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Highlights:

- Firms with higher information asymmetry are less likely to pay dividends
- State-controlled firms with higher information asymmetry would pay higher dividends compared to non-state-controlled firms
- The split share structure reform enhanced information transparency, leading to a positive moderating effect on the relation between information asymmetry and dividend policy.

The relationship among information asymmetry, dividend policy and ownership structure

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Abstract

This study examines the relationship among information asymmetry, dividend policy and ownership structure for Chinese listed firms from 2003 to 2012. We find that firms with higher information asymmetry are less likely to pay dividends. Further, the sample is divided into state-controlled and non-state-controlled firms, and the results show that state-controlled firms with higher information asymmetry would pay higher dividends compared to non-state-controlled firms. In addition, we find that the split share structure reform enhanced information transparency, leading to a positive moderating effect on the relation between information asymmetry and dividend policy.

Keywords: Information asymmetry; ownership structure; dividend policy; split share structure reform

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1. Introduction

According to the dividend signaling hypothesis, managers who know more inside information about future corporate growth convey that information to external investors through dividend payouts. Hence, signaling hypothesis suggests that there is a positive relation between the information asymmetry and dividend payouts. However, in their examination of US stock markets, Li and Zhao (2008) found a reverse relation between information asymmetry and dividend policy. In other words, when information asymmetry is lower, firms are more likely to pay out dividends, which is inconsistent with the signaling hypothesis inference. For agency problem theory, dividends can be a tool to mitigate the agency problem. Through distributing the free cash flow as dividends, the possibility of expropriation by managers can be reduced. La Porta et al. (1999) indicated that when a country has better institutional investor protection, dividends play a critical role in reducing the agency problem, while dividends are insignificant in countries with a weak investor protection environment. However, the focus in previous studies on information asymmetry and dividend policy mostly has been on developed markets. Emerging markets are more inefficient and information asymmetry is higher. Therefore, the contradictions between information asymmetry and dividend policy require further examination, and Chinese markets are particularly critical. China is the second largest economy in the world but the development of their capital market development and corporate management are significantly different from what has occurred in developed countries. Lin and Su (2008) noted that Chinese markets are less developed and that reliable information is lacking. Therefore, China is a suitable platform from which to validate the relationship between information asymmetry and dividend policy. Eun and Huang (2007) studied the asset pricing mechanism of Chinese stock markets from

1995 to 2004, demonstrating that investors were willing to pay the premium price for firms with dividends. In China, the corporate governance mechanism can be strengthened by cash dividends. In another study, Lee and Xiao (2004) demonstrated that with an increase in corporate dividends, there would be a negative reaction in the markets. They suggested that this was because the controlling shareholders acquired corporate benefits through cash dividends and took advantage of minority shareholders.

Chen, Jian and Xu (2009) studied the dividend payouts of Chinese listed firms from 1994 to 2004 and found that the average dividend payout was 19.98%, the lowest payout ratio in the world. However, different firms had extremely different dividend payout ratios with some even reaching a 140% payout ratio. The motivations and incentives to pay out dividends differ between firms, with the controlling shareholder playing an important role in dividend policy. The ownership structure is critical to corporate goals and supervision of managers, and hence influences corporate profitability, dividend payout, capital structure, growth rate and diversification decision-making (Thomsen and Pedersen, 2000). Chen, Jian and Xu (2009) indicated that the dividend yields of the shares held by the controlling shareholder in Chinese listed firms could be up to 50%, while the dividend yields of the shares held by minority shareholders were lower than 2%. They suggested that the dividend payment is a channel for the expropriation of private benefits, and ownership structure is the key determinant of dividend payout. The uniqueness of the ownership structure in Chinese listed firms is that largest controlling shareholders are usually associated with the government. In addition, firms with concentrated ownership may disclose less information, making the problem of information asymmetry between the management and external shareholders more severe (Attig et al., 2006; Chen et al., 2008). In addition, the controlling shareholder can exploit minority shareholders

through information asymmetry (Bae et al., 2002; Chang and Shin, 2007).

The controlling shareholder not only can easily acquire information, but can also decide when or how to introduce the related information to the capital markets. Thus, in Chinese listed firms, how the unique ownership structure influences information communication and affects the dividend policy are important issues of management. In addition, in 2005, China practiced a series of split share structure reforms which not only affected the ownership structure, but also influenced the information transparency of firms. Therefore, this study aims to examine whether information asymmetry influences the dividend policy of Chinese firms, and whether the ownership structure and China's split share structure reform have moderating effects on the relationship between information asymmetry and dividend policy.

