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China Journal of Accounting Research

journal homepage: www.elsevier.com/locate/cjar

The role of cross-listing, foreign ownership and state ownership in dividend policy in an emerging market

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ARTICLE INFO

Article history:

Received 9 September 2011

Accepted 25 June 2012

Available online 7 September 2012

JEL classification:

G30

G34

G35

Keywords:

Agency problems

Corporate governance

Cash dividends

Stock dividends

Ownership structure

Cross listings

Emerging markets

ABSTRACT

In this paper, we investigate if dividend policy is influenced by ownership type. Within the dividend literature, dividends have a signaling role regarding agency costs, such that dividends may diminish insider conflicts (reduce free cash flow) or may be used to extract cash from firms (tunneling effect) – which could be predominant in emerging markets. We expect firms with foreign ownership and those that are listed in overseas markets to have different dividend policies and practices than those that are not, and firms with more state ownership and less individual ownership to be more likely to pay cash dividends and less likely to pay stock dividends. Using firms from an emerging economy (China), we examine whether these effects exist in corporate dividend policy and practice. We find that both foreign ownership and cross-listing have significant negative effects on cash dividends, consistent with the signaling effect and the notion of reduced tunneling activities for firms with the ability to raise capital from outside of China. Consistent with the tunneling effect, we find that firms with higher state ownership tend to pay higher cash dividends and lower stock dividends, while the opposite is true for public (individual) ownership. Further analysis shows that foreign ownership mediates the effect of state ownership on dividend policy. Our results have significant implications for researchers, investors, policy makers and regulators in emerging markets.

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1. Introduction

Corporate dividend policy has attracted the interest of researchers of capital markets and corporate behavior for almost half a century. Today, corporate governance and ownership structure issues continue to be of major interest to researchers, practitioners and policy makers, in particular following accounting scandals such as Enron and WorldCom in 2002 and the corresponding legislative reforms such as the Sarbanes–Oxley Act in the United States. Empirical research on corporate governance is based on the theoretical framework of agency theory (e.g., Jensen and Meckling, 1976; Fama and Jensen, 1983), which provides a framework to explain how to create an effective monitoring and incentive scheme under uncertainty and incomplete information. Following this line of research, the literature has argued that dividends can be used to prevent insiders from diverting retained earnings for their own benefit. In countries with strong investor protection, dividends are found to play a useful role in reducing agency problems, whereas they play a less important role in countries with weak investor protection (La Porta et al., 2000). China is a civil law country with weak investor protection and according to the La Porta et al. (2000) model, lower dividend payout ratios are expected. However, along with dynamic changes, extremely high payout ratios have been observed in China (Chen et al., 2009). In this paper, we shed light on such a dilemma by focusing on whether corporate ownership structure has an influence on corporate dividend policies.

Corporate ownership structure could be associated with dividend policy and practice in that dividends signal the extent of conflicts between majority shareholders and minority shareholders (e.g. Jensen et al., 1992). While empirical studies have documented the significant role of ownership variables in determining dividend policies (Thomsen, 2005; Mancinelli and Ozkan, 2006; Khan, 2006; Szilagyi and Renneboog, 2007), the results are quite mixed. For instance, Szilagyi and Renneboog (2007) find a positive relationship between stakeholders' ownership and dividends for Dutch firms, while Thomsen (2005) and Khan (2006) find a negative relationship for UK firms.

In addition, the potential impact of foreign stockholder ownership has been largely neglected, especially in emerging markets where the ownership structures and institutional background are significantly different from those of developed economies. In a recent study, Ferguson et al. (2002) show that the disclosure policies and disclosure behavior of Chinese firms issuing cross-listed shares on the Stock Exchange of Hong Kong (H-shares on SEHK) were very different from other SEHK-listed firms and state-owned firms incorporated in Hong Kong (Red-chip shares), which they attribute to signaling incentives and cost-benefit concerns. Such differences might also exist for dividend policies and practices. If dividends play a signaling role, then the fact that firms are listed overseas may have a significant influence on their dividend policies and practices compared to those that are not. Therefore, in an emerging market setting, we investigate whether there are significant differences in dividend policies and practices between firms with cross-listed shares and/or foreign ownership and those without.

Other motivations of our study come from the unique institutional setting of public firms in China. The literature has documented several possible motivations for public firms to pay dividends, such as to signal firms' future prospects to investors (e.g., Bhattacharya, 1979; John and Williams, 1985), restrain agency problems by forcing firms to external capital markets with additional monitoring (Rozeff, 1982; Easterbrook, 1984), reduce management's opportunity to invest the firm's free cash flow in projects that benefit management at shareholders' expense (Jensen, 1986) or projects that benefit controlling shareholders at minority shareholders' expense (Faccio et al., 2001) and to minimize taxes (Wilkinson et al., 2001).

However, in contrast to the earlier hypothesis that dividend payments are a vehicle to constrain the agency behavior of managers (e.g., Jensen, 1986), cash dividends are preferred by majority shareholders in emerging markets (Chen et al., 2009). This may occur because the firms listed in emerging markets are mostly equity carve-outs, a term used to indicate that these firms were originally part of assets or subsidiaries of state-owned enterprises and were chosen to be listed because they were relatively attractive to investors. Earlier literature has documented that Chinese firms with a controlling state shareholder are more likely to pay cash dividends and state shareholders are more likely to surrender the exercise of stock subscription rights (Wei et al., 2004).¹

¹ Rights offerings are the offering to existing shareholders of rights to subscribe to common stocks.

Such dividend practices are similar to transferring state shares to other minority shareholders at a transfer price higher than a price under private placement (Lee and Xiao, 2004).²

In contrast, stock dividends can play a different role from cash dividends in the emerging market of China. First, firms with better prospects are more capable of signaling through stock dividend distribution, which is the only available signaling alternative as stock splits are not allowed in China. Second, stock dividend distributions restrict a firm's ability to pay cash dividends in the future, indicating that stock dividends are less likely to be used by state shareholders as such dividends limit their ability to obtain cash from listed companies in the future. Furthermore, stock dividend distribution can increase the share's liquidity and its attractiveness to investors (Lakonishok and Lev, 1987).

In summary, cash dividends and stock dividends play different roles in China. Cash dividends, coupled with non-subscription of shares in subsequent rights offers, represent the return of cash to controlling shareholders and such behavior is termed 'tunneling' in the recent literature. Stock dividends, without entailing actual cash outflow, cannot play such a tunneling role but can be used as a credible mechanism to convey insider information to investors. China provides a unique setting for researchers to study the difference between cash dividends and stock dividends and their determinants.

Both the policies and practices related to cash dividends and stock dividends are examined in our paper to obtain a sufficient understanding of their roles and relationships with corporate ownership structure in the emerging market of China. In addition, along with the roles of cross-listings and foreign ownership in influencing dividend policy, which have not been examined and are one of the aims of our paper, we also investigate the effects of state-ownership and individual ownership on dividends to obtain a comprehensive understanding of the different roles of various shareholders in the same setting. Finally, we control for other factors that are considered as determinants of dividends in the literature. These factors include firm size, leverage, risk, growth opportunity, free cash flow and profitability (Alpa, 2005; Goergen et al., 2005).

We find that firms with higher foreign ownership and cross-listed firms are less likely to distribute cash dividends, which are consistent with the notion of reduced tunneling activities for firms with the ability to raise capital outside of China. We also find that firms with higher state ownership tend to pay higher cash dividends and lower stock dividends, indicating that the tunneling effect dominates the signaling effect for firms with higher state ownership. Furthermore, firms with higher individual ownership tend to pay higher stock dividends and lower cash dividends, where the signaling effect dominates.

Our paper adds to the literature by exploring the role of cross-listing and foreign ownership in determining dividend policy. In particular, we extend the current literature by examining whether companies issuing B-shares, H-shares (in Hong Kong) or cross listed in the US or other markets follow a different policy than documented in early studies on firms issuing only domestic shares (e.g., Wei et al., 2004).

