Flee When You Can: Blockholders' Right of Liquidation and Corporate Governance

Xiaolin Qian,[a] **Lewis H. K. Tam**[b,*]

[a]Faculty of Business Administration, University of Macau, Macau SAR

xiaolinqian@umac.mo

(+853) 8822-4750

[b]Faculty of Business Administration, University of Macau, Macau SAR

lewistam@umac.mo

(+853) 8822-8870

***Corresponding author**

Lewis H. K. Tam

E22-4055, Faculty of Business Administration, University of Macau,

Avenida da Universidade, Taipa, Macau, China

lewistam@umac.mo

(+853) 8822-8870

Flee When You Can: Blockholders' Right of Liquidation and Corporate Governance

This version: October 2015

Abstract

Previous studies suggest that blockholders' incentive to intervene depends on their level of ownership as well as the cost of exit by selling their shareholding. Yet, empirical studies on the impact of blockholding on corporate governance face the challenges of the identification issue. Investigating a unique, market-wide reform in China, which exogenously changes the right of liquidation of large block shares, we find that CEO turnover becomes *less* sensitive to firm performance after large shareholders can liquidate their holdings. The dampening effect is particularly pronounced for firms with lower pre-reform blockholding, as well as firms with more dispersed blockholdings. The latter finding is consistent with the multiple blockholder theory that the existence of multiple blockholders results in the free-rider problem of corporate governance. Our empirical results suggest that stock liquidity reduces the monitoring incentive of large shareholders, who would rather exit from poorly performing firms than fix the firms' management problems.

JEL classification: G30, G38

Keywords: Large shareholders; Monitoring incentive; Stock liquidity; CEO turnover; The split-share-structure reform; Chinese stock market

1. Introduction

Large shareholders exert governance by intervening in a firm's operations in various ways, including directly communicating with top managers, engaging in shareholder activism, and replacing top managers. The cost of such intervention, however, is incurred primarily by the shareholders who monitor, while the benefit is divided among all shareholders, and thus a free-rider problem exists (Shleifer and Vishny, 1986). Hence, even though intervention enhances shareholders' value overall, a rational large shareholder would not intervene if the costs exceed the benefits.

This study examines large shareholders' incentive to intervene by using a unique, market-wide event in China that significantly reduces large shareholders' cost of trading. Over a long period of time, most listed firms in China had more than one class of equity shares, with some classes tradable and others non-tradable. Non-tradable shares, accounting for approximately 60% of the total shares outstanding, had almost zero liquidity and were highly concentrated among large shareholders.[1] Then, during 2005-2007, all listed firms in China underwent a split-share-structure (SSS) reform that aims to convert non-tradable shares into tradable ones in the secondary market. Therefore, after the reform, blockholders of non-tradable shares have the same right of liquidation as other small shareholders in the secondary market.

We compare the sensitivity of CEO turnover to firm performance before and after the SSS reform. As the identification and termination of a poorly performing CEO are important evidence of the implementation and enforcement of corporate governance,[2] a change in CEO turnover-performance sensitivity clearly indicates a change in the

[1] Before the SSS reform, with special permission from the government, non-tradable shares could be traded only with private placement between institutions at a distressed price (Lee and Xiao (2004)). The trading price is about one-third of the market price for the corresponding tradable shares.
[2] In developed markets, appropriate managerial incentives, investor activism, and a threat of corporate takeover also can enforce corporate governance. As the market institutions in China are still underdeveloped, however, many of those alternatives either are ineffective or simply do not exist.

enforcement of corporate governance. We predict that CEO turnover is less sensitive to firm performance after the reform. Previous studies argue that blockholding increases the incentive to intervene, because it allows the blockholder to share more gain from intervention (Shleifer and Vishny, 1986), but other studies argue that blockholders' ability to trade affects their incentives to intervene in management (Bhide, 1993; Kahn and Winton, 1998). A rational blockholder would justify the cost of intervention with the benefit before deciding to sell her shares or to keep the shares and intervene.

Our empirical findings indicate that CEO turnover becomes *less* sensitive to firm performance after large block shareholders obtain the right of liquidation in the secondary market, and the results remain consistent in various robustness checks. Our results provide empirical evidence supporting the hypothesis that corporate governance deteriorates when large shareholders face a lower trading cost. In addition, we find that the effect of SSS reform on turnover-performance sensitivity is stronger in firms with lower pre-reform blockholding and in firms with more dispersed blockholdings. The latter finding is consistent with previous theoretical studies indicating that the existence of multiple blockholders reduces intervention, because it exacerbates the free-rider problem by splitting the power among blockholders, and thus smaller blockholders have limited ability to challenge the largest shareholder (Bolton and von Thadden, 1998; Pagano and Röell, 1998; Bennedsen and Wolfenzon, 2000; Bloch and Hege, 2001). It is, however, inconsistent with other findings indicating that small blockholders play an active role in monitoring the controlling shareholder (Bai et al, 2004; Firth et al., 2007; Gao and Kling, 2008).

Our findings come with a caveat. It is possible that large shareholders tend to use soft information (e.g., subjective evaluation) rather than hard information (i.e., the accounting performance) in their decisions to fire CEOs, which would weaken CEO turnover-performance sensitivity (Cornelli et al., 2013). We argue that this is unlikely, however. To show that performance-driven CEO turnover is an effective device for corporate governance, we run a regression of change in the operating performance after CEO turnover on pre-turnover operating performance for firms with CEO-turnovers. We find that post-turnover change in performance is negatively related to pre-turnover performance, after controlling for the endogeneity issues of sample selection bias and mean reversion in performance. In other words, firms dismissing CEOs with bad operating performance get better performance improvement after CEO turnover than firms dismissing CEO with good performance, and thus dismissing CEO with bad performance does indicate effective monitoring. In addition, an important confounding event that may affect turnover-performance sensitivity is the mandatory adoption of International Financial Reporting Standards (IFRS) by listed firms in 2007. This confounding event, however, is also unlikely to be the reason why firms rely less on financial performance for their CEO turnover decisions after the SSS reform. If the mandatory adoption of the IFRS has any impact on CEO turnover-performance sensitivity, it should increase rather than decrease the sensitivity and therefore bias against our findings, because previous studies generally find that the mandatory adoption of the IFRS improves accounting quality (Liu et al., 2011; Lee et al., 2013) and increases the accounting-based performance sensitivity of executive compensation (Hou et al., 2014).

Our study contributes to the literature in several ways. First, we investigate the intervention-liquidity tradeoff by using the SSS reform in China, an exogenous event

that affects all publicly listed firms in A-share markets. Although most early theoretical studies argue that stock illiquidity, a measure of trading cost, encourages intervention and discourages "cutting and running" by increasing the trading cost of shares (Bhide, 1993; Kahn and Winton, 1998; Aghion et al., 2004), empirical analyses are challenged by that fact that blockholders' actions and other corporate variables are endogenously determined or may be jointly determined by unobservable events or factors (Edmans, 2014). The problem is exacerbated by the fact that blockholding and liquidity are also jointly determined. Maug (1998), for example, argues that liquidity may encourage intervention by allowing blockholders to accumulate shares with a lower cost. Therefore, without the blockholding being exogenous, studying the liquidity impact on blockholder intervention is empirically challenging. The SSS reform of China provides an ideal setting for examining the impact of trading cost on blockholder intervention, because neither the pre-reform block-building nor the reform that removes the trading restriction on the blockholding are market- or performance-driven. Yet after the reform, blockholders get the right of liquidation, which can be decided on the basis of firm and stock performance.

Second, we offer a comprehensive analysis for the effect of SSS reform on CEO turnover. Campello et al. (2014) document a decline in the probability of CEO turnover, but they do not further investigate the trend. We show that the decline is related to a reduction in large shareholders' incentives to intervene after they get the right to trade in the secondary market. We provide empirical support for Aghion et al. (2004), who argue that optimal incentives to monitor require a restriction on the monitor's right to sell her claims on the firm's cash flow.

Third, we find that the effect of the SSS reform on turnover-performance sensitivity is weaker in firms with more dispersed blockholdings. This finding sheds

light on Li et al.'s (2011) study, which demonstrates that non-tradable shareholders take the reform as an opportunity to diversify their portfolios by reducing their excess holdings. Our finding suggests that the liquidation effect likely results from the liquidation incentive of "free-riding" secondary large shareholders.

Arguably, our results should be viewed in conjunction with other corporate governance mechanisms. Demougin and Fluet (2001), among others, argue that large shareholders face a trade-off between monitoring and incentive provision in corporate governance. That CEO turnover-performance sensitivity declines following the SSS reform may suggest that the reform has shifted the balance between intervention and incentive provision. Recent studies by Campello et al. (2014) and Chen et al. (2015) document mixed evidence on the impact of SSS reform on managerial incentives. Our study sheds light on the tradeoff argument by closely investigating the impact of SSS reform on CEO turnover, a large gap in those related studies.

This paper is organized as follows: Section 2 reviews existing literature and develops the hypotheses. Section 3 then describes the data sample and the regression model. Section 4 discusses our empirical results. Finally, Section 5 concludes the paper.

2. Background and Hypotheses Development

2.1. The Split-Share Structure (*SSS*) *Reform*

The SSS reform, which was implemented between 2005 and 2007, affects all publicly listed firms in China's A-share markets. Before the reform, tradable shares and non-tradable shares had identical cash-flow rights and identical voting rights, but were transacted in different ways. Tradable shares could be transacted freely in the domestic or foreign shares markets. Non-tradable shares, representing approximately

two-thirds of overall ownership, had nearly zero liquidity. Non-tradable shares include state shares, legal-person shares, and employee shares, but employee shares are usually negligible. State shares are held by the central government, local governments, or state-owned enterprises, whereas legal-person shares are held by domestic or foreign institutions. The SSS reform started in 2005; more than 95% of listed firms finished implementing the reform by the end of 2006, and almost all finished by the end of 2007.