The results show that, in China, when information asymmetry is higher, dividend payouts will be lower. Dividend policy is not a tool for conveying information to the capital market. In relation to the moderating effect of ownership structure, it has been found that state-owned enterprises (SOEs) with higher information asymmetry tend to pay out dividends, satisfying the controlling shareholders by dividend payouts. In relation to the moderating effect of the split share structure reform, it has been found that overall effect of the split share structure reform is insignificant. However, we further separated the sample period into "before the reform" and "after the reform". We found that after the split share structure reform, when information asymmetry is lower, dividend payouts will be higher.

2. Literature Review and Hypotheses Development

2.1. The relationship between information asymmetry and dividend policy

Dividend policy is one of the most important decisions made within firms. The signaling hypothesis suggests that there exists information asymmetry between the

management and external investors. The management can release information to the markets through dividend payouts. Compared to the repurchasing of stock shares, dividend payments imply not only a positive prospect for future operations, but also a significant commitment to future cash flow. Therefore, dividends provide a channel with cost to deal with information asymmetry. Managers can reduce information asymmetry through the distribution of dividends, and the higher the level of information asymmetry, the higher the dividend payouts will be. For investors, their perception of the dividend payments should be more pronounced in firms with higher information asymmetry. However, Li and Zhao (2008) argued that information asymmetry is negatively related to the dividend payout, which is inconsistent with the signaling hypothesis. *Especially in emerging markets like the China. In the past, the Chinese government retained a powerful control over firms, event after the firms go partial privatization. The powerful control gave the government incentive and ability to divert corporate resources for some political or social welfare goals and this will worsen the information asymmetry. In addition, government set up the split share structure and shares were split into “tradable shares” and “non-tradable shares”. It led to serious agency problems in firms and cash dividends can help prevent government managers and controlling shareholders from extracting private benefits at expense of minority shareholders. In other words, the weak institutional environment severe information asymmetry lead to the dividends as a disciplining mechanism that reduces the agency costs. Therefore, this study infers that in China, since the legal system is underdeveloped, dividend payouts will be lower when information asymmetry is higher.* The hypothesis is developed as follows:

H₁: Information asymmetry is negatively related to dividend payouts.

2.2. The moderating effect of state ownership on the relationship between information

asymmetry and dividend policy

In most of the public firms in the US and UK, corporate ownership tends to be controlled by a few main shareholders. Ownership concentration is particularly apparent in countries with weak shareholder protection mechanisms since controlling shareholders can acquire private benefits at the expense of minority shareholders. Byun, Hwang and Lee (2011) studied the effect of ownership concentration in Korean listed firms on information asymmetry and demonstrated that concentrated ownership may impede information transmission. Moreover, this negative effect of ownership concentration dominates the influence of the institutional environment or internal corporate governance. Bae, Kang and Kim (2002) and Baek et al., (2006) showed that Chaebol-affiliated Korean firms would have acquisitions favorable for controlling shareholders or would set favorable acquisition prices for controlling shareholders at the expense of the private benefits of minority shareholders. Previous studies have also shown that the opaque information environment characteristic of firms with highly concentrated ownership may encourage managers to indulge in opportunistic earnings management. Anderson et al. (2009) indicated that the controlling shareholder may limit the corporate disclosure to reduce the transparency of firms. In summary, ownership concentration is positively related to information asymmetry.

In China, most listed firms are SOEs, which are controlled by the government or state-owned legal persons. The state owners control not only the seats on the boards of directors but also the rights to appoint the top managers. Chen et al. (2006) found that 45.58% of the board of director members were once controlling shareholders of the firms, and almost 100% of the top managers were appointed by the controlling shareholders. Moreover, previous research has also shown that the SOEs perform worse than non-SOEs (non-state-owned enterprises), the main reasons being government interference and conflicts of interest between shareholders or weak

operational motivation (Megginson et al., 1994). Depoliticization can effectively improve corporate performance (Xu and Wang, 1997). In addition, serious agency problems exist between the government and shareholders, and between the controlling shareholders and managers. Under a bureaucratic system of government, information asymmetry is a serious problem, and information can be distorted in the process of communication. It is not easy to effectively monitor SOEs. When state ownership is high, managers might exaggerate corporate performance, disclosing only favorable information to the controlling shareholders (Leuz et al., 2003).