In addition, our study provides updated research on the relationship between corporate ownership structure and dividends. In light of the changes in regulation and ownership, we find a trend toward less cash dividends and more stock dividends during our sample period, which is in contrast to the trend toward more cash dividends and less stock dividends found by earlier studies, such as Wei et al. (2004) with a sample period from 1995 to 2000.

Finally, our paper contributes to the understanding of whether and how majority shareholders use dividend policies to facilitate tunneling cash to themselves. For instance, the role of state shareholders in the unique setting of the emerging market of China can help us obtain a better understanding of the role of government ownership in business.

The paper is organized as follows. Section 2 discusses the regulatory requirements of dividend policy in China, including the types of dividends and the institutional setting relevant to dividend policies. The literature review and hypothesis development are included in Section 3. Section 4 discusses the sample, variables and empirical method used in examining the association between dividend policy and corporate ownership

² State shares were typically non-tradable during the period of our study. They could only be bought and sold through private placement with special approval from the government. However, as discussed later in the paper, in 2005, the Chinese government launched a reform on split share structure by converting non-tradable shares (state and legal person shares) into tradable shares. Nonetheless, it has been argued that the change has only been superficial and the shares, even after the conversion, are "de facto non-tradable shares" (Cheng et al., 2009). Moreover, the dates that these shares can be converted occur after 2006, which is outside the period of our study. Note 8 below also reports the results from sensitivity tests to examine the conversion effect on our analysis.

structure. Section 5 provides the results of our empirical analysis. Finally, Section 6 presents the conclusions and implications.

2. Regulatory requirements of dividend policy in China

2.1. Dividend policy in China

Three general forms of dividend policies are used in public firms in China: cash dividends, stock dividends and a combination of the two (Milonas et al., 2006). There is no mandatory dividend rule that requires a certain percentage of net income or retained earnings to be paid out as dividends and listed companies are allowed to make their own dividend policies (Wei et al., 2004). However, when the board of directors of a firm proposes a distribution of dividends, the proposed dividend policy is subject to final approval at the shareholders' meeting (Milonas et al., 2006). Moreover, the details are required to be announced in designated newspapers along with the interim or annual report. In particular, listed firms should explicitly show the source of dividends in their annual report (Wei et al., 2004).³

The dividend policies of listed companies have experienced significant changes since the establishment of stock markets in China. In the early stage of the stock markets, firms tended to distribute stock dividends rather than cash dividends. For instance, in 1992, about 96.23% of firms distributing dividends paid stock dividends, while in 2000 only 11.25% paid stock dividends (Wei et al., 2004). The same study reported that on average, 53.5% of firms distributed cash dividends from 1992 to 2001. Table 1 provides information using more recent data. The percentage of firms paying only cash dividends fell from 51.91% in 2001 to 38.02% in 2006, while firms paying only stock dividends ranged from 4.91% in 2001 to 9.76% in 2006 with fluctuations in between. Firms distributing both cash and stock dividends ranged from 7.72% to 13.94% during the same period. Non-dividend payers rose from 31% in 2001 to 40.67% in 2006. Thus, our results show an inverse trend when compared to the 1995–2000 results of Wei et al. (2004). Fewer firms paid cash dividends over the period of 2001–2006 than the previous period, which warrants investigation to shed light on this shift in dividend policies.

2.2. Institutional factors that affect dividend policy

There are a few institutional features that affect dividend policies. First, state shareholders seem to play a dominant role in determining dividend policies. Most of the listed companies in China are state-owned and the government has enormous discretion on dividend policy (Wei et al., 2004). Although the number of privately-owned listed companies has increased over time, most listed companies are still controlled by state shareholders. Table 2 illustrates the ownership situation of listed firms in China from 2001 to 2006. For non-tradable shares, state ownership declined from 40.8% in 2001 to 28.8% in 2006. Management ownership (inside employee ownership) decreased from 0.71% in 2001 to 0.1% in 2006. Institutional ownership changed from 18.29% in 2001 to 19% in 2006.⁴ For tradable shares, public ownership increased from 35.95% in 2001 to 45.88% in 2006. Foreign ownership (combination of B-shares and H-shares) decreased slightly from 3.06% in 2001 to 2.71% in 2006.

Second, the role of minority shareholders in corporate governance is limited in China (Jiang et al., 2010). The Chinese legal system offers few options for minority shareholders to take private enforcement against misconduct by large shareholders. The authority of regulators to enforce punitive action is also restricted. In addition, as institutional investors, such as mutual funds, are at a primitive stage in this emerging market, it is more difficult for a fund to influence corporate governance compared to its counterparts in the United States.

³ The source of stock dividends can be from capital reserves, surplus reserves and/or undistributed profits. Capital surplus refers to capital accumulation due to the increase of net assets resulting from non-operating activities, such as premium on paid in capital, receipt of donations, government appropriations and foreign currency translation difference. Surplus reserve refers to the reserves setup from profits annually in accordance with government regulations. Article 177 of the Chinese Company Law requires an amount of 10% of after-tax profits to be provided annually to the surplus reserve.

⁴ As also suggested in Note 2 above, the figures should be interpreted within the context of the 2005 share structure reform launched by the China Securities Regulatory Commission (CSRC, 2005).

Table 1

Number and percentage of China listed firms with cash and/or stock dividends. This table reports the number and percentage of firms paying no dividends and those of firms paying cash (stock) dividends from 2001 to 2006. In China some firms pay stock dividends and cash dividends at the same time, some pay only stock dividends or only cash dividends, and others pay no dividends.

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|-------|-------|-------|-------|-------|-------|
| <i>Firms paying only cash dividends</i> | | | | | | |
| Number of firms | 571 | 519 | 513 | 554 | 507 | 530 |
| Percentage of all listed firms (%) | 51.91 | 45.41 | 42.12 | 41.75 | 37.78 | 38.02 |
| <i>Firms paying only stock dividends</i> | | | | | | |
| Number of firms | 54 | 55 | 55 | 55 | 50 | 136 |
| Percentage of all listed firms (%) | 4.91 | 4.81 | 4.52 | 4.14 | 3.73 | 9.76 |
| <i>Firms paying both stock and cash dividends</i> | | | | | | |
| Number of firms | 134 | 95 | 94 | 185 | 134 | 161 |
| Percentage of all listed firms (%) | 12.18 | 8.31 | 7.72 | 13.94 | 9.99 | 11.55 |
| <i>Non-dividend payers</i> | | | | | | |
| Number of firms paying neither cash nor stock dividends | 341 | 474 | 556 | 533 | 651 | 567 |
| Percentage of all listed firms (%) | 31.00 | 41.47 | 45.65 | 40.17 | 48.51 | 40.67 |
| All listed firms | 1100 | 1143 | 1218 | 1327 | 1342 | 1394 |

Table 2

Average ownership structure of listed companies from 2001 to 2006 (%). This table reports descriptive statistics of the ownership structure of listed firms in China. Source: TEJ database.

| | 2001 (%) | 2002 (%) | 2003 (%) | 2004 (%) | 2005 (%) | 2006 (%) |
|--|----------|----------|----------|----------|----------|----------|
| <i>Non-tradable shares</i> | | | | | | |
| State-owned shares | 40.81 | 40.46 | 38.50 | 35.90 | 34.18 | 28.75 |
| Inside employee shares | 0.71 | 0.44 | 0.20 | 0.18 | 0.12 | 0.10 |
| Domestic institutional shares | 11.36 | 11.34 | 12.71 | 14.48 | 14.83 | 16.03 |
| Placement institutional shares | 6.93 | 6.83 | 6.88 | 6.64 | 6.06 | 2.96 |
| Other shares | 0.13 | 0.37 | 0.82 | 1.92 | 1.74 | 2.18 |
| Foreign institutional shares | 1.05 | 1.01 | 1.18 | 1.30 | 1.40 | 1.39 |
| Subtotal | 60.99 | 60.45 | 60.29 | 60.42 | 58.33 | 51.41 |
| <i>Tradable shares</i> | | | | | | |
| Public individual shares | 35.95 | 36.49 | 36.79 | 36.85 | 38.88 | 45.88 |
| Foreign within China shares (B-shares) | 2.39 | 2.30 | 2.15 | 2.01 | 2.05 | 1.92 |
| Foreign outside China shares (H-shares) | 0.67 | 0.76 | 0.77 | 0.72 | 0.74 | 0.79 |
| Subtotal | 39.01 | 39.55 | 39.71 | 39.58 | 41.67 | 48.59 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| <i>Of the above</i> | | | | | | |
| Total foreign shares | 4.11 | 4.07 | 4.10% | 4.03 | 4.19 | 4.10 |
| Total institutional shares | 18.29 | 18.17 | 19.59 | 21.12 | 20.89 | 18.99 |
| Average ownership by top 10 shareholders | 61.50 | 61.95 | 61.31% | 61.91 | 60.60 | 56.36 |

The average ownership by all mutual funds was only 3.75% of total shares outstanding in 2004 (Jiang et al., 2010). Hence, it is more difficult for a fund to influence corporate governance compared to its counterparts in the US.