The procedure for the SSS reform involved several steps. After the non-tradable shareholders agreed to implement the reform, two suspensions of stock trading occurred. During the suspensions, the stock exchanges considered the firm's suitability for the reform, and the tradable shareholders approved the reformation plans, which included compensation packages for the tradable shareholders in order to gain their support for the plans. The compensation packages were mainly in the form that non-tradable shareholders give shares to tradable shareholders. Li et al. (2011) find that non-tradable shareholders were willing to pay, on average, 30% of the number of shares that are originally held by tradable shareholders. Final agreement on the compensation plan marked the completion of the reform. A lock-up period for the formerly non-tradable shares immediately followed, however: In the first 12-24 months after the completion of the SSS reform, the former non-tradable shareholders were either prohibited from selling or restricted to selling a small proportion of their shares. This lock-up period aimed to avoid the short-term price impact of a sudden run-up in the supply of shares. After the lock-up period, all shares were tradable.

A growing body of literature focuses on the SSS reform. Li et al. (2011) argue that the risk sharing of large shareholders increases after the reform, as the reform enables large shareholders to sell in the stock market. Campello et al. (2014) find that firm

performance improves after the reform and highlight the role of stock markets in shaping corporate activity. Liao et al. (2014) find that listed state-owned enterprises (SOEs) have a higher increase in output and employment than non-SOEs after the reform, because of the market's expectation of the former's further privatization. Liu and Tian (2012) find that non-SOEs have less tunneling by controlling shareholders than SOEs after the SSS reform. Chen et al. (2015) show that corporate executive pay is more sensitive to firm performance after the SSS reform. Campello et al. (2014), however, find an insignificant change in managerial incentives and a reduction in CEO turnover following the reform.

In this study, we examine whether the improved liquidity reduces large shareholders' intervention incentives, because they have a lower cost of opting out. Li et al. (2011), for example, argue that controlling shareholders take the reform as an opportunity to unload their shareholdings, so they are willing to pay a higher compensation for tradable shareholders to gain their support for the conversion plans. If large shareholders' incentive to unload is greater than the incentive to intervene, we can observe a deteriorating effect of SSS reform on corporate governance.

2.2 Large Shareholders, Stock Liquidity, and Corporate Governance

As large shareholders possess significant cash-flow and firm-control rights, they have incentives and ability to monitor managers' performance and intervene (Jensen and Meckling, 1976; Shleifer and Vishny, 1986). The liquidity of the secondary market affects their monitoring incentives, however. Intuitively, if a liquid market facilitates an easy "exit" from firms, monitors would have no incentive to exercise their "voice" (Hirschman, 1970; Bhide, 1993; Kahn and Winton, 1998), but would be motivated to "cut and run." Maug (2002) show that the problem of non-intervention is

more severe if insider trading is allowed. Managers may have incentives to give warning signals to the blockholder to encourage her to “cut and run” rather than intervene. Aghion et al. (2004) argue that a restriction on the liquidation right of a monitor's claims on the firm's cash flow increases her incentives to monitor with cost.

Maug (1998) shows that the above argument is not always true, because liquidity also may encourage intervention by increasing the number of shares the blockholder can purchase. Faure-Grimaud and Gromb (2004) also argue that the price discovery from public trading reveals large shareholders' value-enhancing activities, which increases large shareholders’ incentives to create value. We argue that Maug’s argument is less relevant in China than in the US, however, because most listed firms in China have a large shareholder who holds more than 20% of ownership. Besides, blockholders in most of China's listed firms are stable, because many of them belong to the central government or a local government. Having a sample of firms with stable and large shareholders allows us to ensure that the benefit from intervention is large enough to rule out alternative predictions for the liquidity effect on blockholder intervention. As Back et al. (2014) point out, once a block of sufficient size is created, the “cut and run” effect dominates Maug's (1998) governance enhancement effect.

A more recent series of studies examines the possibility of blockholder governance by exit (Admati and Pfleiderer, 2009; Edmans, 2009). The basic argument is that even a blockholder who cannot intervene because of holding a small block can still exert governance by selling the whole block of shares to push down stock prices and punish poorly performing managers, as long as the managers care about the short-term stock price. Bharath et al. (2013) document empirically that firms with larger blockholdings experience a greater increase in stock price during a positive shock of liquidity when managers’ wealth is sensitive to stock price. As Edmans (2014) points

out, the threat of exit is credible only when blockholdings are small and diffused, which is generally not the case in China.

Following the above discussions, we argue that the right to trade triggered by the SSS reform should result in a lower propensity to intervene by large shareholders who observe a negative signal. Investigating the effect of stock liquidity on large shareholders' intervention incentives, however, faces two potential endogeneity problems. First, stock liquidity itself results from informational transparency, which, in turn, is a consequence of corporate governance. Second, the trading decisions of large shareholders are also a function of firm performance and corporate governance. To alleviate the two problems, this study uses the SSS reform as an exogenous event, which affects all publicly listed firms in China's A-share markets. After the reform, the original non-tradable shares became tradable in the secondary market. As a policy event, the reform is exogenous to a company's performance and decisions. One of the main consequences of the reform is that it provides large shareholders of previously non-tradable shares the right to liquidate their holdings in the secondary market. Therefore, the reform offers researchers a valuable opportunity to investigate how the change in liquidity in large block shares affects corporate governance without facing potential endogeneity issues.

We study the sensitivity of CEO turnover to firm performance for two reasons. First, efficiently replacing inadequate top managers is an important goal of corporate governance. Jensen and Ruback (1983) argue that the failure to replace poorly performing managers indicates an agency problem. Huson et al. (2001) investigate the effectiveness of internal monitoring mechanisms and CEO turnover. Both Gibson (2003) and Defond and Hung (2004) assert that an essential role of good corporate governance is the replacement of poorly performing CEOs. Second, because of the

large positions of non-tradable shareholders before the SSS reform, other corporate governance mechanisms were essentially ineffective in China. Before the SSS reform, non-tradable shares, which represent about 60% of the total shares outstanding, were held almost exclusively by the top-10 shareholders. In contrast, tradable shares were diversely held by individual investors. Xu and Wang (1999) note that individual tradable shareholders among the top-10 shareholders normally hold less than 0.5% of total shares outstanding, which is negligible compared with the large stakes of state shares and legal-person shares. Therefore, tradable shareholders had little voice in corporate governance, owing to their trivial holdings. The market for corporate control was essentially nonexistent, as hostile takeovers are impossible when two-thirds of the shares cannot be acquired in the secondary market. Consequently, before the SSS reform, corporate governance in Chinese listed companies was enforced mainly by large shareholders who held mostly non-tradable shares. Our first hypothesis is as follows.

H1. CEO turnover is less sensitive to firm performance after the SSS reform.

High share ownership should enhance monitoring and intervention, because it allows the blockholder to capture large benefits from her action. Firms in China, like those in other Asian countries, are characterized by large blockholdings because of weak property-right protection, which leads to a need for the large shareholders to enforce their own rights, as well as those of minority shareholders (Claessens and Fan, 2002). Theoretical works point out that blockholdings can mitigate the collective action problem of dispersed shareholders, because blockholders have both an interest in monitoring management and the power to implement management changes (e.g.

Grossman and Hart, 1980; Shleifer and Vishny, 1986; Huddart, 1993; Admati et al., 1994).

After the SSS reform, large shareholders' governance incentives change because of the liquidation right granted to their blockholdings. We argue that the change in incentives is a function of block size because of the market liquidity constraints. Blockholders will compare the benefits from intervention and the benefits from trading their private information. If they hold a large block, the latter is likely to be smaller than the former because of the limited market liquidity for trading. As a result, their incentives to monitor and intervene after the SSS reform would not decrease significantly. In contrast, shareholders will have stronger incentive to sell their stake if they hold a small block because the benefits from intervention are relatively small. Following this argument, our second hypothesis is stated as follows:

H2. The hampering effect of the SSS reform on CEO turnover-performance sensitivity is stronger in firms with a smaller blockholding.

Edmans (2014) argues that the incentive to intervene also depends on the number of blockholders for two reasons. First, splitting a large block of shares among several shareholders exacerbates the free-rider problem of monitoring. Second, upon observing a negative private signal, a blockholder has strong incentives to sell if she is concerned that other blockholders may trade in front of her (Edmans and Manso, 2011).

In China, the coordination problem in corporate governance is less severe before the SSS reform, because all blockholders are forced "into the same boat." Therefore, it is easier for the controlling shareholder to coordinate other blockholders' decisions. After the reform, however, the controlling shareholder and other blockholders have

greater conflicts of interest. The controlling shareholder must consider the possible loss of control and the cost of trading when she makes the selling decision.[3] Other small blockholders, however, can unload their blocks at relatively less cost. They may even have an incentive to delay the realization of bad news that prevents them from selling shares for profit. Therefore, we expect that CEO turnover-performance drops more significantly after the SSS reform for firms with more diffused blockholdings.

H3. The hampering effect of the SSS reform on turnover-performance sensitivity is stronger in firms with more diffused blockholdings prior to the reform, i.e., small blockholders having a higher ownership relative to the largest one.

