact on firms with *CV* equal to one than those with *CV* less than one. The reason can be that controlling shareholders with *CV* less than one are entrenched with fewer shares and tend to benefit less from the removal of trading restrictions on their shares and benefit more from the private benefits associated with their control. Thus, the removal of trading restrictions has a smaller impact on these controlling shareholders. Nevertheless, the coefficient of *ΔControlVoteM_Earn_Reform* is only significant for controlling shareholders with *CV* less than one. These controlling shareholders are entrenched by their voting rights and hence, have greater incentives to expropriate value

Table 6
The Effect of the Divergence between Voting Rights and Cash Flow Rights.

Variable	(1)	(2)	CV < 1 (3)	CV = 1 (4)
Earn	2.0652	2.1442	2.8218	1.8531
	(1.54)	(1.58)	(1.22)	(1.12)
ControlVote_Earn	1.8271***			
	(3.17)			
ControlVote_Earn_Reform	−1.7422**			
	(2.51)			
CV_Earn	−0.0956	0.0524		
	(0.34)	(0.18)		
CV_Earn_Reform	−0.2941	−0.3563		
	(0.92)	(1.04)		
ControlVoteM_Earn		1.4718**	1.0343	2.1430***
		(2.53)	(1.13)	(4.08)
ControlVoteM_Earn_Reform		−1.6290**	−1.4224*	−2.6871***
		(2.35)	(1.65)	(6.06)
ΔControlVoteM_Earn_Reform		0.3995*	0.8508***	−0.0342
		(1.83)	(3.28)	(0.11)
Size_Earn	−0.05745	−0.0583	−0.0744	−0.0589
	(0.93)	(0.94)	(0.70)	(0.75)
Lev_Earn	−0.07622	0.0701	−0.5718	0.0823
	(0.13)	(0.12)	(0.42)	(0.12)
M/B_Earn	0.094787*	0.0889	0.0784	0.0999
	(1.69)	(1.55)	(1.03)	(1.31)
BoardInd_Earn	−0.5835	−0.6751	−1.4677	−0.2881
	(0.67)	(0.76)	(0.92)	(0.25)
Exehold_Earn	4.5703	4.2652	8.2929**	1.8300
	(1.54)	(1.42)	(2.12)	(0.48)
Y2007_Earn	0.3795**	0.4377**	0.1329	0.5829***
	(2.13)	(2.41)	(0.42)	(2.77)
Constant	−0.0159	−0.0140	−0.0750***	−0.0138
	(0.8)	(0.70)	(5.47)	(0.66)
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
N	8138	8029	2663	5367
Adj R^2	0.1367	0.1366	0.1359	0.1363

This table presents regression results with controls for the divergence between controlling shareholders' voting rights and cash flow rights. *CV* is the ratio of controlling shareholders' cash flow rights to their voting rights. The first and the second regressions include an interaction variable of *CV* and *Earn* and an interaction variable of *CV*, *Earn*, and *Reform*. I run the third regression on the subsample of firms with *CV* less than 1 before the reform, which implies that controlling shareholders have more voting rights than cash flow rights. I run the fourth regression on the subsample of firms with *CV* equal to one, which means that controlling shareholders have the same voting rights as cash flow rights. Year and industry fixed effects are included in all regressions, and robust standard errors are clustered by firm. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

from outside shareholders. Their entrenchment can be more threatened by the enhanced monitoring by outside shareholders. Therefore, the dilution of ownership has a stronger impact on controlling shareholders who have more voting rights than cash flow rights and gives them greater incentives to manage earings.

4.5. Trading activities after the reform

A question that remains unanswered is whether the previous results are affected by trading activities after the reform. Before the split share structure reform, about 60% of China's public firms' shares were non-tradable. To mitigate the impact of the dramatic increase in the supply of shares in the open market, the CSRC required that non-tradable shares still be temporarily restricted from trading after the reform. Particularly, non-tradable shares could not be traded in the open market in the first year after the reform, no more than 5% could be traded in the second year, and no more than 10% in the third year. Three years after the reform, all non-tradable shares could be traded in the open market. Therefore, the trading restrictions on non-tradable shares were removed in steps. Next, I examine the effects of the trading activities after the reform on the results.

