The Role of Managerial Ownership in Dividend Tunneling: Evidence from China

Bian, H., Kuo, J-M., Pan, H. & Zhang, Z.

ORIGINAL ARTICLE

WILEY

The role of managerial ownership in dividend tunneling: Evidence from China

Huan Bian[1] 🔟 | Jing-Ming Kuo[2] 🔟 | Hui Pan[3] 🔟 | Zhuang Zhang[4] 🔟

[1]Huarong Fund Management Co. Ltd., Beijing, China

[2]Birmingham Business School, University of Birmingham, Birmingham, UK

[3]Coventry Business School, Coventry University, Coventry, UK

[4]Southampton Business School, University of Southampton, Southampton, UK

Correspondence
Jing-Ming Kuo, Birmingham Business School, University of Birmingham, Birmingham B15 2TT, UK.
Email: j.kuo.2@bham.ac.uk

Abstract

Research Question/Issue: We examine the role of corporate executives in dividend tunneling activity by controlling shareholders and whether the correlation between executive ownership and dividend tunneling is influenced by internal and external governance mechanisms.

Research Findings/Insights: We find increased executive ownership may lead to a higher level of dividend tunneling. This is further strengthened by our finding that the positive effect of executive ownership on dividend tunneling is more pronounced for firms with weaker minority shareholder protection. In addition, our results show that higher degrees of state ownership may further intensify this positive association. Finally, we find that analyst coverage has a *moderating effect and constrains the* collusion between controlling shareholders and executives in dividend tunneling activity.

Theoretical/Academic Implications: Our study contributes to the literature on the role of managerial ownership in controlling shareholders' dividend tunneling activity. We fill a gap in the literature on the corporate agency problem by providing evidence that dividends have been employed by controlling shareholders as a means of tunneling and that executives with higher ownership are more likely to collude with controlling shareholders in dividend tunneling activities.

Practitioner/Policy Implications: This study contributes to the debates around the promotion of the cash dividend policy in China, as our findings show that cash dividends are used as a tunneling vehicle. Providing important evidence to regulators, our findings support the argument that external monitoring by financial analysts can effectively constrain dividend tunneling by dominant shareholders, especially in the context of emerging stock markets with high ownership concentration, weak minority shareholder protection, and an underdeveloped legal system.

KEYWORDS
corporate governance, dividend tunneling, managerial ownership, state ownership, financial analysts

1 | INTRODUCTION

Tunneling, a specific type of financial fraud, is a phenomenon by which controlling shareholders use their power to expropriate minority shareholders (Johnson et al., 2000). Although tunneling cannot be directly observed, prior studies have found activities associated with tunneling behavior by controlling shareholders, such as advantageous transfer pricing to parties related to controlling shareholders, executive perquisites, excessive compensation, loan guarantees, directed equity issuance, favorable lending terms, and outright theft of corporate assets (Faccio et al., 2001; Johnson et al., 2000; La Porta et al., 2000; Shleifer & Vishny, 1997). Jiang et al. (2010) point out that the salient institutional features of Chinese stock markets, including high ownership concentration, weak minority shareholder protection, and the under-developed legal system, facilitate tunneling activities by controlling shareholders. In particular, they revealed that the scale of the tunneling in China is astonishing, based on evidence that over one-third of Chinese listed firms had suffered expropriation via intercorporate loans. In 2006, the China Securities Regulatory Commission (CSRC) developed regulations to completely ban controlling shareholders from making intercorporate loans. Given that the motivators behind tunneling activity in China, being deeply rooted within the nature of the institutional settings, were not eradicated, we expect that controlling shareholders will seek alternative vehicles for tunneling, and dividend tunneling may have become the prevailing form of expropriation especially after the intercorporate loan ban of 2006.

Due to the distinctive features of the institutional landscape of Chinese listed firms, prior studies indicate that tunneling behavior has not been eliminated in China after the introduction of the intercorporate loan regulations in 2006 (Allen et al., 2005; Bai et al., 2004; Braendle et al., 2005; Fan et al., 2007; Kuo et al., 2014). Huang (2016) finds that the balance of outstanding related-party loan guarantees, as a measure of tunneling, even increased after China's 2008 enterprise income tax reform. More importantly, prior studies indicate that controlling shareholders in Chinese listed firms routinely enjoy absolute control over the decision-making of executive appointments, remuneration, and dismissals (Conyon & He, 2011; Firth et al., 2006b). In the same vein, Zhang et al. (2014) find that concentrated ownership reduces executives' performance-based incentives, so managers may be driven to collude with controlling shareholders in tunneling activities. Although the direct impact of ownership and identities of controlling shareholders on tunneling activity have been addressed in the literature, the understanding of the influence of executive ownership remains limited, particularly in the context of emerging markets.

In addition, dividends may have been used as a means of tunneling by controlling shareholders. Atanassov and Mandell (2018) indicate that master limited partnerships (MLPs) with weaker corporate governance mechanisms tend to have more dividend tunneling. Chen et al. (2009) find evidence of dividend tunneling by controlling shareholders through investigating the relationship between IPO price discounts of non-tradable shares and firms' dividend payouts in China. Lv et al. (2012) indicate that dividend tunneling increases in firms with weaker minority shareholder protection in the Chinese stock markets.

Moreover, in October 2008, the CSRC issued new regulations governing dividend payments, which specify that total cash dividend in the previous 3 years should be above 30% of the average annual distributable profits during the same period, with the intention of protecting the interests of minority shareholders in China.[1] In November 2013, further guidance was issued to protect minority shareholders and request that they should be sufficiently consulted before any changes to a current dividend policy. It was also designed to encourage firms to adopt cash dividends in rewarding shareholders so long as the conditions are met for this.[2]

These previous findings in dividend tunneling and the promotion of cash dividend policy have inspired us to conduct further investigation into dividend tunneling in the Chinese stock markets. We aim to fill a gap in the literature on the corporate agency problem by examining the role of corporate executives in dividend tunneling activities by controlling shareholders and whether the correlation between executive ownership and dividend tunneling is influenced by internal and external governance mechanisms.

In this study, we investigate the impact of managerial ownership on divided tunneling using firm-year observations of Chinese listed firms between 2003 and 2020. Prior literature suggests that the Type I agency problem can be partly resolved by increasing executive ownership in firms when the ownership is low (Claessens & Djankov, 1999; Core & Larcker, 2002; Denis et al., 1997a, 1997b; McConnell et al., 2008; Morck et al., 1988; Shuto & Takada, 2010; Zhou, 2001; among many). However, the role of executive ownership in the Type II agency problem regarding the conflicts of interests between controlling and minority shareholders has not been fully addressed.[3] Our results show that dividend tunneling is positively related to executive ownership. The finding implies that executives may collude with controlling shareholders and extract resources through dividend payouts for the interests of controlling shareholders under the institutional settings of Chinese stock markets.

Lv et al. (2012) claim that dividend payment may be used as a vehicle for tunneling by controlling shareholders to extract corporate resources for their own benefit when the level of minority shareholder protection, measured by the shareholder balancing mechanism (SBM), is lower. In line with this argument, our results further show that the positive correlation between executive ownership and dividend tunneling is more pronounced for firms with weaker minority shareholder protection. Our results offer further support to the finding that a more balanced ownership structure can limit expropriation from majority shareholders (Berkman et al., 2009; Maury & Pajuste, 2005).

We also examine whether dividend tunneling has been employed as a substitute for the major tunneling activity, intercorporate loans, in the Chinese stock markets. In particular, it is noteworthy that intercorporate loans have been restricted by the CSRC since 2006. Jiang et al. (2010) provide evidence of tunneling via intercorporate loans, but they believe the magnitude of the overall problem to be certainly greater. Given that the incentives of controlling shareholders to expropriate from minority shareholders are not eliminated, controlling shareholders may use dividends as new means of tunneling. Our results suggest that dividend tunneling has been used as a substitute

for intercorporate loans and become the prevailing form of expropriation since intercorporate loans were restricted by regulatory measures in 2006.

In addition, we examine the effect of state ownership on the relation between executive ownership and dividend tunneling. State shareholders, one of the main types of Chinese shareholders, do not enjoy the same opportunity to benefit from share price appreciation, so they may support tunneling activities for their own interests. Our findings indicate that an increase in state ownership could intensify the positive relation between executive ownership and dividend tunneling. Finally, analyst coverage as an external monitoring mechanism can reduce the potential conflict between corporate managers and shareholders. Healy and Palepu (2001) suggest that financial analysts may improve corporate transparency through their earnings forecasts and stock recommendations, which may in turn constrain managerial opportunism. Dyck et al. (2010) report that such analysts can detect about 10% of corporate fraud cases among their sample, suggesting they are the most effective whistle-blowers and not even corporate insiders. Ding et al. (2013) also suggest that analyst coverage is a particularly effective external monitoring mechanism in China since financial analysts can enhance the corporate information environment in regions where minority investor protection is weak. In line with previous findings, our results confirm that financial analysts can indeed play an external monitoring role and constrain managerial opportunism since we find that a higher level of analyst coverage can weaken the positive correlation between executive ownership and dividend tunneling.

This study contributes to the literature on the tunneling activities of controlling shareholders, especially the role of managerial ownership in controlling shareholders' dividend tunneling activities. We fill a gap in the literature on the corporate agency problem by providing evidence that dividends have been employed by controlling shareholders as a means of tunneling and executives with higher ownership are more likely to collude with controlling shareholders in dividend tunneling activities. Specifically, we show that dividend tunneling is positively correlated with executive ownership. In addition, we further show the correlation to be strengthened by lower minority shareholder protection as well as state ownership. Our study also contributes to the debate around the promotion of cash dividend policy in China, as our findings show that cash dividends are used as a tunneling vehicle and dividend tunneling has displaced other tunneling activity via intercorporate loans. Although the regulations promoting cash dividend payout are used to protect the interests of minority shareholders, they also have the side effect of enabling dividend tunneling. In particular, we show that dividend tunneling has a substitution effect with intercorporate loaning, which has been restricted since 2006. In other words, our findings indicate that regulators need to take into account the adverse effect of future regulations on dividend tunneling, due to the high ownership concentration prevalent in Chinese listed firms. Finally, our findings provide evidence to the regulators supporting the argument that external monitoring by financial analysts can effectively constrain dividend tunneling by dominant shareholders.

Our study distinguishes from Brown et al. (2007) in the following ways. First, as one of our main contributions, we examine the effect of executive ownership on abnormal dividend payout, while Brown et al. (2007) examine this effect at the level of dividend payout. Second, we look into the issue of dividend tunneling in China while Brown et al. (2007) investigate the impact of US market regulation. There are fundamental differences in the institutional settings between the US and Chinese markets. The most important is the degree of ownership concentration, it being much higher in Chinese listed firms than in US listed firms. In fact, under high concentrations of ownership, the abnormal dividend payout is considered to be dividend tunneling behavior in China as it may only benefit a small number of large shareholders. This viewpoint is further strengthened by our results showing that the positive relationship is more pronounced when the minority shareholder protection is weaker. Third, although Brown et al. (2007) find that firms with higher executive ownership tend to increase dividend payout, they show that the level of total dividends remains unchanged as there is a substitution effect between dividend payout and share repurchase. However, Chinese listed firms do not use share repurchase, and we demonstrate that firms with higher executive ownership tend to increase abnormal dividend payout.

The findings in this paper could be well applied to other emerging markets. First, concentrated corporate ownership may easily lead to conflicts of interest between controlling and minority shareholders. Second, weak institutional protection of minority shareholder concerns serves to reduce the likelihood of tunneling behavior being disclosed or detected and may increase associated legal costs. In addition, managers may be driven to collude with controlling shareholders in tunneling activities for their own interests as concentrated ownership reduces executives' performance-based incentives and dominant shareholders have control over executive appointments, remuneration, and dismissals (Conyon & He, 2011; Zhang et al., 2014). Nevertheless, emerging markets do share the salient institutional features as the Chinese stock markets (Allen et al., 2005; Atanassov & Mandell, 2018; Chen et al., 2009; Kuo et al., 2014), and our findings are likely to be well applied to other emerging markets.

The remainder of this paper is arranged as follows. Section 2 reviews the related literature and develops the hypotheses. The sample construction and methodology are described in Section 3. We present the primary results of our empirical analysis in Section 4 and offer robustness checks in Section 5. Finally, Section 6 provides the policy implications and concludes the paper.

2 | RELATED LITERATURE AND HYPOTHESIS DEVELOPMENT

2.1 | Dividend payout

The fundamental argument of theories related to shareholder protection indicates that dividends are considered a means of protecting the interests of all shareholders. Specifically, dividend signaling theory

suggests that the announcement of a dividend payout increase is an indication of positive prospects, which is beneficial to all shareholders (Miller & Rock, 1985). Easterbrook (1984) argues that dividend disbursement can diminish internal perquisite consumption and consequently reduce agency costs. In the same vein, Baker and Wurgler (2004) and Jensen (1986) further argue that dividends, as a form of free cash flow, should be paid to all shareholders in the interests of wealth maximization.

However, following Johnson et al. (2000),[4] the tunneling theory argues that the use of dividends can be employed by controlling shareholders to expropriate the wealth of minority shareholders (Chen et al., 2009; Lv et al., 2012). Lv et al. (2012) suggest that dividends can be treated as a vehicle for tunneling, in particular, when minority shareholder protection is weak. This implies that a dividend payout increase, in particular an abnormal dividend payout, is positively related to the expropriation of minority shareholders. Most evidence of dividend tunneling has been identified in firms with concentrated ownership structures, less independent boards, inactive external takeover markets, and low-quality disclosure (Atanassov & Mandell, 2018; Chen et al., 2009; Chiou et al., 2010).

2.2 | Dividend tunneling and managerial ownership

The relationship between managerial ownership and dividend payouts may be explained by two contradictory theories: alignment theory (Jensen & Meckling, 1976) and entrenchment theory (Morck et al., 1988). The main agency issue between managers and shareholders is associated with free cash flow potentially used by self-serving managers for their own interests at the expense of shareholders, such as in empire-building or for personal benefit (Jensen, 1986; Stulz, 1990). Alignment theory indicates that managerial ownership may serve as a governance mechanism and its increase helps align interests between managers and shareholders, since managers holding more firm equity will be incentivized to act as owners and make decisions more clearly in shareholders' interests (Jensen et al., 1992; Jensen & Meckling, 1976; Lee, 2011). Florackis et al. (2015) find that, in line with the alignment effect of managerial ownership, the relationship between dividend payout and managerial ownership is negative when managerial ownership is below a certain threshold.

By contrast, entrenchment theory argues that managers may entrench themselves at the expense of shareholders and pursue their own interests when their ownership level is high (Morck et al., 1988; Shleifer & Vishny, 1989). A higher level of managerial ownership provides them with more power and influence, and they may even disregard the threat of replacement or the discipline of the market when they have sufficient power to protect their employment or control the board (Lafond & Roychowdhury, 2008; Morck et al., 1988; Shuto & Takada, 2010).