In China, however, agency problems exist not only between shareholders and managers, but also between majority shareholders and minority shareholders to a larger extent. Most listed firms in China have a controlling shareholder who exercises effective control, and this controlling shareholder may collude with managers at the expense of small shareholders. To protect their own interests, small shareholders may have to participate in monitoring the largest shareholder in addition to monitoring managers. Previous studies show that small blockholders do monitor the controlling shareholder in China. Bai et al. (2004) argue that small blockholders can serve as obstacles to the controlling shareholder's tunneling activities, and they find that firm value has a U-shape relationship with the controlling shareholder ownership but is positively related to the ownership of top-2 to top-10 shareholders. Firth et al. (2007) find that top-2 to top-10 ownership can reduce CEO compensation, suggesting blockholders other than the largest one can constrain excessive CEO pay. Gao and

[3] Examining a sample of 393 control block transactions worldwide, Dyke and Zingales (2004) find an average block premium of 14%, and the premium is particularly large in emerging markets, including Asia. Nenova (2003) also finds that control premiums are larger in countries with weaker legal environments.

Kling (2008) also find that tunneling is less likely when large outside shareholders exist. Similarly, in their study of controlling shareholders' incentives to manage earnings, Liu and Lu (2007) use the concentration of top-2 to top-10 shareholding as a proxy for the balance of power by other blockholders. Therefore, it is expected that a powerful group of small blockholders enhances corporate governance after the SSS reform and that small blockholders' incentive to monitor increases with their ownership.

H3a. The hampering effect of the SSS reform on turnover-performance sensitivity is weaker in firms with more diffused blockholdings prior to the reform, i.e., small blockholders having a higher ownership relative to the largest one.

3. Data and Methodology

3.1. Data and Sample

We obtain data from the China Stock Market and Accounting Research Database (CSMAR), including CEO turnover events, personal information on CEOs, board characteristics, financial variables, and shareholder information. In China, the board chairman is the legal representative of a listed firm and, in the majority of listed firms, is appointed by the largest shareholder (Kato and Long, 2006; Firth et al., 2006). In many firms, the board chairman is the real boss and is more powerful than the general manager, a fact that is a common knowledge in China, but many academic studies ignore it (Jiang and Kim, 2014). To better capture top management turnover, we thus define CEO turnover as the turnover of either the chairman or the general manager, following Kato and Long (2006). If both the chairman and the general manager leave in a firm-year, we focus on chairman turnover. If more than one turnover occurs in a

firm-year, we use the turnover event that occurred the earliest. In the years without turnover, we use the characteristics of the board chairman in the regressions.

Our study focuses on non-financial firms listed in A-share markets (Shanghai and Shenzhen Stock Exchanges) in China for the period from 1999 to 2012.[4] The completion dates for the SSS reform are collected from the WIND database. The SSS reform started in 2005. More than 95% of listed firms finished implementing the reform by the end of 2006, and almost all firms finished by the end of 2007. We start with an initial sample of 5,602 turnovers occurring from 1999 to 2012. As not all turnovers are related to firm performance, we follow the steps below to eliminate the turnovers that are less likely to be driven by firm performance.

First, CSMAR classifies the reasons for CEO departures into 12 categories: (1) occupation mobility, (2) retirement, (3) expiration of term of office, (4) change in control rights, (5) resignation, (6) dismissal, (7) health-related reasons, (8) personal reasons, (9) corporate governance reform, (10) litigation involved, (11) other, and (12) end of acting duties. In previous empirical works, many researchers distinguish between forced and non-forced turnovers, and they primarily exclude the latter from analyses, because such turnovers are less likely to be related to firm performance. To examine the sensitivity of CEO turnover to firm performance, in line with Chang and Wong (2009), we exclude turnovers falling under categories (2), (4), (7), (9), and (10), because such turnovers either result from exogenous personal situations or do not result from normal monitoring activities.[5] Second, we exclude turnovers with CEO

[4] Our sample starts from 1999 for two reasons. First, although CSMAR covers executives' turnover data since 1995, data for other characteristics, e.g., duality and board independence, starts from 1999. Second, China implemented a new accounting regulation in 1998 to harmonize Chinese generally accepted accounting standards (GAAP) with International Accounting Standards (IAS) (Chen et al., 2002).

[5] Categories (2) and (7) describe CEO departures caused by exogenous personal situations. Turnovers in category (4) could be forced turnovers, but they likely reflect the new largest shareholder's

tenure shorter than one year to avoid relating CEO turnover to performance attributed to the prior CEO (Kato and Long, 2006). In addition, a CEO may have a short tenure if he is considered an interim CEO while the firm searches for a permanent CEO. Finally, we eliminate observations with missing data on CEOs or accounting variables. After excluding these observations, we have 4,362 forced CEO turnovers for the sample period from 1999 to 2012. The detailed sample selection of CEO turnover is listed in Table 1.

[Insert Table 1 here]

3.2. Research Design

To examine the impact of the SSS reform on the sensitivity of CEO turnover to firm performance, we employ the following baseline logistic regression model for the tests of our hypotheses:

$$
\begin{aligned}
Prob(Turnover_t = 1) &= \Lambda\,(\beta_1 \times Performance_{t-1} + \beta_2 \times Performance_{t-1} \times Ref_t + \beta_3 \\
&\times Ref_t + \beta_4 \times Size_{t-1} + \beta_5 \times Debt_{t-1} + \beta_6 \times Q_{t-1} + \beta_7 \times Cash_{t-1} \\
&+ \beta_8 \times Board_t + \beta_9 \times Dual_t + \beta_{10} \times Indep_t + \beta_{11} \times CEOshr_t \\
&+ \beta_{12} \times Age_t + \beta_{13} \times Tenure_t)
\end{aligned}
$$

$\Lambda(.)$ indicates the logistic distribution function. The dependent variable *Turnover* is a dummy variable that equals one if there is a forced CEO turnover, and zero otherwise. We use two proxies to measure *Performance*: return on assets (*ROA*), measured as the ratio of year-end operating income to total assets, and industry-adjusted *ROA* (*IROA*),

preference to bring in a familiar person to occupy the top position. Category (9) usually refers to cases in which the departing CEOs retain other key positions (such as board chairman) in the firms or other firms in the same group. Finally, cases involving legal disputes (category (10)) are usually unrelated to normal monitoring activities.

defined as *ROA* minus the industry median.[6] We use lagged-year performance and firm characteristics instead of current-year information, because Kato and Long (2006) document that 57% of CEO turnovers in China occur in the first six months of a year. Using lagged-year performance also avoids endogeneity problems. We expect the coefficient for *Performance* to be negative, indicating that a better-performing CEO is less likely to be disciplined. *Ref* is a dummy variable that equals one in years when the firm has completed the SSS reform. *Ref* equals one starting from year t+1 for firms completing the reform in year t. If completion dates for the SSS reform are missing, we define *Ref* as equaling one starting from year 2007.[7] The reform guideline indicates that firms are gradually allowed to trade non-tradable shares in the stock market one year after the firm completes the reform. *Performance* × *Ref*, an interaction term, is used to capture the change in sensitivity of CEO turnover to firm performance after the reform is complete. If the SSS reform enhances corporate governance, the interaction would be negative. *Board* is the number of directors on a firm's board. *Dual* is a dummy variable that equals one if the CEO holds positions as both board chairman and general manager, and zero otherwise. If the CEO holds both positions, she/he may have more power to control the board and therefore may reduce the effectiveness of monitoring. *Indep* is the proportion of independent directors to the total number of directors. We expect board monitoring to be more effective when the board includes a greater number of independent directors. *CEOshr* measures the proportion of shares owned by the CEO to the total number of shares outstanding. When the CEO holds a substantial ownership stake, it is more difficult for other shareholders to remove him from the position. *Tenure* is the number of years that the

[6] All results are robust if we use market-adjusted return on assets (MROA) defined as return on assets minus the average return on assets of all firms.
[7] Results are robust if we delete firms with missing reform data.

CEO has served in the firm, and *Age* is the CEO's age. Both *Tenure* and *Age* measure how close the CEO is to retirement age and proxy for the CEO's power and influence in the firm. Therefore, we do not have specific expectations regarding the sign of their coefficients. *Size* is the natural logarithm of a firm's total assets. *Debt* is total liabilities divided by total assets; creditors may serve as an external disciplinary device to stop a CEO from taking excessive risks. *Q* is the ratio of market value of assets over book value of assets, and *Cash* is the cash or cash equivalent, scaled by total assets. We control for *Q* and *Cash* because growth opportunities and cash reserves may influence CEO turnover. Year dummies and industry dummies control for unknown time- and industry-specific factors. The standard errors of the coefficients' estimations are adjusted for heteroscedasticity and firm clustering. To eliminate the effect of outliers, we winsorize all continuous variables at the 1st and 99th percentiles.

Table 2 presents the summary statistics of the explanatory variables for CEO turnover. The mean ROA is 4.7%. The average size of the board of directors is 9-10 people, with approximately 31% of directors defined as independent. A typical CEO is 51 years of age, has three years of tenure, and owns approximately 0.011 of total shares outstanding. In 14.7% of cases, the CEO holds positions as both board chairman and general manager. The frequency of CEO duality is lower than that reported in Kato and Long (2006) and Chang and Wong (2009), who report values of 17.0% (1999-2002) and 28.3% (1995-2001), respectively. As our sample period (1999-2012) includes more recent years than those of the aforementioned studies, our results indicate that management and ownership are more likely to be separated in recent years.

[Insert Table 2 here]

4. Empirical Results

4.1 Main Results

We first test whether the sensitivity of CEO turnover to firm performance increases or decreases after the SSS reform. After the reform, large shareholders' stocks become tradable in the secondary market. If these large shareholders now prefer to sell their holdings rather than intervene in management, then we would expect to find that CEO turnover is less sensitive to firm performance after the SSS reform.

