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# Firm Profitability, State Ownership, and Top Management Turnover at the Listed Firms in China: A Behavioral Perspective

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**ABSTRACT**

**Manuscript Type:** Empirical
**Research Question/Issue:** We attempt to clarify the relationships between firm profitability, state ownership, and top management turnover at partially privatized firms by applying the behavioral theory of organizational search, which proposes that firms focus on target in performance evaluation.
**Research Findings/Results:** Using data from a large sample of the listed firms in China from 1999 to 2002, we find that firm profitability and state ownership are negatively related to top management turnover only when firm profitability is below target (measured by industry median). We also find that top management turnover has a positive impact on subsequent firm profitability when it occurs under performance below target, but has a negative impact when it occurs under performance above target. Lastly, we find that top management turnover under performance below target has a positive impact on subsequent firm profitability when the state is not the largest shareholder, but has no impact when the state is the largest shareholder.
**Theoretical Implications:** Our study provides strong support for the argument that state ownership weakens corporate governance quality in partial privatization. It also demonstrates the contribution of the behavioral theory of organizational search to the study of top management turnover in emerging economies where it is difficult to identify forced turnover.
**Practical Implications:** To further improve the economic performance of partially privatized firms, states should continue to dilute their ownership. In addition, firms should carefully manage top management turnover when performance is above target.

**Keywords: Corporate Governance, Behavioral Theory, Government Ownership, Ownership Issues, CEOs, Financial Performance, Business Outcomes, China, Privatization**

## INTRODUCTION

Many countries, especially the emerging economies in Asia, Eastern Europe, and South America, have started to privatize state-owned enterprises (SOEs) since the 1980s. Empirical research consistently shows that privatization, including partial privatization, has a positive impact on firm profitability (Megginson and Netter, 2001). Recent studies also find that state ownership has a negative impact on firm performance at partially privatized firms in China and India (Sun and Tong, 2003; Gupta, 2005; Liu and Sun, 2005; Wei, Xie and Zhang, 2005). One explanation for these findings is that privatization improves corporate governance quality in that private owners make managers more accountable for firm profitability than government bureaucrats (Shleifer and Vishny, 1997).

In contrast to the numerous studies of the performance impact of privatization, little research directly investigates whether state ownership actually weakens the relationship between firm profitability and the turnover of top managers (namely, CEOs and/or board chairs) in emerging economies. Only recently have some researchers examined this issue using data from the listed firms in China (Firth, Fung and Rui, 2006; Kato and Long, 2006a; 2006b). Because of the difficulty in identifying forced turnover attributable to corporate governance in emerging economies (Gibson, 2003),

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these authors generally include all top management turnovers in the analysis. Overall, they find that firm profitability is negatively related to top management turnover, suggesting that top managers are held accountable for firm profitability. However, there is no convincing evidence that state ownership weakens the negative relationship between firm profitability and top management turnover. This finding raises the question of whether state ownership in China truly weakens corporate governance quality by making managers less accountable for firm profitability. Further, there is no strong evidence that top management turnover has a positive impact on subsequent firm profitability, raising questions about the effectiveness of corporate governance at the listed firms in China.

Our study attempts to clarify the relationships between firm profitability, state ownership, and top management turnover by taking the behavioral theory of organizational search developed by March and colleagues (March and Simon, 1958; Cyert and March, 1963). The behavioral theory of organizational search proposes that firms focus on target in performance evaluation. When performance meets target, firms regard it as satisfactory. In this situation, firms tend to maintain current routines and have limited motivation to search for alternatives. When performance misses the target, firms regard it as unsatisfactory. In this situation, firms actively search for alternatives to enhance their prospect of returning performance above target. This behavioral theory of organizational search has received empirical support from research on organizational change (Greve, 1998), strategic alliances (Baum, Rowley, Shipilov and Chuang, 2005), and R&D intensity (Greve, 2003a; Chen and Miller, 2007).

Applying the behavioral theory of organizational search to corporate governance, we propose that owners of firms seek to discipline top managers only when performance drops below target. When performance is above target, top management turnover should not be considered as an outcome of corporate governance, because owners of firms are satisfied with performance and thus have no incentive to replace top managers. This proposition suggests that to understand the relationships between firm profitability, state ownership, and top management turnover following partial privatization, it is important to separate top management turnovers occurring at firms where profitability is below target from those occurring at firms where profitability is above target.