Chen, Jian and Xu (2009) suggested that the controlling shareholders in SOEs have a strong incentive and the ability to tunnel resources and cash flow from the company, resulting in a serious agency problem. Especially when the ultimate controlling shareholder is the government, firms tend to pay higher dividends. In China, because of the weak legal system and institutional environment, through the dividend distribution, Chinese listed firms could transfer the funds and benefits coming from the initial public offering or seasoned equity offering to the pockets of the controlling shareholders. Lee and Xio (2004) examined the corporate dividend policy for Chinese listed firms from the years 1996 to 1999, and found that investors evaluated those firms which had concentrated ownership and distributed high dividends negatively.

According to previous studies, dividend distribution is an important source for tunneling. Chen, Jian and Xu (2009) indicated that the non-tradable shares were usually sold to the controlling shareholders at a discounted price, implying that the dividend yield of the controlling shareholder was lower than that of minority shareholders. *Huang, Shen and Sun (2011) examine how the institutional features affected cash dividend payments and found that dividend payments are positively associated with the proportion of nonnegotiable. In addition, changes in stock prices*

did not make any profit for non-tradable shareholders and they were forced to find other ways to expropriate private benefits, especially through dividend payout. Therefore, the inefficient corporate governance in developing markets would usually be shown in the form of tunneling behavior. Furthermore, dividends are the main and lawful income that nonnegotiable shareholders could expect from holding stock, they may press firms to pay and to pay more dividends (Huang et al. 2011). In summary, this study argues that firms with state ownership will have higher agency problems and hence higher information asymmetry. Moreover, SOEs tend to extract private benefits through dividend payouts. Therefore, the second hypothesis is developed as follows:

H₂: State ownership has a moderating effect on the relationship between information asymmetry and dividend payout.

2.3. The effect of the split share structure reform in China

To understand the effect of the split share structure reform on the Chinese stock market, the stock shares were separated into tradable shares held by legal persons or natural persons and non-tradable shares held by the government or state-owned legal persons. The split share structure has caused many problems (Sun and Tong, 2003; Lin and Su, 2008), including conflicts of interest between the holders of tradable and non-tradable shares, and hence the expropriation of benefits by non-tradable shareholders (mainly the controlling shareholders) at the expense of tradable shareholders (mainly minority shareholders). Typically, the non-tradable shareholders use different methods for the extraction for private benefits, for example, related party transactions (Cheung et al., 2006). Moreover, the split share structure is damaging to the market price mechanism, making for stricter equity financing conditions, restricting the merger and acquisition of listed firms, and hindering the market reform

(Qiu and Yao, 2009).

In addition, the different pricing of stock shares can induce different dividend yields between tradable and non-tradable shares. The implication is that the controlling shareholders (non-tradable shareholders) may distribute high cash dividends to transfer funds (Chen, Jian and Xu, 2009). The split share structure could distort the markets and therefore have an impact on corporate dividend policy. Moreover, in a weak external governance environment and with an inefficient internal governance mechanism, controlling shareholders have a greater incentive to increase their own private benefits (Hou and Lee, 2012). Chen, Jian and Xu (2009) found that high dividend payouts resulted from the different pricing between tradable and non-tradable shares in Chinese listed firms, with dividend payments becoming a channel for tunneling. It has been found in previous studies that if the ultimate shareholder is the government, firms tend to have high dividend payouts, and this is even more pronounced in firms with concentrated ownership. Hence, the split share structure not only influences market completeness, but also has an impact on corporate decision making.

The Chinese government initiated a split share structure reform in 2005, trying to transfer non-tradable shares into tradable ones. The China Securities Regulatory Commission (CSRC) instituted a regulation that within a certain period of time, tradable shares could not be traded in the stock market in order to avoid the introduction of a great number of tradable shares which would cause market fluctuation. Meanwhile, the government also set forth compensatory measures to the original tradable shareholders. The compensation was more favorable for SOEs than for non-SOEs, since SOEs had the mission of successful reform. The split share structure reform changed the ownership structure, and influenced the disclosure of information, leading to the alignment of interests between controlling and minority

shareholders (Hou and Lee, 2012). We therefore developed the third hypothesis:

H₃: The split share structure reform would have a moderating effect on the relationship between information asymmetry and dividend payout.

3. Methodology

3.1. Data and sample

The sample consists of Chinese firms listed on Shanghai and Shenzhen exchanges between 2003 and 2012. Financial data were collected from the Taiwan Economic Journal Database (TEJ) and CSMAR. Financial and insurance firms were excluded since their accounting principles differ from those of other industries. In addition, observations with missing data were not included.