I include in the regression an interaction variable of ControlVote_Earn (ControlVoteM_Earn) and an indicator for one year after the reform, an interaction variable of ControlVote_Earn (ControlVoteM_Earn) and an indicator for two years after the reform, and an interaction variable of ControlVote_Earn (ControlVoteM_Earn) and an indicator for three years after the reform, to control for the effects of the increased supply of shares in the market. Table 7 reports the results. As we can see, the coefficients of *ControlVote_Earn_Reform_3Yr* and *ControlVoteM_Earn_Reform_3Yr* are both negative and statistically significant, which indicates that the complete removal of trading restrictions does reduce earnings informativeness, and the reduction increases with controlling shareholders' ownership. The effect is not statistically significant one year and two years after the reform. Consistent with the previous results, the coefficients of

Table 7
Removal of Trading Restrictions after the Split Share Structure Reform.

Variable	(1)	(2)
Earn	1.6617	1.8652
	(1.28)	(1.43)
ControlVote_Earn	2.2006***	
	(4.94)	
ControlVote _Earn_Reform	−1.8642***	
	(3.84)	
ControlVote _Earn_Reform_1Yr	−0.9495	
	(1.61)	
ControlVote _Earn_Reform_2Yr	0.8961	
	(1.55)	
ControlVote _Earn_Reform_3Yr	−1.4762***	
	(2.73)	
ControlVoteM_Earn		1.9507***
		(4.23)
ControlVoteM _Earn_Reform		−1.9097***
		(4.15)
ControlVoteM _Earn_Reform_1Yr		−0.8658
		(1.63)
ControlVoteM _Earn_Reform_2Yr		0.6041
		(1.23)
ControlVoteM _Earn_Reform_3Yr		−1.0255**
		(2.25)
ΔControlVoteM_Earn_Reform		0.3333
		(1.50)
Size_Earn	−0.0500	−0.0530
	(0.83)	(0.87)
Lev_Earn	−0.0835	0.0796
	(0.14)	(0.13)
M/B_Earn	0.0833	0.0752
	(1.51)	(1.34)
BoardInd_Earn	−0.5584	−0.6546
	(0.63)	(0.72)
Exehold_Earn	3.8286	3.5991
	(1.30)	(1.20)
Y2007_Earn	0.5832**	0.6585***
	(2.46)	(2.60)
Constant	−0.01699	−0.01519
	(0.87)	(0.77)
Year	Yes	Yes
Industry	Yes	Yes
N	8141	8032
Adj R^2	0.1376	0.1374

This table presents regression results with control for the progressive removal of trading restrictions after the reform. I include in the regressions an interaction variable of earnings and an indicator for one year after the reform (*ControlVote_Earn_Reform_1Yr*), an interaction variable of earnings and an indicator for two years after the reform (*ControlVote _Earn_Reform_2Yr*), and an interaction variable of earnings and an indicator for three years after the reform (*ControlVote _Earn_Reform_3Yr*). All the other variables are defined in Tables 2 and 3. Year and industry fixed effects are included in all regressions, and robust standard errors are clustered by firm. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

ControlVote_Earn_Reform and *ControlVoteM_Earn_Reform* are still negative and statistically significant. The reform negatively affects the relationship between earnings informativeness and controlling shareholders' ownership when controlling shareholders' non-tradable shares are still restricted from trading temporarily. This implies that the expectation of selling their shares in the open market can provide enough incentives for controlling shareholders to manage earnings. Therefore, the previous results are not driven by market trading activities. In addition, the coefficient of *ΔControlVoteM_Earn_Reform* is still positive but not statistically significant.

4.6. The effect of the 2006 accounting standards

In 2006, Chinese authorities announced the new accounting standards and required that all public firms comply with the new standards in producing their financial reports from January 1, 2007. Although the new accounting standards can potentially influence public firms' financial reporting behavior, I do not expect that they can significantly affect the previous results as the adoption of the new standards should have a similar influence on firms with different ownership structures. Still, in the previous tests, I control for the effects of the new accounting standards on earnings informativeness by including an interaction variable of *Earn* and *dm_2007*.

Table 8
Test before 2007.

