The impact of the Split Share Structure Reform in China on the relationship between executive compensation and firm performance

Abstract

The Split Share Structure Reform in China enables state shareholders of listed firms to trade their restricted shares. This renders the wealth of state shareholders more sensitive to share price movements. We predict this reform will create remuneration arrangements that increase the relationship between Chinese firms' executive pay and stock market performance. We confirm this prediction by showing such effect among state-controlled firms and especially those where dominant shareholders have greater incentives to improve share return performance. Our results indicate this reform strengthens the accountability of executives to external monitoring by stock market and therefore benefit minority shareholders in China.

1. Introduction

The Split Share Structure Reform, which began in 2005, is hailed as one of the most significant capital market and corporate ownership reform in China. We examine the impact of this reform on the relationship between executive remuneration and stock return performance of Chinese listed firms. This reform requires all restricted shares held by state shareholders to be converted into tradable shares equivalent to those held by private shareholders.[1] Therefore, this reform should align the wealth implications of share price movement on both state and private shareholders.[2] We expect the impact of this reform to be more pronounced among Chinese firms controlled by state ownership, since it enhances the incentives of the dominant shareholders to monitor and ensure that executives maximize firm value. Our study contributes to two strands of literature. For the growing literature on Chinese capital market, we provide original evidence on whether this major regulatory intervention benefited the minority shareholders by increasing managerial accountability to the stock market. For the ownership structure literature, we apply a unique setting of an exogenously induced reduction in the conflict of interests between dominant and minority shareholders to evaluate the effect of such a conflict on agency costs.

Previous literature (e.g., La Porta et al., 1999; Claessens et al., 2002) suggests two counteracting effects of ownership concentration on corporate governance. First, large shareholders can cause an entrenchment effect (e.g., Shleifer and Vishny, 1997; Johnson et al., 2000; Djankov et al., 2008), which is similar to the situation when managerial ownership increases beyond an optimal point (e.g., Stulz, 1988; Morck et al., 1998; McConnell and Servaes, 1990). As a result of their dominance in control, such shareholders can affect the management to pursue their own benefit, and are less subject

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[1] There are two types of restricted shares in China: state shares and legal person shares. The state shares can be held by central and local government either through bureaucratic agencies or affiliated State Owned Enterprises (SOEs). The legal person shares can be held by any of the above or private institutions.
[2] Anecdotal evidence from the media (e.g. *Shanghai Securities News*, June 29th, 2009) suggests that previously restricted state-held shares have been actively traded in the stock market following this reform.

to stock market discipline of outside investors. Second, large shareholders can also be associated with an incentive alignment effect (e.g., Shleifer and Vishny, 1986; Gomes, 2000) if their interest and wealth are associated with the value of the firm they control. Due to this alignment, such shareholders are discouraged from expropriating their firm, which may reduce their share value in the stock market. In our setting, state shareholders of Chinese state-controlled listed firms are more linked to the entrenchment effect prior to the Split Share Structure Reform since the restricted share they hold deprives them of wealth gains from higher firm value in the market. We argue that the opportunity to trade their shares and cash in from rising stock price of their firm enabled by this reform tilts the state shareholders of Chinese state-controlled listed firms toward the incentive alignment effect.

The state control of Chinese listed firms has often been blamed for impeding corporate governance reforms and performance, against the interests of outside investors (e.g., Fan et al., 2007). This control is characterized by two main features. First, executives are appointed and/or influenced by the state. As a result, the typical agency problems (e.g., Jensen and Meckling, 1976) are considered to be more pronounced in state controlled firms. This is because their executives are more insulated from effective supervision by the capital market, and they have greater incentives to extract benefits and/or withhold value relevant information from outside investors (Shleifer and Vishny, 1997). Second, state ownership is mainly of restricted shares that are not tradable in the stock market, unlike their unrestricted and tradable counterparts, which are held largely by private shareholders. This is known as the split share structure (see Section 2.2 for further discussion of the institutional background), and it causes stock price movements to affect the wealth of minority shareholders but not that of dominating shareholders. Instead, the state controlling shareholders gain either political credit, by ensuring that executives carry out government initiatives, or dividends, if the firm makes reasonable profits. This is the source of the conflicts of interest between the dominant and minority shareholders in Chinese state controlled listed firms. Since the wealth of controlling state shareholders is insulated against changes in the share price, they are less motivated than minority

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shareholders to ensure that the executives maximize firms' market value. Empirical studies have documented the adverse impact of state control and ownership in Chinese listed firms on share price informativeness (Gul et al., 2010), CEO turnover to performance sensitivity (Conyon and He, 2008), and CEO pay-performance sensitivity (Firth et al., 2006; 2007).

The state ownership of listed firms stems from the intention to maintain governmental influence, as a result of China's political ideology and transitional economy. However, aware of the ailments resulting from state ownership, China has allowed firm-specific voluntary ownership transfers, by which state ownership can be transferred to private entities at firms' choice. In theory, increased private ownership should strengthen outside investor monitoring and increase firm executives' accountability to the capital market (e.g., Boycko et al., 1996; Denis and McConnell, 2003). For instance, Chen et al. (2008) show improved operating performance in Chinese firms that voluntarily switch from state to private controlling shareholders. However, China still has weaker legal enforcement and shareholder protection than developed countries. In such an institutional environment, increasing private ownership alone may not necessarily be enough to strengthen managerial incentives to maximize shareholder wealth (e.g., Dyck and Zingales, 2004). Given the dilemma surrounding the need to strengthen corporate governance, and the reluctance to relinquish government control entirely, abolishing the split share structure between state and private ownership becomes an obvious solution. Aligning the incentives of dominant and minority shareholders may strengthen corporate governance and reduce agency costs among state controlled Chinese listed firms. Starting from 2005, China piloted the Split Share Structure Reform first on a small batch of listed firms and subsequently expanded it to all listed firms, which were required to terminate the trading constraints imposed on their restricted shares, to enable these shares to become tradable.[3] Following a

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[3] Between 2005 and 2007, Chinese listed firms are chosen in batches to carry out the reform. Those that are selected must first negotiate with existing freely tradable shareholders to agree a compensation plan (see Firth et al., 2010). Following the ratification of the compensation plan, the restricted shares offered as part of the consideration payout become immediately tradable while the rest of the restricted shares are still not tradable for another 12 months. After this period, all restricted shareholders can freely trade their shares apart from those large shareholders who possess 5% or more of a

previously failed attempt, the Chinese capital market authority was now determined to make this round of reform successful. For instance, Firth et al. (2010) show that state controlled firms pay higher compensation for the release of restricted shares to the stock market to existing tradable shareholders relative to private shareholder-controlled firms, and they interpret this as evidence of pressure being exerted by the Chinese capital market authority.

Although the holdings of dominant shareholders in state-controlled firms may remain unchanged, the values of all shares are now subject to price movements in the capital market. In other words, both the state and private shareholders now benefit when executives increase firms' market value. Thus, the incentives of both groups of shareholders are now more aligned to ensure that executives improve firm's share return performance. An effective way of achieving this is through executives' remuneration arrangement, i.e. to increase the relationship between executive pay and share return performance. As a result, we predict that executive remuneration in state-controlled Chinese listed firms will become more associated with stock returns after the reform. Empirical evidence in favor of this prediction implies that the reform has benefitted the Chinese capital market, by strengthening the controlling shareholders' incentives to hold executives more accountable to the objective of firm value maximization. To confirm our prediction, we compare the relationship between executive pay to share return performance before and after the reform was finalized. We expect state shareholders' incentive to increase their firms' market value to be triggered once this reform is imminent and the process commences by end of 2005. This assumption is reasonable and intuitive since increasing share price even before trading restriction is fully eliminated would allow state shareholders to cash in more should they decide to sell the moment their shares turn tradable.[4]

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listed firm's shares. Such shareholders are not allowed to trade more than 5% and 10% of their restricted shares within the next 12 and 24 months respectively. After 36 months following the ratification of the compensation, the reform process completes and all restricted shares of the firm become fully tradable. Section 2.2 provides further discussion.