However, supporting evidence for this is mainly found in developed markets where firms tend to have more balanced shareholder ownership structures and stronger minority shareholder protection mechanisms. Unlike in developed markets, the majority of publicly listed firms in the Chinese stock markets have a controlling shareholder with a substantial shareholding (Jiang et al., 2010). Firth et al. (2006b) and Conyon and He (2011) also note that the controlling shareholders in Chinese listed firms can decide on executive remuneration, appointments, and dismissals. Zhang et al. (2014) report that dominant shareholders have absolute control over board composition since they can determine member nomination. Cullinan et al. (2012) extend this by noting that those nominated or successfully remaining on firms' boards may be affiliated with the controlling shareholders. In their sample, affiliated directors occupied about 40% of board seats. This is in line with the finding that even boards containing supervisory directors may not conduct independent and effective monitoring in all decision-making processes (Firth et al., 2006b). Consequently, managers may collude with controlling shareholders for their own interests, such as protecting their position and advancing their careers. In other words, the alignment effect may be dominated by the entrenchment effect in the Chinese stock markets where the ownership concentration is high.

In sum, due to weak minority shareholder protection and the high ownership concentration in Chinese listed firms, dominant shareholders tend to have controlling power and can affect executive remuneration, appointments, and dismissals as well as board composition. Thus, we argue that the entrenchment effect may have stronger impact on executives' decision making and executives may have the motivation to participate in dividend tunneling along with controlling shareholders, to protect their jobs and careers and pursue their own interests. Therefore, we propose the following hypothesis:

> **Hypothesis 1.** Executive ownership is positively related to dividend tunneling.

Jiang et al. (2010) and Chizema et al. (2020) indicate that most Chinese listed firms have concentrated ownership structures, and the Chinese capital markets have weak minority shareholder protection and underdeveloped legal systems. Prior research reveals that a more concentrated ownership structure may lead to expropriation of minority shareholders by insiders (Farinha & López-de-Foronda, 2009; Lemmon & Lins, 2003). Using firm-year observations of Chinese listed companies, Zhang et al. (2014) find that concentrated ownership reduces executives' performance-based incentives and thus controlling shareholders and executives may collude in tunneling behavior. By contrast, Maury and Pajuste (2005) document that a larger number of shareholders with similar shareholdings can compete with each other and maintain a balanced ownership structure. Similarly, Berkman et al. (2009) find a negative relationship between private non-controlling shareholder ownership and the likelihood of expropriation by a controlling shareholder. Barroso et al. (2016) also find that firms with several large shareholders have stronger shareholder protection and they are more able to prevent a large shareholder from trying to extract rents at the expense of others.

In particular, controlling shareholders in the Chinese markets commonly enjoy absolute control by directly affecting the nomination

of board members as well as decisions around senior appointments, remuneration, and dismissals (Conyon & He, 2011; Firth et al., 2006b; Zhang et al., 2014). Furthermore, using the shareholder balancing mechanism (SBM) of non-controlling large shareholders' ownership as a measure of minority shareholder protection, Lv et al. (2012) reveal that dividends have been employed as a mean of tunneling activity by controlling shareholders and such activities may be more pronounced in firms with weaker minority shareholder protection. As a result, we conjecture that it is more likely for executives in the firms with weaker minority shareholder protection to collude with controlling shareholders in the process of dividend tunneling, and we have the following hypothesis:

> **Hypothesis 2.** The relationship between executive ownership and dividend tunneling is more pronounced in firms with weaker minority shareholder protection.

Berkman et al. (2009) shows that the controlling shareholders in Chinese listed firms may use related-party loan guarantees to expropriate wealth from minority shareholders. Similarly, Jiang et al. (2010) indicate that controlling shareholders have been able to conduct tunneling through intercorporate loans recorded on balance sheets as "other receivables" in the majority of Chinese listed firms. They argue that intercorporate loan tunneling siphoned large amounts of firms' cash to controlling shareholders who disregarded the associated prospects for their firms. Such tunneling activities by controlling shareholders have been more pronounced among Chinese listed companies due to their split share structure. This is because controlling shareholders held non-tradable shares that were restricted in trading, and consequently controlling shareholders have been barely able to enjoy the benefits of share price appreciation, which further motivated them to conduct tunneling activities before the split share structure reform (Chizema et al., 2020).

Although intercorporate loans have been largely prohibited by the Chinese regulators since 2006, the diminished incidence of intercorporate loan tunneling has not been the death-toll of tunneling behavior. Weak minority shareholder protection and the intention of controlling shareholders to siphon resources still remain. Huang (2016) shows that tunneling through related party loan guarantees increased in Chinese listed firms after the enterprise income tax reform of 2008. Cash dividends, used as a new tunneling method by controlling shareholders, have been gradually recognized by researchers such as Chen et al. (2009), Lv et al. (2012), and Atanassov and Mandell (2018). Consequently, we conjecture that dividend tunneling is used as a substitute for intercorporate loans for the same purposes, in the Chinese stock markets, since these became less feasible for controlling shareholders, and with dividend tunneling being comparatively more difficult to detect. Therefore, we present the following hypotheses:

> **Hypothesis 3a.** "Other receivables" are negatively related to dividend tunneling.

> **Hypothesis 3b.** The positive relationship between executive ownership and dividend tunneling is more pronounced for firms with lower "other receivables."

2.3 | State ownership and the expropriation of minority shareholders

Tunneling activities observed in China have been the subject of debate, in light of the institutional environment of the Chinese stock markets. A primary consideration is that most large Chinese listed firms are carve-outs or splits from massive state-owned enterprises (Jiang et al., 2010). Yuan et al. (2008) find that the average shareholding by the government remains very high in Chinese listed firms, and Wang and Xiao (2011) show that 70% of Chinese listed companies are ultimately controlled by government agencies, indicating that state ownership remains widespread in Chinese stock markets.[5] Moreover, state shareholders may need to retain their shares for the purpose of corporate control and pursue their political agenda. The lack of free trading of state-owned shares prevents shareholders from benefiting from stock price appreciation, and thus, state shareholders have greater incentives to engage in dividend tunneling (Jiang et al., 2010; Lv et al., 2012).

Prior studies find that large state shareholders, with their majority voting rights, can exert a strong influence on firms' business operations in China. Hou et al. (2012) show that firms with higher state ownership have lower corporate transparency since state shareholders may focus their effort on acquiring political credits and ensuring their firms carry out government policies. Some studies indicate that dominant state shareholders have divergent interests from those of minority investors, and thus, state ownership may negatively contribute to corporate operational efficiency and in turn reduce firm performance (e.g., Dewenter & Malatesta, 2001; Gul, 1999; Yuan et al., 2008). Similarly, Boateng and Huang (2017) investigate the effects of contestability of multiple large shareholders on tunneling and indicate that government-associated controlling shareholders reduce the monitoring effects of multiple larger shareholders.

In addition, Firth et al. (2006b) and Conyon and He (2011) conclude that state shareholders retain corporate control by carrying weight in the appointments and tenure of senior executives. In order to retain their positions, executives may assist tunneling activity by the controlling state shareholders (Zhang et al., 2014). Berkman et al. (2009) also find tunneling through loan guarantees to related parties are more likely when the controlling shareholder is a state corporate entity. Similarly, Jian and Wong (2010) show that state-owned firms are more likely to prop up corporate resources to their controlling shareholders. Therefore, we propose the following hypothesis:

> **Hypothesis 4.** The positive relationship between executive ownership and dividend tunneling is more pronounced for firms with higher state ownership.

2.4 | External monitoring of financial analysts

Prior studies find that financial analysts play an effective monitoring role on managerial behavior in listed firms, strengthen corporate governance and transparency, and reduce agency costs (Healy & Palepu, 2001; Jensen & Meckling, 1976). Firms followed by higher numbers of financial analysts are subject to more intensive monitoring, so the expropriation by controlling shareholders may be constrained by the ensuing pressure from greater transparency. Dyck et al. (2010) show that financial analysts can monitor fraudulent behavior in firms effectively. Yu (2008) argues that earnings management manipulation and related agency costs can be reduced by an increased density in analyst coverage (measured by the frequency of analyst investigations). In other words, the more intensive the climate of analysis, the lesser the agency costs related to earnings management, by constraining executive and controlling shareholder misconduct and fraudulent behavior.

More specifically, Healy and Palepu (2001) show that analysts are familiar with financial and industrial knowledge, so they can scrutinize managerial behavior and financial reports to provide recommendations for market participants. They also point out that combining or convergence of the alternative formats used by external monitors such as brokers could increase the effectiveness of external screening of firms. We conjecture, therefore, that the interests of minority shareholders could be more effectively protected in a market with strong external monitoring, and specifically that, when dividend payouts are used as a tunneling method in China, analyst coverage can mitigate the positive relation between executive ownership and dividend tunneling. Consequently, we have the hypothesis below:

> **Hypothesis 5.** The positive relationship between executive ownership and dividend tunneling is more pronounced for firms with lower analyst coverage.

3 | METHODOLOGY AND DATA

3.1 | Multivariate regressions

To examine the relationship between executive ownership and dividend tunneling, we have the following baseline regression:

$$
\begin{aligned}
Abn\_DividPayout_{it} = {} & \alpha_i + \beta_1 ExeOwnership_{it} + \gamma_1 FirmSize_{it} \\
& + \gamma_2 TangAsset_{it} + \gamma_3 MTBV_{it} + \gamma_4 Leverage_{it} \\
& + \gamma_5 Cash_{it} + \gamma_6 CashFlowVol_{it} + \gamma_7 FirmAge_{it} \\
& + \gamma_8 SME_{it} + \gamma_9 TotalCompensation_{it} \\
& + \gamma_{10} COW_{it} + \gamma_{11} HIndex_{it} + \gamma_{12} BoardSize_{it} \\
& + \gamma_{13} BoardMeeting_{it} + \varepsilon_{it}
\end{aligned} \tag{1}
$$

The dependent variable, *Abn_DividPayout*, denotes the abnormal dividend payout which is employed as a proxy for dividend tunneling. Following Holder et al. (1998) and Rozeff (1982), the abnormal

dividend payout is computed using the residuals of the Equation A1 (see Appendix B). Distinct from the method used by Lv et al. (2012), which only captures the extreme cases when the dividend per share is positive and the earning per share is negative, we define the abnormal dividend payout as the dividend payout which deviates from the firm's expected dividend payout. More specifically, we first obtain an individual firm's expected dividend using Equation A1, and the residuals are defined as the abnormal dividend payout. There are two advantages of our method. First, we allow the model to self-decide what abnormal dividend payout is, rather than relying on the arithmetic mean or median of the industry dividend payout ratios. Second, the method has filtered the increase of dividend due to a company's normal and sound growth. Consequently, the value of the abnormal dividend we derive can be a more accurate and reliable proxy for controlling shareholders' tunneling behavior, in particular when tunneling is rarely observed directly (Berkman et al., 2009).

Executive ownership, *ExeOwnership*, is defined as the number of executive shares divided by the number of total shares. In this study, we surmise that executives may collude with their controlling shareholders since most Chinese listed firms have a dominant controlling shareholder who can influence the appointments and tenure of executives (Conyon & He, 2011; Firth et al., 2006b). Prior studies also show that executives may collude with controlling shareholders to protect their positions or performance-based incentives (Wang & Xiao, 2011; Zhang et al., 2014). Therefore, we expect a significant and positive coefficient on *ExeOwnership* if our first hypothesis holds.

Following Lv et al. (2012), we incorporate *FirmSize*, *TangAssets*, *MTBV*, *Leverage*, and *Cash* in Equation 1 to control for their impact on abnormal dividend payout. *FirmSize* is defined as the natural logarithm of total assets (Hoberg & Prabhala, 2008; Iman & Conover, 1979). Some studies provide supportive evidence of a positive relationship between dividend payout ratio and firm size (Berzins et al., 2019; Grennan, 2019; Lv et al., 2012). Lv et al. (2012) argue that the acquisition of fixed assets can reduce cash levels in firms and in turn reduce the dividend payout ratio; thus, we also include the tangible assets to total assets ratio in the regression. *MTBV* is the market-to-book ratio of a firm, defined as the market value of the firm divided by its book value, which reflects the firm's efficiency and growth opportunity (Harakeh et al., 2020). *Leverage* is the ratio of long-term debt of a firm divided by its total equity, as widely used in previous studies (Barclay et al., 1995; Crutchley & Hansen, 1989; Kumar & Vergara-Alert, 2020; Rozeff, 1982). A higher leverage ratio may lead to a lower probability of controlling shareholders' expropriating from the firm if dividend payout is used as a method of tunneling. *Cash* is the cash and cash equivalents scaled by the total assets, and the relationship between *Cash* and *Abn_DividPayout* is expected to be positive since firms with more cash may be able to pay more abnormal dividends.

We also incorporate other control variables related to firm characteristics, namely, *CashFlowVol*, *FirmAge*, *SME*, *TotalCompensation*, *COX*, and *HIndex*. *CashFlowVol* is the volatility of a firm's cash flows measured by the standard deviation of the firm's cash flows over the previous 5 years, as Bradley et al. (1998) suggest this to be an important determinant of dividend payout policy. More specifically, senior

managers may pay lower dividends when future cash flows are more uncertain. For the independent variable assessing firm age, *FirmAge*, we have followed Loderer et al. (2017) and Loughran and Ritter (2004) and used the firm establishment age, namely, the number of years since a firm is founded. *SME* is an indicator variable which equals one if the first three digits of a stock code are either 002 or 300, and zero otherwise. We incorporate these two variables because, in the Chinese stock markets, young firms may be more likely to pay dividends than old firms, and firms listed on the small-medium and entrepreneur boards (SME) tend to pay more dividends. *TotalCompensation* is defined as the natural logarithm of the total compensation received by the top three executives and is used to control for the effect of executive compensation. *COW* represents the divergence between shareholders' cash flow rights and their control rights over firms. Fan and Wong (2002) argue that separating voting rights from cash flow rights is common in East Asian markets. Their results show that this divergence motivates controlling shareholders to undertake self-interested activities. Francis et al. (2005) also find that the prominence of dividends can be affected by separating cash flow rights and voting rights. Finally, we follow Renneboog (2000) and employ *HIndex* to measure the level of ownership concentration, defined as the square of the shareholding percentage owned by the top shareholder.

Following Kuo et al. (2014), we also consider some variables related to board characteristics which may influence managerial decisions on dividend payout. *BoardSize* is the number of board members. Lipton and Lorsch (1992) and Jensen (1993) argue that larger boards may be less effective in monitoring since having more members may associate with greater difficulty in reaching consensus and making decisions. *BoardMeeting* is the number of board meetings in a year as a higher board meeting frequency may indicate stronger supervision by a board over their firm's operations, so it may be negatively related to tunneling activities. To reduce potential endogeneity problems, we control for year- and industry-fixed effects across all the regressions in this study.