We followed Li and Zhao (2008) and considered the characteristics of Chinese stock markets to construct the following models. The dependent variable is the proxy of dividend policy. Equation (1) includes the proxies of information asymmetry, ownership structure and control variables; Equation (2) includes the proxies of information asymmetry, split share structure reform and control variables¹. The models are formulated as follows:

$$\text{Div}_{i,t} = \beta_0 + \beta_1 \text{ASY}_{i,t} + \beta_2 \text{OWN}_{i,t} + \beta_3 \text{ASY}_{i,t} * \text{OWN}_{i,t} + \text{Control Variables} + \varepsilon_{i,t} \quad (1)$$

$$\text{Div}_{i,t} = \alpha_0 + \alpha_1 \text{ASY}_{i,t} + \alpha_2 \text{Reform}_{i,t} + \alpha_3 \text{ASY}_{i,t} * \text{Reform}_{i,t} + \text{Control Variables} + \mu_{i,t} \quad (2)$$

3.1.1. Dividend policy (DIV)

Following Li and Zhao (2008), dividend payout is used as a proxy for corporate dividend policy. DIV is the dummy variable which is one, if firms distributed cash

¹ The study follows China Securities Regulatory Commission(CSRC) and defines twelve industries. The industries are Agriculture and Forestry, Mining, Manufacture, Power, Architecture, Transportation, Information, Wholesale business, Real Estate, Renting Industry, Entertainment Industry, and Others. In order to control industry effects, we use eleven dummies to perform regression. The coefficients of industries dummies are all significant at conventional levels.

dividends, and zero otherwise.

3.1.2. Information asymmetry (ASY):

We followed Li and Zhao (2008) and Drobetz et al. (2010), and defined corporate information asymmetry as the standard deviation of earnings forecast errors by analysts, calculated by the following formula:

$$ASY = \ln \left(1 + \frac{\text{standard deviation of analysts forecasts}}{|\text{median forecasts}|} \right) \quad (3)$$

The measurement should be based on earnings forecast by at least two analysts in each company in every year. Specifically, when analysts' earnings forecast for the company for that year are more dispersed, the information will be more uncertain.

3.1.3. Ownership structure (OWN)

OWN is a dummy variable set to be one if the firm is an SOE, or zero otherwise. This study treats firms with more than 50% of the shares held by the government as SOEs.

3.1.4. Split share structure reform (Reform)

This study uses the year when the firm initiated the split share structure reform as the reform year. *The years before the reform year are set to be zero and the years after the reform year are set as one.*

3.1.5. Other control variables

The characteristics of Chinese markets are considered and the work of Li and Zhao (2008) is extended to control for the possible impact of dividend policy, including corporate size, growth opportunity (market-to-book ratio and asset growth

rate), profit margin and corporate risk. Fama and French (2001) suggested that large firms, and firms with low growth and high cash flows would pay high dividends. As in Grullon, Michaely and Swaminathan (2002), Hoberg and Prabhala (2009), and Bulan, Subramanian and Tanlu (2007), corporate risk is taken as the control variable. They suggested that when firms entered the mature phase, corporate risk would decrease, and they would tend to pay out dividends as a signal to the market.

4. Results

This section discusses the relationship between information asymmetry and dividend policy for Chinese firms listed on the Shanghai and Shenzhen exchanges from 2003 to 2012. Firms were further divided into state-owned enterprises (SOEs) and non-state-owned enterprises (non-SOEs) to observe whether the relationship between information asymmetry and dividend policy would be moderated by the ownership structure. Finally, this study also examines the ownership structure in relation to the split share structure reform in order to observe whether the reform had a moderating effect on the relationship between information asymmetry and dividend policy.

4.1. Univariate tests

This study includes 7,601 observations, 1,269 SOEs (16.69%) and 6,332 non-SOEs (83.31%). Table 1 and Table 2 show the results of univariate tests designed to examine the differences between the samples with high and low degrees of information asymmetry, and between SOEs and non-SOEs, separately. An examination of the results in Table 1 shows that the dummy of dividend mean (median) for total sample is 0.679 (1.000). In other words, 67.9% of firms paid out

dividends. As for the high and low information asymmetry subsamples, 59.2% of firms with high information asymmetry paid out dividends; while 76.7% of firms with low information asymmetry paid out dividends. These results are consistent with H1 that indicates that when the information asymmetry is higher, dividend payouts will be lower. The OWN results indicate that 10.8% are SOEs with high information asymmetry; while 20.9% are SOEs with low information asymmetry.