Variable	(1)	(2)
Earn	−1.4219	−1.5602
	(0.64)	(0.69)
ControlVote_Earn	1.2674**	
	(2.37)	
ControlVote_Earn_Reform	−3.1531***	
	(7.42)	
ControlVoteM_Earn		0.8942*
		(1.71)
ControlVoteM_Earn_Reform		−2.9425***
		(7.24)
ΔControlVoteM_Earn_Reform		0.4370
		(0.91)
Size_Earn	0.1086	0.1265
	(1.09)	(1.26)
Lev_Earn	−1.2076	−1.2378
	(1.58)	(1.56)
M/B_Earn	0.2182	0.2209
	(1.31)	(1.30)
BoardInd_Earn	−0.4938	−0.7309
	(0.48)	(0.71)
Exehold_Earn	6.8197	6.9693
	(1.37)	(1.47)
Constant	−0.0269	−0.0238
	(0.59)	(0.52)
Year	Yes	Yes
Industry	Yes	Yes
N	3568	3514
Adj R^2	0.1638	0.1655

This table presents regression results of the subsample of firms that completed the reform before 2007 when the new accounting standards became in effect in China. Observations in or after 2007 are dropped. All other variables are defined in Tables 2 and 3. Year and industry fixed effects are included in all regressions, and robust standard errors are clustered by firm. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

dm_2007 is a dummy variable that equals to 1 in or after 2007 when the new accounting standards are in effect. I also perform additional tests to examine whether the previous results hold before the new accounting standards were adopted.

Table 8 reports the results with observations before 2007. As we can see, the coefficients of *ControlVote_Earn_Reform* and *ControlVoteM_Earn_Reform* are still negative and statistically significant. The evidence is consistent with *Hypothesis 1* and implies that the removal of trading restrictions gives controlling shareholders incentives to influence the stock price through managing earnings, and the incentives increase with their ownership. However, the coefficient of *ΔControlVoteM_Earn_Reform* is positive but not statistically significant. Thus, I do not find evidence in support of *Hypothesis 2b*.

5. Conclusions

In this paper, I investigate how the removal of trading restrictions and ownership structures affect the informativeness of public firms' reported earnings around China's split share structure reform. The reform can have two effects on earnings informativeness. First, the removal of trading restrictions makes it possible that controlling shareholders sell their non-tradable shares in the open market at the market price, giving them incentives to influence the stock price by managing earnings. These incentives increase with their ownership. Second, shares offered to tradable shareholders as considerations dilute controlling shareholders' ownership and enhance outside shareholders' influence and incentives to monitor. Nevertheless, according to Warfield et al. (1995), the enhanced monitoring by outside shareholders may give controlling shareholders incentives to provide less informative earnings to avoid the constraint. I find evidence consistent with these two effects.

Further, I split the sample into groups and perform more tests. I find that when controlling shareholders are the state or have the same voting rights as cash flow rights, the trading right effect is strengthened. When controlling shareholders are non-state or have more voting rights than cash flow rights, the dilution effect is strengthened. When controlling shareholders are not monitored by other large shareholders, both effects are stronger. These findings confirm the interpretations of the previous results. To address the concerns that the new accounting standards and trading activities after the reform could potentially affect the results, I also examine their effects and find that most of the previous results still hold with controls for these effects.

This paper contributes to the literature by showing that besides voting rights and cash flow rights, trading rights can influence controlling shareholders' financial reporting incentives. The split share structure reform is unique in that it affected a significant portion of public firms' equity and had a strong impact on controlling shareholders' financial reporting behavior. Also, unlike

previous research, this paper investigates changes in ownership structures and provides new evidence on the relationship between ownership structures and earnings informativeness.

Shares differ not only in voting rights but also in trading rights. For example, shares privately placed by public firms cannot be traded on exchanges. In the US, firms going public with multi-class shares and concentrated ownership are common in recent years. Besides different voting rights, some classes in the multi-class shares are non-tradable on exchanges. Several papers advocate the "sunset provisions" to convert multi-class shares to a single class within a certain period post-IPO (Baran et al., 2018; and Cremers et al., 2018). The results in this paper can shed light on the financial reporting behavior of controlling shareholders/managers and corporate governance issues arising in similar situations. Nevertheless, this paper is limited in that it focuses on the capital markets in China, which are characterized by a weak legal system, highly concentrated ownership structures, and low investor protection. My results provide valuable insights to mitigate agency problems in such markets. How trading rights affect earnings informativeness in developed markets which feature diversified ownership and strong investor protection is my future research direction.

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