[4] The argument that state shareholders will only be interested in share price performance after all restricted shares of their firms become fully tradable, which is 36 months after the reform process begins, is counterintuitive. It essentially assumes that state shareholders are so myopic that they make no effort ahead to increase their firms' market value so that they can profit more when they sell shares after the trading restriction is lifted. It also assumes that the gradual lifting of trading

With state shareholders interested in share return performance of their firms, minority private shareholders of Chinese state-controlled listed firms gets greater assurance that the dominant shareholders will strengthen their supervision of managers to promote share value maximization.[5]

We assume that the alignment of interest between controlling and minority shareholders brought about by the reform is likely to make a greater difference among state-controlled than privately-controlled Chinese listed firms. Therefore, we classify the state-controlled firms as the treatment group (where we expect to observe empirical evidence in support of our hypotheses) and privately-controlled firms as the control group (where we expect not to observe empirical evidence in support of our hypotheses) in our analyses.   To be able to infer that the reform exerts the impact we predict, we need to observe, following the reform, significantly more pronounced increases in the relationship between executive pay and share return performance in the treatment group than in the control groups. Otherwise, either there has been no change in this sensitivity, or the change is not brought about by the reform, but by some unidentified confounding effect. Our study covers the sample period 2000-2007. We define years 2000 to 2005 as the period before (henceforth pre-reform) and years 2006 to 2007 as the period after (henceforth post-reform) the Split Share Structure Reform was implemented. Although firms were selected in batches to carry out the reform, there was no uncertainty as all listed firms were involved in the reform. We therefore expect the incentive alignment between dominant and minority shareholders in state-controlled firms to begin once the implementation of the reform was formally announced, i.e. end of 2005.

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restriction during the 36-months process has zero wealth effect to state shareholders. We discuss this further in Section 2.3.

[5] The argument that state shareholders will never be interested in share price performance of their firm because all of them bow to government pressure and will simply not sell their shares at all despite of being allowed to do so after the reform is also unfounded. It essentially neglects anecdotal evidence from the media (e.g., *Shanghai Securities News*, June 29th, 2009) that indicates previously restricted shares have been actively traded in the stock market following this reform. It also ignores official Chinese government policy to maintain influence only in large enterprises with strategic value but encourage gradual relinquishing of influence in smaller and less important businesses. We discuss this further in Section 2.3.

Our findings are as follows. Among the state-controlled firms, we observe that executive remuneration is significantly and positively related with operating performance but not with share return performance during the pre-reform period. This is broadly consistent with the findings of Firth et al. (2006; 2007) although both studies are based on earlier sample period (1998-2000). During the post-reform period, we observe among such firms a significant increase in the relationship of executive pay and share return performance. In contrast, no such increase is observed for the association between executive pay to operating performance. This finding confirms our prediction that the incentive alignment between dominant and minority shareholders prompts the former to strengthen the link between executive remuneration and market value of the state-controlled Chinese listed firms, i.e. our treatment group. Among the privately-controlled firms, during the pre-reform period we observe that executive remuneration is significantly and positively related with share return performance but not operating performance (i.e. the opposite of state-controlled firms). This is again broadly consistent with Firth et al. (2006; 2007) despite the difference in sample period. During the post-reform period, we observe among such firms no incremental effect in executive remuneration's relation with either share return or operating performance. The observation of no reform effect in the control group strengthens our inference that the increase in relationship between executive remuneration to share returns performance in our treatment group is indeed due to the incentive alignment effect between dominant and minority shareholders in the post-reform period.

Further analyses within our treatment group reveal that the increase in relationship between executive pay and share return performance after the reform is more pronounced among state-controlled firms where dominant shareholder have greater incentives to improve share return performance. These include firms that are not affiliated with the State-owned Assets Supervision and Administration Commission (SASAC) and firms that payout more restricted shares as part of the reform consideration. The SASAC is a Chinese central government bureaucratic agency, which is expected to maintain ownership and control of listed firms of vital importance to national interest (e.g.

energy and aerospace/defense sectors). Thus, we expected SASAC affiliated shareholders to be less likely to sell their holdings and cash in on the rise in share value compared to their non-SASAC affiliated counterparts. As part of the reform process, firms must negotiate and agree with existing holders of unrestricted shares on a compensation plan. This involves the payout of restricted shares as part of the consideration. Firms that payout more restricted shares bear higher cost to participate in the reform. Thus, we expect dominant shareholders of such firms to have greater incentives to improve their firms' market value after the reform by adjusting the executive remuneration scheme, so as to recuperate the cost of the consideration payout. The observation of greater effect among these state-controlled firms (i.e. non-SASAC affiliated or higher restricted share payout) with greater incentives to improve share return performance further strengthens our inference that the increased relationship between executive remuneration and share return we observe is indeed due to the reform. All aforementioned results are robust to controls of firm size, leverage, growth, loss, ownership concentration, board size, board activeness, board independence, managerial ownership, CEO duality, as well as both regional and industry effects. Therefore, we find empirical evidence in support of our prediction that the Split Share Structure Reform improves the accountability of executives to their market performance among state-controlled listed firms in China.

Our findings contribute to two key strands of the academic literature. For the literature on economic development in China, we show that the Split Share Structure Reform has a positive impact on the capital market. As far as our results show, it strengthens corporate governance and benefit minority private investors of state-controlled firms. Thus, our findings have implications for investors, academics, and regulators interested in capital market development in China, which is currently one of the largest transitional economies, with increasing influence both regionally and globally.[6] For the

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[6] Cheung et al (2010) show positive relationship between corporate governance and the market valuation of Chinese listed firms, and this relationship is mainly driven by issues associated with shareholder rights. Thus, our finding that minority shareholders of Chinese state-controlled listed firms benefit from the Split Share Structure Reform implies that this reform could contribute to the market valuation of such firms.

literature on ownership structure, our findings have the following implications. First, we show that the incentive alignment between different classes of shareholders can improve corporate governance, as manifested in our case by better executive remuneration practices. This result highlights that, even in economies where radical changes to firms' ownership structure (such as privatization) are expensive for economic, social, and political reasons, there are still ways of improving corporate governance. Our results also imply that the full privatization of Chinese listed firms is not necessary to improve governance and performance. Second, we amply illustrate that an external influence, in the form of regulatory intervention, can strengthen corporate governance. This is particularly beneficial in a transitional economy with relatively weak legal protection and information disclosure, as in China.

Our paper is organized as follows. Section 2 reviews the literature, explains the institutional background, and develops our hypotheses. Section 3 describes our sample and methodologies. Section 4 presents our empirical findings. Section 5 concludes.

2. Literature and hypotheses

2.1 Ownership and executive compensation in China

The relationship between corporate ownership structure and executive compensation is well established in the corporate governance literature on western developed economies. Ownership structure plays a crucial role in corporate governance, which deals with the agency problem induced by the separation of ownership and control (e.g., Jensen and Meckling, 1976). Large shareholders are assumed to have more incentives, and to be more effective in monitoring executives, and so have greater potential to reduce the agency problem (e.g., Shleifer and Vishny, 1986; Admati et al., 1994; Maug, 1998; Noe, 2002). Holderness and Sheeban (1988) find positive market reaction intended to

block trades that would create a dominant shareholder. Kaplan and Minton (1994) and Kang and Shivdasani (1995) document that the presence of large shareholders is associated with increased management turnover. Bertrand and Mullainathan (2001) find evidence that large shareholders exert tighter control over executive compensation. Hartzell and Starks (2003) find that institutional ownership concentration is positively related to the pay-performance sensitivity of executive compensation, and negatively related to the level of compensation.