Table 3 reports our baseline results from estimating the logit model (1). The results are essentially the same regardless of which of the two firm performance measures we use. Consistent with previous studies, better performance is associated with lower CEO turnover, as indicated by the negative coefficients for *ROA* and *IROA*. The economic magnitude is such that the odds of CEO turnover would increase by 0.282 times if *IROA* drops by one standard deviation (0.083).[8] More important, the results show that CEO turnover is *less* sensitive to firm performance after the SSS reform, as indicated by the positive coefficients for *ROA* × *Ref* and *IROA* × *Ref*. The impact of a one-standard-deviation reduction in *IROA* on the odds of CEO turnover after the reform is 0.125 (= $exp(0.083 \times 1.243) - 1$) times lower than the impact before the reform.[9] Therefore, managers with poor performance are less likely to be disciplined after the SSS reform, supporting hypothesis *H1*. The coefficients for the

[8] In a logit model, the proportional impact of an increase of y for a variable Y on the odds of a positive outcome is estimated as $exp(\alpha \times y) - 1$, where α is the coefficient of Y in the model. As the coefficient of *IROA* in model (1) is -2.923, the impact of a one-standard-deviation reduction in *IROA* on the odds of CEO turnover is $exp(0.083 \times 2.923) - 1 = 0.282$.

[9] We do not report the interaction effect based on the interaction term because Ai and Norton (2003) show that the coefficient of an interaction term is not an accurate measure of the true interaction effect on the outcome probability. Instead, we interpret the interaction effect based on odds ratios, as Buis (2010) and Kolasinski and Siegel (2010) show that the interaction term is still relevant for measuring proportional marginal effects.

control variables have the expected signs. For example, CEO duality (*Dual*), which indicates CEO power, is negatively related to CEO turnover; board independence (*Indep*), which controls CEO power, is positively related to CEO turnover; and CEO share ownership is negatively related to CEO turnover, indicating that CEO power reduces the possibility of replacement.

[Insert Table 3 here]

The effect of SSS reform on turnover-performance sensitivity is stronger in firms whose large shareholders have more incentives to liquidate their holdings than to intervene in poorly performing management. In general, a high level of blockholding should enhance intervention incentives, because it allows the blockholders to capture a significant portion of benefits from the action. Therefore, we expect the right to trade granted by the reform should have a weaker effect on firms with higher blockholdings. We split the sample into two groups according to the level of top-1 shareholder ownership (columns 1&2), where shareholder's ownership is measured on the CSMAR report date that is closest to but before the reform date for each firm. The result shows that the hampering effect of SSS reform on the CEO turnover-performance sensitivity is *weaker* for firms having a high pre-reform top-1 ownership (column 2) than those having a low top-1 ownership (column 1). For firms with low top-1 ownership, the impact of a one-standard-deviation reduction in *IROA* on the odds of CEO turnover after the reform is 0.188 (= $exp(0.083 \times 2.077) - 1$) times lower than the impact before the reform. For firms with high top-1 ownership, the impact of *IROA* on CEO turnover is insignificantly different between before and after the reform. This is consistent with Hypothesis *H2* that blockholding enhances incentives to intervene in management.

We confirm our above conclusion by providing by two additional sub-sample tests. First, we consider all top-10 shareholders as a collective group of blockholders and split the sample into two groups according to the level of top-10 shareholder ownership before the SSS reform (columns 3&4). Consistent with columns 1&2, the hampering effect of SSS reform on the CEO turnover-performance sensitivity is *weaker* for firms with a higher top-10 shareholder ownership. Second, following previous studies for the US, we include only top-10 shareholders who hold at least 5% of ownership for our calculation of total blockholding. In general, small shareholders have lower incentives to intervene in management than large shareholders because they gain less from their actions. Excluding those with weak incentives allows us to obtain a better proxy for incentives to intervene. We split the sample into two groups according to this refined blockholding measure, and re-run and report the results in columns 5&6. Consistent with columns 1&2, the hampering effect of SSS reform on CEO turnover-performance sensitivity is *weaker* for firms with higher pre-reform blockholding.

[Insert Table 4 here]

To further examine whether ownership diffusion results in weaker corporate governance, we calculate the Herfindahl index of the top-10 shareholder ownership (HI10) for our sample firms before the reform and split the firms into two equal groups (columns 1&2). The result shows that the hampering effect of SSS reform on turnover-performance sensitivity is *stronger* in firms with a lower Herfindahl index of ownership, i.e., a more diffused ownership. The impact of a one-standard-deviation reduction in *IROA* on the odds of CEO turnover after the reform is 0.186 (= $exp(0.083 \times 2.058) - 1$) times lower than the impact before the reform. This is consistent with hypothesis *H3* and our argument that a more diffused ownership weakens corporate

governance after the SSS reform, because the liquidation right exacerbates the free-rider problem of monitoring among shareholders. Inconsistent with *H3a*, however, we do not find evidence that small blockholders play an active role in monitoring the controlling shareholder.

We provide two additional tests to show that the free-rider problem after the SSS reform is exacerbated by a larger position in small blockholding relative to the controlling shareholder. First, we split firms into two equal groups according to the ownership of top 2-10 shareholders (columns 3&4). Consistent with columns 1&2, the result shows that the hampering effect of SSS reform on turnover-performance sensitivity is *stronger* in firms with a higher ownership of top 2-10 shareholders. This indicates that small blockholders intervene in management less after the SSS reform. As argued in section 2.2, small blockholders can unload their blocks more easily than the controlling shareholder. So, they are likely to focus on the gain from selling their blocks rather than the gain from intervening in management. Second, we classify firms into two groups according to the ratio of top-1 shareholder's ownership over top-2 shareholders' ownership (R(1/2)) and report the regression results in columns 5&6. The result shows that the SSS reform dampens CEO turnover when the second-largest shareholders have a share ownership closer to the largest shareholder, i.e., R(1/2) is low. Therefore, while it is expected that a larger ownership provides the second-largest shareholder's power and incentive to monitor the controlling shareholder's tunneling activities (Bai et al., 2004; Gao and Kling, 2008), our result indicates the opposite. This confirms that the weaker turnover-performance after the SSS reform mainly comes from the non-controlling large shareholders' incentive to "cut and run."

The results in Table 5 highlight an important difference in incentives between the controlling shareholder and other blockholders, in that while the controlling shareholder has an incentive to maintain her shareholding and monitor managers, such an incentive is not shared among other blockholders. A possible explanation for the above observation is that the controlling shareholder enjoys a benefit of control while other blockholders do not, and therefore the controlling shareholder will be more reluctant to sell her ownership.

[Insert Table 5 here]

Thus, we find that CEOs are less likely to be replaced for poor performance after the SSS reform converted all non-tradable shares into tradable ones. The SSS reform allows large shareholders, who are critical monitors in Chinese companies, to sell their stocks. The right of liquidation provided by the SSS reform weakens large shareholders' incentive to intervene in management. Overall, our findings show that the improved stock liquidity resulting from the SSS reform reduces CEO turnover-performance sensitivity. The dampening effect is particularly pronounced for firms with lower pre-reform blockholding and firms with more dispersed blockholdings.

4.2 Robustness check

We conduct several robustness checks and report the results in Table 6. First, the SSS reform is a market-wide exogenous event to the firm, because it is a country-wide policy imposed by the government and all firms must finish the reform during the required period. Some firms, however, were chosen as the pilot firms for the reform, and some firms finished the reform later than others. The timing of these two types of firms might be endogenous to firm performance. To eliminate the effect of the endogenous timing choice, we remove firms in the pilot batches and firms that

finished the SSS reform after the end of year 2006 and redo the CEO turnover-performance regression. The result in column 1 shows that our previous finding is robust.

Second, firms that were listed after year 2005 might not have a split share structure and therefore did not participate in the reform. We thus remove firms that conduct the IPO after year 2005 from the sample and rerun the regression. The result in column 2 shows that our previous finding is robust.

Third, some firms do not have reform dates recorded in the database. We assume these firms to complete the reform in 2007, because most firms had completed their reforms by the end of 2007. To ensure that our main results are unaffected by our assumption, we remove those firms from our sample and re-run our baseline regression and find that the main result is robust.

Lastly, the decreased turnover-performance sensitivity after the reform might be due to a time series trend. In columns 4&5, we report the Placebo test results to check whether our findings are due to a time series trend of turnover-performance sensitivity. We define the dummies Y02 and Y10 that equal 1 for observations after the years 2002 and 2010, respectively. Model 4 is run in years 1999-2004 and Model 5 is run in years 2008-2012, so Y02 and Y10 capture the time series trend that is not affected by the SSS reform. We can see that the interaction of IROA with neither Y02 nor Y10 is significant. Therefore, there is no significant time series trend of turnover-performance sensitivity in our sample period.

[Insert Table 6 here]

4.3 Alternative Explanation and Additional Evidence

Our interpretation of the change in CEO turnover-performance sensitivity around the SSS reform may be subject to confounding-event problems and alternative explanations. It is possible, for example, that there is another concurrent event that reduces the informativeness of financial reporting. As a result, firms would rely less on hard information but more soft information for their decision making. Cornelli et al. (2013) show that stronger large shareholder monitoring can lead to weaker CEO turnover-performance sensitivity if large shareholders tend to use soft information (e.g., subjective evaluation) rather than hard information (e.g., accounting performance) in their decisions to fire CEOs. They conclude that effective monitoring and more inside information allow large shareholders to rely less on objective firm performance in CEO turnover decisions.

One significant confounding event during the SSS reform is the mandatory adoption of the International Financial Reporting Standards (IFRS) by listed firms in 2007, and the market could be well informed of the change by the intention of China's Ministry of Finance declared in 2005. Therefore, from 2005 to 2007, there are two major events that could affect corporate governance of listed firms in China. We argue, however, that the adoption of the IFRS should increase rather than decrease the CEO turnover-performance sensitivity, because previous studies generally find that the mandatory adoption of the IFRS improves accounting quality (Liu et al., 2011; Lee et al., 2013) and increases the accounting-based performance sensitivity of executive compensation (Hou et al., 2014). Since we find that firms rely less on the accounting performance in the CEO-turnover decision, the finding is less likely to be driven by the effect of mandatory adoption of IFRS. It is worth noting that the confounding adoption of IFRS actually biases against us finding significant results on the large shareholders' liquidation-intervention tradeoff after the SSS reform.