We also investigate whether minority shareholder protection affects the sensitivity between executive ownership and the dividend tunneling behavior of controlling shareholders. Lv et al. (2012) and Maury and Pajuste (2005) suggest that a balanced shareholder structure with a high SBM (shareholder balancing mechanism) can help protect firms' minority shareholders and reduce the potential tunneling behavior. Following this approach, we use the reciprocal of SBM (*RSBM*) to test the moderating effect of minority shareholder protection on the correlation between executive ownership and dividend tunneling, and a higher value of *RSBM* indicates weaker minority shareholder protection. The *RSBM* is defined as follows:

$$RSBM = \frac{c^2}{l_2^2 + l_3^2 + l_4^2 + l_5^2} \quad (2)$$

The notations l_2, l_3, l_4, and l_5 are the proportions of the shares held by the second to the fifth largest shareholders. The denominator is the sum of the square of the shareholding fractions of these shareholders. The numerator is the square of the shareholding fraction of

the controlling shareholder. According to Maury and Pajuste (2005), a higher level of shareholding by multiple shareholders (l_2, l_3, l_4, l_5) indicates a higher degree of corporate shareholder balance structure, which plays an important role in corporate governance since competition among large shareholders can limit the expropriation of minority shareholders' wealth.

$$
\begin{aligned}
Abn\_DividPayout_{it} = {} & \alpha_i + \beta_1 ExeOwnership_{it} + \beta_2 RSBM_{it} \quad (3) \\
& \times ExeOwnership_{it} + \beta_3 RSBM_{it} + \gamma_1 FirmSize_{it} \\
& + \gamma_2 TangAsset_{it} + \gamma_3 MTBV_{it} + \gamma_4 Leverage_{it} \\
& + \gamma_5 Cash_{it} + \gamma_6 CashFlowVol_{it} + \gamma_7 FirmAge_{it} \\
& + \gamma_8 SME_{it} + \gamma_9 TotalCompensation_{it} \\
& + \gamma_{10} COW_{it} + \gamma_{11} HIndex_{it} + \gamma_{12} BoardSize_{it} \\
& + \gamma_{13} BoardMeeting_{it} + \varepsilon_{it}
\end{aligned}
$$

In Equation 3, a positive coefficient of the interaction of *RSBM* and *ExeOwnership* implies that an increase in *RSBM* (i.e., weaker minority shareholder protection) may lead to a stronger effect of executive ownership on dividend tunneling. Following Jaccard et al. (1990), the component variables of the interaction term between *RSBM* and *ExeOwnership* are standardized for their industry-year means and standard deviations to mitigate the effects of multicollinearity.

For the third hypothesis, we include *OtherReceivs*, which is defined as "other receivables" to the total asset ratio in the regression since intercorporate loans are recorded as "other receivables" in the balance sheet and can be considered a measure of controlling shareholders' tunneling activities (Jiang et al., 2005, 2010). The purpose of including *OtherReceivs* is to test whether dividend tunneling is used as a substitute for other tunneling activities such as intercorporate loans. The substitution effect of dividend tunneling for intercorporate loans implies that the coefficient of *OtherReceivs* as well as the interaction term between *OtherReceivs* and *ExeOwnership* is negative as dividend tunneling and intercorporate loan tunneling both transfer benefits to the controlling shareholders.[6] As a result, the regression is expressed as Equation 4:

$$
\begin{aligned}
Abn\_DividPayout_{it} = {} & \alpha_i + \beta_1 ExeOwnership_{it} + \beta_2 OtherReceivs_{it} \quad (4) \\
& \times ExeOwnership_{it} + \beta_3 OtherReceivs_{it} \\
& + \gamma_1 FirmSize_{it} + \gamma_2 TangAsset_{it} + \gamma_3 MTBV_{it} \\
& + \gamma_4 Leverage_{it} + \gamma_5 Cash_{it} + \gamma_6 CashFlowVol_{it} \\
& + \gamma_7 FirmAge_{it} + \gamma_8 SME_{it} \\
& + \gamma_9 TotalCompensation_{it} + \gamma_{10} COW_{it} \\
& + \gamma_{11} HIndex_{it} + \gamma_{12} BoardSize_{it} \\
& + \gamma_{13} BoardMeeting_{it} + \varepsilon_{it}
\end{aligned}
$$

Furthermore, we incorporate *StateOwnership* and its interaction term with the executive ownership to test the moderating effect of state ownership on the association between dividend tunneling and executive ownership. The regression equation is expressed as follows.

$$Abn\_DividPayout_{it} = \alpha_i + \beta_1 ExeOwnership_{it} + \beta_2 StateOwnership_{it} \quad (5)$$
$$\times ExeOwnership_{it} + \beta_3 StateOwnership_{it}$$
$$+ \gamma_1 FirmSize_{it} + \gamma_2 TangAsset_{it} + \gamma_3 MTBV_{it}$$
$$+ \gamma_4 Leverage_{it} + \gamma_5 Cash_{it} + \gamma_6 CashFlowVol_{it}$$
$$+ \gamma_7 FirmAge_{it} + \gamma_8 SME_{it}$$
$$+ \gamma_9 TotalCompensation_{it} + \gamma_{10} COW_{it}$$
$$+ \gamma_{11} HIndex_{it} + \gamma_{12} BoardSize_{it}$$
$$+ \gamma_{13} BoardMeeting_{it} + \varepsilon_{it}$$

StateOwnership is the fraction of state-owned shares, calculated as the state-owned shares divided by the total shares outstanding. *StateOwnership* and *ExeOwnership* are standardized for their industry-year means and standard deviations. Given the premise that state shareholders have greater incentive to expropriate from minority shareholders for their own interests, we expect a positive coefficient of the interaction term between dividend tunneling and executive ownership as well as *StateOwnership* in Equation 5.

Finally, we examine whether external monitoring by financial analysts can affect the impact of managerial ownership on dividend tunneling. We express the following, Equation 6:

$$Abn\_DividPayout_{it} = \alpha_i + \beta_1 ExeOwnership_{it} + \beta_2 Analyst_{it} \quad (6)$$
$$\times ExeOwnership_{it} + \beta_3 Analyst_{it}$$
$$+ \gamma_1 FirmSize_{it} + \gamma_2 TangAsset_{it} + \gamma_3 MTBV_{it}$$
$$+ \gamma_4 Leverage_{it} + \gamma_5 Cash_{it} + \gamma_6 CashFlowVol_{it}$$
$$+ \gamma_7 FirmAge_{it} + \gamma_8 SME_{it}$$
$$+ \gamma_9 TotalCompensation_{it} + \gamma_{10} COW_{it}$$
$$+ \gamma_{11} HIndex_{it} + \gamma_{12} BoardSize_{it}$$
$$+ \gamma_{13} BoardMeeting_{it} + \varepsilon_{it}$$

Analyst is the number of analysts following a firm.[7] The more analysts on a firm, the greater the likelihood that the tunneling behavior of controlling shareholders in the firm may be constrained. In other words, we expect the coefficient of the interaction term (β_2) to be negative, which indicates a negative moderation effect of *Analyst* on the positive correlation between dividend tunneling and executive ownership. In addition, we follow Xu et al. (2013) and Ding et al. (2013) and use two alternative measures for this monitoring effect of financial analysts, the number of brokers *(Broker)* and the number of reports *(AnalystReport)*, to test Hypothesis 5. Ding et al. (2013) suggest that the number of brokers reflects the range and scope of monitoring on target firms. Moreover, Hong and Kubik (2003) argue that brokerage firms might have a particular tie with a target firm, such as underwriting their stocks, which implies that analysts' reviews may not always be conducted independently. Consequently, it may be necessary to consider the number of brokers to reduce the biases caused by such business relationships. We replace *Analyst* with *Broker* and *AnalystReport* in Equation 6, respectively. *Broker* is defined as the number of brokers covering a firm, and *AnalystReport* is the number of analyst reports covering a firm. *Broker* and *AnalystReport* indicate the

frequency of forecasting and how often a firm is reviewed. The detailed definitions of all variables are reported in Appendix A.

3.2 | Data and sample

We obtain the firm-year observations from the Chinese Stock Market Accounting Research (CSMAR) database for the sample period 2003 to 2020.[8] We include all the listed firms on both the Shanghai Stock Exchange (SHSE) and Shenzhen Stock Exchange (SZSE). Following Berkman et al. (2009) and Lv et al. (2012), we exclude the financial and banking sectors since the firms therein tend to have significantly different governance. The total firm-year observation is 24,511.

Table 1 reports the sample selection procedure and the distribution of executive ownership in panels A and B, respectively. Panel A shows that our original full sample from 2003 to 2020 has 43,484 firm-year observations. After excluding the observations in the financial and banking sectors and those with missing financial statements, or stock market and corporate governance variables, we are left with 24,511 firm-year observations. A detailed distribution of executive ownership is reported in panel B. About 78% of the firm-year observations have executive ownership between 0% and 1%. The observations with executive ownership between 1% and 10%, between 10% and 30%, and between 30% and 50% account for about 21% of our total observations. The distribution of executive ownership is consistent with other findings that it is relatively lower in emerging markets (Coles et al., 2012; Core & Larcker, 2002; Mehran, 1995). According to the year distribution, the number of firms with positive executive ownership gradually increases from 521 in 2003 to 2392 in 2020. This indicates the importance of examining the association between executive ownership and dividend tunneling.

Table 2 displays the summary statistics for all the variables used in this study. The explanatory variable, *ExeOwnership*, has an average of 0.034, which implies that there are on average 3.4% of shares in the hands of executives in our sample firms. The median is well below the mean. The average dividend payout ratio, *DividPayout*, is 0.247 while the standard deviation is 0.306. The mean of *Abn_DividPayout* is 0.004, and the standard deviation is 0.306. Table 2 shows the mean of *OtherReceivs* to be 0.015, which implies that other receivables on average account for 1.5% of total assets among Chinese listed firms.[9] The median is 0.006 and below the mean, and the standard deviation is small, equal to 0.029. These imply that most observations are close to the mean and slightly right-skewed. Jiang et al. (2010) use other receivables as a proxy for tunneling activities by controlling shareholders in China. Their sample range is from 1996 to 2004 with a mean of 0.081 and median of 0.048, which suggests that the value of *OtherReceivs* has dropped significantly in the Chinese stock markets since 2005. Meanwhile, the mean and median of state ownership are 8.9% and 0%, respectively. This indicates that considerable state ownership exists in a certain proportion of listed firms.

TABLE 1 Sample selection and the distribution of executive ownership

Panel A. Sample selection	
	N
Total firm-years covered by the China Stock Market & Accounting Research Database (CSMAR), 2003–2020	43,484
Less firm-years:	
Excluded the financial and banking sectors observations	(1322)
Excluded missing financial statement data	(14,914)
Excluded missing stock market data	(148)
Excluded missing corporate governance data	(2589)
Total sample	24,511

Panel B. The distribution of executive ownership						
ExeOwnership	0–1%	1%–10%	10%–30%	30%–50%	>50%	**N**
2003	521	0	0	0	0	521
2004	776	1	0	0	0	777
2005	760	2	1	0	0	763
2006	815	10	3	1	0	829
2007	832	15	5	2	0	854
2008	836	27	19	2	0	884
2009	863	34	17	1	0	915
2010	946	50	23	4	0	1023
2011	1034	87	36	17	2	1176
2012	1131	91	48	16	3	1289
2013	1119	127	67	29	10	1352
2014	1140	233	115	69	22	1579
2015	1177	293	174	95	31	1770
2016	1368	309	227	91	27	2022
2017	1375	321	225	86	26	2033
2018	1431	362	223	78	31	2125
2019	1456	378	245	101	27	2207
2020	1544	415	274	131	28	2392
Total	19,124	2755	1702	723	207	24,511

Note: Panel A reports the sample selection procedure. Our sample period is from 2003 to 2020 since the executive ownership data are only available after 2003. Panel B presents the yearly distribution of execution ownership. *ExeOwnership* is executive ownership. All variables are defined in Appendix A.

4 | EMPIRICAL RESULTS

4.1 | Ownership structure and dividend tunneling

Table 3 presents the results of the relationship between executive ownership (*ExeOwnership*) and dividend tunneling (*Abn_DividPayout*). Columns (1) and (2) report the results when the explanatory variable *ExeOwnership* is included and the impact of firm characteristics is controlled for, while all the control variables, including firm characteristics and corporate governance variables, are incorporated in columns (3) and (4). In columns (2) and (4), we control for year- and industry-fixed effects.[10] Overall, the results reported in columns (1) to (4) consistently show that *ExeOwnership* is significantly and positively correlated with *Abn_DividPayout*. This implies that under higher levels of executive ownership, we observe more dividend tunneling.

Consistent with our first hypothesis, our results show a positive correlation between abnormal dividend payout and executive ownership. In line with the findings of Chen et al. (2009), Atanassov and Mandell (2018), and Chiou et al. (2010), this implies that firms' dividend policy leans toward controlling shareholders' interests and executives may collude with their controlling shareholders to expropriate from minority shareholders through abnormal dividends. Consistent with our expectation, we observe that managerial ownership has a positive effect on the dividend tunneling by controlling shareholders.

	N	Mean	Std. dev.	p25	Median	p75
Abn_DividPayout	24,511	0.004	0.306	−0.195	−0.069	0.109
DividPayout	24,511	0.247	0.306	0.000	0.172	0.348
ExeOwnership	24,511	0.034	0.094	0.000	0.000	0.005
FirmSize	24,511	22.236	1.297	21.362	22.093	22.967
TangAssets	24,511	0.239	0.175	0.100	0.204	0.345
MTBV	24,511	1.963	1.302	1.168	1.523	2.226
Leverage	24,511	0.255	0.389	0.022	0.102	0.319
Cash	24,511	0.161	0.111	0.084	0.134	0.208
CashFlowVol	24,511	0.702	1.767	0.111	0.237	0.565
FirmAge	24,511	16.777	5.726	12.000	17.000	21.000
SME	24,511	0.305	0.461	0.000	0.000	1.000
TotalCompensation	24,511	14.144	0.903	13.641	14.222	14.710
COW	24,511	6.259	8.401	0.000	0.073	12.336
HIndex	24,511	0.145	0.121	0.053	0.106	0.206
BoardSize	24,511	10.194	2.567	9.000	9.000	11.000
BoardMeeting	24,511	9.643	3.925	7.000	9.000	12.000
InsiderOwnership	24,511	0.044	0.103	0.000	0.000	0.006
SalesGrowth	24,511	0.143	0.189	0.039	0.126	0.226
BETA	24,511	1.130	0.277	0.954	1.131	1.301
SHR	24,511	10.578	0.821	10.021	10.548	11.092
FreeCashFlow	24,511	0.003	0.107	−0.031	0.015	0.057
Sales	24,511	21.561	1.460	20.612	21.451	22.427
ROE	24,511	0.078	0.080	0.031	0.068	0.115
STD	24,511	0.129	0.063	0.087	0.115	0.155
RSBM	24,511	0.464	1.901	0.003	0.013	0.094
OtherReceivs	24,511	0.015	0.029	0.002	0.006	0.015
StateOwnership	24,511	0.089	0.182	0.000	0.000	0.041
Analyst	24,511	6.569	9.221	0.000	2.000	9.000
Broker	24,511	5.244	6.939	0.000	2.000	8.000
AnalystReport	24,511	12.979	20.614	0.000	4.000	17.000

Note: This table reports the summary statistics for variables used in the paper. Our sample consists of 24,511 firm-year observations from 2003 to 2020. All variables are defined in Appendix A. *RSBM* is in thousands. All continuous variables are winsorized at the 1% and 99% levels.