Starting in the early 1990s, many state owned firms in China were partially privatized, and shares from these firms are traded on the stock exchanges. However, the state (including central and local government) often retains sufficient shares (through both state and legal person shares) to maintain control of these listed firms; this distinguishes China from other transitional economies, where the state relinquishes all of its ownership (e.g., Russia). The majority of firms currently listed on the Chinese stock exchanges remain dominated by state ownership. However, despite the growth potential of the Chinese economy and high share prices, the profitability of many Chinese listed firms is limited (e.g., Leung et al., 2002; Allen et al., 2005). Chen et al. (2008) show that firms that voluntarily switch from state to private ownership dominance are associated with improved performance. Gul et al. (2010) report that the low stock price informativeness of listed firms in China relative to other countries, as documented by Morck et al. (2000), is more pronounced among state-controlled firms.

The existing corporate governance literature suggests two possible reasons for this. First, since the executives of state-controlled listed firms are appointed and influenced by the government, they are insulated from the monitoring of outside investors, and are expected to pursue political rather than profit-maximizing objectives (e.g., Shleifer and Vishny, 1997). Second, the concentration of state ownership in such firms encourages collusion between executives to divert firm resources (e.g., Claessens et al., 2002), and/or to extract benefits (e.g., Shleifer and Vishny, 1986) at the expense of

outside investors. To conceal such self-serving behavior, state-controlled listed firms in China may withhold unfavorable information, and/or manage the release of price sensitive information (e.g., Fan and Wong, 2005). Due to the lack of information and the high degree of state ownership concentration, outside private investors in Chinese listed firms also have lower incentives to exercise their rights to monitor the executives (Tenev et al., 2002).

According to *The Code of Corporate Governance for Listed Firms in China*, issued by the China Securities Regulatory Commission (CSRC), controlling shareholders make recommendations on the appointment and pay of top executives in Chinese listed firms. Although there is evidence that executive compensation in China is linked to some performance targets (Fleisher and Wang, 2003; Yueh, 2004; Chang and Wong, 2009), in Chinese listed firms the supervisory board exerts little influence over executive pay (Cha, 2001; Tong et al., 2009). There is also limited use and disclosure of executive stock options, and this is perhaps because of higher turnover, and/or Chinese CEOs preference for cash over stock (Firth et al., 2006). Kato and Long (2006a,b) find that privately controlled Chinese listed firms are associated with better subsequent performance following CEO replacement. Conyon and He (2008) find that CEO turnover has weaker sensitivity to share price performance for firms controlled by the state. Firth et al. (2006; 2007) show that CEO compensation is sensitive to operating performance, but not to share price performance, among state-controlled Chinese listed firms. They also emphasize that these sensitivities are low, and unlikely to provide executives with incentives to increase profit and firm values. These empirical findings generally imply that executives in Chinese listed firms controlled by state ownership are not contracted to maximize shareholder wealth.

2.2 Split Share Structure Reform in China

The Shanghai and Shenzhen stock exchanges were established in the early 1990s and currently

list well over 1,500 firms. The shares of Chinese listed firms can be classified into four types. The A shares (denominated in RMB) originally could be traded only by domestic investors, but are now also open to Qualified Foreign Institutional Investors (QFII). The B shares (denominated in US$) at first could be traded only by foreign investors, but are now also open to domestic investors. The H shares (denominated in US$ and HK$) are listed in the Hong Kong stock exchange. Finally, there are shares of companies that are cross-listed abroad, i.e., in the New York (NYSE) and London (LSE) stock exchanges. The A shares are further classified into restricted and freely-traded shares, i.e., a split share structure. There are two kinds of restricted shares, i.e., state or legal-person. The former is held by central and local government through their bureaucratic agencies or affiliated SOEs. The latter can be held by any of the above or private entities. Such shares are not freely tradable in the stock exchanges and can only be transferred privately, usually at a discounted value relative to the firm's freely tradable shares, which are largely held by outside private investors.

The split share structure stems from the socio-political ideology in China. On the one hand, the government still wishes to retain influence in firms, in order to achieve political and social objectives. On the other hand, the government also wants Chinese firms to transform into modern enterprises that are capable of raising their own capital, thus reducing state subsidies. However, studies by Sun and Tong (2003) and Wei et al. (2005) suggest that partial privatization and the split share structure reduce firms' corporate governance quality and performance efficiency. The restricted shares of controlling state shareholders can change hands through two channels. First, they can be transferred with the authorities' approval, in which case the transfer price is often set near the book value (e.g., Xu, 2003). Second, they can be auctioned, but with a substantial illiquidity discount in their value, due to the lack of tradability. For instance, Chen and Xiong (2001) document a 77.93% discount and Huang and Xu (2009) document a discount of over 70%. Firth et al. (2006) argue that holding restricted shares gives less incentive for the controlling state shareholders to monitor executives to ensure that they maximize stock value. They find some evidence that state shareholders focus more on accounting

performance, which facilitates them receiving dividend payouts and/or political credits. However, accounting performance can be subject to managerial manipulation (e.g., Lambert and Larcker, 1987), and it does not necessarily ensure shareholder wealth maximization. Although state ownership can be sold to outside private investors, which would result in a change in control (e.g., Chen et al., 2008), this has been done only on a voluntary basis, and the shares transferred remained restricted and untradeable.

Following a previously unsuccessful attempt, in 2001, to reform the split share structure, the CSRC announced, on 29th April 2005, its decision to mandate the release of all restricted shares into the secondary market. Two batches of firms were selected in May and June 2005 for initial piloting. By August and September 2005 two official documents providing formal operational procedures were issued. To avoid a sharp price decline in the stock market, as occurred in previous such attempts (Kim et al., 2003), negotiations with existing tradable shareholders were required to decide a satisfactory level of compensation. Firth et al. (2010) provide evidence that state-controlled listed firms pay more compensation to existing tradable shareholders, perhaps due to government pressure to ensure the success of this reform. Listed firms are selected in batches by the authorities to carry out this process. Once the negotiation process terminates and the compensation deal is agreed, the portion of the restricted shares paid out as consideration to the minority private investors becomes immediately tradable. After a 12-month period following the agreement of the compensation deal, all restricted shares held by shareholders possessing less than 5% of the firm's ownership can be traded in the stock market. Within a further 12 and 24 months after this, larger shareholders possessing over 5% of the firm's ownership can trade up to 5% and 10% respectively of their restricted shares. Finally, all restricted shares become completely tradable in the stock market 36-months horizon after the ratification of the compensation plan. All Chinese listed firms have completed their compensation plan ratifications by the end of 2007 to enact the gradual release of their restricted shares. All Chinese listed firms will no longer have restricted shares by the end of 2010.

2.3 Hypothesis development

The aforementioned literature highlights two key issues related to our study. First, the ownership structure affects the corporation's governance quality, which in turn determines executive compensation. Second, Chinese listed firms are heavily dominated by state ownership, and these state owners have had the prior trading restrictions on the shares they held lifted as a result of the reform. We intersect these two issues and argue that the Split Share Structure Reform, which seeks to render restricted shares tradable, should affect the relationship between executive remuneration and shareholder wealth in Chinese state-controlled listed firms.