To further test whether the weaker turnover-performance sensitivity indicates more or less effective corporate governance, we run a regression of change in operating performance after CEO turnover on pre-turnover operating performance for CEO-turnover firms. If stronger turnover-performance sensitivity indicates better corporate governance, the post-turnover performance of firms with bad pre-turnover performance should improve more than that of firms with good pre-turnover performance. In other words, post-turnover changes in operating performance should be negatively related to pre-turnover operating performance.

We need to address two endogeneity issues, however. First, the sample CEO-turnover firms are not randomly selected and therefore suffer from selection bias. We use a Heckman (1979) two-stage model to correct for selection bias, where the first-stage model uses model (4) of Table 3. Second, performance change can be attributed to the mean reversion of accounting performance (Chang and Wong, 2009). To eliminate the effect of mean reversion, we follow Chang and Wong (2009) to adjust the change in IROA of post-turnover firms with the variable of a matched non-turnover firm that has similar IROA in the pre-turnover year. In particular, we match each turnover firm in the pre-turnover year with a benchmark firm that satisfies the following criteria: (1) the benchmark firm has no turnover occurring in the event year and in the three years preceding the event year, (2) the benchmark firm is in the sample industry as the turnover firm, and (3) the benchmark firm's IROA in the pre-turnover year is within +/−20% of the IROA of the turnover firm. When multiple matching firms satisfy the industry and IROA criteria, the benchmark firm is the one whose total assets are closest to those of the turnover firm. If no matching firms satisfy both industry and IROA criteria, we relax the requirement on the industry. If

no matching firms satisfy the IROA requirement, we remove the CEO-turnover firm from the sample for this test.

The benchmark-adjusted IROA (adjIROA) is the IROA of the turnover firm minus the corresponding ratio of the benchmark firm, and we calculate the change in adjIROA from the pre-turnover year to the first year, second year, and third year after the turnover as ΔadjIROA(Y1), ΔadjIROA(Y2), and ΔadjIROA(Y3), respectively. Then we fit these three variables as the dependent variables in the regression and report the results in models (1) to (3) of Table 7. Due to space limitations, Table 7 reports only the second-stage regression of Heckman two-stage model. The first-stage regression is similar to model (4) of Table 3. We can observe that the post-turnover change in IROA is negatively related to the pre-turnover IROA. The economic magnitude is such that ΔadjIROA(Y1) would increase by 0.011 if *IROA* is one standard deviation (0.083) lower. In other words, firms that dismiss CEO with worse performance get more improvement in IROA than firms that dismiss CEO with better performance, and thus dismissing CEO for bad performance does indicate effective corporate governance.

[Insert Table 7 here]

In addition, we use the characteristics of successors after CEO turnovers to further check whether the effectiveness of corporate governance improves or declines after the SSS reform. Previous studies show that if the CEO also takes the position of the board chairman, she can control the board and weaken the board's power. Therefore, the two roles should be separated for shareholders' interests.[10] Besides, compared

[10] Rechner and Dalton (1991) and Pi and Timme (1993), for example, find that U.S. firms with separate CEO and chairman titles have better financial performance. In China, Firth et al. (2007) find that CEO compensation is less sensitive to operating performance if the CEO also holds the board chairman position. Li and Tang (2010) document a positive relation between CEO hubris and risk taking and find that the relationship is stronger in firms with the CEO also chairing the board.

with a CEO hired from outside, an internally promoted CEO tends to have a closer relationship with board members and is expected to be subject to less board scrutiny. Finally, a CEO with higher qualifications is more innovative and open to new technology, and enhances corporate long-term growth.[11] Therefore, we argue that CEO duality, internally promoted CEOs, and CEOs with a low educational level are detrimental to shareholders' value and that hiring such a CEO reflects poor corporate governance.

Table 8 compares the characteristics of the successors of CEO turnover before and after the SSS reform. It shows that after the reform, the CEOs' successors are more likely to simultaneously take positions of both General Manager and Board Chairman, are more likely to be internally promoted, and are less likely to have a professional certificate or a college degree. All of these observations indicate weaker corporate governance after the reform.

[Insert Table 8 here]

In sum, turnover-performance sensitivity is positively associated with better governance. Compared to the pre-reform period, the quality of CEOs' successors after the SSS reform also indicates weaker corporate governance, which is consistent with the results on turnover-performance sensitivity.

5. Conclusion

Theoretical studies have widely debated the monitoring-liquidity tradeoff for large shareholders. When stock is easy to liquidate, large shareholders may prefer to sell their holdings rather than intervene in management. Empirical studies on this topic are

[11] Lin et al. (2011), for example, find that CEO educational level is positively related to the firm's innovation effort.

scarce, however, because of the reverse causality between stock liquidity and corporate governance. To address this endogeneity problem, we use a market-wide and exogenous event, namely, the SSS reform in China, to investigate this topic. This reform grants a right of liquidation to the originally non-tradable shares by converting them into tradable shares. Before the reform, non-tradable shares accounted for two-thirds of the total number of shares outstanding for most Chinese firms, and the ownership of these shares was highly concentrated among large shareholders. The reform exogenously changed the liquidity of these large block shares, providing us with a valuable opportunity to study the effect of improved liquidity on large shareholders' incentives to enforce corporate governance.

We compare the sensitivity of CEO turnover to firm performance before and after the SSS reform. As the identification and termination of a poorly performing CEO provide clear evidence of the implementation and enforcement of corporate governance, a change in CEO turnover-performance sensitivity indicates a change in the enforcement of corporate governance. We find that CEO turnover becomes *less* sensitive to performance after large block shareholders obtain the right of liquidation in the secondary market. In addition, the dampening effect is particularly pronounced for firms with a lower blockholding and for firms with more dispersed blockholdings. We further provide robustness tests and additional evidence to rule out alternative explanations.

In summary, the SSS reform grants large shareholders a chance to "unload the burden and run" rather than fix the likely complicated management problems in poorly performing firms. Improved stock liquidity may discourage internal governance, as large shareholders may opt out because of the lower cost of stock liquidation. Our findings support the predictions of Aghion et al. (2004), who argue

that to provide shareholders with optimal incentives to monitor, the monitor's right to sell her claims on the firm's cash flow must be restricted.

References

Admati, A.R. and P. Pfleiderer (2009), 'The "Wall Street Walk" and Shareholder Activism: Exit as a Form of Voice', Review of Financial Studies, Vol.22, pp.2445-2485.

Admati, A.R., P. Pfleiderer and J. Zechner (1994), 'Large Shareholder Activism, Risk Sharing, and Financial Market Equilibrium', Journal of Political Economy, Vol.102, pp.1097−1130.

Aghion, P., P. Bolton and J. Tirole (2004), 'Exit Options in Corporate Finance: Liquidity versus Incentives', Review of Finance, Vol.8, pp.327-353.

Ai, C. and E.C. Norton (2003), 'Interaction Terms in Logit and Probit Models', *Economics Letter*, Vol.80, pp.123-129.

Back. K., T. Li and A. Ljungqvist (2014), 'Liquidity and Governance', NBER working paper #19669.

Bai, C., Q. Liu, J. Lu, F. Song and J. Zhang (2004), 'Corporate Governance and Market Valuation in China, Journal of Comparative Economics, Vol.32, pp.599-616.

Bennedsen, M. and D. Wolfenzon (2000), 'The Balance of Power in Closely Held Corporations, Journal of Financial Economics, Vol.58, pp.113-139.

Bharath, S.T., S. Jayaraman and V. Nagar (2013), Exit as Governance: An Empirical Analysis, Journal of Finance, Vol.68, pp.2515-2547.

Bhide, A. (1993), 'The Hidden Costs of Stock Market Liquidity', Journal of Financial Economics, Vol.34, pp.31-51.

Bloch, F. and U. Hege (2001), 'Multiple Shareholders and Control Contests', Working paper (Aix-Marseille University).

Bolton, P. and E.L. von Thadden (1998), 'Blocks, Liquidity and Corporate Control', Journal of Finance, Vol.53, pp.1-15.

Buis, M.L. (2010), 'Interpretation of Interactions in Nonlinear Models', The Stata Journal, Vol.10, pp.305-308.

Campello, M., R.P. Ribas and A. Wang (2014), Is the Stock Market Just a Side Show? Evidence from a Structural Reform", Review of Financial Studies, Vol.3, pp.1-38.

Chang, E.C. and S.M.L. Wong (2009), 'Governance with Multiple Objectives: Evidence from Top Executive Turnover in China', Journal of Corporate Finance, Vol.15, pp.230-244.

Chen, S., B. Lin, R. Lu and T. Zhang (2015), 'Controlling Shareholders' Incentives and Executive Pay-for-Performance Sensitivity: Evidence from the Split Share Structure Reform in China', Journal of International Financial Markets, Institutions & Money, Vol.34, pp.147-160.

Chen, S., Z. Sun and Y. Wang (2002), 'Evidence from China on Whether Harmonized Accounting Standards Harmonize Accounting Practices', Accounting Horizons, Vol.16, pp.183-197.

Claessens, S. and J.P.H. Fan (2002), 'Corporate Governance in Asia', International Review of Finance, Vol.3, pp.71-103.

Cornelli, F., Z. Kominek and A. Ljungqvist (2013), 'Monitoring Managers: Does It Matter?', Journal of Finance, Vol.68, pp.431-481.