Regarding firm characteristics, the coefficients on *TangAssets*, *Cash*, and *SME* are significant and positive at the 1% level, while the *MTBV*, *Leverage*, *CashFlowVol*, and *FirmAge* coefficients are significant and negative. These results are in line with the findings in prior studies. Lv et al. (2012) suggest that dividend payout ratio and firm size are positively related since larger firms have more cash to make more dividend payments. Similarly, the relationship between *Cash* and *Abn_DividPayout* is expected to be positive as firms with more cash may be able to pay more dividends. Meanwhile, a higher leverage ratio means a larger proportion of debt financing, which can induce more effective monitoring from debtors and in turn a reduction in dividend payouts. In addition, Bradley et al. (1998) suggest that

dividends are paid less when the uncertainty of future cash flows is higher.

Among the corporate governance variables, regressions (3) and (4) show that *HIndex* is positively related to *Abn_DividPayout* at the 1% significance level. This implies that higher ownership concentration leads to a higher abnormal dividend payout ratio, which is consistent with the argument of Lv et al. (2012). *BoardMeeting* demonstrates a significant and negative relation with *Abn_DividPayout*. This is consistent with the argument of Jensen (1993) that a higher board meeting frequency may lead to stronger supervision of the board on the firm's operations, and thus, it may be negatively related to tunneling activities. Finally, *COW* and *BoardSize* show no statistically significant impact on *Abn_DividPayout* in columns (3) and (4).

TABLE 3 Executive ownership and dividend tunneling

| | Dependent variable: *Abn_DividPayout* | | | |
	(1)	(2)	(3)	(4)
ExeOwnership	0.304*** (8.017)	0.294*** (7.722)	0.302*** (8.011)	0.291*** (7.648)
FirmSize	0.014*** (4.283)	0.014*** (3.906)	0.004 (1.151)	0.003 (0.867)
TangAssets	0.154*** (8.402)	0.146*** (7.290)	0.128*** (6.869)	0.117*** (5.836)
MTBV	−0.005** (−2.183)	−0.006** (−2.413)	−0.006*** (−2.975)	−0.009*** (−3.569)
Leverage	−0.077*** (−10.427)	−0.076*** (−10.139)	−0.064*** (−8.929)	−0.061*** (−8.375)
Cash	0.184*** (6.255)	0.201*** (6.821)	0.152*** (5.210)	0.167*** (5.735)
CashFlowVol	−0.003 (−1.586)	−0.003 (−1.551)	−0.004** (−2.087)	−0.004* (−1.940)
FirmAge	−0.003*** (−6.437)	−0.003*** (−3.444)	−0.003*** (−5.536)	−0.002** (−2.479)
SME	0.030*** (3.900)	0.032*** (3.491)	0.032*** (4.097)	0.039*** (4.304)
TotalCompensation			0.023*** (5.108)	0.032*** (6.391)
COW			−0.000 (−0.777)	−0.000 (−0.894)
HIndex			0.208*** (7.216)	0.202*** (6.939)
BoardSize			0.000 (0.479)	−0.000 (−0.045)
BoardMeeting			−0.006*** (−8.303)	−0.006*** (−8.535)
Constant	−0.285*** (−3.997)	−0.300*** (−3.692)	−0.357*** (−4.896)	−0.441*** (−5.130)
Industry FE	N	Y	N	Y
Year FE	N	Y	N	Y
Observations	24,511	24,511	24,511	24,511
Adjusted R^2	0.037	0.051	0.050	0.065

Note: This table presents the impact of executive ownership on dividend tunneling. The dependent variable is the abnormal dividend payout representing dividend tunneling. All variables are defined in Appendix A. Standard errors are clustered at the firm level and *t* statistics are in parentheses.
*Significance at the 10% level.
**Significance at the 5% level.
***Significance at the 1% level.

4.2 | The impact of minority share protection

Table 4 shows how minority share protection affects the sensitivity of executive ownership on the abnormal dividend payout. The impact of *RSBM* on *Abn_DividPayout* is not statistically significant in columns (3) and (4) when corporate governance variables are also included, while the coefficient of the interaction term between *RSBM* and *ExeOwnership* is positive and significant across all four regressions. This implies that the relationship between executive ownership and dividend tunneling is more pronounced for firms with weaker minority shareholder protection, which supports our Hypothesis 2. These results are in line with those of Lv et al. (2012) that the greater the ownership of controlling shareholders the more dividends may be paid out for tunneling purposes. Since we directly measure dividend tunneling by *Abn_DividPayout*, our results provide supportive evidence for their findings that dividends have been used as a means of tunneling in Chinese listed firms, whereby firms' resources have been extracted to benefit controlling shareholders. This type of expropriation of minority shareholders' wealth may be more severe in markets with weak minority shareholder protections and underdeveloped legal

systems. Lv et al. (2012) further indicate that minority shareholders may consider dividend issuance as a signal of expropriation against their interests, and thus may sell their shares to avoid further exploitation, making the firm's shareholder ownership structure even more unbalanced.

4.3 | The substitution between dividend tunneling and other tunneling activities

We report the results of the relationship between *OtherReceivs* and *Abn_DividPayout* and the impact of *OtherReceivs* on the relation between *ExeOwnership* and *Abn_DividPayout* in Table 5. The results show that the *OtherReceivs* coefficient is negative and significant at the 1% level across all the regressions. Given that a firm's resource is limited, an increase in intercorporate loans results in less dividend tunneling. More importantly, the coefficients of the interaction term between *OtherReceivs* and *ExeOwnership* are negative at the 1% significance level for regressions (1)–(4). These results indicate that dividend tunneling is considered as a substitute for intercorporate loans.

TABLE 4 The influence of minority shareholder protection

| | Dependent variable: *Abn_DividPayout* | | | |
	(1)	(2)	(3)	(4)
ExeOwnership	0.046*** (13.757)	0.043*** (12.783)	0.045*** (13.569)	0.042*** (12.255)
RSBM*ExeOwnership	0.019** (2.274)	0.020** (2.414)	0.022** (2.539)	0.022** (2.540)
RSBM	0.011*** (3.750)	0.011*** (3.805)	0.004 (1.282)	0.004 (1.444)
FirmSize	0.016*** (8.334)	0.014*** (6.754)	0.006*** (2.588)	0.004 (1.467)
TangAssets	0.153*** (13.448)	0.138*** (11.066)	0.129*** (11.050)	0.111*** (8.810)
MTBV	−0.002 (−1.558)	−0.005*** (−3.096)	−0.005*** (−2.907)	−0.008*** (−4.847)
Leverage	−0.085*** (−17.379)	−0.081*** (−16.213)	−0.072*** (−14.650)	−0.066*** (−13.200)
Cash	0.189*** (9.488)	0.204*** (10.275)	0.155*** (7.790)	0.170*** (8.565)
CashFlow	−0.004*** (−3.297)	−0.003*** (−2.886)	−0.004*** (−3.933)	−0.004*** (−3.353)
FirmAge	−0.003*** (−7.803)	−0.003*** (−5.670)	−0.003*** (−7.421)	−0.002*** (−4.355)
SME	0.042*** (9.293)	0.036*** (6.262)	0.042*** (8.724)	0.041*** (7.150)
TotalCompensation			0.025*** (8.650)	0.032*** (10.342)
COW			−0.000 (−0.867)	−0.000 (−1.270)
HIndex			0.199*** (10.565)	0.195*** (10.255)
BoardSize			0.000 (0.649)	−0.000 (−0.243)
Boardmeeting			−0.006*** (−11.730)	−0.006*** (−11.834)
Constant	−0.335*** (−7.634)	−0.297*** (−5.981)	−0.422*** (−9.305)	−0.438*** (−8.456)
Industry FE	N	Y	N	Y
Year FE	N	Y	N	Y
Observations	24,511	24,511	24,511	24,511
Adjusted R^2	0.040	0.053	0.052	0.066

Note: This table presents the results for the moderating effect of minority shareholder protection on the relationship between executive ownership and dividend tunneling. All variables are defined in Appendix A. Standard errors are clustered at the firm level and *t* statistics are in parentheses.
*Significance at the 10% level.
**Significance at the 5% level.
***Significance at the 1% level.

There are two implications from this finding. On the one hand, since 2006, tunneling activities generally may not have been entirely eliminated, despite intercorporate loans being largely prohibited by the CSRC in China. Other means of tunneling, such as dividend tunneling, may be emerging as the new modus operandi. On the other hand, although retail investors in China support the CSRC's recent guidance on cash dividend policy, it may be necessary to call for a more balanced policy, which, at the same time, might be able to effectively prevent minority shareholders from dividend expropriation.

We further examine whether the 2006 reform has provided incentives for controlling shareholders and executives to switch their tunneling activity from intercorporate loans to dividends, given that the reform aims to cease tunneling in the form of intercorporate loans by controlling shareholders. To test this, we incorporate the interaction term between *ExeOwnership*, *OtherReceivs*, and *Reform 2006* in Equation 3.[11]

We provide the results in columns (5) and (6) of Table 5. The results show that the coefficient of *OtherReceivs* is still negative. This implies that, consistent with the results in columns (1)–(4), there is a

substitution effect between the tunneling of intercorporate loans and dividends over the full sample period. Furthermore, the significant and negative coefficient on the interaction term of *ExeOwnership*OtherReceivs*2006reform* implies that after the reform in 2006, the positive association between executive ownership and dividend tunneling is more pronounced for firms with lower other receivables. These results offer further evidence to our argument that due to the restrictions on intercorporate loans by the CSRC since 2006, corporate insiders have shifted their tunneling activities from intercorporate loans to dividends. In other words, dividend tunneling has become the prevailing form of expropriation by controlling shareholders after the 2006 reform.

In addition, the sum of the coefficients of the two interaction terms, *ExeOwnership*OtherReceivs* and *ExeOwnership*OtherReceivs*2006*, is still negative although the coefficient on *ExeOwnership*OtherReceivs* is positive. These suggest that the significantly negative coefficient of *ExeOwnership*OtherReceivs* in columns (1)–(4) is mainly driven by the negative coefficient on *ExeOwnership*OtherReceivs*2006*. These imply that the substitution effect

TABLE 5 The influence of other receivables

	Dependent variable: Abn_DividPayout					
	(1)	(2)	(3)	(4)	(5)	(6)
ExeOwnership	0.039*** (7.952)	0.037*** (7.270)	0.040*** (8.192)	0.036*** (7.191)	0.304*** (6.854)	0.300*** (6.806)
OtherReceivs*ExeOwnership	−0.709*** (−3.121)	−0.673*** (−2.973)	−0.748*** (−3.376)	−0.723*** (−3.243)	40.507*** (3.831)	40.545*** (4.093)
OtherReceivs	−1.077*** (−11.200)	−1.113*** (−11.572)	−0.943*** (−10.013)	−0.976*** (−10.371)	−0.678*** (−11.407)	−0.579*** (−9.970)
ExeOwnership*OtherReceivs*2006Reform					−42.307*** (−3.997)	−42.018*** (−4.237)
FirmSize	0.015*** (4.523)	0.012*** (3.235)	0.005 (1.307)	0.002 (0.413)	0.011*** (2.930)	0.001 (0.196)
TangAssets	0.141*** (7.654)	0.116*** (5.797)	0.121*** (6.489)	0.094*** (4.695)	0.113*** (5.614)	0.091*** (4.535)
MTBV	−0.004** (−2.018)	−0.008*** (−3.377)	−0.006*** (−2.776)	−0.010*** (−4.323)	−0.006** (−2.473)	−0.008*** (−3.550)
Leverage	−0.078*** (−10.706)	−0.072*** (−9.718)	−0.066*** (−9.322)	−0.059*** (−8.117)	−0.071*** (−9.546)	−0.058*** (−7.981)
Cash	0.160*** (5.432)	0.173*** (5.864)	0.132*** (4.549)	0.145*** (4.982)	0.171*** (5.816)	0.143*** (4.945)
CashFlowVol	−0.002 (−1.192)	−0.002 (−0.779)	−0.003* (−1.682)	−0.002 (−1.180)	−0.002 (−0.799)	−0.002 (−1.197)
FirmAge	−0.003*** (−4.826)	−0.003*** (−3.329)	−0.003*** (−4.320)	−0.002** (−2.440)	−0.003*** (−3.252)	−0.002** (−2.367)
SME	0.041*** (5.695)	0.033*** (3.619)	0.041*** (5.513)	0.039*** (4.404)	0.031*** (3.444)	0.038*** (4.220)
TotalCompensation			0.024*** (5.344)	0.030*** (6.065)	0.030*** (6.014)	0.030*** (6.014)
COW			−0.000 (−0.574)	−0.000 (−0.829)	−0.000 (−0.743)	−0.000 (−0.743)
HIndex			0.192*** (6.680)	0.190*** (6.570)	0.190*** (6.551)	0.190*** (6.551)
BoardSize			0.001 (0.800)	0.000 (0.037)	0.000 (0.078)	0.000 (0.078)
Boardmeeting			−0.005*** (−7.866)	−0.005*** (−7.947)	−0.005*** (−7.834)	−0.005*** (−7.834)
Constant	−0.295*** (−4.140)	−0.231*** (−2.872)	−0.381*** (−5.208)	−0.373*** (−4.369)	−0.198** (−2.304)	−0.382*** (−4.062)
Industry FE	N	Y	N	Y	Y	Y
Year FE	N	Y	N	Y	Y	Y
Observations	24,511	24,511	24,511	24,511	24,511	24,511
Adjusted R^2	0.045	0.059	0.056	0.070	0.059	0.070

Note: This table presents the results for the relationship between other receivables and dividend tunneling and the moderating effect of other receivables on the relationship between executive ownership and dividend tunneling. All variables are defined in Appendix A. Standard errors are clustered at the firm level and *t* statistics are in parentheses.

*Significance at the 10% level.