Finally, controlling shareholders of public firms seem to prefer cash dividends to stock dividends in China, where most firms are carved out from state-owned enterprises (SOEs). As the government restrictively regulates both IPOs and seasoned equity financing, many firms and their holding companies are short of working capital. Moreover, state shares are not tradable in the market (Sami and Zhou, 2004). In such a setting, controlling shareholders, particularly in SOEs, may force listed firms to pay cash dividends to fulfill their capital needs (Lee and Xiao, 2004).

In addition to the approval from the shareholders' general meeting (GTA, 2010), public companies must meet the following requirements⁵ in order to distribute stock dividends: (1) they must have recovered any prior losses (if any), (2) the amount can be distributed only if there is a sufficient balance for the appropriation of the statutory surplus reserve, including that related to the public welfare fund, (3) the statutory surplus reserve and capital reserve, after the distribution, must not be less than 50% of the capital stock account balance, and (4) the stock dividend must be offered to all registered common stockholders. As a result, stock dividend distribution is not only limited to profitable companies it is also limited in its scale.

The accounting treatment for stock dividends also affects the popularity of stock dividends. Stock dividends are accounted for in China by reclassifying the appropriate undistributed and reserve accounts to the capital stock account based on the par value of the stock dividends issued (Lan, 2001, pages 11–13). This is different from the prevailing practices in other countries (such as the US) where the transfer is based on the fair value of the stock dividends issued (Kieso et al., 2007, pages 745–746). The fact that the par value is usually lower than its fair value explains why stock dividends are more prevalent in China than in the US.

3. Literature review and hypothesis development

3.1. Determinants of dividend payout policy

The literature on dividend policy provides three schools of theoretical models to explain corporate dividend behavior. The first group of theories (full information models) argues that investors demand higher expected returns on shares of dividend-paying stocks as a result of the imposition of a tax liability on dividends (Miller and Scholes, 1978; DeAngelo and Masulis, 1980). The second group of theories (information asymmetry models) is based on the market inefficiency hypothesis related to asymmetric information (Kale and Noe, 1990; John and Kalay, 1982; Jensen, 1986). The third group of theories (behavioral models) suggests that investor behavior is substantially influenced by societal norms and attitudes (Shiller, 1984) and dividend payouts can be viewed as the socioeconomic effect of corporate evolution (Frankfurter and Lane, 1992).

First, the literature has documented that tax factors affect the demand from investors to increase shareholders' pre-tax returns (Miller and Scholes, 1978; DeAngelo and Masulis, 1980). This suggests a negative relationship between tax rates and dividend payouts. However, a survey on the management of US companies indicates that differential taxes were a consideration, but not a first-order concern in payout policy decisions (Brav et al., 2005). Their results suggest that the factors discussed below could be more important in a low dividend tax environment.

Second, the literature also provides models based on the market inefficiency hypothesis related to asymmetric information, such as dividend signaling models (Kale and Noe, 1990). This is consistent with agency theory, which uses dividend policy to align the interests of shareholders and corporate managers (John and Kalay, 1982). Many researchers believe that dividends can convey information about a firm's prospects. One possibility is that dividends could simply convey information not previously known to the market (Miller and Rock, 1985), even if managers are not explicitly signaling private information. Alternatively, dividends can be used explicitly as an expensive signal to alter market perceptions of future earnings prospects (e.g., Bhattacharya, 1979; John and Williams, 1985). This line of literature has consistent findings that firms' hesitancy to cut dividends is related to signaling. The reason is that the market perceives that only firms with long-run and severe liquidity crises make dividends cut, and firms normally do not want to give the market such an impression. It would be extremely costly for bad firms to mimic good firms' policy of not cutting dividends. Therefore, by not cutting its dividend, a good firm might be able to separate itself from bad competitors (Brav et al., 2005).

Third, the dividend literature has also developed clientele theory, which suggests that investor behavior is substantially influenced by societal norms and attitudes (Shiller, 1984) and dividend payouts can be viewed as the socioeconomic effect of corporate evolution. That is, the segregation of management and ownership makes

⁵ The requirements are based on the Provisional Regulations on the Administration of Stock Issuance and Trading (see GTA 2010, page 11). Further to Note 3 above, the public welfare fund is part of the surplus reserve which is designed to be used for expenditure relating to employees' welfare (Chong and Wang, 2004).

it necessary to use dividend payouts to increase the attractiveness of equity issues. Even with the large tax disadvantage of dividends, paying dividends is an important factor in attracting individual investors to own shares (Brav et al., 2005). From management's perspective, institutions attempt to influence dividend decisions as much as they try to influence repurchase decisions. However, there are mixed results as to whether dividend payments are a significant factor affecting institutions' decisions (e.g., Allen et al., 2000; Brav et al., 2005).

Corporate ownership structure could be associated with dividend policy and practice in that dividends signal the extent of conflicts between majority shareholders and minority shareholders (Jensen et al., 1992). While empirical studies have investigated the significant role of different ownership variables in determining dividend policies (Thomsen, 2005; Khan, 2006; Szilagyi and Renneboog, 2007, among others), the results are quite mixed. For instance, Szilagyi and Renneboog (2007) find a positive relationship between stakeholders' ownership and dividends for Dutch firms, while Thomsen (2005) and Khan (2006) find a negative relationship for UK firms. We attempt to shed more light on such issues using data from the emerging market of China.

3.2. Studies on dividend payout in china and hypothesis development

The dividend literature usually suggests that paying cash dividends mitigates the conflict of interest between majority shareholders and minority shareholders (e.g., Faccio et al., 2001). However, recent studies in China provide the opposite evidence. For instance, Wei et al. (2004) analyze the effects of state and individual shareholders on dividend policy, and find a positive relationship between state ownership and cash dividends and between individual ownership and stock dividends. Moreover, the higher the state ownership, the higher the cash dividend rate. Similarly, Lee and Xiao (2004) find that firms with higher state ownership in China are more likely to pay cash dividends, increase cash dividends subsequent to rights offerings and give up stock subscription rights. As state shares in China can only be transferred with special approval by the government, this dividend practice has the same effect as the state's transfer of a portion of non-tradable shares to other shareholders. In addition, Lee and Xiao (2004) find that the computed transfer price is about three times higher than that of a typical private placement officially approved by the government. The capital market reacts negatively to the cash dividend announcements of state controlling firms but positively to those of other firms, suggesting that instead of alleviating agency problems, cash dividends might be used as a vehicle for tunneling in firms with the state as the controlling shareholder.