We test the above proposition using data from the listed firms in China from 1999 to 2002. We measure firm profitability with both returns on assets (ROA) and earnings per share (EPS). Following recent research on the behavioral theory of organizational search (Greve, 2003b; Baum *et al.*, 2005; Chen and Miller, 2007), we use industry median profitability as the proxy of performance target. We find that firm profitability and state ownership are negatively related to top management turnover when firm profitability is below the industry median, but not when profitability is above the industry median. We also find that top management turnover under unsatisfactory performance (i.e., below industry median) has a positive impact on subsequent firm profitability only when the state is not the largest shareholder of the firm. Lastly, we find that top management turnover under satisfactory performance (i.e., above industry median) has a negative impact on subsequent firm profitability.

Our study contributes to the literature on corporate governance in emerging economies in two important ways. First, it clarifies the role of state ownership in the relationship between firm profitability and top management turnover, and provides convincing evidence that state ownership weakens corporate governance quality by making top managers less accountable for firm profitability at the listed firms in China. Second, it demonstrates that the behavioral theory of organizational search can be very useful to the study of top management turnover in emerging economies, where it is often difficult to identify the true reasons behind top management turnover because of the lack of relevant information. Our study also contributes to research on the behavioral theory of organizational search by extending it to the study of corporate governance and top management turnover.

## THEORY AND HYPOTHESES

### Privatization, Corporate Governance and Top Management Turnover

Empirical studies of privatization consistently show that state ownership is associated with lower firm financial performance than is private ownership in both developed and emerging economies (Megginson and Netter, 2001). Recent studies about partial privatization in China and India also show that state ownership has a negative impact on financial performance at partially privatized firms (Sun and Tong, 2003; Gupta, 2005; Liu and Sun, 2005; Wei *et al.*, 2005). One explanation for these findings focuses on the difference in corporate governance between representatives of state ownership (i.e., government bureaucrats) and private owners (Shleifer and Vishny, 1997). Although private owners pursue profit maximization, the main goal for government bureaucrats is to achieve their social and political objectives that are often different from profit maximization. Even if some government bureaucrats are interested in profit maximization, they tend to have a weak incentive to invest the time and effort required to monitor managerial performance. The reason is that the cost involved is much higher than the political payoff of modestly improving firm profitability. Thus, according to this perspective, the positive impact of privatization on firm profitability results from improvement in corporate governance quality, which refers to the degree to which managers are held accountable for firm profitability (Shleifer and Vishny, 1997). Private owners introduced by privatization make managers more accountable for firm profitability than do government bureaucrats.

One way to assess corporate governance quality directly is to examine the relationship between firm profitability and top management turnover. Because a main purpose of corporate governance is to ensure that shareholder interests are protected and low-performing managers are terminated, an important function of corporate governance is to identify and terminate low-quality managers (Weisbach, 1988; Gibson, 2003). Because firm performance is often considered as an indicator of the quality of top managers, prior research consistently finds that firm performance is negatively related to top management turnover (Finkelstein, Hambrick and Cannella, 2009). Moreover, because good corporate governance

also means replacing low-quality managers with high-quality successors, top management turnover because of corporate governance is expected, and has been found, to have a positive impact on subsequent firm performance (Denis and Denis, 1995; Huson, Malatesta and Parrino, 2004).

If the positive impact of privatization on firm profitability results from improvement in corporate governance quality, we should expect firm profitability to be negatively related to top management turnover after privatization, which in turn has a positive impact on subsequent firm profitability. Moreover, if privatization is partial and the state still pressure managers to pursue goals other than profit maximization, we should observe that state ownership weakens the relationship between firm profitability and top management turnover.

In contrast to the numerous studies of the performance impact of privatization, little research directly investigates whether top managers are held accountable for firm profitability after privatization, and whether state ownership in partial privatization weakens the relationship between firm profitability and top management turnover. Only recently have some researchers examined these issues using data from the listed firms in China (e.g., Firth *et al.*, 2006; Kato and Long, 2006a; 2006b).