Table 1. The differences between firms with high information asymmetry and low information asymmetry. This table reports the differences of variables between firms with high information asymmetry and low information asymmetry. *, ** and *** represent the significance at the 10%, 5% and 1% levels, respectively.

	Mean			Median		
	High	Low	difference	High	Low	difference
DIV	0.149	0.202	-0.053***	0.000	0.000	0.000***
OWN	0.122	0.210	-0.088***	0.000	0.000	0.000***
MB	1.642	2.417	-0.775	1.152	1.237	-0.085***
Growth	0.267	0.337	-0.069	0.123	0.119	0.004
ROA	0.042	0.046	-0.003	0.033	0.046	-0.013***
Risk	2.287	2.946	-0.659*	1.658	1.924	-0.266***

Table 2. The differences between SOEs and non-SOEs. This table reports the differences of variables between state-owned enterprises (SOEs) and non-state-owned enterprises (non-SOEs). *, ** and *** represent the significance at the 10%, 5% and 1% levels, respectively.

	Mean			Median		
	SOEs	Non-SOEs	difference	SOEs	Non-SOEs	difference
DIV	0.266	0.157	0.108***	0.000	0.000	0.000***
ASY	0.206	0.277	-0.070***	0.155	0.224	-0.069***
MB	1.527	2.130	-0.603	1.080	1.221	-0.141***
Growth	0.463	0.270	0.192***	0.139	0.118	0.021***
ROA	0.057	0.042	0.014***	0.049	0.037	0.012***
Risk	2.353	2.669	-0.316	1.980	1.738	0.242***

Table 3. Correlations. This table reports the correlations of variables for firms listed on the Shanghai and Shenzhen Stock Exchanges between 2003 and 2012. *, ** and *** represent the significance at the 10%, 5% and 1% levels, respectively.

	DIV	ASY	OWN	MB	Growth	ROA	Risk
DIV	1.000						
ASY	-0.183***	1.000					
OWN	0.099***	-0.084***	1.000				
MB	-0.021*	0.003	-0.008	1.000			
Growth	0.011	-0.023*	0.030***	0.050***	1.000		
ROA	0.239***	-0.141***	0.051***	-0.635***	0.005	1.000	
Risk	-0.096***	0.005	-0.009	0.197***	0.048***	-0.011	1.000

4.2. Multivariate tests

4.2.1. Information asymmetry, dividend policy and ownership structure

This study examines the effect of information asymmetry on the dividend policy as determined by Probit regression analysis. The results in Column I of Table 4 demonstrate that the level of information asymmetry of firms significantly and negatively influences the distribution of dividends (the coefficient of ASY is -0.139 at the 10% level). This shows that when information asymmetry is higher, firms may choose not to pay dividends. The results are consistent with Li and Zhao's (2009) argument that dividend payout is not the tool that conveys information to the markets. In China, the incompleteness of the legal system and insufficiency of fund raising channels makes dividend policy more critical for corporate operations. The results are consistent with H_1 , that information asymmetry is negatively related to dividend payout.

The moderating effect of the ownership structure on the relationship between information asymmetry and dividend policy is shown in columns II and III of Table 4.

In Column II of Table 4, we are only concerned with the effect of ownership on the dividend policy, and find that SOEs had a significantly positive impact on dividend policy (the coefficient of OWN is 0.259, significant at the 1% level). SOEs tend to pay higher dividends than non-SOEs. Most non-tradable shares are held by SOEs, meaning that these shareholders cannot benefit from capital gains through stock prices. Rather, holders of non-tradable shares will tend to benefit from dividend payouts. When all effects of the main variables are considered (see Column III of Table 4), the interaction term between information asymmetry and SOEs had a significantly positive impact on the dividend policy (the coefficient of ASY*OWN is 0.289, significant at the 5% level). In other words, SOEs with high information asymmetry would pay out dividends. Therefore, the state ownership could moderate the relationship between information asymmetry and dividend policy, which is consistent with H₂.

Table 4. Multivariate tests of full sample. This table reports the relation among information asymmetry, ownership structure and dividend policy. The dependent variable is dividend payouts (DIV). *, ** and *** represent the significance at the 10%, 5% and 1% levels, respectively.