There are several reasons proposed in the literature suggesting stock dividends can play a different role than cash dividends in China. First, as argued by the traditional signaling theory, managers of public firms can use stock dividends to signal favorable insider information to the market (Grinblatt et al., 1984). Firms with better prospects are more capable of signaling because the reduction in the balance of retained earnings resulting from stock dividend distributions will constrain their future cash dividend payments. However, firms with poorer prospects find it more difficult to mimic this behavior as their undistributed profits cannot be replenished so easily. Although stock splits are as credible a signal as stock dividends, they are prohibited in China (Wei and Xiao, 2009). Thus, stock dividends are the only available signaling alternative. Second, stock dividend distribution restricts a firm's ability to pay cash dividends in the future, indicating that stock dividends are less likely to be used to tunnel cash to majority shareholders in the future. Third, as the demand for equity shares in China is strong due to the lack of other investment opportunities (Chen and Yuan, 2004), stock dividend distribution can increase the share's liquidity and its attractiveness to investors (Lakonishok and Lev, 1987). Fourth, Chinese companies could raise more capital by paying stock dividends than paying cash dividends before a rights issue (Wei and Xiao, 2009). Under the rules of the China Securities Regulatory Commission, the price used for rights issues should be based on the average share price during the period of twenty days prior to the disclosure of the prospectus. As stock dividend declaration often increases stock prices while cash dividends often decrease stock prices, stock dividends can increase the money raised in a subsequent rights issue.

In sum, cash dividends and stock dividends play different roles in China. Cash dividends, coupled with non-subscription of shares in subsequent rights offerings, represent the return of cash to controlling shareholders and such behavior is termed "tunneling" in the recent literature. Stock dividends, without entailing actual cash outflow, cannot play such a tunneling role but can be used as a credible mechanism to convey insider information to investors.

Extant empirical evidence is consistent with the argument above. [Chen et al. \(2002\)](#) document that when earnings surprise is corroborated by a stock dividend surprise of the same directional sign, the earnings signal is stronger. [Chen et al. \(2002\)](#) also find that changes in cash dividends have little incremental information value. [Cheng et al. \(2006\)](#) conduct event studies on Chinese firms' announcements of stock dividends and cash dividends. Their results indicate that cash dividends are preferred by non-tradable shareholders while stock dividends are preferred by individual investors. They also find that stock dividends are positively related to earnings and return on assets, supporting the signaling hypothesis of dividend policy. In a more recent paper, [Cheng et al. \(2007\)](#) examine dividend policies of underperforming firms in China and Hong Kong. They find that poor performing Chinese firms with higher non-tradable shares pay out more cash dividends than those with a lower proportion of non-tradable shares.

Hence, the literature generally supports the two distinct roles played by cash and stock dividends in China. However, none of these studies have investigated whether firms with cross-listed shares and/or foreign ownership use different dividend policies than other firms or how foreign ownership and cross-listing act as moderating factors for different types of dividends.

As indicated in the dividend literature, dividends play a signaling role. The fact that firms are listed overseas could make a significant difference in these firms' dividend policies and practices compared to those that are not. For instance, cross-listing in the U.S. allows "good" firms to separate themselves from "bad" firms because disclosure requirements and legal liability makes cross-listing much more costly for "bad" firms ([Fuerst, 1998](#)). In addition, given that foreign investors are at an informational disadvantage in obtaining information about a local firm's future prospects compared with domestic investors ([Choe et al., 2005](#)), an increase in foreign ownership may lead to increased demand and pressure for increased disclosure by local firms. For instance, [Sami and Zhou \(2004\)](#) find that the value relevance of accounting information in the B-share market of China (where foreigners invest) is generally higher than in the A-share market (where domestic investors trade). A-shares' accounting information is prepared and audited for domestic investors under the domestic accounting standards, while B-shares' information is prepared and audited for foreign investors under international accounting standards. Their results suggest that the presence of foreign ownership may help to improve the general information environment of public companies. Similarly, an increase in foreign ownership may lead to increased demand and pressure for improved corporate governance. Not surprisingly, foreign investors are shown to contribute to firm performance through shareholder activism and board representation ([Choi et al., 2007](#)). Thus we would expect that the presence of foreign investors would deter the tunneling behavior of state shareholders and that foreign ownership would be negatively associated with cash dividends and positively associated with stock dividends. This is consistent with the signaling hypothesis of dividends in that the managers of public firms with foreign investors and cross-listings would have different dividends policies than those without. Finally, foreign investors tend to prefer firms with more investment opportunities. Hence, they might be more likely to prefer stock dividends to cash dividends ([Lin and Schiu, 2003](#)).

Based upon the discussions above, we develop the following hypotheses for our study: Hypothesis on cross-listing and dividends:

Hypothesis 1. Firms with cross-listed shares are more likely to pay stock dividends and less likely to pay cash dividends.

Hypothesis on foreign ownership and dividends:

Hypothesis 2. Firms with foreign ownership are more likely to pay stock dividends and less likely to pay cash dividends.

In addition, the literature above indicates that cash dividends could be used by majority shareholders as a tunneling tool, which could be predominant in emerging markets (e.g., [Lee and Xiao, 2004](#); [Cheng et al., 2006](#)). If firms have controlling state shareholders, they are more likely to pay cash dividends and increase cash dividend payments soon after rights offerings to transfer more cash to state controlling shareholders. Cash dividends are paid to a government agent, the State-owned Asset Management Office, which supervises the state

shares and collects cash dividends on behalf of the government. As state-held shares in China can only be transferred with special approval by the government, giving up stock subscription rights and using receipts from rights offerings to pay cash dividends are similar to the transfer of non-tradable shares from majority shareholders to minority shareholders, with a computed sale price higher than that of officially approved private placements (Lee and Xiao, 2004). Thus, state shareholders would be more likely to use cash dividends as a vehicle of tunneling in firms with higher state ownership. As the privatization of state-owned enterprises simultaneously involves a reduction in state-ownership and an increase in individual (public) ownership, we also expect an opposite effect of individual ownership on dividend policy to that of state ownership. In other words, firms with more individual (public) ownership are less likely to pay cash dividends and more likely to pay stock dividends.

We retest the hypotheses on the relationship between state and individual ownership and dividend policy as the literature has documented an obvious trend that more and more firms are paying cash dividends instead of stock dividends (Wei et al., 2004). In light of the change in the trend regarding stock dividends versus cash dividends, we examine whether the findings of early studies, such as Wei et al. (2004) and Lee and Xiao (2004) on state and/or individual ownership and dividends, still apply to more recent years or not. Thus, we test the following hypotheses. Hypothesis on state ownership and dividends:

Hypothesis 3. Firms with more state ownership are more likely to pay cash dividends and less likely to pay stock dividends.

Hypothesis on individual (public) ownership and dividends:

Hypothesis 4. Firms with more individual ownership are less likely to pay cash dividends and more likely to pay stock dividends.

4. Research design

4.1. Sample selection

In this paper, we examine the dividend policies of publicly traded firms in China during the period 2001–2006. Sample selection started with the entire population of firms issuing A-shares and/or B-shares that are listed on the Shanghai Stock Exchange or Shenzhen Stock Exchange, as well as firms issuing H-shares on the Stock Exchange of Hong Kong and those firms that are cross-listed in the US and/or other foreign markets. The sample companies are selected on the basis of the following screening criteria: (1) Firms have been listed on the exchanges for at least a year before dividend announcements to exclude the effects of new listings, (2) Financial and insurance firms are excluded due to their different operations from other firms, (3) Firms that experience reorganizations during the sample period are excluded as the ownership and corporate governance of these firms could experience great changes, and so could their performance. The screening procedures result in 7519 firm-year observations from 1712 companies, of which 908 companies are listed on the Shanghai Stock Exchange and 804 on Shenzhen Stock Exchange. Among these 1712 companies, 33 firms are cross-listed on the Stock Exchange of Hong Kong, 27 in the United States, 5 in London and 1 in Singapore.