**Significance at the 5% level.

***Significance at the 1% level.

TABLE 6 The influence of state ownership

	Dependent variable: Abn_DividPayout			
	(1)	(2)	(3)	(4)
ExeOwnership	0.050*** (9.671)	0.047*** (8.840)	0.050*** (9.661)	0.046*** (8.515)
StateOwnership*ExeOwnership	0.053*** (4.748)	0.052*** (4.631)	0.047*** (4.214)	0.045*** (4.001)
StateOwnership	0.025*** (5.010)	0.024*** (4.900)	0.015*** (2.849)	0.014*** (2.714)
FirmSize	0.016*** (4.810)	0.013*** (3.620)	0.006* (1.672)	0.003 (0.873)
TangAssets	0.162*** (8.765)	0.144*** (7.223)	0.141*** (7.543)	0.120*** (5.990)
MTBV	−0.003 (−1.313)	−0.006** (−2.494)	−0.005** (−2.349)	−0.009*** (−3.715)
Leverage	−0.080*** (−11.001)	−0.076*** (−10.232)	−0.068*** (−9.527)	−0.062*** (−8.522)
Cash	0.185*** (6.219)	0.199*** (6.706)	0.154*** (5.274)	0.168*** (5.750)
CashFlowVol	−0.003* (−1.743)	−0.003 (−1.451)	−0.004** (−2.318)	−0.004* (−1.926)
FirmAge	−0.002*** (−4.463)	−0.003*** (−3.152)	−0.002*** (−4.195)	−0.002** (−2.374)
SME	0.041*** (5.635)	0.033*** (3.577)	0.040*** (5.311)	0.038*** (4.269)
TotalCompensation			0.025*** (5.676)	0.032*** (6.369)
COW			−0.000 (−0.570)	−0.000 (−0.797)
HIndex			0.196*** (6.535)	0.194*** (6.367)
BoardSize			0.001 (0.810)	0.000 (0.062)
Boardmeeting			−0.006*** (−8.385)	−0.006*** (−8.537)
Constant	−0.330*** (−4.562)	−0.279*** (−3.417)	−0.435*** (−5.876)	−0.439*** (−5.090)
Industry FE	N	Y	N	Y
Year FE	N	Y	N	Y
Observations	24,511	24,511	24,511	24,511
Adjusted R^2	0.040	0.053	0.052	0.065

Note: This table presents the results for the moderating effect of state ownership on the relationship between executive ownership and dividend tunneling. All variables are defined in Appendix A. Standard errors are clustered at the firm level and *t* statistics are in parentheses.
*Significance at the 10% level.
**Significance at the 5% level.
***Significance at the 1% level.

between other receivables and dividend tunneling exists only after the 2006 reform. Before the restriction of intercorporate loans imposed in 2006, firms intended to use both intercorporate loans and dividends as the means of tunneling. This further stresses the importance of examining the dividend tunneling after the reform in 2006 that restricts the tunneling of intercorporate loans.

4.4 | The impact of state ownership

To investigate whether higher state ownership of a firm moderates the positive association between managerial ownership and dividend tunneling, we incorporate *StateOwnership* and its interaction term with *ExeOwnership* in the regressions. The results in Table 6 show that both the coefficients on state ownership, *StateOwnership*, and the interaction term between *ExeOwnership* and *StateOwnership* are positive and significant at the 1% level for all four regressions. This implies that state ownership has a positive effect on firms' abnormal dividend payouts and the positive correlation between executive ownership

and dividend tunneling is more pronounced for firms with higher state ownership. In line with the findings of Zhang et al. (2014), this reflects that state shareholders may have their own agenda which compromises their attention paid to firm performance, and executives may collude with controlling shareholders for their own benefits. All the results in Table 6 are robust to the control of firm characteristics, board features and both industry and year fixed effects.

4.5 | External monitoring and dividend tunneling

Table 7 shows the moderating effect of financial analysts on the relationship between executive ownership and dividend tunneling, when *Analyst* and the interaction term between *Analyst* and *ExeOwnership* are both included in the regression. The results in Table 7 show that the coefficient of *Analyst* is negative at the 5% or 1% significance level in columns (1) to (4). This suggests that a higher number of analysts following a firm can exert more effective monitoring on its executives to reduce agency costs (Degeorge et al., 1999; Yu, 2008). Moreover,

TABLE 7 The influence of analyst coverage

	Dependent variable: Abn_DividPayout			
	(1)	(2)	(3)	(4)
ExeOwnership	0.045*** (8.895)	0.042*** (7.994)	0.046*** (9.030)	0.042*** (7.863)
Analyst*ExeOwnership	−0.011*** (−2.763)	−0.011*** (−2.701)	−0.009** (−2.454)	−0.009** (−2.314)
Analyst	−0.010*** (−2.972)	−0.008** (−2.577)	−0.010*** (−2.985)	−0.010*** (−3.120)
FirmSize	0.020*** (5.635)	0.018*** (4.390)	0.010** (2.439)	0.008* (1.871)
TangAssets	0.165*** (8.954)	0.147*** (7.334)	0.141*** (7.527)	0.119*** (5.948)
MTBV	−0.001 (−0.401)	−0.004 (−1.446)	−0.003 (−1.322)	−0.006** (−2.342)
Leverage	−0.083*** (−11.131)	−0.078*** (−10.319)	−0.070*** (−9.691)	−0.064*** (−8.733)
Cash	0.189*** (6.398)	0.203*** (6.867)	0.155*** (5.330)	0.170*** (5.810)
CashFlowVol	−0.004** (−1.974)	−0.004* (−1.756)	−0.004** (−2.441)	−0.004** (−2.124)
FirmAge	−0.003*** (−5.214)	−0.003*** (−3.473)	−0.003*** (−4.732)	−0.002*** (−2.594)
SME	0.040*** (5.414)	0.034*** (3.682)	0.040*** (5.268)	0.041*** (4.542)
TotalCompensation			0.026*** (5.772)	0.034*** (6.642)
COW			−0.000 (−0.629)	−0.000 (−0.867)
HIndex			0.201*** (6.961)	0.198*** (6.766)
BoardSize			0.001 (0.523)	−0.000 (−0.191)
Boardmeeting			−0.006*** (−8.358)	−0.006*** (−8.478)
Constant	−0.423*** (−5.404)	−0.376*** (−4.195)	−0.514*** (−6.396)	−0.556*** (−5.794)
Industry FE	N	Y	N	Y
Year FE	N	Y	N	Y
Observations	24,511	24,511	24,511	24,511
Adjusted R^2	0.039	0.052	0.052	0.065

Note: This table presents the results for the moderating effect of financial analysts on the relationship between executive ownership and dividend tunneling. All variables are defined in Appendix A. Standard errors are clustered at the firm level and t statistics are in parentheses.
*Significance at the 10% level.
**Significance at the 5% level.
***Significance at the 1% level.

the coefficient of the interaction term between *ExeOwnership* and *Analyst* is significantly and negatively related to *Abn_DividPayout* across all regressions. These results support our Hypothesis 5 that external monitoring moderates the positive correlation between executive ownership and dividend tunneling. Therefore, we can suggest that firms with more analysts following are less likely to conduct dividend tunneling. The results are consistent across the models when *ANALYST* is replaced by *BROKER*, or *REPORT* as the alternative proxies for analysts following, and these results are reported in the Appendices C and D.

5 | ROBUSTNESS CHECKS

5.1 | Endogeneity concerns

To address the potential endogeneity issues caused by reverse causality and the persistence of the impact of executive ownership, we further test whether a higher level of abnormal dividend payouts is

driven by a higher level of managerial ownership, by regressing future abnormal dividend payout in the periods at $t + 1$, $t + 2$, and $t + 3$ on the executive ownership in the period at t. Table 8 shows that the impact of executive ownership on future dividend tunneling is still significant and positive.[12] The results reported in Table 8 are consistent with those in the previous tables and our hypotheses are supported.

We also re-examine the relationship between abnormal dividend payout and executive ownership using *propensity score matching* (PSM) to further address the concerns of endogeneity due to systematic differences between the treatment and control firms. This PSM method attributes the observed effects on the abnormal dividend payout ratio to varying executive ownership levels, rather than to other observable or unobservable factors associated with executive ownership levels (Bowen et al., 2010). Following Focke et al. (2017), we estimate the probability that firms have higher levels of executive ownership by running the probit regression below:

$$\begin{aligned} &\text{Prob}(\text{above median } ExeOwnership_{it} = 1) \\ &= \text{logit}(\alpha + \beta Controls_{it} + Year\&IndustryDummies + \varepsilon_{it}) \end{aligned} \quad (7)$$

TABLE 8 Persistence of the impact of executive ownership on dividend tunneling

	Dependent variable: *Abn_DividPayout*					
	$t+1$	$t+2$	$t+3$	$t+1$	$t+2$	$t+3$
	(1)	(2)	(3)	(4)	(5)	(6)
ExeOwnership	0.242*** (5.614)	0.227*** (4.649)	0.221*** (4.058)	0.244*** (5.622)	0.233*** (4.770)	0.234*** (4.310)
FirmSize	0.007* (1.717)	0.013*** (3.033)	0.014*** (3.048)	−0.005 (−1.190)	0.002 (0.392)	0.003 (0.593)
TangAssets	0.139*** (6.526)	0.127*** (5.964)	0.125*** (5.690)	0.110*** (5.117)	0.101*** (4.689)	0.102*** (4.570)
MTBV	−0.011*** (−4.029)	−0.004 (−1.372)	0.002 (0.642)	−0.014*** (−5.218)	−0.006** (−2.212)	−0.000 (−0.062)
Leverage	−0.063*** (−7.376)	−0.068*** (−8.008)	−0.065*** (−7.480)	−0.050*** (−5.890)	−0.056*** (−6.690)	−0.054*** (−6.286)
Cash	0.210*** (6.466)	0.173*** (5.373)	0.157*** (4.634)	0.179*** (5.578)	0.146*** (4.568)	0.132*** (3.916)
CashFlowVol	−0.001 (−0.662)	−0.003 (−1.023)	−0.001 (−0.359)	−0.002 (−1.037)	−0.003 (−1.452)	−0.002 (−0.708)
FirmAge	−0.003*** (−2.962)	−0.002** (−2.381)	−0.002** (−2.173)	−0.002* (−1.959)	−0.001 (−1.423)	−0.001 (−1.290)
SME	0.027*** (2.687)	0.019* (1.746)	0.011 (0.900)	0.035*** (3.488)	0.026** (2.381)	0.017 (1.376)
TotalCompensation				0.030*** (5.470)	0.026*** (4.682)	0.025*** (4.265)
COW				−0.000 (−1.004)	−0.000 (−0.706)	−0.000 (−0.095)
HIndex				0.212*** (6.897)	0.191*** (5.990)	0.170*** (5.121)
BoardSize				0.002 (1.471)	0.002** (1.978)	0.003** (2.055)
Boardmeeting				−0.005*** (−6.173)	−0.004*** (−5.435)	−0.004*** (−4.944)
Constant	−0.100 (−1.098)	−0.273*** (−2.919)	−0.299*** (−3.077)	−0.224** (−2.303)	−0.376*** (−3.784)	−0.396*** (−3.807)
Industry FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y
Observations	20,431	18,201	16,150	20,431	18,201	16,150
Adjusted R^2	0.043	0.035	0.033	0.055	0.045	0.042

Note: This table presents the results for the effect of executive ownership on future dividend tunneling. The future dividend tunneling is abnormal dividend payout at time $t+1$ in columns (1) and (4), time $t+2$ in columns (2) and (5), and time $t+3$ in columns (3) and (6). All variables are defined in Appendix A. Standard errors are clustered at the firm level and t statistics are in parentheses.
*Significance at the 10% level.
**Significance at the 5% level.
***Significance at the 1% level.

where the dependent variable is a dummy variable which equals one if executive ownership, *ExeOwnership*, is above the median, otherwise zero. This model is employed to predict the probability of firms having above-median executive ownership levels compared with other firms. The independent variables are the previously defined control variables. The results of estimating Equation 7 are applied to obtain firms' propensity scores, and then we match pairs of firms having the closest propensity scores, where one has an above-median executive ownership and the other has a below-median executive ownership. Finally, we compare the levels of abnormal dividend payout, *Abn_DividPayout*, between the matched firms.

Different matching techniques (such as, one-to-one nearest neighbor, one-to-four nearest neighbors) are used, and the results are reported in Table 9. In panel A, regardless of the matching methods, we find that the difference in the abnormal dividend payout ratio between matched firms with above-median and below-median executive ownership is significantly positive at the 1% level. In panel B of Table 9, we report the coefficients and t statistics for all regressions over the matched subsample. The matched subsample is based on firms' propensity scores and the one-to-one nearest neighbor

matching method. This analysis allows us to investigate how differences in abnormal dividend payout ratios of these firms are explained by variations in the full spectrum of varying executive ownership levels. In line with our expectations, the results are consistent with our previous findings.

We further address the potential concern about omitted variables using different model specifications, including firm fixed effect, multi-level fixed effects, and two-way (firm and year) clustered standard errors to further address the issue of omitted variables. The results are reported in Table 10. In column (1), we estimate our baseline regression and control for firm and year fixed effects. In column (2), we estimate our baseline regression with firm, year, and industry fixed effects. In column (3), we adopt a two-way (firm and year) clustering strategy in the baseline model. The results reported in Table 10 show that the coefficient on executive ownership remains positive and significant at the 1% level.

Finally, we follow Hoechle et al. (2012), Abdallah et al. (2015), and Cremers et al. (2017) and conduct the estimation of dynamic system GMM to further address the issue of omitted variables. In the differenced equation of the GMM system, we take the first

TABLE 9 Propensity-score matching

	Panel A: Difference in the abnormal dividend payout ratio for matched samples	
	Matching with Firm's characteristics	
	NN 1:1	NN 1:4
Abn_DividPayout	0.068*** (8.12)	0.070*** (4.13)

	Panel B: Baseline regressions for matched sample			
	Dependent variable: *Abn_DividPayout*			
	(1)	**(2)**	**(3)**	**(4)**
ExeOwnership	0.372*** (6.395)	0.370*** (6.344)	0.385*** (6.608)	0.381*** (6.508)
FirmSize	0.011** (2.081)	0.010* (1.930)	0.003 (0.613)	0.002 (0.415)
TangAssets	0.122*** (4.609)	0.121*** (4.166)	0.108*** (4.043)	0.102*** (3.489)
MTBV	−0.005 (−1.348)	−0.005 (−1.391)	−0.007* (−1.949)	−0.008** (−2.057)
Leverage	−0.081*** (−7.431)	−0.082*** (−7.453)	−0.066*** (−6.159)	−0.065*** (−5.994)
Cash	0.239*** (5.221)	0.247*** (5.393)	0.208*** (4.633)	0.216*** (4.776)
CashFlowVol	−0.003 (−1.319)	−0.004 (−1.379)	−0.003 (−1.284)	−0.003 (−1.284)
FirmAge	−0.003** (−2.288)	−0.002** (−2.170)	−0.001 (−1.169)	−0.001 (−1.003)
SME	0.021 (1.603)	0.019 (1.518)	0.017 (1.388)	0.016 (1.303)
TotalCompensation			0.019*** (2.585)	0.020*** (2.667)
COW			0.000 (0.755)	0.000 (0.625)
HIndex			0.271*** (5.482)	0.275*** (5.503)
BoardSize			0.000 (0.067)	0.000 (0.125)
Boardmeeting			−0.006*** (−5.746)	−0.006*** (−5.608)
Constant	−0.221* (−1.889)	−0.204* (−1.739)	−0.302** (−2.382)	−0.285** (−2.250)
Industry FE	N	Y	N	Y
Year FE	N	Y	N	Y
Observations	9256	9256	9256	9256
Adjusted R^2	0.045	0.045	0.058	0.059

Note: Panel A shows the results of the propensity score matching in order to test whether the difference in abnormal dividend payout ratios is significant between firms with above-median executive ownership and matched firms with below-median executive ownership. The one-to-one nearest neighbor (NN 1:1) and one-to-four nearest neighbors (NN 1:4) matching methods are both displayed in this table. Panel B presents the impact of executive ownership on dividend tunneling based on the propensity-score-matched sample. All variables are defined in Appendix A. Standard errors are clustered at the firm level and *t* statistics are in parentheses.