Our rationale is as follows. Prior to the reform, the untradeable restricted shares held by controlling state shareholders had low liquidity and value. Transfers of unrestricted shares were infrequent and occurred only after approval by the authorities. Even if the transfers took place the price of such shares was set substantially lower than that of tradable shares due to their illiquidity discount, and was often close to the book value. As a result, controlling state shareholders received no wealth gains from rises in the stock market value of the tradable shares. Therefore, they had limited incentive to appraise executives using stock price performance, or to monitor them on behalf of minority private shareholders in order to maximize the market value of the firm. Following the reform, the shares held by the controlling shareholders have become tradable in the stock market. Thus, the state owners now receive wealth gains from rises in share prices, as do their minority shareholder counterparts. The controlling shareholders therefore have a greater incentive to monitor executives, and to ensure that they maximize shareholders' wealth. A direct and effective way of increasing managerial incentives to maximize their firm's market value is through their remuneration scheme. Therefore we hypothesize that:

H₁: The Split Share Structure Reform increases in the relationship between executive remuneration and share return performance among state-controlled listed firms but not privately-controlled listed firms in China.

If our empirical evidence in favor of hypothesis H1 is indeed attributable to the reform, then we expect the effect to be more pronounced among state-controlled firms where dominant shareholders have more incentive to boost share return performance after the reform. We identify such firms in two ways. First, we expect state shareholders of firms expected to maintain central government control of listed firms that are vital to national interest (e.g. energy and aerospace/defence sector) to be less likely to sell their shares even if trading restriction is lifted after the reform. In other words, controlling shareholders of such firms have less to gain from rising share price even after the reform and therefore less incentive to adjust executive remuneration scheme to pursue this objective. Thus, within state-controlled listed firms of our treatment group we further identify those that are affiliated to the central government bureaucratic agency known as SASAC and hypothesize that:

H₂: The increase in the relationship between executive remuneration and share return performance among state-controlled listed firms in China following the Split Share Structure Reform is concentrated among those not controlled by SASAC.

Second, we expect state-controlled firms that payout more restricted shares as part of the reform consideration to existing holders of unrestricted shares to have more incentives to improve share return performance after the reform. This is because such firms are paying higher cost to participate in this reform, which implies that the dominating state shareholders place a higher value on the tradability of their shares after the reform and are also more motivated to recuperate this cost through potential wealth gains from trading their shares. Thus, we hypothesize that:

H₃: The increase in the relationship between executive remuneration and share return performance among state-controlled listed firms in China following the Split Share Structure Reform is more pronounced for those that payout more restricted shares as reform consideration.

There are some possible factors that could bias us against finding evidence in support of these hypotheses. First, the Chinese stock markets are not efficient enough to warrant using stock return performance as a suitable measure to evaluate firm performance. However, studies such as Fan and Zhang (1998) and Hu (1998) suggest that the Chinese stock market is weak-form and semi-strong-form efficient. Second, the financial crisis has overlapped with our post-reform period, and could add substantial noise to our analyses. However, the financial crisis is likely to affect both state- and private-dominated Chinese listed firms simultaneously. Finally, Chinese convergence toward the International Financial Reporting Standards (IFRS) also overlaps with our post-reform period. If the financial reporting quality improves, then accounting numbers will become more verifiable, and firms may prefer accounting performance over stock-return performance, as a way of appraising executives and determining their remuneration.[7]

There are also two possible counterarguments against our hypotheses. First, despite trading restrictions being abolished, state shareholders will never sell their shares due to government pressure. Therefore, there are absolutely no incentive alignment effect is achieved from this reform at all. Unfortunately, this critique neglects the established Chinese government policy known as "*Zhua Da Fang Xiao*", which intends to sustain state ownership only in strategic enterprises (e.g., energy, transportation, aerospace, defense, and etc.) and encourages the relaxation of state control of less

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[7] He et al. (2009) found no empirical evidence suggesting that the mandatory adoption of IFRS improved the earnings quality of Chinese firms. Their result mitigates the possibility that the evidence we find in support of our hypotheses is attributed to the IFRS mandatory adoption instead of the Split Share Structure Reform

essential businesses.[8] Anecdotal evidence from the media further shows that previously restricted shares held by state shareholders have been actively traded in the stock market following this reform.[9] Even if the state shareholders do not rush to trade their shares immediate once they are allowed, it does not imply they have absolutely no incentives to see the increase of their firms' market performance. Instead, they could be holding on to the shares due to the anticipation of long-term growth prospect of their firms' market value. Second, there is absolutely no incentive alignment effect possible before all restricted shares of a firm become fully tradable, which will be 36 months after the ratification of the compensation plan in the reform process of each firm. Based on to this critique, it is only possible to examine the impact of the reform across all firms in the Chinese stock market using a post-2010 sample. Therefore, our study cannot capture any incentive alignment effect associated with the reform. However, this critique is based on the narrow assumption that all restricted shareholders are simply too myopic and unsophisticated to prepare and plan ahead. The CSRC's announcement in 2005 already made clear the government's intention to expand the reform across all Chinese listed firms. The restricted shareholders who are keen would step up their pressure on managers to increase their firms' market value before their shares are eligible for trading. The higher is the share price, the more they can profit whenever the trading becomes allowed. It is time consuming to identify and operate profitable investment projects and boost market value of their firm, so restricted shareholders will not wait until the day all their shares becomes tradable to suddenly change their mind and begin this effort. Section 2.2 suggests that restricted shareholders can sell all or a portion of their holdings within the 36 months horizon, depending on the proportion of their ownership. Therefore, this critique also naively ignores the wealth implication of rising share price to the restricted shareholders over this period.

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[8] This policy has been announced in the *Ninth Five-Year Plan for National Economic and Social Development and the Outline for the Long-Range Objective Through the Year 2010* (see http://cpc.people.com.cn/GB/134999/135000/8104918.html, in Chinese)

[9] For an example, see http://www.chinasecurities.com.cn/xwzx/11/200804/t20080430_1445678.htm (in Chinese).

3. Sample and Methodology

3.1 Sample description

Our sample period is 2000 to 2007. Listed firms are required to disclose executive compensation from 1998 onward, but we skip the first two years due to lack of data for a wide cross-section of firms. From GTA/CSMAR we obtain our measure of executive compensation, which is the aggregated total pay of the top three executives; this measure has been used by existing studies such as Kato and Long (2005).[10] From CCER (China Center of Economic Research) we obtain firm characteristic variables, such as stock returns, operating income, sales, total assets, leverage, special treatment status, board size, number of board meetings, proportion of independent directors, managerial ownership, CEO duality, regional classification, industrial classification, state control status, and reform consideration. Our final sample requires all the aforementioned variables to have valid values, and has 7,695 observations. Table 1 presents the yearly number of observations and average executive pay. The number of Chinese listed firms included in our sample increased from 269 in 2000 to 1213 in 2007. This reflects the expansion of the Chinese stock markets. The percentage of listed firms controlled by the state declined from 85.87% (231/269) in 2000 to 66.03% (801/1213) in 2007. This reflects the gradual increase in the private control of listed firms. On average, over 70% of Chinese listed firms are controlled by the state shareholders, i.e., our treatment group. Turning to average top executive pay, we note the increase from RMB 140 thousand in 2000 to RMB 893 thousand in 2007. This six fold rise reflects growth in both the economy and in living standards over our sample period.

[insert Table 1 here]

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[10] Although the GTA/CSMAR database also provides details on CEO pay only, the data coverage on this variable is limited, therefore its use will substantially reduce our ability to generalize our findings to the cross-section of listed firms in the
Chinese stock market.