4.2. Models of dividend policy

As mentioned earlier, the literature has documented three schools of dividend policy theories to explain the determinants of corporate dividend behavior – (1) full information models, (2) models of information asymmetry and (3) behavioral models. Although these models have conflicting predictions on the effect of dividend policy on share returns, they provide a theoretical background for the determinants of dividend policies. Hence, a theoretical function of the determinants of corporate dividend policy is:

$$\text{Dividends} = f(\text{tax factor, information asymmetry, agency costs, socioeconomic factors, cash flow})$$

The tax factor might not play a role in dividend payouts in China. Under the current Chinese tax system, cash dividend income is exempt from tax if the cash dividend income is less than the one-year saving deposit rate declared by China's central bank. If the cash dividend income is higher than the above-mentioned amount, a flat tax rate of 20% is charged on the excess amount. For stock dividends, since the gains on the stock dividends are not realized, there is no tax effect. Dividend yields of Chinese firms are generally lower than the declared saving rates which are around two to ten percent during the past decade (Cheng et al., 2009). As our study uses data from a single country and a period with no significant changes in tax policies, we exclude the tax factor from our model. The literature shows that firm's ownership structure, firm size, firm debt, specific risk (beta) and investment opportunities (firm growth) could affect information asymmetry risk and agency costs (e.g., Choi et al., 2009). Industry features, time trend and previous dividend payout record could form the socioeconomic factors of dividend policy (Faccio et al., 2001; Wei et al., 2004). For instance, a firms' past dividend policy determines its current clientele of investors and clientele effects impede changing policy, which is consistent with the socio-economic view of dividend policy (Shiller, 1984). Performance and the level of cash in the firm could affect cash flow and in turn dividend policy. Accordingly, we examine the following dividend policy model:

$$\begin{aligned} \text{CDPR}_i(\text{SDPR}_i) = & \alpha_0 + \alpha_1 \text{CROSSLIST}_i + \alpha_2 \text{FOREIGN}_i + \alpha_3 \text{STATE}_i + \alpha_4 \text{PUBLIC}_i + \alpha_5 \text{SIZE}_i \\ & + \alpha_6 \text{DEBT}_i + \alpha_7 \text{BETA}_i + \alpha_8 \text{GROW}_i + \alpha_9 \text{CASH}_i + \alpha_{10} \text{ROA}_i \\ & + \alpha_{11} \text{LAGCDPR}_i(\text{LAGSDPR}_i) + \alpha_{12+j} \Sigma \text{INDUSTRY}_j + \alpha_{13+j+k} \Sigma \text{YEAR}_k + e_i \quad (1) \end{aligned}$$

where CDPR = cash dividend payout ratio, calculated as cash dividends per share divided by earnings per share; SDPR = stock dividend payout ratio, calculated as stock dividends per share divided by earnings per share; CROSSLIST = 1 if the firm is cross-listed in Hong Kong, U.S., U.K. or Singapore, and 0 otherwise. FOREIGN = the percentage of equity shares owned by foreign shareholders at the fiscal year end; STATE = the percentage of equity shares owned by the government and its fully owned enterprises at the fiscal year end; PUBLIC = the percentage of equity shares owned by public (individual) shareholders; SIZE = the logarithm of book value of total assets at the fiscal year end; DEBT = the ratio of total liabilities to total assets at the fiscal year end; BETA = a firm's specific risk, estimated from a regression of share returns on market returns during the fiscal year; GROW = a firm's market to book (M/B) ratio at fiscal year end as the proxy for growth and investment opportunities; CASH = the logarithm of the total cash balance at the fiscal year end; ROA = a firm's return on assets for the fiscal year; LAGCDPR = cash dividend payout ratio in the previous fiscal year; LAGSDPR = stock dividend payout ratio in the previous fiscal year; INDUSTRY = indicator variables for industries; YEAR = indicator variables controlling for year effects; e = the error term.

The regression analysis is conducted as follows. First, we conduct a series of OLS and Tobit regressions using panel data. Furthermore, to mitigate the effects of outliers, we winsorize variables involving ratio calculations to their 1st and 99th percentile values. We also report the results of sensitivity analysis.

5. Empirical results

5.1. Univariate tests

Table 3 reports descriptive statistics for the variables in Model (1). Columns two through six report the statistics for the overall sample. The following two columns show information on firms paying zero and non-zero cash dividends, respectively. The last two columns provide information on firms paying zero and non-zero stock dividends, respectively. Details of statistical significance are also provided. The results show that on average firms with positive cash dividends have higher state ownership, lower individual (public) ownership, lower market to book ratios (GROW), higher cash balances, larger asset bases (SIZE), higher debt, higher ROA, higher possibility of being cross-listed and higher lagged cash dividends than firms paying no cash dividends. On the other hand, firms distributing stock dividends on average have lower foreign ownership, lower state ownership, and higher public ownership. They are also larger, have higher debt, lower risk (BETA), higher market to book ratios (GROW), higher cash balances, higher

Table 3

Descriptive statistics. CDPR = Cash dividends payout ratio, calculated as cash dividend per share paid in a year divided by earnings per share; SDPR = Stock dividend rate, calculated as stock dividend per share distributed in a year divided by earnings per share; FOREIGN = the percentage of equity shares owned by foreign shareholders; CROSSLIST = 1 for firms cross-listed in stock exchanges outside mainland China and 0 otherwise. STATE = the percentage of equity shares owned by the government; PUBLIC = percentage of shares owned by the general public; SIZE = $\log_{10}(\text{total assets})$, DEBT = total liabilities to total assets ratio; BETA = estimate of beta of the firm; GROW = market to book ratio; CASH = $\log_{10}(\text{Cash balance})$; ROA = return on assets. LAGCDPR and LAGSDPR are lagged (one year) measures of cash and stock dividends, respectively. *T*-tests values are computed assuming unequal variances. ***, ** and * represent significance at 0.01, 0.05 and 0.10 levels respectively.

| Variables | Overall | | | | | Cash dividend | | Stock dividend | |
|-----------|----------|--------|-----------|-------|--------|---------------|----------|----------------|----------|
| | | | | | | =0 | >0 | =0 | >0 |
| | N = 7519 | | | | | N = 3523 | N = 3996 | N = 6391 | N = 1128 |
| | Mean | Median | Std. dev. | Min. | Max. | Mean | Mean | Mean | Mean |
| CDPR | 0.28 | 0.13 | 0.37 | 0.00 | 2.44 | 0.00 | 0.52*** | 0.27 | 0.29 |
| SDPR | 0.45 | 0.00 | 1.63 | 0.00 | 11.40 | 0.47 | 0.44 | 0.00 | 3.01*** |
| FOREIGN | 4.08 | 0.00 | 11.01 | 0.00 | 92.52 | 4.09 | 4.08 | 4.31 | 2.91*** |
| CROSSLIST | 0.03 | 0.00 | 0.16 | 0.00 | 1.00 | 0.02 | 0.04*** | 0.03 | 0.01*** |
| STATE | 36.09 | 39.89 | 25.13 | 0.00 | 88.58 | 31.83 | 39.86*** | 36.74 | 32.71*** |
| PUBLIC | 38.71 | 37.66 | 14.08 | 2.39 | 100.00 | 40.37 | 37.23*** | 38.05 | 42.18*** |
| SIZE | 6.19 | 6.15 | 0.44 | 2.35 | 8.77 | 6.05 | 6.30*** | 6.17 | 6.28*** |
| DEBT | 0.37 | 0.40 | 0.08 | 0.01 | 0.40 | 0.38 | 0.35*** | 0.37 | 0.37 |
| BETA | 0.81 | 0.98 | 0.54 | -2.84 | 11.54 | 0.80 | 0.82 | 0.82 | 0.78** |
| GROW | 3.08 | 2.38 | 2.81 | -3.76 | 18.51 | 3.39 | 2.81*** | 3.05 | 3.25*** |
| CASH | 5.24 | 5.31 | 0.62 | 0.90 | 7.36 | 4.97 | 5.48*** | 5.21 | 5.40*** |
| ROA | 0.02 | 0.03 | 0.07 | -0.30 | 0.24 | -0.02 | 0.06*** | 0.02 | 0.05*** |
| LAGCDPR | 0.21 | 0.00 | 0.46 | 0.00 | 2.44 | 0.12 | 0.29*** | 0.21 | 0.22 |
| LAGSDPR | 0.38 | 0.00 | 1.50 | 0.00 | 11.40 | 0.38 | 0.37 | 0.36 | 0.48** |

returns on assets, lower possibility of being cross-listed and higher lagged stock dividends. Contrary to our expectations, firms issuing cash dividends are more likely to be cross-listed and firms issuing stock dividends are less likely to be cross-listed. As univariate analysis examines the effect of each variable in isolation, the results should be interpreted with caution and further examined under multivariate analysis, which is presented later.⁶

Table 4 reports the correlations between the variables. Based on Pearson correlations, cash dividend payout ratios (CDPR) are positively correlated with STATE (0.17), SIZE (0.16), CASH (0.26), ROA (0.29) and LAGCDPR (0.21), and negatively correlated with PUBLIC (-0.10) and GROW (-0.11). Hence the univariate statistics are consistent with the notion that firms with higher state ownership, lower public ownership, higher accounting returns, higher cash balances, higher prior year cash dividends and lower growth opportunities tend to have higher cash dividend payout rates. On the other hand, the Pearson correlations show that stock dividend payout rates (SDPR) are positively related to PUBLIC (0.09), CASH (0.04), ROA (0.04) and LAGSDPR (0.03), and negatively related to FOREIGN (-0.05), CROSSLIST (-0.04) and STATE (-0.05). Hence, firms with higher public ownership, more cash, higher profitability and higher prior year stock dividends tend to have higher stock dividends, while firms with higher STATE ownership tends to have lower stock dividends. Again, these results should be interpreted with caution because the analysis is conducted on each variable in isolation.