*Significance at the 10% level.
**Significance at the 5% level.
***Significance at the 1% level.

difference of all the endogenous variables to control for unobserved heterogeneity and reduce the omitted variables concern. We use instruments in levels, with the fourth lag for the equations in first differences and first-differenced instruments, with third lag for the equations in levels. The results of the dynamic system GMM for abnormal dividend payout are reported in column (4) of Table 10. The results of the Hansen test of over identification are all insignificant, implying that we do not reject the null hypothesis that all instruments are valid. The results of a Diff-in-Hansen test of exogeneity show that the instruments used for the equations in levels are exogenous. The results of an AR(2) test show no concerns about autocorrelation in the residuals, given that the

equations are in first differences. More importantly, the coefficient on executive ownership is positive and significant at 1% level. This suggests that the results of our baseline regression are robust to the biases caused by omitted variables, simultaneity, and dynamic endogeneity.

5.2 | The one-step estimation of Chen et al. (2018) and sensitivity tests

Chen et al. (2018) argue that a two-step approach may generate a biased estimation. To address this issue, following Chen et al. (2018),

TABLE 10 Alternative model specification and dynamic system GMM

	Dependent variable: *Abn_DividPayout*			
	(1)	(2)	(3)	(4)
Abn_DividPayout ($t - 1$)				0.162*** (3.105)
Abn_DividPayout ($t - 2$)				0.036** (2.275)
ExeOwnership	0.195*** (3.364)	0.167*** (2.852)	0.291*** (6.715)	0.502*** (3.031)
FirmSize	0.038*** (6.774)	0.036*** (6.277)	0.003 (0.692)	0.008 (0.705)
TangAssets	0.107*** (3.947)	0.091*** (3.353)	0.117*** (4.609)	0.096 (1.457)
MTBV	−0.001 (−0.321)	−0.004 (−1.492)	−0.009** (−2.683)	−0.009 (−1.350)
Leverage	−0.076*** (−9.463)	−0.072*** (−9.035)	−0.061*** (−7.606)	−0.006 (−0.265)
Cash	0.100*** (3.416)	0.116*** (3.970)	0.167*** (5.066)	0.255*** (2.788)
CashFlowVol	−0.001 (−0.764)	−0.001 (−0.638)	−0.004* (−1.794)	−0.004 (−1.018)
FirmAge	−0.007*** (−6.970)	0.005 (0.627)	−0.002** (−2.433)	−0.007** (−1.975)
SME			0.039** (2.581)	0.023 (0.758)
TotalCompensation	−0.003 (−0.554)	0.005 (0.863)	0.032*** (5.481)	0.006 (0.413)
COW	−0.001* (−1.860)	−0.001* (−1.877)	−0.000 (−0.832)	−0.001 (−1.226)
HIndex	0.206*** (5.068)	0.174*** (4.283)	0.202*** (4.296)	0.273** (2.296)
BoardSize	−0.001 (−1.108)	−0.002** (−2.461)	−0.000 (−0.042)	0.000 (0.081)
Boardmeeting	−0.003*** (−3.937)	−0.003*** (−4.027)	−0.006*** (−6.644)	−0.002 (−0.856)
Constant	−0.659*** (−5.399)	−0.778*** (−5.563)	−0.441*** (−3.845)	−0.180 (−0.688)
Firm FE	Y	Y	N	N
Year FE	Y	Y	Y	Y
Industry FE	N	Y	Y	Y
Observations	24,213	24,213	24,511	17,478
Adjusted R^2	0.250	0.264	0.065	-
F-stat (p value)				14.93
p value for AR(1)				0.000
p value for AR(2)				0.381
Hansen test (p value)				0.233
Hansen test diff. (p value)				0.220

Note: This table presents the impact of executive ownership on dividend tunneling based on alternative model specifications. In column (1), to mitigate concerns of endogeneity and unobservable omitted variables, we re-estimate our baseline regression further controlling for firm fixed effects. In column (2), we use multi-level fixed effects. In column (3), we adopt a two-way (firm and year) clustering strategy in the baseline model. Column (4) presents the results for the system GMM dividend tunneling regression on executive ownership, allowing for two lags of the dependent variable. Regressions use instruments in levels dated $t - 4$ for the equations in first differences and first-differenced instruments dated $t - 3$ for the equations in levels. The AR(1) and AR(2) are tests for first-order and second-order serial correlation in the first-differenced residuals, under the null of no serial correlation. The Hansen test of over identification is under the null that all instruments are valid. The Diff-in-Hansen test of exogeneity is under the null that instruments used for the equations in levels are exogenous. All variables are defined in Appendix A. Standard errors are clustered at the firm level and t statistics are in parentheses.

*Significance at the 10% level.
**Significance at the 5% level.
***Significance at the 1% level.

we include all the independent variables in the first and second stages in a single regression under the one-stage approach and report the results in Table 11. We use abnormal dividend payout and dividend payout as the dependent variable in columns (1) and (2), respectively. Consistent with the results in the previous tables, the coefficient on the executive ownership measure is still positive and significant for abnormal dividend payout in column (1), and we also find similar results for dividend payout in column (2).

We also conduct some sensitivity tests to check the robustness of our results. We replace the abnormal dividend payout with abnormal cash dividends in our baseline regression and the results remain similar. We also include additional dummy variables to control for the impact of the financial crisis and the related regulatory changes in 2006, 2008, and 2013, and the results remain materially unchanged. For brevity, we do not report these results, but they are available upon request.

TABLE 11 The one-step estimation of Chen et al. (2018)

	Abn_DividPayout (1)	DividPayout (2)
ExeOwnership	0.329*** (8.404)	0.242*** (6.135)
FirmSize	0.025*** (3.753)	0.025*** (3.807)
TangAssets	0.111*** (5.714)	0.112*** (5.666)
MTBV	−0.009*** (−3.564)	−0.008*** (−3.449)
Leverage	−0.064*** (−9.031)	−0.066*** (−9.130)
Cash	0.256*** (8.862)	0.257*** (8.829)
CashFlowVol	−0.005*** (−3.364)	−0.006*** (−3.451)
FirmAge	−0.002** (−2.543)	−0.002*** (−2.636)
SME	0.014 (1.459)	0.011 (1.180)
TotalCompensation	0.345*** (7.099)	0.215*** (4.346)
COW	0.227*** (18.126)	−0.100*** (−7.834)
HIndex	−0.178*** (−18.210)	−0.012 (−1.160)
BoardSize	0.028*** (6.026)	−0.001 (−0.298)
Boardmeeting	0.253*** (13.835)	0.093*** (4.979)
InsiderOwnership	−0.036*** (−7.505)	−0.007 (−1.401)
SalesGrowth	−0.469*** (−16.236)	0.090*** (3.033)
BETA	0.248*** (6.332)	−0.360*** (−8.722)
SHR	0.047*** (9.456)	0.047*** (9.505)
FreeCashFlow	0.000 (0.587)	0.000 (0.651)
Sales	0.245*** (8.524)	0.246*** (8.460)
ROE	0.000 (0.408)	0.000 (0.300)
STD	−0.007*** (−10.672)	−0.007*** (−10.604)
Constant	−0.476*** (−5.588)	−0.701*** (−8.121)
Industry FE	Y	Y
Year FE	Y	Y
Observations	24,511	24,511
Adjusted R^2	0.115	0.084

Note: This table presents the impact of executive ownership on dividend tunneling based on the one-step procedure. Following Chen et al. (2018), we re-estimate our baseline model in a single regression in column (1). We also regress the dividend payout on the combination of all the second-step regressors and all the first-step regressors in column (2). All variables are defined in Appendix A. Standard errors are clustered at the firm level and *t* statistics are in parentheses.
*Significance at the 10% level.
**Significance at the 5% level.
***Significance at the 1% level.

6 | CONCLUSION

We study the role of managerial ownership in dividend tunneling activity by controlling shareholders. The striking finding depicted by our data is that higher executive ownership increases dividend tunneling activity in China. This implies that executives may collude with controlling shareholders to engage in dividend tunneling. Our results also provide further supportive evidence to the view of Lv et al. (2012) that controlling shareholders tend to use dividend payouts for

tunneling purposes in the Chinese stock markets. We find that the relation between executive ownership and dividend tunneling is stronger for firms with weaker minority shareholder protection. In particular, our results show dividend tunneling to be increasingly used as a substitute for the formerly predominant tunneling activity, inter-corporate loans.

Our results also show that higher levels of state ownership may further strengthen the positive correlation between executive ownership and dividend tunneling. In line with previous studies, state shareholders have more motivation to engage in dividend tunneling for their own interests since they may have their political agendas that pay less attention to firm value maximization than other shareholders'. Moreover, they may retain their shares for the purpose of corporate control and thus share price movements have no direct impact on their shareholdings. Consequently, they could not enjoy the benefits of stock price appreciation.

Finally, the results on the external monitoring of financial analysts indicate that analyst coverage plays an effective monitoring role and moderates the positive relation between executive ownership and dividend tunneling. Considering the underdeveloped legal system and concentrated ownership structure in China, external monitoring by independent third parties enhances minority shareholder protection in the stock markets. Given the burgeoning emerging evidence that dividends are among the main vehicles for controlling shareholders' tunneling activity in China, companies with continuous abnormal dividend payouts should be under the radar of the regulator, the CSRC. How to identify and regulate this collusion between executives and controlling shareholders is worthy of greater attention by both academic scholars and policymakers.

CONFLICT OF INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available in CSMAR at https://www.gtarsc.com/.

ORCID

Huan Bian https://orcid.org/0000-0001-7933-0106
Jing-Ming Kuo https://orcid.org/0000-0002-1205-0609
Hui Pan https://orcid.org/0000-0003-0167-2688
Zhuang Zhang https://orcid.org/0000-0001-5369-3144

NOTES

[1] For details, please see the Decisions on Amending Some Provisions on Cash Dividends by Listed Companies Order No. 57 [2008] of the China Securities Regulatory Commission.

[2] For details, please see the Guidelines No.3 on the Supervision and Administration of Listed Companies – Distribution of Cash Dividends of Listed Companies, Announcement No. 43 [2013] of the China Securities Regulatory Commission.

[3] The role of executives in tunneling by controlling shareholders has not been investigated in the prior tunneling literature, for example, Lv et al. (2012).

[4] There are a wide range of activities associated with tunneling, including outright theft, loan guarantees, and deviation from market prices when selling assets or products. For instance, tunneling through intercorporate loans and related party transactions has been discussed by Jiang et al. (2010), Aharony et al. (2010), and Du et al. (2013).

[5] Yuan et al. (2008) find that the controlling shareholders and state-owned shareholders belong to the same state-owned holding groups at most times.

[6] Following Jaccard et al. (1990), the component variables of the interaction term between *OtherReceivs* and *ExeOwnership* are standardized for their industry-year means and standard deviations to mitigate the effects of multicollinearity.

[7] A few studies focusing on the Chinese market have selected the number of analysts as the measure of external monitoring. Sun (2011) studies analyst coverage and the income-smoothing relationship. Meanwhile, Chan and Hameed (2006) study the synchronicity and the analyst coverage relationship. Yu (2008) tests the relationship between earnings management and analyst coverage.

[8] This dataset has been used widely in studies related to listed firms in China (Firth et al., 2006a, 2006b, 2007a, 2007b; Firth et al., 2012; Firth et al., 2016; Jiang et al., 2010).

[9] We used the "other receivables" account in the CSMAR database, derived from the financial footnote catalogue.

[10] A Hausman test suggests the industry- and year-fixed effects should be employed. For brevity, the Hausman results are not reported in the paper but are available upon request.

[11] We also include the *2006Reform* dummy, but it is omitted by the Stata computer package when year fixed effects are controlled as the year fixed effect absorbs the effect of the 2006 reform.

[12] Duchin et al. (2010) measure firms' financial position with the lags of variables to ensure there is no chance the dependent variables and the independent variables can affect each other. Arslan-Ayaydin et al. (2014) design their regressions to have independent variables lagged 1 year to control for potential endogeneity problems. Similarly, McCarthy et al. (2017) use regressions with one lag of all independent variables to avoid simultaneity, which can cause potential endogeneity.

REFERENCES

Abdallah, W., Goergen, M., & O'Sullivan, N. (2015). Endogeneity: How failure to correct for it can cause wrong inferences and some remedies. *British Journal of Management*, 26(4), 791–804. https://doi.org/10.1111/1467-8551.12113

Aharony, J., Wang, J., & Yuan, H. (2010). Tunneling as an incentive for earnings management during the IPO process in China. *Journal of Accounting and Public Policy*, 29(1), 1–26. https://doi.org/10.1016/j.jaccpubpol.2009.10.003

Allen, F., Qian, J., & Qian, M. (2005). Law, finance, and economic growth in China. *Journal of Financial Economics*, 77(1), 57–116. https://doi.org/10.1016/j.jfineco.2004.06.010

Arslan-Ayaydin, Ö., Florackis, C., & Ozkan, A. (2014). Financial flexibility, corporate investment and performance: Evidence from financial crises. *Review of Quantitative Finance and Accounting*, 42(2), 211–250. https://doi.org/10.1007/s11156-012-0340-x

Atanassov, J., & Mandell, A. J. (2018). Corporate governance and dividend policy: Evidence of tunneling from master limited partnerships. *Journal of Corporate Finance*, 53, 106–132. https://doi.org/10.1016/j.jcorpfin.2018.10.004

Bai, C.-E., Liu, Q., Lu, J., Song, F. M., & Zhang, J. (2004). Corporate governance and market valuation in China. *Journal of Comparative Economics*, 32(4), 599–616. https://doi.org/10.1016/j.jce.2004.07.002

Baker, M., & Wurgler, J. (2004). A catering theory of dividends. *The Journal of Finance*, 59(3), 1125–1165. https://doi.org/10.1111/j.1540-6261.2004.00658.x

Barclay, M. J., Smith, C. W., & Watts, R. L. (1995). The determinants of corporate leverage and dividend policies. *Journal of Applied Corporate Finance*, 7(4), 4–19. https://doi.org/10.1111/j.1745-6622.1995.tb00259.x

Barroso, C. R., Burkert, M., Dávila, A., & Oyon, D. (2016). Shareholder protection: The role of multiple large shareholders. *Corporate Governance: An International Review*, 24, 105–129. https://doi.org/10.1111/corg.12131

Berkman, H., Cole, R. A., & Fu, L. J. (2009). Expropriation through loan guarantees to related parties: Evidence from China. *Journal of Banking & Finance*, 33(1), 141–156. https://doi.org/10.1016/j.jbankfin.2007.11.001

Berzins, J., Bøhren, Ø., & Stacescu, B. (2019). Dividends and taxes: The moderating role of agency conflicts. *Journal of Corporate Finance*, 58, 583–604. https://doi.org/10.1016/j.jcorpfin.2019.07.003