3.2 Test of hypothesis

To test our predictions in hypotheses H_1 *to* H_3 about the impact of the Split Share Structure

Reform on the relationship between executive compensation level and performance, we apply a

model specification, as in Equation 1 below:

$$
\begin{aligned}
ExecPay_{i,t} = {} & \alpha_0 + \alpha_1 SSSR_{i,t} + \alpha_2 RET_{i,t} + \alpha_3 SSSR_{i,t} \times RET_{i,t} \\
& + \alpha_4 ROS_{i,t} + \alpha_5 SSSR_{i,t} \times ROS_{i,t} \\
& + \alpha_6 Size_{i,t} + \alpha_7 Lev_{i,t} + \alpha_8 SG_{i,t} + a_9 STPT_{i,t} \\
& + a_9 OwnCon_{i,t} + a_{10} BSize + \alpha_{11} BMeet_{i,t} \\
& + a_{12} BIndep + a_{13} CeoOwn_{i,t} + a_{14} Duality \\
& + \alpha_{15} Area_{i,t} + a_{16} RInd_{i,t} + \varepsilon_{i,t}
\end{aligned}
\tag{1}
$$

The dependent variable $ExecPAY_{i,t}$ is the aggregate total pay of the top three executives for firm i at

year t (in thousand RMB). $SSSR_{i,t}$ indicates the period after the Split Share Structure Reform and is a

dummy variable assigned 1 for years 2006 onward and 0 otherwise. $RET_{i,t}$ captures stock market

performance and is measured as annual stock return. $ROS_{i,t}$ captures operating performance and is

measured as operating income divided by sales. $Size_{i,t}$ is log of total assets of the firm. $Lev_{i,t}$ captures

financial risk and is measured as debt to equity ratio. $SG_{i,t}$ captures growth opportunity and is the

annual percentage growth of sales. $STPT_{i,t}$ is 1 for firms on the verge of special treatment, i.e. those

with two consecutive years of losses, and 0 otherwise. $OwnCon_{i,t}$ is ownership concentration

measured by the Herfindahl index based on the ownership held by the 10 largest shareholders of the

firm. $BSIZE_{i,t}$ is 1 for firms with board size above cross-sectional median and 0 otherwise. $Duality_{i,t}$ is

1 for firms with CEO also serving as board chairman and 0 otherwise. $BMeet_{i,t}$ is a dummy set to 1 for

firms with above median number of board meetings and 0 otherwise. $BIndep_{i,t}$ is 1 for firms with

proportion of independent directors above cross-sectional median and 0 otherwise. $CeoOwn_{i,t}$ is set to

1 for firms with CEO shareholding level in the cross-sectional top or bottom 25 percentile and 0 otherwise. $Area_{i,t}$ is 1 for firms from more developed region (Shanghai or Shenzhen) and 0 otherwise. $RInd_{i,t}$ is 1 for firms in more regulated industry (natural resources, public utilities, or finance and real estate) and 0 otherwise. Coefficient α_2 indicates whether executive pay is related to share return performance in the pre-reform period. If coefficient $\alpha_3 > 0$, this will indicate an increase in this relationship during the post-reform period.[11] If we observe this effect in state-controlled listed firms but not their privately-controlled counterpart, then we have evidence in support of hypothesis H1. Among state-controlled firms, if we observe this effect to be more pronounced in those with higher state ownership and consideration payout using restricted shares, then we confirm hypotheses H2 and H3 respectively.

The data for the aggregated pay of the top three executives has also been used by previous studies, e.g., Kato and Long (2005). Total pay comprises cash salary, bonus, and commissions. As discussed by Firth et al. (2006), the individual items cannot be broken down, and options are either rarely used or disclosed. In measuring operating performance, we follow Firth et al. (2006) using operating income scaled by sales. Our definition of state control covers both central and local government through both state and legal person shares. Our choice of control variables follows the executive pay literature, i.e., firm size (e.g., Conyon, 1998), leverage (e.g., Basu et al., 2007; Hernan, 2007), growth opportunities (e.g., Smith and Watts, 1992; Himmelberg et al., 1999), and board characteristics (e.g., Conger et al., 1998). We also control for regional effects, because there are substantial disparities in living expenses and wages between the coastal and interior regions of China (Firth et al., 2006; 2007). We control for difference between more and less regulated industry

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[11] Based on Core and Guay (1999) coefficient α_3 can also be interpreted as pay-to-performance sensitivity. There is debate in the literature on the proper definition of incentives, i.e., whether pay-performance sensitivity should be measured as change in executive wealth for a firm's percent or "dollar" return performance. The latter specification assumes that the executive marginal product of effort is constant across firm size, which is a valid assumption only when considering actions that do not scale with firm size, e.g., the purchase of a corporate jet (Baker and Hall, 2004; p. 769). Our specification, instead assumes that the marginal product scales proportionally with firm size, which is valid when considering executive actions that affect the overall value of the firm. We also add independently a proxy of firm size to control for its effect.

following Fan et al. (2007).

4. Empirical findings

4.1 Descriptive statistics and correlation

Table 2 presents the summary statistics of the variables used in our analyses. Across our full sample (i.e., including both state-controlled and privately-controlled listed firms) and over our sample period (i.e., 2000 to 2007), the average aggregate remuneration of the top three executives (*ExecPay*) is around RMB 568 thousand. The average annual stock return (*RET*) is 34.87%, which reflects the rising stock value of listed firms in the Chinese stock markets over this period. The average profitability of our sampled firms, measured by operating income divided by sales (*ROS*), is 1.0%. The average firm in our sample has debt-to-equity ratio of 48.23% and experiences around 26.83% annual sales growth. Table 3 presents the correlation matrix of the variables used in our analyses. We note that *ExecPay* level is significantly positively correlated with both the market and operating performance indicators, i.e., *RET* and *ROS*. Throughout our sample, firms with higher leverage or are loss making pay significantly less to executives. On the other hand, listed firms that are larger in size and are based in higher income regions (Shanghai and Shenzhen) tend to pay significantly more.

[insert Table 2 here]

[insert Table 3 here]

4.2 Test of hypothesis H₁

Table 4 presents our result from the test of hypothesis H_1. Among the state-controlled listed firms, the coefficient on *ROS* is significantly positive but the coefficient on *RET* is statistically insignificant. This suggests that the executive remuneration among such firms is positively related with operating performance but not share return performance prior to the Split Share Structure Reform. This finding is broadly consistent with Firth et al (2006, 2007) despite of the earlier sample period they analyze. Among state-controlled listed firms, the coefficient on the interactive term *SSSR×RET* is significantly positive (i.e. 79.04, *t*-statistics = 3.00) but the coefficient on the interactive term *SSSR×ROS* is statistically insignificant. This suggests that executive remuneration among such firms becomes more related to share return performance while its association with operating performance did not change after the Split Share Structure Reform. In other words, we have evidence that state-controlled firms adjusted executive remuneration scheme to appraise managerial performance more through share returns after the reform. The observation that executive remuneration increased relationship only with share return but not with operating performance strengthens our inference that this effect is attributed to the reform instead of some unidentified confounding effects that influence the state-controlled firms.

[insert Table 4 here]

Turning to privately-controlled firms, notice that the coefficient on *RET* is significantly positive but not the coefficient on *ROS*. This implies that privately-controlled firms' executive remuneration is more associated with share return performance than operating performance prior to the reform. This finding is again broadly similar to Firth et al (2006, 2007) despite of difference in sample period we analyze. The coefficients on *SSSR×RET* (i.e. −61.71, *t*-statistics = −1.17) and *SSSR×ROS* are both statistically insignificant in the privately-controlled firms. An F test suggests that the difference between state-controlled and privately-controlled groups on the coefficient of the interactive term

SSSR×RET is statistically significant. This suggests that the reform did not change the association between the executive pay of such firms with both share return and operating performance. The contrast in result between state-controlled (treatment group) and privately-controlled (control group) firms in Table 4 through the coefficient on *SSSR×RET* confirms our prediction in hypothesis H_1. Since the effect we find is confined to the treatment group and does not exist in the control group mitigates the possibility that our results is attributed to some unidentified confounding affect that influence all listed firms in Chinese stock market. Our results in Table 4 are robust to controls of firm characteristics and corporate governance.