	I	II	III
Constant	-1.544*** (-13.410)	-1.606*** (14.081)	-1.544*** (-13.228)
ASY	-0.139* (-1.900)		-0.223** (-2.476)
OWN		0.259*** (5.173)	0.198*** (3.191)
ASY*OWN			0.289* (1.670)
MB	-0.074*** (-4.740)	-0.07***5 (-4.786)	-0.075*** (-4.781)
Growth	-0.223*** (-4.277)	-0.238*** (-4.545)	-0.236*** (-4.515)
ROA	13.080*** (16.758)	13.085*** (16.827)	12.939*** (16.577)
Risk	-0.225*** (-9.820)	-0.225*** (-9.887)	-0.222*** (-9.711)
Industry	Yes	Yes	Yes
Year	Yes	Yes	Yes
McFadden R-squared	0.109	0.112	0.113
Log likelihood	-3099.490	-3088.12	-3084.682
Observations	7492	7,492	7492

In addition, as to the effect of the split share structure reform, this study tried to examine whether the relationship between information asymmetry and the dividend policy would be moderated by the split share structure reform. After the split share structure reform, non-tradable shares were transferred into tradable ones, allowing for lowering of information asymmetry in the capital market, hence reducing the distribution of the dividends. The results are shown in Table 5. The coefficient of the interaction term between the split share structure reform and information asymmetry is significantly negative (the coefficient of ASY*Reform is -0.351, significant at the 10% level). The results show that after the reform, firms with lower information

asymmetry showed significantly higher dividend distribution. The results are consistent with H3, that the split share structure reform would have a moderating effect on the relationship between the information asymmetry and dividend payout.

Table 5. Multivariate tests for full sample. This table reports the effects of the split share structure reform on information asymmetry. The dependant variable is dividend payouts (DIV). *, ** and *** represent the significance at the 10%, 5% and 1% levels, respectively. Industry effects and year effects are controlled, and t-values are shown in parentheses.

Constant	-1.692*** (-8.586)
ASY	0.085 (0.495)
Reform	0.163 (1.016)
ASY*Reform	-0.351* (-1.792)
MB	-0.080*** (-4.917)
Growth	-0.232*** (-4.224)
ROA	12.795*** (15.815)
Risk	-0.220*** (-9.269)
Industry	Yes
Year	Yes
McFadden R-squared	0.111
Log likelihood	-2788.10
Observations	6802

4.3 Additional Test

4.3.1 Another measures of information asymmetry

Since the empirical literature has introduced various simpler measures of information asymmetry, therefore, we use other measures of information asymmetry

to robust our results². Previous studies argued that information asymmetry tends to increase with agency cost³, increase with growth opportunity (Smith and Watts, 1992) and decrease with firm size (Vermaelen, 1981). As another robustness test, we use agency cost, Tobin's Q and firm size to measures of information asymmetry and the results are shown in Table 6.

In Columns I, agency cost is used to capture the information asymmetry and the coefficient of $ASY*OWN$ is 1.614(significant at the 10%). In column II and III, Tobin's Q and firm size are used to measure another information asymmetry. Although the coefficients of $ASY*OWN$ are insignificant at conventional levels, but the directions of coefficients are same with our expectation. The findings are consistent with the main results, namely that SOEs with high information asymmetry would pay out dividends. In other words, our main results remain unchanged.

² We thank the reviewer for suggesting this analysis.

³ Agency cost is measured by the ratio of management expense.

Table 6. Multivariate tests of full sample. This table reports the relation among information asymmetry, ownership structure and dividend policy. The dependent variable is dividend payouts (DIV). *, ** and *** represent the significance at the 10%, 5% and 1% levels, respectively.

	I	II	III
Constant	-1.540*** (-13.183)	-1.259*** (-9.681)	-9.043*** (-19.241)
ASY	-0.811** (-2.215)	-0.318*** (-5.543)	0.324*** (16.27)
OWN	0.139* (1.721)	0.156* (1.713)	1.413* (1.680)
ASY*OWN	1.614* (1.798)	0.041 (1.365)	-0.058 (-1.547)
MB	-0.068*** (-4.189)	0.205*** (3.814)	0.030*** (3.559)
Growth	-0.242*** (-4.594)	-0.193*** (-3.888)	-0.366*** (-6.058)
ROA	12.901*** (16.707)	12.105*** (15.254)	11.259*** (15.466)
Risk	-0.220*** (-10.011)	-0.205*** (-8.899)	-0.194*** (-8.628)
Industry	Yes	Yes	Yes
Year	Yes	Yes	Yes
McFadden R-squared	0.113	0.116	0.153
Log likelihood	-3109.258	-3097.7	-2967.465
Observations	7514	7517	7517