Defond, M.L and M. Hung (2004) 'Investor Protection and Corporate Governance: Evidence from Worldwide CEO Turnover', Journal of Accounting Research, Vol.42, pp.269-312.

Demougin, D. and C. Fluet (2001), 'Monitoring versus Incentives', European Economic Review, Vol.45, pp.1741-1764.

Dyke, A. and L. Zingales (2004), 'Private Benefits of Control: An International Comparison', Journal of Finance, Vol.59, pp.537-600.

Edmans, A. (2009), 'Blockholder Trading, Market Efficiency, and Managerial Myopia', Journal of Finance, Vol.64, pp.2481-2513.

Edmans, A. (2014), 'Blockholders and Corporate governance', Annual Review of Financial Economics, Vol.6, pp.23-50.

Edmans, A. and G. Manso (2011), 'Governance through Trading and Intervention: A Theory of Multiple Blockholders' Review of Financial Studies, Vol.24, pp.2395-2428.

Faure-Grimaud, A. and D. Gromb (2004), 'Public Trading and Private Incentives', Review of Financial Studies, Vol.17, pp.985-1014.

Firth, M., P.M.Y. Fung and O.M. Rui (2006), 'Firm Performance, Governance Structure, and Top Management Turnover on a Transitional Economy', Journal of Management Studies, Vol.43, pp.1289-1330.

Firth, M., P.M.Y. Fung and O.M. Rui (2007), 'How Ownership and Corporate Governance Influence Chief Executive Pay in China's Listed Firms', Journal of Business Research, Vol.60, pp.776-785.

Gao, L., Kling, G., 2008. Corporate governance and tunneling: Empirical evidence from China. Pacific-Basin Finance Journal 16, 591-605.

Gibson, M.S. (2003), 'Is Corporate Governance Ineffective in Emerging Markets?', Journal of Financial & Quantitative Analysis, Vol.38, pp.231-250.

Grossman, S.J. and O.D. Hart (1980), 'Takeover Bids, the Free-Rider Problem and the Theory of the Corporation', Bell Journal of Economics, Vol.11, pp.42−64.

Heckman, J. (1979), 'Sample Selection Bias as a Specification Error', Econometrica, Vol.47, pp.153–161.

Hirschman, A.O. (1970), 'Exit, Voice, and Loyalty; Responses to Decline in Firms, Organizations, and States', Harvard University Press, Cambridge, Massachusetts.

Hou, Q., Q.Jin and L. Wang (2014), 'Mandatory IFRS Adoption And Executive Compensation: Evidence From China', China Journal of Accounting Research, Vol.7, pp.9-29.

Huddart, S. (1993), 'The Effect of a Large Shareholder on Corporate Value', Management Science, Vol.39, pp.1407−1421.

Huson, M.R., R. Parrino and L.T. Starks (2001), 'Internal Monitoring Mechanisms and CEO Turnover: A Long-Term Perspective', Journal of Finance, Vol.56, pp.2265-2297.

Jensen, M.C. and W.H. Meckling (1976), 'Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure', Journal of Financial Economics, Vol.3, pp.305-360.

Jensen, M.C. and R.S. Ruback (1983), 'The Market for Corporate Control: The Scientific Evidence', Journal of Financial Economics, Vol.11, pp.5−50.

Jiang, F. and K.A. Kim (2014), 'Corporate Governance in China: A Modern Perspective', Journal of Corporate Finance, forthcoming.

Kahn, C. and A. Winton (1998), 'Ownership Structure, Speculation, and Shareholder Intervention', Journal of Finance, Vol.53, pp.99-129.

Kato, T. and C. Long (2006), 'CEO Turnover, Firm Performance, and Enterprise Reform in China: Evidence from Micro Data', Journal of Comparative Economics, Vol.34, pp.796-817.

Kolasinski, A.C. and A.F. Siegel (2010), 'On the Economic Meaning of Interaction Term Coefficients in Non-linear Binary Response Regression Models', Working Paper (University of Washington).

Lee, C.W.J. and X. Xiao (2004), 'Tunneling Dividends', Working Paper (Tulane University and Tsinghua University).

Lee, E., M. Walker and C. Zeng (2013), 'Does IFRS Convergence Affect Financial Reporting Quality In China?', ACCA Research Report #131.

Li, J. and Y. Tang (2010), 'CEO Hubris and Firm Risk Taking in China: The Moderating Role of Managerial Discretion', Academy of Management Journal, Vol.53, pp.45-68.

Li, K., T. Wang, Y.L. Cheung and P. Jiang (2011), 'Privatization and Risk Sharing: Evidence from the Split Share Structure Reform in China', Review of Financial Studies, Vol.24, pp.2499-2525.

Liao, L., B. Liu and H. Wang (2014), 'China's Secondary Privatization: Perspectives From the Split-Share Structure Reform', Journal of Financial Economics, Vol.113, pp.500-518.

Lin, C., P. Lin, F.M. Song and C. Li (2011), 'Managerial Incentives, CEO Characteristics and Corporate Innovation in China's Private Sector', Journal of Comparative Economics, Vol.39, pp.176-190.

Liu, Q. and Z. Lu (2007), 'Corporate Governance and Earnings Management in the Chinese Listed Companies: A Tunneling Perspective', Journal of Corporate Finance, Vol.13, pp.881-906.

Liu, Q. and G. Tian (2012), 'Controlling Shareholder, Expropriations and Firm's Leverage Decision: Evidence from Chinese Non-Tradable Share Reform', Journal of Corporate Finance, Vol.18, pp.782-803.

Liu, C., L.J. Yao, N. Hu and L. Liu (2011), 'The Impact of IFRS on Accounting Quality in a Regulated Market: An Empirical Study of China', Journal of Accounting, Auditing & Finance, Vol.26, pp.659-676.

Maug, E. (1998), 'Large Shareholders as Monitors: Is There a Trade-Off between Liquidity and Control?', Journal of Finance, Vol.53, pp.65-98.

Maug, E. (2002), 'Insider Trading Legislation and Corporate Governance', European Economic Review, Vol.46, pp.1569-1597.

Nenova, T. (2003), 'The Value of Corporate Voting Rights and Control: A Cross-Country Analysis', Journal of Financial Economics, Vol.68, pp.325-351.

Pagano, R. and A. Roell (1998), 'The Choice of Stock Ownership Structure: Agency Costs, Monitoring, and the Decision to Go Public', Quarterly Journal of Economics, Vol.113, pp.187-225.

Pi, L. and S.G. Timme (1993), 'Corporate Control and Bank Efficiency', Journal of Banking & Finance, Vol.17, pp.515-530.

Rechner, P.L. and D.R. Dalton (1991), 'CEO Duality and Organizational Performance: A Longitudinal Analysis', Strategic Management Journal, Vol.12, pp.155-160.

Shleifer, A. and R.W. Vishny (1986), 'Large Shareholders and Corporate Control', Journal of Political Economy, Vol.94, pp.461-488.

Xu, X. and Y. Wang (1999), 'Ownership Structure and Corporate Governance in Chinese Stock Companies', China Economic Review, Vol.10, pp.75-98.

Table 1 Sample selection of CEO turnovers

This table presents the sample selection for forced CEO turnovers of A-share non-financial firms in China for the period from 1999 to 2012.

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Turnover cases in a year	305	363	357	411	403	368	427	427	413	405	418	425	435	445	5602
Eliminations due to:															
(2) Retirement	17	15	8	6	16	9	14	15	15	11	16	16	19	24	201
(4) Change in control rights	36	33	7	0	11	5	1	7	6	1	1	2	8	1	119
(7) Health-related reasons	12	4	14	11	16	18	11	8	6	15	7	3	12	9	146
(9) Corporate governance improvement	39	44	19	4	12	6	2	5	4	0	1	9	8	26	179
(10) Litigation involved	4	4	1	1	1	2	1	6	2	0	1	2	0	0	25
Tenure of less than 1 year	20	26	24	36	36	37	30	30	27	30	30	26	27	16	395
Missing data	1	1	5	3	4	6	7	8	21	42	22	17	23	15	175
Final Sample	176	236	279	350	307	285	361	348	332	306	340	350	338	354	4362

Table 2 Summary statistics

This table presents summary statistics for variables in regressions. Summary statistics are the number of observations (N), mean, median, standard deviation (Std. Dev.), 25th percentile (25th Pctl), 75th percentile (75th Pctl) , minimum (Min.), and maximum (Max.). The sample comprises A-share non-financial firms in China for the period from 1999 to 2012. The definitions of the variables are provided in Appendix A. Superscripts ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	N	Mean	Median	Std. Dev.	Min.	25th Pctl	75th Pctl	Max.
ROA	15854	0.047	0.043	0.085	-0.251	0.011	0.084	0.349
IROA	15854	0.005	0.001	0.083	-0.288	-0.028	0.040	0.300
Size	15854	21.381	21.239	1.128	18.938	20.621	22.013	24.899
Debt	15854	0.500	0.493	0.228	0.070	0.348	0.630	1.536
Q	15854	2.433	1.924	1.640	0.880	1.373	2.880	10.528
Cash	15854	0.158	0.130	0.117	0.004	0.074	0.211	0.570
Board	15854	9.361	9.000	2.078	3.000	9.000	11.000	19.000
Dual	15854	0.147	0.000	0.354	0.000	0.000	0.000	1.000
Indep	15854	0.310	0.333	0.123	0.000	0.333	0.364	0.727
CEOshr	15854	0.011	0.000	0.051	0.000	0.000	0.000	0.348
Tenure	15854	2.869	2.000	1.985	0.000	2.000	3.000	19.000
Age	15854	50.718	51.000	7.389	27.000	45.000	56.000	85.000