Boateng, A., & Huang, W. (2017). Multiple large shareholders, excess leverage and tunneling: Evidence from an emerging market. *Corporate Governance: An International Review*, 25(1), 58–74. https://doi.org/10.1111/corg.12184

Bowen, R. M., Call, A. C., & Rajgopal, S. (2010). Whistle-blowing: Target firm characteristics and economic consequences. *The Accounting Review*, 85(4), 1239–1271. https://doi.org/10.2308/accr.2010.85.4.1239

Bradley, M., Capozza, D. R., & Seguin, P. J. (1998). Dividend policy and cash-flow uncertainty. *Real Estate Economics*, 26(4), 555–580. https://doi.org/10.1111/1540-6229.00757

Braendle, U. C., Gasser, T., & Noll, J. (2005). Corporate governance in China—Is economic growth potential hindered by guanxi? *Business and Society Review*, 110(4), 389–405. https://doi.org/10.1111/j.0045-3609.2005.00022.x

Brown, J. R., Liang, N., & Weisbenner, S. (2007). Executive financial incentives and payout policy: Firm responses to the 2003 dividend tax cut. *The Journal of Finance*, 62(4), 1935–1965. https://doi.org/10.1111/j.1540-6261.2007.01261.x

Chan, K., & Hameed, A. (2006). Stock price synchronicity and analyst coverage in emerging markets. *Journal of Financial Economics*, 80(1), 115–147. https://doi.org/10.1016/j.jfineco.2005.03.010

Chen, D., Jian, M., & Xu, M. (2009). Dividends for tunneling in a regulated economy: The case of China. *Pacific-Basin Finance Journal*, 17(2), 209–223. https://doi.org/10.1016/j.pacfin.2008.05.002

Chen, W. E. I., Hribar, P., & Melessa, S. (2018). Incorrect inferences when using residuals as dependent variables. *Journal of Accounting Research*, 56(3), 751–796. https://doi.org/10.1111/1475-679X.12195

Chiou, J.-R., Chen, Y.-R., & Huang, T.-C. (2010). Assets appropriation via cash dividends? Free cash flow or tunneling? *China Journal of Accounting Research*, 3(1), 71–93. https://doi.org/10.1016/S1755-3091(13)60020-9

Chizema, A., Jiang, W., Kuo, J.-M., & Song, X. (2020). Mutual funds, tunneling and firm performance: Evidence from China. *Review of Quantitative Finance and Accounting*, 55(1), 355–387. https://doi.org/10.1007/s11156-019-00846-z

Claessens, S., & Djankov, S. (1999). Enterprise performance and management turnover in the Czech Republic. *European Economic Review*, *43*(4–6), 1115–1124. https://doi.org/10.1016/S0014-2921(98)00119-6

Coles, J. L., Lemmon, M. L., & Felix Meschke, J. (2012). Structural models and endogeneity in corporate finance: The link between managerial ownership and corporate performance. *Journal of Financial Economics*, *103*(1), 149–168. https://doi.org/10.1016/j.jfineco.2011.04.002

Conyon, M. J., & He, L. (2011). Executive compensation and corporate governance in China. *Journal of Corporate Finance*, *17*(4), 1158–1175. https://doi.org/10.1016/j.jcorpfin.2011.04.006

Core, J. E., & Larcker, D. F. (2002). Performance consequences of mandatory increases in executive stock ownership. *Journal of Financial Economics*, *64*(3), 317–340. https://doi.org/10.1016/S0304-405X(02)00127-7

Cremers, K. J. M., Litov, L. P., & Sepe, S. M. (2017). Staggered boards and long-term firm value, revisited. *Journal of Financial Economics*, *126*(2), 422–444. https://doi.org/10.1016/j.jfineco.2017.08.003

Crutchley, C. E., & Hansen, R. S. (1989). A test of the agency theory of managerial ownership, corporate leverage, and corporate dividends. *Financial Management*, *18*(4), 36–46. https://doi.org/10.2307/3665795

Cullinan, C. P., Wang, F., Wang, P., & Zhang, J. (2012). Ownership structure and accounting conservatism in China. *Journal of International Accounting, Auditing and Taxation*, *21*(1), 1–16. https://doi.org/10.1016/j.intaccaudtax.2012.01.001

Degeorge, F., Patel, J., & Zeckhauser, R. (1999). Earnings management to exceed thresholds. *The Journal of Business*, *72*(1), 1–33. https://doi.org/10.1086/209601

Denis, D. J., Denis, D. K., & Sarin, A. (1997a). Agency problems, equity ownership, and corporate diversification. *The Journal of Finance*, *52*(1), 135–160. https://doi.org/10.1111/j.1540-6261.1997.tb03811.x

Denis, D. J., Denis, D. K., & Sarin, A. (1997b). Ownership structure and top executive turnover. *Journal of Financial Economics*, *45*(2), 193–221. https://doi.org/10.1016/S0304-405X(97)00016-0

Dewenter, K. L., & Malatesta, P. H. (2001). State-owned and privately owned firms: An empirical analysis of profitability, leverage, and labor intensity. *The American Economic Review*, *91*(1), 320–334. https://doi.org/10.1257/aer.91.1.320

Ding, R., Hou, W., Kuo, J.-M., & Lee, E. (2013). Does analyst coverage affect share price informativeness of Chinese listed firms. Working Paper. https://doi.org/10.2139/ssrn.2221675

Du, J., He, Q., & Yuen, S. W. (2013). Tunneling and the decision to go private: Evidence from Hong Kong. *Pacific-Basin Finance Journal*, *22*(1), 50–68. https://doi.org/10.1016/j.pacfin.2012.10.001

Duchin, R., Ozbas, O., & Sensoy, B. A. (2010). Costly external finance, corporate investment, and the subprime mortgage credit crisis. *Journal of Financial Economics*, *97*(3), 418–435. https://doi.org/10.1016/j.jfineco.2009.12.008

Dyck, A., Morse, A., & Zingales, L. (2010). Who blows the whistle on corporate fraud? *The Journal of Finance*, *65*(6), 2213–2253. https://doi.org/10.1111/j.1540-6261.2010.01614.x

Easterbrook, F. H. (1984). Two agency-cost explanations of dividends. *The American Economic Review*, *74*(4), 650–659. https://www.jstor.org/stable/1805130

Faccio, M., Lang, L. H., & Young, L. (2001). Dividends and expropriation. *The American Economic Review*, *91*(1), 54–78. https://doi.org/10.1257/aer.91.1.54

Fama, E. F., & MacBeth, J. D. (1973). Risk, return, and equilibrium: Empirical tests. *Journal of Political Economy*, *81*(3), 607-636.

Fan, J. P., Wong, T. J., & Zhang, T. (2007). Politically connected CEOs, corporate governance, and post-IPO performance of China's newly partially privatized firms. *Journal of Financial Economics*, *84*(2), 330–357. https://doi.org/10.1016/j.jfineco.2006.03.008

Fan, J. P. H., & Wong, T. J. (2002). Corporate ownership structure and the informativeness of accounting earnings in East Asia. *Journal of Accounting and Economics*, *33*(3), 401–425. https://doi.org/10.1016/S0165-4101(02)00047-2

Farinha, J., & López-de-Foronda, Ó. (2009). The relation between dividends and insider ownership in different legal systems: International evidence. *The European Journal of Finance*, *15*(2), 169–189. https://doi.org/10.1080/13518470802588718

Firth, M., Fung, P. M. Y., & Rui, O. M. (2006a). Corporate performance and CEO compensation in China. *Journal of Corporate Finance*, *12*(4), 693–714. https://doi.org/10.1016/j.jcorpfin.2005.03.002

Firth, M., Fung, P. M. Y., & Rui, O. M. (2006b). Firm performance, governance structure, and top management turnover in a transitional economy. *Journal of Management Studies*, *43*(6), 1289–1330. https://doi.org/10.1111/j.1467-6486.2006.00621.x

Firth, M., Fung, P. M. Y., & Rui, O. M. (2007a). How ownership and corporate governance influence chief executive pay in China's listed firms. *Journal of Business Research*, *60*(7), 776–785. https://doi.org/10.1016/j.jbusres.2007.01.014

Firth, M., Fung, P. M. Y., & Rui, O. M. (2007b). Ownership, two-tier board structure, and the informativeness of earnings—Evidence from China. *Journal of Accounting and Public Policy*, *26*(4), 463–496. https://doi.org/10.1016/j.jaccpubpol.2007.05.004

Firth, M., Gao, J., Shen, J., & Zhang, Y. (2016). Institutional stock ownership and firms' cash dividend policies: Evidence from China. *Journal of Banking & Finance*, *65*, 91–107. https://doi.org/10.1016/j.jbankfin.2016.01.009

Firth, M., Malatesta, P. H., Xin, Q., & Xu, L. (2012). Corporate investment, government control, and financing channels: Evidence from China's listed companies. *Journal of Corporate Finance*, *18*(3), 433–450. https://doi.org/10.1016/j.jcorpfin.2012.01.004

Florackis, C., Kanas, A., & Kostakis, A. (2015). Dividend policy, managerial ownership and debt financing: A non-parametric perspective. *European Journal of Operational Research*, *241*(3), 783–795. https://doi.org/10.1016/j.ejor.2014.08.031

Focke, F., Maug, E., & Niessen-Ruenzi, A. (2017). The impact of firm prestige on executive compensation. *Journal of Financial Economics*, *123*(2), 313–336. https://doi.org/10.1016/j.jfineco.2016.09.011

Francis, J., Schipper, K., & Vincent, L. (2005). Earnings and dividend informativeness when cash flow rights are separated from voting rights. *Journal of Accounting and Economics*, *39*(2), 329–360. https://doi.org/10.1016/j.jacceco.2005.01.001

Grennan, J. (2019). Dividend payments as a response to peer influence. *Journal of Financial Economics*, *131*(3), 549–570. https://doi.org/10.1016/j.jfineco.2018.01.012

Gul, F. A. (1999). Government share ownership, investment opportunity set and corporate policy choices in China. *Pacific-Basin Finance Journal*, *7*(2), 157–172. https://doi.org/10.1016/S0927-538X(99)00004-9

Harakeh, M., Matar, G., & Sayour, N. (2020). Information asymmetry and dividend policy of Sarbanes-Oxley Act. *Journal of Economic Studies*, *47*(6), 1507–1532. https://doi.org/10.1108/JES-08-2019-0355

Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, *31*(1), 405–440. https://doi.org/10.1016/S0165-4101(01)00018-0

Hoberg, G., & Prabhala, N. R. (2008). Disappearing dividends, catering, and risk. *The Review of Financial Studies*, *22*(1), 79–116. https://doi.org/10.1093/rfs/hhn073

Hoechle, D., Schmid, M., Walter, I., & Yermack, D. (2012). How much of the diversification discount can be explained by poor corporate governance? *Journal of Financial Economics*, *103*(1), 41–60. https://doi.org/10.1016/j.jfineco.2011.03.025

Holder, M. E., Langrehr, F. W., & Hexter, J. L. (1998). Dividend policy determinants: An investigation of the influences of stakeholder theory.

Financial Management, 27(3), 73–82. https://doi.org/10.2307/3666276

Hong, H., & Kubik, J. D. (2003). Analyzing the analysts: Career concerns and biased earnings forecasts. *The Journal of Finance*, 58(1), 313–351. https://doi.org/10.1111/1540-6261.00526

Hou, W., Kuo, J. M., & Lee, E. (2012). The impact of state ownership on share price informativeness: The case of the Split Share Structure Reform in China. *The British Accounting Review*, 44(4), 248–261. https://doi.org/10.1016/j.bar.2012.09.003

Huang, W. (2016). Tunneling through related-party loan guarantees: Evidence from a quasi-experiment in China. *Review of Quantitative Finance and Accounting*, 47(3), 857–884. https://doi.org/10.1007/s11156-015-0523-3

Iman, R. L., & Conover, W. J. (1979). The use of the rank transform in regression. *Technometrics*, 21(4), 499–509. https://doi.org/10.1080/00401706.1979.10489820

Jaccard, J., Wan, C. K., & Turrisi, R. (1990). The detection and interpretation of interaction effects between continuous variables in multiple regression. *Multivariate Behavioral Research*, 25(4), 467–478. https://doi.org/10.1207/s15327906mbr2504_4

Jensen, G., Solberg, D. P., & Zorn, T. S. (1992). Simultaneous determination of insider ownership, debt, and dividend policies. *Journal of Financial and Quantitative Analysis*, 27(2), 247–263. https://doi.org/10.2307/2331370

Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American Economic Review*, 76(2), 323–329. https://www.jstor.org/stable/1818789

Jensen, M. C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *The Journal of Finance*, 48(3), 831–880. https://doi.org/10.1111/j.1540-6261.1993.tb04022.x

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X

Jian, M., & Wong, T. J. (2010). Propping through related party transactions. *Review of Accounting Studies*, 15, 70–105. https://doi.org/10.1007/s11142-008-9081-4

Jiang, G., Lee, C., & Yue, H. (2005). Tunneling in China: The surprisingly pervasive use of corporate loans to extract funds from Chinese listed companies. Working Paper. https://doi.org/10.2139/ssrn.861445

Jiang, G., Lee, C. M. C., & Yue, H. (2010). Tunneling through intercorporate loans: The China experience. *Journal of Financial Economics*, 98(1), 1–20. https://doi.org/10.1016/j.jfineco.2010.05.002

Jiang, Z., & Lie, E. (2016). Cash holding adjustments and managerial entrenchment. *Journal of Corporate Finance*, 36, 190–205. https://doi.org/10.1016/j.jcorpfin.2015.12.008

Johnson, S., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2000). Tunneling. *American Economic Review*, 90(2), 22–27. https://doi.org/10.1257/aer.90.2.22

Kumar, A., & Vergara-Alert, C. (2020). The effect of financial flexibility on payout policy. *Journal of Financial and Quantitative Analysis*, 55(1), 263–289. https://doi.org/10.1017/S002210901800114X

Kuo, J.-M., Ning, L., & Song, X. (2014). The real and accrual-based earnings management behaviors: Evidence from the split share structure reform in China. *The International Journal of Accounting*, 49(1), 101–136. https://doi.org/10.1016/j.intacc.2014.01.001

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (2000). Agency problems and dividend policies around the world. *The Journal of Finance*, 55(1), 1–33. https://doi.org/10.1111/0022-1082.00199

Lafond, R., & Roychowdhury, S. (2008). Managerial ownership and accounting conservatism. *Journal of Accounting Research*, 46(1), 101–135. https://doi.org/10.1111/j.1475-679X.2008.00268.x

Lee, W. (2011). Managerial entrenchment and the value of dividends. *Review of Quantitative Finance and Accounting*, 36, 297–322. https://doi.org/10.1007/s11156-010-0179-y

Lemmon, M. L., & Lins, K. V. (2003). Ownership structure, corporate governance, and firm value: Evidence from the East Asian financial crisis. *The Journal of Finance*, 58(4), 1445–1468. https://doi.org/10.1111/1540-6261.00573