Explanatory variables with high correlations include those between ownership variables, such as PUBLIC and FOREIGN (with a Pearson correlation coefficient of -0.45 and a Spearman coefficient of -0.40), FOREIGN and CROSSLIST (both Pearson and Spearman coefficients are 0.40), and PUBLIC and STATE (with a Pearson correlation coefficient of -0.33 and a Spearman coefficient of -0.35). Other high correlations between control variables are SIZE and CASH (both Pearson and Spearman coefficients

⁶ The values reported in the cash dividend and stock dividend columns in Table 3 also include firms paying both cash and stock dividends. Such "joint paying" firms (795 firm-year observations) are less likely to be cross-listed, have lower foreign ownership, but are larger, have bigger cash balances and higher ROA. Other differences are insignificant.

Table 4

Correlation analysis. CDPDR = Cash dividends payout ratio, calculated as cash dividend per share paid in a year divided by earnings per share; SDPR = Stock dividend rate, calculated as stock dividend per share distributed in a year divided by earnings per share; FOREIGN = the percentage of equity shares owned by foreign shareholders; CROSSLIST = 1 for firms cross-listed in stock exchanges outside mainland China and 0 otherwise; STATE = the percentage of equity shares owned by the government; PUBLIC = percentage of shares owned by the general public; SIZE = log10(total assets), DEBT = total liabilities to total assets ratio; BETA = estimate of beta of the firm; GROW = market to book ratio; CASH = log10(Cash balance); ROA = return on assets. LAGCDPR and LAGSDPR are lagged (one year) measures of cash and stock dividends, respectively. T-tests values are computed assuming unequal variances. ***, ** and * represent significance at 0.01, 0.05 and 0.10 levels respectively. The upper diagonal figures are Spearman correlations and the lower diagonal values are Pearson correlations.

| | CDPR | SDPR | FOREIGN | CROSS-LIST | STATE | PUBLIC | SIZE | DEBT | BETA | GROW | CASH | ROA | LAGCDPR | LAGSDPR |
|-----------|----------|----------|----------|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| CDPR | 1.00 | 0.08*** | 0.02* | 0.04*** | 0.19*** | -0.14*** | 0.23*** | 0.03*** | 0.00 | -0.05*** | 0.35*** | 0.51*** | 0.35*** | 0.07*** |
| SDPR | 0.00 | 1.00 | -0.05*** | -0.06*** | -0.05*** | 0.08*** | 0.09*** | 0.02** | -0.05*** | 0.07*** | 0.12*** | 0.20*** | 0.08*** | 0.13*** |
| FOREIGN | -0.01 | -0.05*** | 1.00 | 0.40*** | -0.08*** | -0.40*** | 0.18*** | 0.01 | 0.00 | -0.01 | 0.15*** | 0.01 | 0.02 | -0.03*** |
| CROSSLIST | 0.01 | -0.04** | 0.40*** | 1.00 | 0.07*** | -0.24*** | 0.22*** | 0.06*** | 0.00 | -0.06*** | 0.19*** | 0.07*** | 0.05*** | -0.04*** |
| STATE | 0.17*** | -0.05*** | -0.08*** | 0.08*** | 1.00 | -0.35*** | 0.20*** | 0.07*** | 0.00 | 0.00 | 0.18*** | 0.10*** | 0.10*** | -0.02** |
| PUBLIC | -0.10*** | 0.09*** | -0.45*** | -0.28*** | -0.33*** | 1.00 | -0.04*** | 0.04*** | 0.03*** | -0.19*** | -0.08*** | -0.11*** | -0.01 | 0.07*** |
| SIZE | 0.16*** | 0.01 | 0.21*** | 0.31*** | 0.23*** | -0.09*** | 1.00 | 0.35*** | -0.03*** | -0.33*** | 0.74*** | 0.18*** | 0.26*** | 0.09*** |
| DEBT | 0.01 | 0.01 | 0.02 | 0.07*** | 0.08*** | -0.01 | 0.30*** | 1.00 | -0.01 | -0.11*** | 0.12*** | 0.01 | 0.07*** | 0.03*** |
| BETA | 0.01 | -0.01 | 0.00 | 0.00 | 0.01 | 0.03*** | 0.00 | -0.01 | 1.00 | 0.05*** | 0.00 | -0.05*** | 0.01 | -0.03** |
| GROW | -0.11*** | 0.02 | 0.00 | -0.05*** | -0.04*** | -0.11*** | -0.27*** | -0.09*** | -0.01 | 1.00 | -0.21*** | 0.11*** | -0.21*** | -0.02 |
| CASH | 0.26*** | 0.04*** | 0.14*** | 0.20*** | 0.20*** | -0.08*** | 0.74*** | 0.10*** | 0.04*** | -0.19*** | 1.00 | 0.34*** | 0.25*** | 0.09*** |
| ROA | 0.29*** | 0.04*** | 0.00 | 0.06*** | 0.12*** | -0.07*** | 0.28*** | 0.02** | 0.02 | -0.03** | 0.46*** | 1.00 | 0.27*** | 0.13*** |
| LAGCDPR | 0.21*** | -0.00 | 0.00 | 0.04** | 0.09*** | -0.02* | 0.14*** | 0.05*** | 0.01 | -0.12*** | 0.15*** | 0.13*** | 1.00 | 0.17*** |
| LAGSDPR | 0.02 | 0.03*** | -0.03* | -0.03** | -0.02* | 0.06*** | 0.02* | 0.02 | -0.02 | -0.03** | 0.03** | 0.01 | 0.03*** | 1.00 |

Table 5

Regression analysis: determinants of cash and stock dividends the regression is based on 7519 observations over 2001–2006 and includes all listed firms in China. The dependent variables are cash dividend payout ratio, calculated as cash dividend per share paid in a year divided by earnings per share, and stock dividend, calculated as stock dividend per share distributed in a year divided by earnings per share. STATE is the percentage of equity shares owned by the government. FOREIGN is the percentage of equity shares owned by foreign shareholders; CROSSLIST = 1 for firms cross-listed in stock exchanges outside mainland China and 0 otherwise; PUBLIC is the percentage of equity shares owned by public shareholders; SIZE = $\log_{10}(\text{total assets})$, DEBT = total liabilities to total assets ratio; BETA = estimate of beta of the firm; GROW = market to book ratio; CASH = $\log_{10}(\text{Cash balance})$; ROA = return on assets. LAGCDPR and LAGSDPR are lagged (one year) measures of cash and stock dividends, respectively. In each regression we also put in INDUSTRY, indicator variables for industries and YEAR, indicator variables controlling for year effects. For simplicity of presentation the last two items are not shown here. ***, **, * represent significance at 0.01, 0.05 and 0.10, respectively. Robust standard errors are used to compute the *t*-statistics.

| | Cash dividend | Stock dividend |
|-----------|---------------|----------------|
| INTERCEPT | 0.2655*** | −0.3998 |
| STATE | 0.0010*** | −0.0018** |
| FOREIGN | −0.0010*** | −0.0031 |
| CROSSLIST | −0.0784*** | −0.2134*** |
| PUBLIC | −0.0016*** | 0.0072*** |
| SIZE | −0.0212 | 0.0194 |
| DEBT | −0.5280*** | 0.3081 |
| BETA | 0.0114 | −0.0722* |
| GROW | −0.0111*** | 0.0154*** |
| CASH | 0.0753*** | 0.1199** |
| ROA | 0.8220*** | 0.7275** |
| LAGCDPR | 0.2311*** | |
| LAGSDPR | | 0.0331** |
| Adj R-sq | 0.2076 | 0.0218 |
| F-value | 88.21*** | 12.54*** |

are 0.74), SIZE and DEBT (with a Pearson correlation coefficient of 0.30 and a Spearman coefficient of 0.35), and CASH and ROA (with a Pearson correlation coefficient of 0.46 and a Spearman coefficient of 0.34). Nonetheless, analysis based on variance inflation factors (VIFs) indicate that none of the explanatory variables have VIF values larger than 10, alleviating the concern of severe multicollinearity problems.