4.3.2 Another measures of dividend payout

This study defines DIV is the dummy variable which is one, if firms distributed cash dividends, and zero otherwise. Previous studies also use the dividend payout ratio to test the effects of the issues⁴. Therefore, we use the payout ratio to robust our findings and the results are shown as Table 7. The results show that when SOEs with higher information asymmetry, the dividend payout ratio will increase (the coefficient

⁴ We thank the reviewer for suggesting this analysis.

of the interaction term is 0.008, significant at the 1% level). The result is consistent with our main findings, indicating that SOEs with higher asymmetry will be perceived as having a channel to expense other investors by dividend payout.

Table 7. Multivariate tests of full sample. This table reports the relation among information asymmetry, ownership structure and dividend policy. The dependent variable is dividend payouts (DIV). *, ** and *** represent the significance at the 10%, 5% and 1% levels, respectively.

Constant	0.004** (2.329)
ASY	0.005*** (-5.992)
OWN	0.001 (1.463)
ASY*OWN	0.008*** (4.200)
MB	0.002*** (16.072)
Growth	0.001 (-1.093)
ROA	0.119*** (33.071)
Risk	0.001*** (-5.781)
Industry	Yes
Year	Yes
Adj.R-squared	0.283
F-value	92.407
Observations	6229

4.3.3 Does share repurchases matter in the relationship among ownership structure, the information asymmetry and the dividend policy? ⁵

Previous empirical literature argued that share repurchases can bring significant effect in dividend policy. This study takes the share repurchases into consideration

⁵ We thank the reviewer for suggesting this analysis.

and the results are shown in Table 8. The coefficient of interaction term (ASY*OWN) is 0.298 and significant at the 10% level. The results indicating that when we take the share repurchases into consideration, the results remain unchanged.

Table 8. Multivariate tests of full sample. This table reports the relation among information asymmetry, ownership structure and dividend policy. The dependent variable is dividend payouts (DIV). *, ** and *** represent the significance at the 10%, 5% and 1% levels, respectively.

Constant	-1.557*** (-13.349)
ASY	-0.230** (-2.551)
OWN	0.199*** (3.192)
ASY*OWN	0.298* (1.719)
MB	-0.075*** (-4.830)
Growth	-0.234*** (-4.477)
ROA	12.939*** (16.639)
Risk	-0.222*** (-9.755)
RP_DUM	0.597*** (4.008)
Industry	Yes
Year	Yes
McFadden R-squared	0.115
Log likelihood	-3101.691
Observations	7517

4.3.4 The robustness of moderating effects

If “OWN” moderates “ASY”, then it should also moderate all other covariates⁶. We estimate the model by interacting all other covariates with the “OWN” variable and the results are shown in Table 9 and Table 10. The coefficients of ASY*OWN and ASY*Reform are 0.423 and -0.394, respectively, and significant at the 5% level. The results are consistent with the main findings.

Table 9. Multivariate tests of full sample. This table reports the relation among information asymmetry, ownership structure and dividend policy. The dependent variable is dividend payouts (DIV). *, ** and *** represent the significance at the 10%, 5% and 1% levels, respectively.

Constant	-1.504*** (-13.546)
ASY	-0.344*** (-4.324)
OWN	-0.010 (-0.114)
ASY*OWN	0.423** (2.404)
OWN*MB	-0.043 (-1.462)
OWN*Growth	-0.268*** (-2.976)
OWN*ROA	13.248*** (7.142)
OWN*Risk	-0.205*** (-3.668)
Industry	Yes
Year	Yes
McFadden R-squared	0.056
Log likelihood	-3309.653
Observations	7517

Table 10. Multivariate tests of full sample. This table reports the relation among information asymmetry, ownership structure and dividend policy. The dependent variable is dividend payouts

⁶ We thank the reviewer for suggesting this analysis.

(DIV). *, ** and *** represent the significance at the 10%, 5% and 1% levels, respectively.

Constant	-1.755*** (-9.262)
ASY	0.016 (0.103)
Reform	0.239 (1.557)
ASY*Reform	-0.394** (-2.186)
OWN*MB	-0.038 (-1.252)
OWN*Growth	-0.263*** (-2.839)
OWN*ROA	12.694*** (6.441)
OWN*Risk	-0.177*** (-3.219)
Industry	Yes
Year	Yes
McFadden R-squared	0.056
Log likelihood	-2986.09
Observations	7626

4.3.5 The robustness of clustered standard errors.

Regression model errors are likely to be correlated within firm. In such settings default standard errors can greatly overstate estimator precision. Therefore, this study use clustered standard errors to examine the all regression models. The results are presented in Table 11. The coefficients of interaction (ASY*OWN and ASY*Reform) are 0.289 and -0.351, respectively, and significant at 5% levels. The results are same with our main results.