Lipton, M., & Lorsch, J. W. (1992). A modest proposal for improved corporate governance. *The Business Lawyer*, 48(1), 59–77. https://www.jstor.org/stable/40687360

Loderer, C., Stulz, R., & Waelchli, U. (2017). Firm rigidities and the decline in growth opportunities. *Management Science*, 63(9), 3000–3020. https://doi.org/10.1287/mnsc.2016.2478

Loughran, T., & Ritter, J. (2004). Why has IPO underpricing changed over time? *Financial Management*, 33(3), 5–37. https://www.jstor.org/stable/3666262

Lv, H., Li, W., & Gao, S. (2012). Dividend tunneling and joint expropriation: Empirical evidence from China's capital market. *The European Journal of Finance*, 18(3–4), 369–392. https://doi.org/10.1080/1351847X.2011.579741

Maury, B., & Pajuste, A. (2005). Multiple large shareholders and firm value. *Journal of Banking & Finance*, 29(7), 1813–1834. https://doi.org/10.1016/j.jbankfin.2004.07.002

McCarthy, S., Oliver, B., & Song, S. (2017). Corporate social responsibility and CEO confidence. *Journal of Banking & Finance*, 75, 280–291. https://doi.org/10.1016/j.jbankfin.2016.11.024

McConnell, J. J., Servaes, H., & Lins, K. V. (2008). Changes in insider ownership and changes in the market value of the firm. *Journal of Corporate Finance*, 14(2), 92–106. https://doi.org/10.1016/j.jcorpfin.2008.02.001

Mehran, H. (1995). Executive compensation structure, ownership, and firm performance. *Journal of Financial Economics*, 38(2), 163–184. https://doi.org/10.1016/0304-405X(94)00809-F

Miller, M. H., & Rock, K. (1985). Dividend policy under asymmetric information. *The Journal of Finance*, 40(4), 1031–1051. https://doi.org/10.1111/j.1540-6261.1985.tb02362.x

Morck, R., Shleifer, A., & Vishny, R. W. (1988). Management ownership and market valuation: An empirical analysis. *Journal of Financial Economics*, 20(3), 293–315. https://doi.org/10.1016/0304-405X(88)90048-7

Renneboog, L. (2000). Ownership, managerial control and the governance of companies listed on the Brussels stock exchange. *Journal of Banking & Finance*, 24(12), 1959–1995. https://doi.org/10.1016/S0378-4266(99)00128-4

Rozeff, M. S. (1982). Growth, beta and agency costs as determinants of dividend payout ratios. *Journal of Financial Research*, 5(3), 249–259. https://doi.org/10.1111/j.1475-6803.1982.tb00299.x

Shleifer, A., & Vishny, R.W. (1989). Management entrenchment: The case of managers-specific investment. *Journal of Financial Economics*, 25(1), 123–139.

Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *The Journal of Finance*, 52(2), 737–783. https://doi.org/10.1111/j.1540-6261.1997.tb04820.x

Shuto, A., & Takada, T. (2010). Managerial ownership and accounting conservatism in Japan: A test of management entrenchment effect. *Journal of Business Finance & Accounting*, 37(7–8), 815–840. https://doi.org/10.1111/j.1468-5957.2010.02196.x

Stulz, R. (1990). Managerial discretion and optimal financing policies. *Journal of Financial Economics*, 26, 3–28. https://doi.org/10.1016/0304-405X(90)90011-N

Sun, J. (2011). The effect of analyst coverage on the informativeness of income smoothing. *The International Journal of Accounting*, 46(3), 333–349. https://doi.org/10.1016/j.intacc.2011.07.005

Wang, K., & Xiao, X. (2011). Controlling shareholders' tunneling and executive compensation: Evidence from China. *Journal of Accounting and Public Policy*, 30(1), 89–100. https://doi.org/10.1016/j.jaccpubpol.2010.09.014

Xu, N., Chan, K. C., Jiang, X., & Yi, Z. (2013). Do star analysts know more firm-specific information? Evidence from China. *Journal of Banking & Finance*, *37*(1), 89–102. https://doi.org/10.1016/j.jbankfin.2012.08.014

Yu, F. F. (2008). Analyst coverage and earnings management. *Journal of Financial Economics*, *88*(2), 245–271. https://doi.org/10.1016/j.jfineco.2007.05.008

Yuan, R., Xiao, J. Z., & Zou, H. (2008). Mutual funds' ownership and firm performance: Evidence from China. *Journal of Banking & Finance*, *32*(8), 1552–1565. https://doi.org/10.1016/j.jbankfin.2007.08.001

Zhang, M., Gao, S., Guan, X., & Jiang, F. (2014). Controlling shareholder-manager collusion and tunneling: Evidence from China. *Corporate Governance: An International Review*, *22*(6), 440–459. https://doi.org/10.1111/corg.12081

Zhou, X. (2001). Understanding the determinants of managerial ownership and the link between ownership and performance: Comment. *Journal of Financial Economics*, *62*(3), 559–571. https://doi.org/10.1016/S0304-405X(01)00085-X

AUTHOR BIOGRAPHIES

Huan Bian is a macroeconomic and bond analyst at Hua-Rong Fund Management Company. He was awarded a PhD in Finance from the University of Birmingham, UK. He is also a post-doctoral researcher at Renmin University of China. His research explores several topics including government debt management, local government financing vehicle supervision in China, bond issuers' ESG obligations, responsible investing by fund managers, and fiscal policies.

Jing-Ming Kuo, PhD, is an associate professor of finance at Birmingham Business School, University of Birmingham, UK. His research interests include topics related to dividend payout policy, corporate governance and social responsibility, the behavior of controlling shareholders, the role of institutional investors, corporate transparency and liquidity, credit rating, and investor trading behavior. Motivated by the challenges resulting from climate change, Jing-Ming is also currently investigating environmental finance issues.

Hui Pan is a senior lecturer in Economics at Coventry Business School, Coventry University, UK. He received his PhD in Economics from the Department of Economics, University of Essex, UK. His main research interests are managerial economics and corporate governance.

Zhuang Zhang is an assistant professor of finance at Southampton Business School, University of Southampton, UK. He holds a PhD in Finance from the University of Durham and has published in international indexed journals. His research addresses issues relating to corporate governance, managerial behavior, employment decisions, social capital, and sustainability.

APPENDIX A.

VARIABLE DEFINITIONS

Variable	Definition
Abn_DividPayout	Abnormal dividend payout, computed using the residuals of Equation A1 (Appendix B) (Holder et al., 1998; Rozeff, 1982).
DividPayout	The ratio of dividends per share to earnings per share.
ExeOwnership	The proportion of a firm's total number of outstanding shares held by executive officers.
FirmSize	Natural logarithm of total assets.
TangAssets	Tangible assets scaled by total assets.
MTBV	Market value of common equity plus book value of debt, scaled by book value of total assets.
Leverage	Long-term debt to total equity.
Cash	Cash and cash equivalent scaled by total assets.
CashFlowVol	Standard deviation of firm's cash flows over the previous 5 years.
FirmAge	Number of years since the year of the firm is founded.
SME	An indicator equaling one if the firm's first three stock code digits are either 002 or 300, and zero otherwise.
TotalCompensation	The natural logarithm of the total compensation received by the top three executives.
COW	The separation between cash flow rights and control rights, which is the divergence of control rights and cash flow rights of shareholders.
HIndex	The Herfindahl Index: the sum of the squares of the percentage ownership by the top shareholder.
BoardSize	Number of board members.
BoardMeeting	Number of board meetings annually.
InsiderOwnership	The proportion of a firm's total number of outstanding shares held by directors and executive officers.
SalesGrowth	The average growth rate of revenues over the last 5 years (Rozeff, 1982).
BETA	Beta value of the firm.
SHR	The number of shareholders.
FreeCashFlow	Free cash flow scaled by total assets.
Sales	The natural logarithm of sales.
ROE	Net profit divided by net assets.
STD	Standard deviation of monthly stock returns of a firm in a given calendar year.
RSBM	The reciprocal of shareholder balancing mechanism.
OtherReceivs	Other receivables scaled by total assets.
StateOwnership	The proportion of a firm's total number of outstanding shares held by state.
Analyst	The number of analysts covering the firm.
Broker	The number of brokers covering the firm.
AnalystReport	The number of analyst reports covering the firm.
2006Reform	Dummy variable equaling 1 after year 2006 and zero otherwise.

APPENDIX B.

ABNORMAL DIVIDEND PAYOUT

Dependent variable: *Dividend Payout*	
Insider Ownership	42.632 (0.840)
Sales Growth	−0.103*** (−4.760)
BETA	0.040* (1.830)
SHR	−0.013* (−0.191)
Free Cash Flow	0.008 (0.210)
Log Sales	0.027*** (5.150)
ROE	0.096 (1.300)
STD	−0.634*** (−5.500)
Constant	−0.171 (−1.640)

Note: This table reports the regression results using the Fama and MacBeth (1973) estimation. The abnormal dividend payout is measured by the residual derived from the regressions of expected dividend payouts. Following Holder et al. (1998) and Rozeff (1982), we include *Insider Ownership*, *Sales Growth*, *BETA*, *SHR*, *Free Cash Flow*, *Log Sales*, *ROE*, and *STD* in the regression. We obtain the residuals by running the regressions in the industry-year group. A similar method has been used in Jiang and Lie (2016). All variables are defined in Appendix A.
*Significance at the 10% level.
**Significance at the 5% level.
***Significance at the 1% level.
The equation is as follows:

$$Dividenpayout = \alpha + \beta_1 InsiderOwnership_t + \beta_2 SalesGrowth_t + \beta_3 BETA_t + \beta_4 SHR_t + \beta_5 Freecashflow_t + \beta_6 LogSales_t + \beta_7 ROE_t + \beta_8 STD_t + \varepsilon_t \quad \text{(A1)}$$

APPENDIX C.

THE INFLUENCE OF BROKER COVERAGE

	Dependent variable: *Abn_DividPayout*			
	(1)	(2)	(3)	(4)
ExeOwnership	0.045*** (8.831)	0.042*** (7.941)	0.046*** (8.971)	0.042*** (7.821)
Broker*ExeOwnership	−0.012*** (−2.884)	−0.012*** (−2.785)	−0.010*** (−2.587)	−0.010** (−2.410)
Broker	−0.008** (−2.349)	−0.007** (−1.990)	−0.008** (−2.403)	−0.009** (−2.568)
FirmSize	0.019*** (5.323)	0.017*** (4.080)	0.009** (2.210)	0.007* (1.648)
TangAssets	0.165*** (8.921)	0.146*** (7.321)	0.140*** (7.488)	0.119*** (5.929)
MTBV	−0.001 (−0.632)	−0.004* (−1.687)	−0.003 (−1.528)	−0.006** (−2.557)
Leverage	−0.082*** (−11.014)	−0.078*** (−10.213)	−0.069*** (−9.584)	−0.064*** (−8.638)
Cash	0.188*** (6.364)	0.202*** (6.837)	0.155*** (5.301)	0.169*** (5.788)
CashFlowVol	−0.004** (−2.000)	−0.004* (−1.766)	−0.005** (−2.479)	−0.004** (−2.151)
FirmAge	−0.003*** (−5.084)	−0.003*** (−3.451)	−0.003*** (−4.598)	−0.002** (−2.565)
SME	0.039*** (5.396)	0.033*** (3.606)	0.040*** (5.272)	0.041*** (4.485)
TotalCompensation			0.025*** (5.720)	0.033*** (6.553)
COW			−0.000 (−0.652)	−0.000 (−0.885)
HIndex			0.202*** (6.992)	0.199*** (6.797)
BoardSize			0.001 (0.566)	−0.000 (−0.153)
Boardmeeting			−0.006*** (−8.354)	−0.006*** (−8.478)
Constant	−0.401*** (−5.088)	−0.351*** (−3.889)	−0.493*** (−6.095)	−0.532*** (−5.497)
Industry FE	N	Y	N	Y
Year FE	N	Y	N	Y
Observations	24,511	24,511	24,511	24,511
Adjusted R^2	0.039	0.052	0.051	0.065

Note: This table presents the results for the moderating effect of broker coverage on the relationship between executive ownership and dividend tunneling. The component variables of the interaction terms are standardized to reduce the effects of multicollinearity. All variables are defined in Appendix A. Standard errors are clustered at the firm level and *t* statistics are in parentheses.

*Significance at the 10% level.

**Significance at the 5% level.

***Significance at the 1% level.

APPENDIX D.

ANALYST REPORT COVERAGE

	Dependent variable: Abn_DividPayout			
	(1)	(2)	(3)	(4)
ExeOwnership	0.046*** (8.900)	0.042*** (8.003)	0.046*** (9.019)	0.042*** (7.852)
AnalystReport*ExeOwnership	−0.009** (−2.479)	−0.009** (−2.471)	−0.007** (−2.142)	−0.007** (−2.048)
AnalystReport	−0.011*** (−3.723)	−0.010*** (−3.337)	−0.011*** (−3.572)	−0.011*** (−3.712)
FirmSize	0.021*** (5.975)	0.019*** (4.762)	0.010*** (2.617)	0.008** (2.054)
TangAssets	0.166*** (9.002)	0.147*** (7.356)	0.142*** (7.580)	0.120*** (5.979)
MTBV	−0.000 (−0.147)	−0.003 (−1.157)	−0.002 (−1.139)	−0.005** (−2.145)
Leverage	−0.084*** (−11.287)	−0.079*** (−10.467)	−0.071*** (−9.816)	−0.065*** (−8.845)
Cash	0.190*** (6.448)	0.204*** (6.915)	0.156*** (5.371)	0.171*** (5.847)
CashFlowVol	−0.004* (−1.851)	−0.003* (−1.664)	−0.004** (−2.301)	−0.004** (−1.991)
FirmAge	−0.003*** (−5.335)	−0.003*** (−3.477)	−0.003*** (−4.838)	−0.002*** (−2.600)
SME	0.040*** (5.454)	0.035*** (3.798)	0.040*** (5.284)	0.042*** (4.622)
TotalCompensation			0.026*** (5.816)	0.034*** (6.734)
COW			−0.000 (−0.599)	−0.000 (−0.843)
HIndex			0.201*** (6.946)	0.197*** (6.752)
BoardSize			0.000 (0.468)	−0.000 (−0.242)
Boardmeeting			−0.006*** (−8.301)	−0.006*** (−8.409)
Constant	−0.445*** (−5.750)	−0.404*** (−4.564)	−0.530*** (−6.676)	−0.576*** (−6.082)
Industry FE	N	Y	N	Y
Year FE	N	Y	N	Y
Observations	24,511	24,511	24,511	24,511
Adjusted R^2	0.039	0.052	0.052	0.066

Note: This table presents the results for the moderating effect of analyst report coverage on the relationship between executive ownership and dividend tunneling. The component variables of the interaction terms are standardized to reduce the effects of multicollinearity. All variables are defined in Appendix A. Standard errors are clustered at the firm level and t statistics are in parentheses.
*Significance at the 10% level.
**Significance at the 5% level.
***Significance at the 1% level.