4.3 Test of hypothesis H2

Table 5 presents our analyses by splitting the state-controlled firms into those that are not and those that are affiliated with SASAC. As mentioned in Section 2.3, we expect the incentives to improve share return performance after the reform to be lower among SASAC affiliated firms since the state shareholders are expected to maintain central government's control of listed firms vital to national interest. In other words, there is no incentive for controlling shareholders in such firms to adjust executive remuneration scheme to pressure or entice managers to boost the market value of their firms. Among non-SASAC firms, the coefficient on *SSSR×RET* is significantly positive, i.e. 107.8345 (*t*-statistics = 3.96). On the other hand, the same coefficient from the analysis of the SASAC firms is statistically insignificant, i.e. –53.2878 (*t*-statistics = –0.45). An F test indicates that the difference between the non-SASAC and SASAC affiliated firms on the coefficient of the interactive term *SSSR×RET* is statistically significant. In other words, the increase in relationship between executive remuneration and share return among state-controlled firms we previously observe in Table 4 exist only in firms that are not expected to maintain government control, i.e. the non-SASAC firms. In firms where state shareholders have little to gain from the reform, i.e. the SASAC, we observe no

such effect. Thus, the finding in Table 5 not only confirms our prediction in hypothesis H_2 but further strengthens the inference that the effect we find (i.e. increased relation between executive pay and share return among state-controlled firms) is attributed to the Split Share Structure Reform.

[insert Table 5 here]

4.4 Test of hypothesis H3

Table 6 presents the findings of our analyses by splitting the state-controlled listed firms into those that pay more or less restricted shares to holders of unrestricted shares as consideration package. Panels A and B partition the sample by payout ratio and cost ratio respectively. Payout ratio is number of restricted shares paid out divided by total number of restricted shares. Cost ratio is number of restricted shares paid out divided by the number of restricted shares that remains after the payout. We argue that state shareholders that payout more of their restricted shares as consideration to holders of unrestricted shares are more committed to enhance market value of the firm after the reform. This is because they paid a higher cost to participate in the reform and therefore would like to recuperate this cost by having the option to cash in their restricted shares from higher share price. In other words, controlling shareholders of such firms have greater incentive to adjust executive remuneration schemes to pressure or entice managers to work toward improving firms' share return performance. We confirm this in both Panels A and B that the coefficient on the interactive term $SSSR{\times}RET$ is significantly positive only in state-controlled firms that payout more restricted shares. For instance, in Panel A this coefficient is 96.78 (*t*-statistics = 2.76) in the higher payout ratio group and only 46.31 (*t*-statistics = 1.20) in the lower payout ratio group. An F test on the difference between them is significant at 1% level. In Panel B we get broadly similar results. Our findings in Table 6 not only confirms the prediction in hypothesis H_3, but also strengthens the inference that the increase in relationship between executive remuneration and share return performance that we observe in

support of hypothesis H_1 and H_2 are indeed attributed to the Split Share Structure Reform.

[insert Table 6 here]

5. Conclusion

We provide empirical evidence that the executive remuneration is more sensitive to share return performance among state-controlled listed firms in China since the Split Share Structure Reform was formalized in late 2005. Prior to the reform, the controlling state shareholders held restricted shares that were not tradable in the stock exchanges, and so enjoy no wealth benefit from rising share prices. This gave the dominant shareholders limited incentives to appraise executives using share returns. Following the reform, we argue that the conversion of the restricted shares held by the controlling shareholders of these firms into tradable shares aligned the wealth impact of share price movement between the dominant and minority shareholders. This gives the controlling shareholders a greater incentive to adjust executive remuneration schemes in ways that entice executives to maximize firm value. We confirm this effect empirically by documenting an increased relationship between executive remuneration and share return performance after the reform in state-controlled but not privately-controlled Chinese listed firms. Among the state-controlled firms, this effect is more pronounced among those with higher state ownership and greater consideration payout by restricted shares.

Our results have two key implications. First, we confirm that the Split Share Structure Reform in China created benefits for minority shareholders of Chinese listed firms, since it increased managerial accountability for share price movement. This highlights the importance of regulatory intervention, especially in transitional economies that have not yet built a strong shareholder protection regime and information disclosure environment. This also suggests that ending the split share structure per se is

effective in strengthening corporate governance among Chinese listed firms, even without further ownership reform. Second, using a unique setting of exogenously induced reduction in conflicts of interests between dominant and minority shareholders, we show that such reduction could strengthen corporate governance and reduce agency costs. This is an important finding, since it illustrates that the western PLC corporate form need not be a panacea in transitional economies. An economy that resists full privatization and ownership dispersion for socio-political reasons, can still improve minority shareholder rights, reduce agency costs, improve corporate governance, and maintain the strong monitoring role of a dominant state shareholder, as long as there is a proper alignment of interests between the different classes of shareholders.

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Table 1

Sample description

This table presents the yearly average executive pay and number of observations of Chinese listed firms in our sample. Our sample period is 2000 to 2007. Executive pay is the sum of the total pay of the top three executives of the firm (in thousand RMB).

	All		State-controlled listed firms		Privately-controlled listed firms	
	ExecPay	Obs.	ExecPay	Obs.	ExecPay	Obs.
2000	140	269	141	231	135	38
2001	292	864	281	739	359	125
2002	379	993	369	815	424	178
2003	485	1029	484	787	490	242
2004	590	1091	594	793	579	298
2005	610	1161	614	837	599	324
2006	716	1075	745	754	650	321
2007	893	1213	950	801	783	412
Average	513		522		502	
Sum		7695		5757		1938

Table 2

Summary Statistics

This table presents the summary statistics of the variables used in our analyses. Our sample period is 2000 to 2007. *ExecPAY* is the aggregate total pay of the top three executives (in thousand RMB). *SSSR* indicates the period after the Split Share Structure Reform and is a dummy variable assigned 1 for years 2006 onward and 0 otherwise. *RET* captures stock market performance and is measured as annual stock return. *ROS* captures operating performance and is measured as operating income divided by sales. *Size* is log of total assets of the firm. *Lev* captures financial risk and is measured as debt to equity ratio. *SG* captures growth opportunity and is the annual percentage growth of sales. *STPT* is 1 for firms on the verge of special treatment, i.e. those with two consecutive years of losses, and 0 otherwise. *OwnCon* is ownership concentration measured by the Herfindahl index based on the ownership held by the 10 largest shareholders of the firm. *BSIZE* is 1 for firms with board size above cross-sectional median and 0 otherwise. *Duality* is 1 for firms with CEO also serving as board chairman and 0 otherwise. *BMeeting* is a dummy set to 1 for firms with above median number of board meetings and 0 otherwise. *BIndep* is 1 for firms with proportion of independent directors above cross-sectional median and 0 otherwise. *CeoOwn* is set to 1 for firms `with CEO shareholding level in the cross-sectional top or bottom 25 percentile and 0 otherwise. *Area* is 1 for firms from developed region (Shanghai or Shenzhen) and 0 otherwise. *RInd* is 1 for firms in more regulated industry and 0 otherwise.