Table 3 Sensitivity of CEO turnover to firm performance

This table reports the results of a logistic regression on CEO turnover as the dependent variable. Firm performance is measured by ROA or IROA. Ref is a dummy variable that equals one in years when the firm has completed the SSS reform. Ref equals 1, starting from year t+1 for firms completing the reform in year t. The sample comprises A-share non-financial firms in China for the period from 1999 to 2012. All other controls are defined in Appendix A. Industry fixed effects are based on the first digit of the CSRC industry code. The t-values in parentheses are based on standard errors adjusted for heteroscedasticity and firm clustering. Superscripts ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1) Model1	(2) Model2	(3) Model3	(4) Model4
ROA ×Ref		1.243**		
		(2.34)		
IROA ×Ref				1.156**
				(2.16)
ROA	-2.923***	-3.501***		
	(-9.46)	(-8.88)		
IROA			-2.918***	-3.451***
			(-9.49)	(-8.70)
Ref		-0.457***		-0.415***
		(-3.24)		(-2.96)
Q	0.064***	0.059***	0.063***	0.058***
	(3.85)	(3.54)	(3.77)	(3.48)
Cash	-0.153	-0.141	-0.158	-0.147
	(-0.69)	(-0.65)	(-0.72)	(-0.67)
Size	-0.039	-0.041	-0.041	-0.044
	(-1.37)	(-1.46)	(-1.47)	(-1.54)
Debt	0.250**	0.229**	0.253**	0.231**
	(2.24)	(2.04)	(2.27)	(2.07)
Board	-0.019*	-0.018*	-0.019*	-0.018*
	(-1.76)	(-1.71)	(-1.74)	(-1.69)
Dual	-0.472***	-0.478***	-0.472***	-0.478***
	(-7.26)	(-7.36)	(-7.26)	(-7.35)
Indep	1.450***	1.484***	1.442***	1.474***
	(4.13)	(4.23)	(4.10)	(4.20)
CEOShr	-1.447**	-1.492***	-1.435**	-1.475***
	(-2.57)	(-2.63)	(-2.55)	(-2.60)
Tenure	0.423***	0.422***	0.423***	0.422***
	(28.12)	(28.10)	(28.13)	(28.12)
Age	-0.034***	-0.034***	-0.034***	-0.034***
	(-10.08)	(-10.08)	(-10.09)	(-10.08)
Intercept	0.780	0.893	0.656	0.712
	(1.29)	(1.46)	(1.07)	(1.16)
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
N	15854	15854	15854	15854
Chi-Square	1293.553	1321.568	1298.257	1325.886
Prob > chi2	0.000	0.000	0.000	0.000
Pseudo_R2	0.118	0.119	0.118	0.119

Table 4 Large shareholders' holding and CEO turnover-performance sensitivity

This table reports the results of a logistic regression on CEO turnover as the dependent variable. Firm performance is measured by IROA. Ref is a dummy variable that equals one in years when the firm has completed the SSS reform. Ref equals 1 starting from year t+1 for firms completing the reform in year t. The sample comprises A-share non-financial firms in China for the period from 1999 to 2012. Top1 is the top 1 shareholder's holding as percentage of the total number of shares outstanding. Top 10 is the sum of top-10 shareholders' holding as percentage of the total number of shares outstanding. Hldg5 is the sum of the holding of shareholders who are each among the top-10 shareholders and holds more than 5% of the total number of shares outstanding. The large shareholder ownership is measured on the CSMAR report date that is closest to but before the reform date for each firm. All other controls are defined in Appendix A. Industry fixed effects are based on the first digit of the CSRC industry code. The t-values in parentheses are based on standard errors adjusted for heteroscedasticity and firm clustering. Superscripts ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1) Low Top1	(2) High Top1	(3) Low Top10	(4) High Top10	(5) Low Hldg5	(6) High Hldg5
IROA ×Ref	2.077***	0.245	2.153***	0.780	2.068**	0.878
	(2.72)	(0.25)	(2.62)	(0.88)	(2.56)	(0.99)
IROA	-3.654***	-3.637***	-3.741***	-3.821***	-3.813***	-3.825***
	(-6.64)	(-5.16)	(-6.54)	(-5.70)	(-6.50)	(-5.87)
Ref	-0.617***	-0.110	-0.560**	-0.227	-0.698***	-0.140
	(-3.11)	(-0.52)	(-2.39)	(-1.20)	(-3.06)	(-0.72)
Q	0.044*	0.083***	0.045	0.079***	0.033	0.092***
	(1.75)	(2.72)	(1.56)	(3.11)	(1.19)	(3.54)
Cash	-0.210	0.130	0.179	-0.307	0.477	-0.576*
	(-0.62)	(0.35)	(0.52)	(-0.84)	(1.31)	(-1.68)
Size	-0.124**	-0.008	-0.139***	-0.006	-0.142***	-0.009
	(-2.48)	(-0.20)	(-2.95)	(-0.13)	(-3.03)	(-0.22)
Debt	0.187	0.453**	0.266	0.305	0.266	0.315*
	(1.18)	(2.29)	(1.60)	(1.62)	(1.55)	(1.68)
Board	-0.045***	0.006	-0.028*	-0.002	-0.034**	-0.000
	(-2.83)	(0.38)	(-1.85)	(-0.14)	(-2.22)	(-0.02)
Dual	-0.468***	-0.509***	-0.463***	-0.509***	-0.396***	-0.574***
	(-5.07)	(-4.38)	(-4.62)	(-4.97)	(-3.99)	(-5.39)
Indep	1.461***	2.214***	1.299**	2.539***	1.373**	2.481***
	(2.68)	(4.20)	(2.41)	(4.64)	(2.50)	(4.66)
CEOShr	-2.153	-0.960	0.243	-1.913	-1.850	-1.307
	(-1.29)	(-0.83)	(0.10)	(-1.47)	(-1.16)	(-0.81)
Tenure	0.433***	0.487***	0.449***	0.472***	0.477***	0.445***
	(19.06)	(19.94)	(19.29)	(20.10)	(19.78)	(19.71)
Age	-0.034***	-0.031***	-0.031***	-0.035***	-0.033***	-0.033***
	(-6.96)	(-5.70)	(-6.28)	(-6.53)	(-6.53)	(-6.21)
Intercept	2.575**	-1.013	2.486**	-0.644	2.527**	-0.509
	(2.38)	(-1.14)	(2.38)	(-0.73)	(2.46)	(-0.59)
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
N	6982	6977	6975	6984	6980	6992
Chi-square	722.912	584.044	664.570	654.065	698.333	651.004
Prob>chi2	0.000	0.000	0.000	0.000	0.000	0.000
Pseudo_R2	0.128	0.135	0.125	0.139	0.134	0.130

Table 5 Large shareholders' ownership dispersion and CEO turnover-performance sensitivity

This table reports the results of a logistic regression on CEO turnover as the dependent variable. Firm performance is measured by IROA. Ref is a dummy variable that equals one in years when the firm has completed the SSS reform. Ref equals 1 starting from year t+1 for firms completing the reform in year t. The sample comprises A-share non-financial firms in China for the period from 1999 to 2012. HI10 is the Herfindahl Index of percentage shareholdings among the top-10 shareholders. Top(2-10) is sum of the top-2 to top-10 shareholders' holding as percentage of the total number of shares outstanding. R(1/2) is the ratio of top 1 shareholder's share over top-2 shareholder's share. The large shareholder ownership is measured on the CSMAR report date that is closest to but before the reform date for each firm. All other controls are defined in Appendix A. Industry fixed effects are based on the first digit of the CSRC industry code. The t-values in parentheses are based on standard errors adjusted for heteroscedasticity and firm clustering. Superscripts ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1) Low HI10	(2) High HI10	(3) Low Top(2-10)	(4) High Top(2-10)	(5) Low R(1/2)	(6) High R(1/2)
IROA ×Ref	2.058***	0.236	0.214	1.974***	2.096***	0.082
	(2.71)	(0.25)	(0.22)	(2.64)	(2.81)	(0.08)
IROA	-3.651***	-3.650***	-3.970***	-3.455***	-3.679***	-3.722***
	(-6.77)	(-5.06)	(-5.62)	(-6.31)	(-6.66)	(-5.32)
Ref	-0.640***	-0.102	-0.125	-0.567***	-0.483**	-0.260
	(-3.19)	(-0.48)	(-0.53)	(-3.08)	(-2.47)	(-1.17)
Q	0.038	0.087***	0.095***	0.040*	0.043*	0.095***
	(1.56)	(2.91)	(3.10)	(1.68)	(1.79)	(3.14)
Cash	0.030	-0.123	0.303	-0.339	-0.450	0.442
	(0.09)	(-0.34)	(0.84)	(-0.98)	(-1.31)	(1.20)
Size	-0.128***	-0.003	0.006	-0.096**	-0.094**	0.003
	(-2.69)	(-0.07)	(0.14)	(-2.15)	(-2.01)	(0.07)
Debt	0.226	0.390*	0.197	0.328**	0.293*	0.222
	(1.43)	(1.91)	(0.97)	(2.09)	(1.84)	(1.12)
Board	-0.036**	-0.001	-0.029*	-0.015	-0.016	-0.026*
	(-2.38)	(-0.08)	(-1.82)	(-0.92)	(-0.96)	(-1.69)
Dual	-0.450***	-0.548***	-0.495***	-0.461***	-0.448***	-0.502***
	(-4.88)	(-4.70)	(-4.32)	(-4.86)	(-4.91)	(-4.23)
Indep	1.730***	1.968***	1.870***	1.815***	1.585***	2.233***
	(3.19)	(3.70)	(3.36)	(3.50)	(3.05)	(4.00)
CEOShr	-2.123	-0.971	-0.522	-1.787	-1.679	-1.750
	(-1.22)	(-0.78)	(-0.09)	(-1.54)	(-1.16)	(-1.23)
Tenure	0.436***	0.483***	0.486***	0.434***	0.437***	0.482***
	(19.18)	(19.75)	(18.83)	(20.08)	(20.07)	(18.85)
Age	-0.033***	-0.031***	-0.035***	-0.030***	-0.029***	-0.037***
	(-6.66)	(-5.86)	(-6.31)	(-6.24)	(-6.00)	(-6.67)
Intercept	2.562**	-1.027	-0.547	1.353	1.155	-0.293
	(2.49)	(-1.12)	(-0.59)	(1.38)	(1.12)	(-0.32)
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
N	6980	6979	6979	6980	6983	6976
Chi-square	729.528	580.864	552.029	682.007	691.873	555.613
Prob>chi2	0.000	0.000	0.000	0.000	0.000	0.000
Pseudo_R2	0.127	0.135	0.136	0.125	0.125	0.136