Table 11. Multivariate tests of full sample. This table reports the relation among information

asymmetry, ownership structure and dividend policy. The dependent variable is dividend payouts

(DIV). *, ** and *** represent the significance at the 10%, 5% and 1% levels, respectively.

	I	II
Constant	-1.544*** (-13.569)	-1.692*** (-8.025)
ASY	-0.223*** (-3.023)	0.085 (0.725)
OWN	0.198*** (3.438)	
Reform		0.163 (0.914)
ASY*OWN	0.289** (2.035)	
ASY*Reform		-0.351** (-2.447)
MB	-0.075*** (-4.667)	-0.080*** (-4.726)
Growth	-0.236*** (-4.252)	-0.232*** (-3.821)
ROA	12.939*** (15.169)	12.795*** (14.382)
Risk	-0.222*** (-10.001)	-0.220*** (-9.490)
Industry	Yes	Yes
Year	Yes	Yes
McFadden R-squared	0.113	0.111
Log likelihood	-3084.682	-2788.1
Observations	7429	6802

4.3.6 The robustness test of other control variables

In order to minimize the omitted variables concern, we control the variables⁷ of R&D and Cross-listings and recheck the main results. The results are shown in Table 12. Column I of Table 12 shows the results obtained from testing the impact of R&D. Column II, test whether cross-listings matter in the results. As can be seen, the coefficients of ASY*OWN are 0.431 and 0.412, respectively, and significant at the 5% level. This is consistent with our main results, indicating that SOEs with more information asymmetry will be perceived as having a channel to extract private benefits at the expense of other external shareholders by the dividend payout. The main results remain unchanged.

Table 12. Multivariate tests of full sample. This table reports the relation among information asymmetry, ownership structure and dividend policy. The dependent variable is dividend payouts (DIV). *, ** and *** represent the significance at the 10%, 5% and 1% levels, respectively

	I	II
Constant	-1.504*** (-13.536)	-1.495*** (-13.477)
ASY	-0.345*** (-4.337)	-0.345*** (-4.344)
OWN	-0.007 (-0.082)	-0.046 (-0.501)
ASY*OWN	0.431** (2.434)	0.412** (2.365)
OWN*MB	-0.040 (-1.371)	-0.036 (-1.221)
OWN*Growth	-0.267*** (-2.965)	-0.267*** (-2.960)
OWN*ROA	13.203*** (7.126)	13.631*** (7.252)
OWN*Risk	-0.205***	-0.217***

⁷ We thank the reviewer for suggesting this analysis.

	(-3.667)	(-3.812)
	-24.833	
OWN*RD	(-0.952)	
		0.487***
OWN*CROSS		(3.094)
Industry	Yes	Yes
Year	Yes	Yes
McFadden R-squared	0.056	0.057
Log likelihood	-3308.887	-3304.888
Observations	7517	7517

5. Conclusions

Different interpretations of corporate dividend payouts have been proposed in the literature (Allen and Michaely, 2003). The dividend signaling hypothesis suggests that managers, in comparison to external investors, know more about the inside information related to future corporate growth. Hence, firms can convey the information to capital markets through dividend payouts. However, agency theory demonstrates that when the legal system is weak, dividends cannot be used as a tool to avoid agency problems. This study probes into the effect of information asymmetry on dividend payouts and explores the moderating effects of the ownership structure and China's split share structure reform.

The results of this study show that in China, when information asymmetry is higher, dividend payout will be lower. Dividend policy does not convey information to the capital market. As to the moderating effect of ownership structure, SOEs with higher information asymmetry tend to pay out dividends, satisfying the controlling shareholders by dividend payouts. Whether changes in the ownership structure and the enhancement of external corporate governance have a moderating effect on the relationship between information asymmetry and dividend policy are examined. The findings show that the total effect of split share structure reform is insignificant.

However, we further separated the sample period into “before the reform” and “after the reform”. We found that after the split share structure reform, when information asymmetry is lower, dividend payout will be higher. The results support the hypothesis stated in this study, and showed that split share structure reform increased the transparency of corporate information.

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