	Mean	Std Dev	25%	50%	75%	Obs.
ExecPay	568	548	213	400	730	7,695
SSSR	0.2725	0.4453	0	0	1	7,695
RET	0.3487	0.9341	-0.2526	-0.0601	0.6250	7,695
ROS	0.0100	0.3206	0.0001	0.0345	0.0877	7,695
Size	20.5122	0.9963	19.9003	20.4605	21.0682	7,695
Lev	0.4823	0.1821	0.3534	0.4885	0.6137	7,695
SG	0.2683	0.8815	0.0106	0.1593	0.3435	7,695
STPT	0.0609	0.2393	0	0	0	7,695
OwnCon	0.2156	0.1401	0.1044	0.1803	0.3036	7,695
BSize	0.3496	0.4769	0	0	1	7,695
BMeet	0.5848	0.4928	0	1	1	7,695
BIndep	0.8364	0.3699	1	1	1	7,695
CeoOwn	0.2595	0.4384	0	0	1	7,695
Duality	0.0096	0.0976	0	0	0	7,695
Area	0.1340	0.3407	0	0	0	7,695
RInd	0.0804	0.2720	0	0	0	7,695

Table 3

Correlation analyses

This table presents the correlation analyses of the variables used in our analyses. Our sample period is 2000 to 2007. *ExecPAY* is the aggregate total pay of the top three executives (in thousand RMB). *SSSR* indicates the period after the Split Share Structure Reform and is a dummy variable assigned 1 for years 2006 onward and 0 otherwise. *RET* captures stock market performance and is measured as annual stock return. *ROS* captures operating performance and is measured as operating income divided by sales. *Size* is log of total assets of the firm. *Lev* captures financial risk and is measured as debt to equity ratio. *SG* captures growth opportunity and is the annual percentage growth of sales. *STPT* is 1 for firms on the verge of special treatment, i.e. those with two consecutive years of losses, and 0 otherwise. *OwnCon* is ownership concentration measured by the Herfindahl index based on the ownership held by the 10 largest shareholders of the firm. *BSIZE* is 1 for firms with board size above cross-sectional median and 0 otherwise. *Duality* is 1 for firms with CEO also serving as board chairman and 0 otherwise. *BMeeting* is a dummy set to 1 for firms with above median number of board meetings and 0 otherwise. *BIndep* is 1 for firms with proportion of independent directors above cross-sectional median and 0 otherwise. *CeoOwn* is set to 1 for firms with CEO shareholding level in the cross-sectional top or bottom 25 percentile and 0 otherwise. *Area* is 1 for firms from from developed region (Shanghai or Shenzhen) and 0 otherwise. *RInd* is 1 for firms in more regulated industry and 0 otherwise.

	ExecPay	SSSR	RET	ROS	Size	Lev	SG	STPT	OwnCon	BSize	BMeet	BIndep	CeoOwn	Duality	Area	RInd
ExecPay	1															
SSSR	0.339*	1														
RET	0.111*	0.385*	1													
ROS	0.088*	0.009	0.088*	1												
Size	0.406*	0.141*	0.051*	0.226*	1											
Lev	−0.040*	0.106*	0.011	−0.409*	−0.187*	1										
SG	0.023	0.023	0.103*	0.102*	−0.020	0.024	1									
STPT	−0.141*	0.072*	0.020	−0.248*	−0.322*	0.478*	0.084*	1								
OwnCon	−0.060*	−0.213*	−0.064*	0.119*	0.237*	−0.163*	−0.010	−0.121*	1							
BSize	0.043*	−0.083*	−0.038*	0.018	0.131*	−0.002	−0.027*	−0.039*	0.017	1						
BMeet	0.072*	0.038*	0.037*	−0.022	0.007	0.084*	0.027*	0.053*	−0.050*	−0.041*	1					
BIndep	0.081*	0.106*	0.106*	0.057*	0.002	−0.024*	0.006	−0.047*	−0.004	−0.279*	0.024*	1				
CeoOwn	0.116*	0.007	−0.002	0.048*	0.046*	−0.069*	−0.035*	−0.112*	−0.123*	−0.037*	−0.055*	0.014	1			
Duality	0.001	−0.034*	0.000	−0.023*	−0.026*	0.011	0.003	0.025*	−0.031*	0.006	0.011	0.030*	−0.001	1		
Area	0.171*	−0.021	−0.009	0.020	0.070*	0.028*	0.017	0.010	0.000	−0.012	0.056*	0.034*	0.017	0.002	1	
RInd	0.050*	0.008	0.009	0.027*	0.098*	0.028*	0.054*	0.018	0.042*	0.035*	−0.078*	−0.013	−0.062*	0.006	0.059*	1

Table 4
State-controlled vs privately-controlled listed firms

This table presents the regression analyses of the relationship between executive remuneration and share return performance. Our sample period is 2000 to 2007. The dependent variable is the aggregate total pay of the top three executives (in thousand RMB). *SSSR* indicates the period after the Split Share Structure Reform and is a dummy variable assigned 1 for years 2006 onward and 0 otherwise. *RET* captures stock market performance and is measured as annual stock return. *ROS* captures operating performance and is measured as operating income divided by sales. *Size* is log of total assets of the firm. *Lev* captures financial risk and is measured as debt to equity ratio. *SG* captures growth opportunity and is the annual percentage growth of sales. *STPT* is 1 for firms on the verge of special treatment, i.e. those with two consecutive years of losses, and 0 otherwise. *OwnCon* is ownership concentration measured by the Herfindahl index based on the ownership held by the 10 largest shareholders of the firm. *BSIZE* is 1 for firms with board size above cross-sectional median and 0 otherwise. *Duality* is 1 for firms with CEO also serving as board chairman and 0 otherwise. *BMeeting* is a dummy set to 1 for firms with above median number of board meetings and 0 otherwise. *BIndep* is 1 for firms with proportion of independent directors above cross-sectional median and 0 otherwise. *CeoOwn* is set to 1 for firms with CEO shareholding level in the cross-sectional top or bottom 25 percentile and 0 otherwise. *Area* is 1 for firms from from developed region (Shanghai or Shenzhen) and 0 otherwise. *RInd* is 1 for firms in more regulated industry and 0 otherwise. The *t*-statistics in parentheses are adjusted for heteroskedasticity and ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively.

	State-controlled listed firms			Privately-controlled listed firms		
SSSR	212.89	(8.08)	***	120.40	(3.11)	***
RET	−21.01	(−1.02)		85.79	(1.77)	*
SSSR×RET	79.04	(3.00)	***	−61.71	(−1.17)	
ROS	32.32	(2.06)	**	−26.60	(−1.56)	
SSSR×ROS	82.62	(1.10)		87.57	(0.96)	
Size	199.24	(21.89)	***	235.55	(12.02)	***
Lev	253.34	(7.39)	***	215.85	(2.92)	***
SG	19.43	(2.57)	***	0.87	(0.13)	
STPT	−51.74	(−2.23)	**	−30.43	(−0.86)	
OwnCon	−346.18	(−7.65)	***	−417.59	(−3.81)	***
BSize	20.94	(1.53)		43.20	(1.47)	
BMeet	52.87	(4.17)	***	2.34	(0.10)	
BIndep	52.81	(3.47)	***	58.26	(1.84)	*
CeoOwn	82.23	(5.52)	***	81.55	(2.73)	***
Duality	57.06	(0.60)		66.35	(1.01)	
Area	209.85	(11.23)	***	253.98	(7.46)	***
RInd	−49.01	(−2.48)	***	−172.38	(−3.34)	***
Intercept	−3793.25	(−20.39)	***	−4359.95	(−10.89)	***
Adjusted R²		0.28			0.21	
Obs.		5757			1938	