Table 6 Robustness tests

This table reports the results of a logistic regression on CEO turnover as the dependent variable. Firm performance is measured by IROA. Ref is a dummy variable that equals one in years when the firm has completed the SSS reform. Ref equals 1 starting from year t+1 for firms completing the reform in year t. The sample comprises A-share non-financial firms in China for the period from 1999 to 2012. All other controls are defined in Appendix A. Industry fixed effects are based on the first digit of the CSRC industry code. The t-values in parentheses are based on standard errors adjusted for heteroscedasticity and firm clustering. Superscripts ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. In column (1), we delete firms in the pilot batches and firms that finish SSS reform after the end of year 2006. In column (2), we delete firms that IPO after 2005. In column (3), we delete firms with missing reform date. In column (4) we run the regression in years 1999-2004. In column (5), we run the regression in years 2008-2012. Y02 and Y10 are dummy variables that equal 1 for observations after the year 2002 and 2010, respectively.

	(1) Timing	(2) IPO2005	(3) MisRefD	(4) PlY02	(5) PlY10
IROA×Ref	1.217**	1.129**	1.333**		
	(2.04)	(2.03)	(2.25)		
IROA×Y02				-0.171	
				(-0.18)	
IROA×Y10					0.398
					(0.53)
IROA	-3.496***	-3.449***	-3.707***	-3.847***	-2.297***
	(-7.90)	(-8.55)	(-8.55)	(-4.92)	(-4.02)
Ref	-0.233	-0.430***	-0.394***		
	(-1.12)	(-3.00)	(-2.68)		
Q	0.071***	0.062***	0.064***	0.081**	0.059***
	(3.55)	(3.45)	(3.45)	(2.58)	(2.77)
Cash	-0.071	-0.079	-0.034	-0.234	-0.072
	(-0.30)	(-0.33)	(-0.13)	(-0.63)	(-0.24)
Size	-0.025	-0.053*	-0.061*	-0.067	-0.004
	(-0.80)	(-1.72)	(-1.93)	(-1.18)	(-0.12)
Debt	0.229*	0.251**	0.303**	0.239	0.333**
	(1.80)	(2.15)	(2.45)	(1.28)	(2.09)
Board	-0.018	-0.014	-0.019*	-0.014	-0.038*
	(-1.55)	(-1.30)	(-1.69)	(-0.92)	(-1.94)
Dual	-0.489***	-0.445***	-0.475***	-0.741***	-0.406***
	(-6.91)	(-6.41)	(-6.60)	(-6.47)	(-4.21)
Indep	1.463***	1.708***	1.859***	2.004***	0.496
	(3.85)	(4.62)	(4.90)	(4.07)	(0.80)
CEOShr	-1.551**	-1.592	-1.576	-187.094	-1.519***
	(-2.56)	(-1.28)	(-1.27)	(-0.66)	(-2.75)
Tenure	0.433***	0.450***	0.456***	0.510***	0.338***
	(26.25)	(27.84)	(27.57)	(18.16)	(20.48)
Age	-0.037***	-0.033***	-0.032***	-0.021***	-0.051***
	(-10.05)	(-9.44)	(-8.95)	(-4.09)	(-9.81)
Y02				-1.194***	
				(-5.74)	
Y10					-1.018***
					(-8.29)
Intercept	0.449	0.722	0.710	0.192	0.297
	(0.67)	(1.09)	(1.04)	(0.16)	(0.37)
Industry FE	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES
N	13742	14457	13972	4984	7300
Chi-square	1124.889	1243.921	1208.257	519.155	610.461
Prob>chi2	0.000	0.000	0.000	0.000	0.000
Pseudo_R2	0.122	0.125	0.128	0.103	0.106

Table 7 Performance after the CEO turnover using Heckman selection model

This table reports the regression of change in benchmark-adjusted IROA (adjIROA) after CEO turnover on pre-turnover IROA. AdjIROA is IROA minus the corresponding ratio of the benchmark firm. The benchmark firm is matched with the turnover firm in the pre-turnover year using IROA, industry and firm size. We use the pre-turnover year as the reference year to test the difference in performance in the first (Year 1) to the third year (Year 3) after turnover. We mark the change of adjIROA from the pre-turnover year to the first year, second year, and third year after turnover as ΔadjIROA(Y1), ΔadjIROA(Y2), and ΔadjIROA(Y3) and then fit the three variables as the dependent variables in model (1) to model (3), respectively. Because the sample of turnover firms is not randomly selected, we use a Heckman (1979) two-stage model to correct for the selection bias. The first-stage model uses model (4) of Table 3 and is not reported to save space. This table reports the second-stage regression. The sample comprises A-share non-financial firms in China for 1999 to 2012. Superscripts ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)
Dep.Var.	ΔadjIROA(Y1)	ΔadjIROA(Y2)	ΔadjIROA(Y3)
IROA	-0.131***	-0.197***	-0.073***
	(-5.53)	(-8.15)	(-3.08)
Q	0.002	0.003**	0.002
	(1.20)	(2.07)	(1.43)
Cash	0.098***	0.045***	0.040**
	(5.91)	(2.68)	(2.41)
Size	0.001	0.004*	0.002
	(0.68)	(1.84)	(0.92)
Debt	-0.036***	-0.022***	-0.023***
	(-4.33)	(-2.65)	(-2.74)
Constant	-0.017	-0.070	-0.024
	(-0.37)	(-1.55)	(-0.55)
Mills Lambda	-0.008*	-0.005	-0.004
	(-1.79)	(-1.03)	(-0.76)
Rho	-0.078	-0.045	-0.033
Sigma	0.109	0.111	0.109

Table 8 Successors of CEO turnover before and after SSS reform

This table reports the average of the characteristics of the successor of CEO turnover before and after SSS reform. The sample comprises A-share non-financial firms in China for 1999 to 2012. Duality is a dummy variable that equals 1 if the successor is both General Manager and Board Chairman, and 0 otherwise. Internal is a dummy variable that equals 1 if the successor is from internal, and 0 otherwise. Degree/Pro.Cert. is a dummy variable that equals 1 if the successor either holds a Bachelor Degree or above or has a professional certificate, and 0 otherwise. Superscripts ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Duality	(1) After Reform	0.145
	(2) Before Reform	0.096
	Difference (1-2)	**0.049*** **
	t-statistics of Difference	4.853
	p-value of Difference	0.000
Internal	(1) After Reform	0.646
	(2) Before Reform	0.552
	Difference (1-2)	**0.094*** **
	t-statistics of Difference	6.278
	p-value of Difference	0.000
Degree/Pro.Cert.	(1) After Reform	0.778
	(2) Before Reform	0.845
	Difference (1-2)	**-0.067*** **
	t-statistics of Difference	-4.502
	p-value of Difference	0.000

Appendix A. Variables descriptions and correlations

Table A.1 This table presents the definitions of variables in the regression.

Variable	Definition
ROA	the ratio of year-end operating income to the total assets
IROA	ROA minus the industry median
Ref	a dummy variable that equals one in years when the firm has completed the SSS reform (i.e., *Ref* equals 1 starting from year t+1 for firms completing the reform in year t)
Q	the ratio of the market value of assets over the book value of assets
Cash	Cash or cash equivalent, scaled by total assets
Board	the number of directors on a firm's board
Dual	a dummy variable that equals one if the CEO holds positions as both board chairman and general manager, and zero otherwise
Indep	the proportion of independent directors to the total number of directors
CEOshr	the proportion of shares owned by the CEO to the total number of shares outstanding
Age	the age of the CEO
Tenure	the number of years that the CEO has served in the firm
Size	the natural logarithm of firm's total assets
Debt	total liabilities divided by total assets

Table A.2 This table presents the correlations of variables in the regressions.

	IROA	ROA	Size	Debt	Q	Cash	Board	Dual	Indep	CEOShr	Tenure
ROA	0.979***										
Size	0.218***	0.227***									
Debt	-0.422***	-0.435***	0.112***								
Q	0.069***	0.105***	-0.444***	-0.042***							
Cash	0.297***	0.291***	-0.015	-0.330***	0.113***						
Board	0.054***	0.058***	0.218***	-0.007	-0.107***	-0.027***					
Dual	-0.015	-0.012	-0.097***	-0.029***	0.065***	0.045***	-0.098***				
Indep	0.035***	-0.037***	0.223***	0.106***	-0.150***	0.112***	-0.138***	0.004			
CEOShr	0.105***	0.010***	-0.055***	-0.118***	0.080***	0.162***	-0.098***	0.133***	0.117***		
Tenure	0.015	0.024**	0.121***	-0.011	-0.057***	0.039***	-0.012	0.007	0.115***	0.072***	
Age	0.085***	0.096***	0.199***	-0.058***	-0.072***	0.011	0.084***	-0.062***	-0.016*	-0.002	0.155***