5.2. OLS and TOBIT regressions

We present the results of OLS regressions for both cash and stock dividends, respectively in Table 5. Consistent with our hypotheses, cash dividend payment varies positively with STATE ownership and negatively with FOREIGN ownership, PUBLIC ownership and CROSSLIST. These results are consistent with the notion that firms with higher state ownership distribute more cash dividends and that they might even do so to tunnel cash to major shareholders (state) in situations when cash dividend payments might not be the best strategy for the firm. Interestingly, both foreign ownership and cross-listings have significant negative effects on cash dividends, consistent with the expected moderating effect on tunneling activity. As expected, the results on PUBLIC (individual) ownership are the opposite of those for STATE ownership. For control variables, firms with higher cash balances and higher return on assets are more likely to pay higher cash dividends in order to signal their value. All of these results are consistent with the signaling theory of dividend payments. Also, firms with lower growth rates (more mature firms) are more likely to pay cash dividends, consistent with the notion that mature firms pay more dividends. In addition, cash dividend levels are positively and significantly related to lagged cash dividends in the previous fiscal year,

Table 6

Tobit analysis: determinants of cash and stock dividends. The regression is based on 7519 observations over 2001–2006 and includes all listed firms in China. The dependent variables are cash dividend payout ratio, calculated as cash dividend per share paid in a year divided by earnings per share, and stock dividend, calculated as stock dividend per share distributed in a year divided by earnings per share. STATE is the percentage of equity shares owned by the government. FOREIGN is the percentage of equity shares owned by foreign shareholders; CROSSLIST = 1 for firms cross-listed in stock exchanges outside mainland China and 0 otherwise; PUBLIC is the percentage of equity shares owned by public shareholders; SIZE = $\log_{10}(\text{total assets})$, DEBT = total liabilities to total assets ratio; BETA = estimate of beta of the firm; GROW = market to book ratio; CASH = $\log_{10}(\text{Cash balance})$; ROA = return on assets. LAGCDPR and LAGSDPR are lagged (one year) measures of cash and stock dividends, respectively. In each regression we also put in INDUSTRY, indicator variables for industries and YEAR, indicator variables controlling for year effects. For simplicity of presentation the last two items are not shown here. ***, **, * represent significance at 0.01, 0.05 and 0.10, respectively.

| | Cash dividend | Stock dividend |
|----------------|---------------|----------------|
| INTERCEPT | -0.3261** | -21.301*** |
| STATE | 0.0009*** | -0.0164*** |
| FOREIGN | -0.0024*** | -0.0225 |
| CROSSLIST | -0.1449*** | -5.2975*** |
| PUBLIC | -0.0032*** | 0.0530*** |
| SIZE | -0.1054*** | 1.1708*** |
| DEBT | -0.4692*** | 3.2992** |
| BETA | 0.0336** | -0.4845** |
| GROW | -0.0457*** | 0.2024*** |
| CASH | 0.2715*** | 0.9551*** |
| ROA | 3.9949*** | 27.826*** |
| LAGCDPR | 0.3885*** | |
| LAGSDPR | | 0.1535** |
| Pseudo R-sq | 0.1847 | 0.0145 |
| Log-likelihood | -4754.44*** | -5336.53*** |

which provides evidence of the clientele effect on dividends. Finally, firms with higher debt pay less cash dividends.

The results of OLS regressions on stock dividends imply that the determinants of stock dividends are different from those of cash dividends. First, consistent with our hypotheses and in contrast to the findings on cash dividends, stock dividends are negatively associated with STATE ownership and positively associated with PUBLIC ownership. Note that the coefficient on PUBLIC is now significantly positive, indicating that firms with higher individual ownership (free float) are more likely to pay more stock dividends, which is consistent with the literature (Wei et al., 2004; Cheng et al., 2006). Because the coefficient on PUBLIC in the cash dividends model is significantly negative, it suggests that stock and cash dividends are probably perfect substitutes from the perspective of individual shareholders. Unlike cash dividends, stock dividends have no wealth redistribution effect. Hence, it is also natural that firms with higher state ownership distribute less stock dividends. CROSSLIST is significantly negative here, which is not consistent with our hypothesis on the effect of cross-listing on stock dividends. For control variables, firms with higher growth opportunities (GROW), more cash (CASH), higher profitability (ROA) and lower risk (BETA) are more likely to pay stock dividends. Firms with these attributes are more growth-oriented, hence these firms are trying to preserve their cash to take advantage of growth opportunities. In addition, stock dividend levels are positively and significantly related to those of the previous fiscal year, which again provides evidence of the clientele effect on dividends.

The results are robust even when Tobit analysis is used instead of OLS regressions. Table 6 reports the results using TOBIT analysis. For cash dividends, except for a difference in the significance of the SIZE

Table 7

Regression analysis: determinants of cash and stock dividends to earnings per share ratio the regression is based on 7519 observations over 2001–2006 and includes all listed firms in China. The dependent variables are cash dividend payout ratio, calculated as cash dividend per share paid in a year divided by earnings per share, and stock dividend, calculated as stock dividend per share distributed in a year divided by earnings per share. STATE is the percentage of equity shares owned by the government. FOREIGN is the percentage of equity shares owned by foreign shareholders; CROSSLIST = 1 for firms cross-listed in stock exchanges outside mainland China and 0 otherwise; PUBLIC is the percentage of equity shares owned by public shareholders; SIZE = $\log_{10}(\text{total assets})$, DEBT = total liabilities to total assets ratio; BETA = estimate of beta of the firm; GROW = market to book ratio; CASH = $\log_{10}(\text{Cash balance})$; ROA = return on assets. LAGCDPR and LAGSDPR are lagged (one year) measures of cash and stock dividends, respectively. In each regression we also put in INDUSTRY, indicator variables for industries and YEAR, indicator variables controlling for year effects. For simplicity of presentation the last two items are not shown here. ***, **, * represent significance at 0.01, 0.05 and 0.10, respectively. Robust standard errors are used to compute the t-statistics.

| | Cash dividend | Stock dividend |
|-----------------|---------------|----------------|
| INTERCEPT | 0.2488**** | -0.4338 |
| STATE | 0.0016*** | 0.0017 |
| FOREIGN | 0.0009 | -0.0046 |
| CROSSLIST | -0.0873** | -0.1691** |
| PUBLIC | -0.0013*** | 0.0101*** |
| SIZE | -0.0224 | 0.0648 |
| DEBT | -0.5208*** | 0.3103 |
| BETA | 0.0118 | -0.0723* |
| GROW | -0.0109*** | 0.0149*** |
| CASH | 0.0766*** | 0.1199** |
| ROA | 0.8142*** | 0.7429*** |
| LAGCDPR | 0.2303*** | |
| LAGSDPR | | 0.0324* |
| STATE*FOREIGN | -0.0001*** | 0.0001 |
| STATE*CROSSLIST | 0.0010 | -0.0024 |
| STATE*PUBLIC | -0.0000 | -0.0001 |
| Adj R-sq | 0.2093 | 0.0224 |
| F-value | 82.26*** | 12.08*** |

variable, which is now significant, the qualitative results are the same as in Table 5. The results for stock dividends are also consistent with those in Table 5.⁷