Table 5
Non-SASAC vs SASAC state-controlled firms

This table presents the regression analyses of the relationship between executive remuneration and share return performance. Our sample period is 2000 to 2007. State-controlled listed firms are partitioned into those that are and are not controlled by State-owned Asset Supervision and Administration Commission (SASAC). The dependent variable is the aggregate total pay of the top three executives (in thousand RMB). *SSSR* indicates the period after the Split Share Structure Reform and is a dummy variable assigned 1 for years 2006 onward and 0 otherwise. *RET* captures stock market performance and is measured as annual stock return. *ROS* captures operating performance and is measured as operating income divided by sales. *Size* is log of total assets of the firm. *Lev* captures financial risk and is measured as debt to equity ratio. *SG* captures growth opportunity and is the annual percentage growth of sales. *STPT* is 1 for firms on the verge of special treatment, i.e. those with two consecutive years of losses, and 0 otherwise. *OwnCon* is ownership concentration measured by the Herfindahl index based on the ownership held by the 10 largest shareholders of the firm. *BSIZE* is 1 for firms with board size above cross-sectional median and 0 otherwise. *Duality* is 1 for firms with CEO also serving as board chairman and 0 otherwise. *BMeeting* is a dummy set to 1 for firms with above median number of board meetings and 0 otherwise. *BIndep* is 1 for firms with proportion of independent directors above cross-sectional median and 0 otherwise. *CeoOwn* is set to 1 for firms with CEO shareholding level in the cross-sectional top or bottom 25 percentile and 0 otherwise. *Area* is 1 for firms from from developed region (Shanghai or Shenzhen) and 0 otherwise. *RInd* is 1 for firms in more regulated industry and 0 otherwise. The *t*-statistics in parentheses are adjusted for heteroskedasticity and ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively.

	Non-SASAC			SASAC		
SSSR	193.5934	(6.87)	***	233.5495	(3.05)	***
RET	−37.1272	(−1.85)	*	63.29737	(0.56)	
SSSR×RET	107.8345	(3.96)	***	−53.2878	(−0.45)	
ROS	34.0054	(2.25)	**	476.1035	(2.45)	**
SSSR×ROS	63.0088	(0.85)		205.3861	(0.46)	
Size	186.0810	(19.63)	***	217.8896	(7.59)	***
Lev	234.7064	(6.52)	***	307.4459	(2.62)	***
SG	20.7158	(2.70)	***	−19.6976	(−0.72)	
STPT	−51.5569	(−2.19)	**	−187.3	(−2.03)	**
OwnCon	−423.3271	(−9.62)	***	271.9025	(1.29)	
BSize	30.8023	(2.18)	**	−49.0703	(−1.00)	
BMeet	42.9416	(3.31)	***	144.9887	(3.19)	***
BIndep	56.3815	(3.60)	***	20.00802	(0.34)	
CeoOwn	71.1564	(4.71)	***	235.6668	(3.99)	***
Duality	59.9501	(0.61)		236.6501	(0.66)	
Area	191.3483	(10.88)	***	296.1646	(3.83)	***
RInd	−52.6476	(−2.59)	***	−20.2298	(−0.31)	
Intercept	−3507.9860	(−18.06)	***	−4241.14	(−7.49)	***
Adjusted R^2		0.2608			0.3382	
Obs.		5172			585	

Table 6

State-controlled firms partitioned by level of consideration payout through restricted shares

This table presents the regression analyses of the relationship between executive remuneration and share return performance. Our sample period is 2000 to 2007. State-controlled listed firms are partitioned by the level of consideration payout. Payout ratio (Panel A) is number of restricted shares paid out divided by total number of restricted shares. Cost ratio (Panel B) is number of restricted shares paid out divided by the number of restricted shares that are not paid out. The dependent variable is the aggregate total pay of the top three executives (in thousand RMB). *SSSR* indicates the period after the Split Share Structure Reform and is a dummy variable assigned 1 for years 2006 onward and 0 otherwise. *RET* captures stock market performance and is measured as annual stock return. *ROS* captures operating performance and is measured as operating income divided by sales. *Size* is log of total assets of the firm. *Lev* captures financial risk and is measured as debt to equity ratio. *SG* captures growth opportunity and is the annual percentage growth of sales. *STPT* is 1 for firms on the verge of special treatment, i.e. those with two consecutive years of losses, and 0 otherwise. *OwnCon* is ownership concentration measured by the Herfindahl index based on the ownership held by the 10 largest shareholders of the firm. *BSIZE* is 1 for firms with board size above cross-sectional median and 0 otherwise. *Duality* is 1 for firms with CEO also serving as board chairman and 0 otherwise. *BMeeting* is a dummy set to 1 for firms with above median number of board meetings and 0 otherwise. *BIndep* is 1 for firms with proportion of independent directors above cross-sectional median and 0 otherwise. *CeoOwn* is set to 1 for firms with CEO shareholding level in the cross-sectional top or bottom 25 percentile and 0 otherwise. *Area* is 1 for firms from from developed region (Shanghai or Shenzhen) and 0 otherwise. *RInd* is 1 for firms in more regulated industry and 0 otherwise. The *t*-statistics in parentheses are adjusted for heteroskedasticity and ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively.

| | Panel A: Payout ratio | | | | | | Panel B: Cost ratio | | | | | |
	Higher			Lower			Higher			Lower		
SSSR	220.8796	(6.10)	***	184.4476	(4.88)	***	220.4376	(6.09)	***	186.3841	(4.93)	***
RET	−37.748	(−1.41)		12.20001	(0.40)		−36.7738	(−1.37)		9.634598	(0.32)	
SSSR×RET	96.78913	(2.76)	***	46.31017	(1.20)		96.17583	(2.74)	***	48.60198	(1.26)	
ROS	22.49648	(1.09)		41.10618	(1.88)		22.80981	(1.10)		41.59651	(1.90)	*
SSSR×ROS	138.949	(1.42)		−60.7804	(−0.46)		137.3663	(1.41)		−58.066	(−0.44)	
Size	200.8071	(17.49)	***	205.1034	(13.15)	***	202.7073	(17.61)	***	200.7222	(12.93)	***
Lev	242.0455	(5.31)	***	272.6408	(5.21)	***	251.0333	(5.50)	***	259.8731	(4.96)	***
SG	22.16757	(2.06)	**	14.72227	(1.57)		21.95288	(2.04)	**	15.24589	(1.62)	
STPT	−71.3297	(−2.36)	**	−17.2655	(−0.48)		−71.435	(−2.36)	**	−18.1392	(−0.50)	
OwnCon	−291.57	(−4.43)	***	−525.55	(−7.25)	***	−295.279	(−4.47)	***	−511.705	(−7.09)	***
BSize	31.78853	(1.73)	*	−0.29258	(−0.01)		29.75269	(1.62)		2.750624	(0.14)	
BMeet	67.33143	(4.01)	***	30.81015	(1.60)		67.50802	(4.02)	***	29.72531	(1.55)	
BIndep	64.63352	(3.09)	***	33.96184	(1.61)		64.22511	(3.07)	***	34.53204	(1.63)	
CeoOwn	87.38074	(4.63)	***	85.02638	(3.49)	***	86.01606	(4.56)	***	87.47029	(3.58)	***
Duality	88.04908	(0.60)		−4.85895	(−0.08)		86.53757	(0.59)		−3.03465	(−0.05)	
Area	218.605	(9.00)	***	197.6106	(6.94)	***	217.1323	(8.94)	***	200.0045	(7.04)	***
RInd	−36.4378	(−1.25)		−67.2507	(−2.52)	**	−37.5687	(−1.28)		−63.629	(−2.38)	**
Intercept	−3871.16	(−16.37)	***	−3805.75	(−12.29)	***	−3911.45	(−16.5)	***	−3718.23	(−12.05)	***
Adjusted R^2	0.2655			0.2975			0.2669			0.2939		
Obs.	3560			2197			3556			2201		