⁷ We also would like to report some results which for conciseness are not provided in the tables. First, in Tables 5 and 6, we put both FOREIGN and CROSSLIST in the regressions. One potential criticism is that these are overlapping measures. However, in the Chinese setting, this is not true. The correlation between the variables in our sample is 0.40 which is not exceedingly large. FOREIGN captures ownership by foreign investors in the listed firms through strategic ownership or direct investment on both domestic and foreign markets, while CROSSLIST measures share percentage traded on foreign exchanges. Nonetheless, if we use only FOREIGN or CROSSLIST (but not both) in the regression, they are still be negative and significant in the regression for cash dividends, insignificant for FOREIGN but marginally significant for CROSSLIST in stock dividends. Second, we explore the effects of controlling for stock dividends (lagged and non-lagged) in the cash dividend model and cash dividends (lagged and non-lagged) in the stock dividend model. We do not find any significant results for these additional controls, suggesting that cross effects among cash and stock dividends do not exist. Third, we explore the possibility of using both stock and cash dividends versus stock dividends as a signal of future prospects. We use a logit regression for our analysis as it is difficult to find a basis to sum up both dividends. We find that firms paying both cash and stock dividends, when compared with firms paying stock dividends only, tend to be larger, with higher ROA, higher market to book ratios and more cash. Nonetheless, they also have much lower state ownership or cross-listing, which are the typical features of cash dividend paying firms. Hence firms paying cash and stock dividends have the hybrid characteristics of firms paying cash dividends alone and firms paying stock dividends only. However, since one of our research focuses is to contrast the two types of dividends, our analysis concerning firms paying both types of dividends is supplementary at best.

5.3. Sensitivity tests

In this section, we perform several sensitivity tests to verify the robustness of our results. First, as alternative measures of dividend payout ratios, we use dividends per share (DPS) and dividends per share divided by net sales per share. The results are qualitatively the same as those reported.

Second, to test the robustness of our results using ROA as a proxy for profitability, we use return on equity (ROE). Again, the results are qualitatively similar to those reported above.

Third, we test whether other shareholders mediate the effect of state ownership on dividend policies. Table 7 reports these results. With the interaction terms between state ownership and other ownership variables added in the cash dividend regression, FOREIGN is not significant but CROSSLIST is significantly negative. However, the interaction effect STATE*FOREIGN is negative and significant at the 0.001 level, consistent with the notion that foreign ownership (FOREIGN) in effect suppresses cash tunneling by state owners (STATE). The results are different for stock dividends. Here the interaction term STATE*FOREIGN is not significant, which is expected as stock dividends have no cash effect. Our results are also consistent with a recent line of literature that argues that foreign ownership is useful in restraining controlling shareholders in their exploitation of domestic minority shareholders (Leuz and Oberholzer-Gee, 2006).

Finally, a common concern in using a panel dataset like ours is inference problems due to the correlation of the residuals across firms and across years, which may result in estimation bias (Fama and MacBeth, 1973). To alleviate this concern, we re-perform our OLS analysis using the Fama-MacBeth approach. Our results (not presented here) indicate that such a bias is not likely to affect our conclusions.⁸

6. Conclusions

In this paper, we investigate whether firms with different ownership characteristics have different dividend policies. As indicated in the dividend literature, dividends play a signaling role. Also, dividends could be used by state-owned agents who are majority shareholders to tunnel money from state-controlled firms to themselves (tunneling effect). Such a situation could especially be dominant in emerging markets.

⁸ We summarize here other sensitivity tests we have performed. First, we perform tests to study the effect of rights issues on both types of dividends. We find that the rights issue variable is significantly positive for both stock and cash dividends, signifying the importance of future financing in dividend decisions in China. Second, we examine the effect of ownership concentration. Our measure of concentration is HOLD, which is defined as the percentage of shares owned by the top 10 shareholders. We find that HOLD is significantly positively related to cash dividends, signifying that cash dividends are more prevalent among concentrated firms, which is consistent with the tunneling story. In contrast, HOLD is significantly negatively related to stock dividends, consistent with the notion that stock dividends are prevalent for low concentration firms. Third, we examine tunneling activities through intercorporate loans in China. Using other receivables to total assets (ORECTA) ratio, we find that the variable is significantly negative in the cash dividend regression. We interpret this result as suggesting that cash dividends and intercorporate loans are substitutes for tunneling. We do not find a significant effect of ORECTA on stock dividends. Fourth, we decompose foreign shareholders into foreign individual and foreign institutional shareholders. We find that the negative effect of foreign ownership on cash dividends is driven by foreign individual shares and not by foreign institutional shares. When we exclude the foreign institutional shares from the definition of total foreign ownership, the negative effect of foreign ownership on cash dividends is even more significant. Fifth, we perform a test on the potential influence of the split share structure reform (2005–2007). As mentioned in Note 2, state shares were typically non-tradable during the period of our study, as they could only be bought and sold through private placement with special approval from the government. However, in 2005, the Chinese government launched a reform on split share structure by converting non-tradable shares (state and legal person shares) into tradable shares. We perform the regressions separately for the two sub-periods - one with the data on or before 2004 and another after 2004. We find that the significance of the variables in the regressions does not vary much from the tabled results. Finally, an alternative explanation of our results could be that firms in different stages of their life cycle have different preferred dividend choices. Firms with high maturity (larger in size and with lower growth rates) are more likely to distribute cash dividends, while firms with lower maturity (smaller and higher growth) are more likely to distribute stock dividends. To shed light on this issue, we group our observations into four different partitions: HA-HG, HA-LG, LA-HG and LA-LG, where HA is for firms with above mean SIZE, LA is for firms with SIZE at or below the mean value, HG is for firms with above mean GROW and LG is for firms with GROW at or below the mean value. Based on these partitions, our variables of interest, FOREIGN and CROSSLIST have the expected signs in all four regression segments. CROSSLIST is significant for the large firm segments. This is reasonable as larger firms are more likely to be cross-listed than smaller firms and thus they have more variation in these segments. FOREIGN, however, is highly significant in small firms with high growth rates. This is expected as smaller firms are less likely to be cross-listed and the differentiating factor is more likely to be FOREIGN. The results are robust when we use median rather than mean values to differentiate between high and low observations.

Using firms from the emerging market of China, we examine whether the above effects exist in corporate dividend policy and practice. We find that both foreign ownership and cross-listing have significant negative effects on cash dividends, consistent with the notion of reduced tunneling activities for firms with the ability to raise capital outside of China. Consistent with the tunneling hypothesis, we find that firms with higher state ownership tend to pay higher cash dividends and lower stock dividends. In addition, firms with higher individual (public) ownership pay lower cash dividends and higher stock dividends.

These results have significant implications for researchers, investors, policy-makers and regulators. Our results indicate that foreign shareholders prefer low cash dividends, suggesting that foreign investors help reduce tunneling activities in firms in emerging markets. Our results further suggest the benefits of fostering foreign investors' activities in public companies in emerging markets.

In addition, in contrast to prior literature, our results document an inverse trend with fewer firms paying cash dividends over the period 2001–2006 than the previous period, which helps to shed light on a time-series shift in dividend policies. These results suggest a dynamic approach is needed for researchers to investigate dividend payment policies.

Also, the results on the role of majority shareholders, such as state shareholders in the unique setting of China, can help us obtain a better understanding of the role of government ownership in the business world, as more governments in western countries have obtained and/or increased state ownership in business enterprises during the recent economic crisis.

Finally, our results help investors obtain a comprehensive understanding of the different roles of various shareholders in shaping corporate dividend policies. Further, our results show that growth opportunities, cash flow and profitability have similar effects on dividends in the emerging market of China as documented by prior literature (Alpa, 2005; Goergen et al., 2005), which helps investors determine their investment strategies.

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