## Partial Privatization and Top Management Turnover in China

Since the initiation of SOE reform in 1979, China has engaged in the transition to a market-oriented economy, with the intent of increasing enterprise autonomy and efficiency. In 1990 China first listed 10 former SOEs through share issue privatization (SIP). By the end of 2002, the number of listed firms in China's Shanghai Stock Exchange (SHSE) and Shenzhen Stock Exchange (SZSE) skyrocketed to 1224, with a total market capitalization of RMB 3.86 trillion (about US $470 billion), equivalent to nearly 37 per cent of China's GDP (Zhang, 2004). Most of the listed firms are partially privatized former SOEs. The state, represented by central and regional government agencies, retains about one-third of all the shares issued and is the largest shareholder in more than 40 per cent of the listed firms (Zhang, 2004). Overall, SIP in China improves SOEs' earnings ability, real sales, and worker productivity (Sun and Tong, 2003). There is also evidence that state ownership at the listed firms have a negative impact on firm performance (Sun and Tong, 2003; Liu and Sun, 2005; Wei *et al.*, 2005). These findings are consistent with studies on the performance impact of privatization in other countries (Megginson and Netter, 2001; Gupta, 2005).

Recent studies also find that firm profitability is negatively related to top management turnover at the listed firms in China (Firth *et al.*, 2006; Kato and Long, 2006a). However, there is no convincing evidence that state ownership weakens this relationship. Although Kato and Long (2006a) report that the negative relationship between firm profitability and top management turnover is weaker for firms still controlled by the state, Firth *et al.* (2006) find that state ownership and its interaction with firm profitability are not significantly related to top management turnover. Nor is there strong evidence that top management turnover has a positive impact on subsequent firm profitability. Kato and Long (2006b) find only weak evidence that top management turnover leads to an increase in firm ROA. Firth *et al.* (2006) find no evidence that firm profitability improves following top management turnover. These findings raise the question of whether privatization truly improves the quality and effectiveness of corporate governance in the world's largest emerging economy, China.

Two related issues may help explain the lack of strong support for the argument that privatization improves corporate governance quality and effectiveness in China. One is the difficulty in identifying top management turnover attributable to corporate governance. Prior research stresses the importance of separating forced turnover from voluntary turnover in studying the relationship between firm profitability and top management turnover because only forced turnover reflects the quality of corporate governance (Huson *et al.*, 2004). However, it is often difficult to identify forced top management turnover in emerging economies because of the lack of information (Gibson, 2003). In China, the task is even more challenging because of several factors. The first is the high rate of top management turnover, which is about 24 per cent for CEOs (Kato and Long, 2006a) and 40 per cent for board chairs (Firth *et al.*, 2006). The second is the relative young age of top managers when they step down, which is about 50 years old for CEOs and 51 years old for board chairs (Firth *et al.*, 2006; Kato and Long, 2006a). Unlike in developed economies, such as the US, where CEOs normally retire after stepping down,[1] serving as the CEO or board chair of a listed firm is usually not the final stage of one's career in China. Instead, many top managers aspire to obtain a higher position in the government or in the controlling shareholder firm or agency after stepping down from office (Tenev and Zhang, 2002).

Lastly, there is lack of transparency about the true reasons for top management turnover in China because of a strong cultural emphasis on harmony and saving face in interpersonal and social relationships (Firth *et al.*, 2006). In studying CEO turnovers at US companies, researchers can usually rely on the age of the outgoing CEOs and news reports to separate forced turnover from ordinary retirement (Shen and Cannella, 2002; Huson *et al.*, 2004). However, because of the factors pointed out above, it is extremely difficult to identify forced top management turnover in China. Although Firth *et al.* (2006) take great effort trying to separate forced and normal turnover on the basis of the reasons given by the firms, their results show that firm performance has a negative impact on both forced and normal turnover, suggesting that what they classified as normal turnover is not all "normal"[2] Because of the difficulty in identifying forced turnover, Firth *et al.* (2006) and Kato and Long (2006a; 2006b) include all turnover in their analysis of the relationships between firm profitability, state ownership, and top management turnover.

The other issue is directed at the assessment of firm performance. Conceptually, it is poor firm performance that triggers forced top management turnover attributable to corporate governance (Weisbach, 1988). Empirically, prior research focuses on the main effect of firm profitability on

top management turnover and the moderating effects of corporate governance mechanisms, such as ownership structure and the board of directors on the sensitivity of top management turnover to firm profitability (Finkelstein *et al.*, 2009). The underlying assumption is that firm profitability has a constant negative impact on top management turnover when corporate governance is effective. In other words, because the goal of the firm is to maximize profits, top managers at firms with lower profitability always face a higher risk of forced turnover than top managers at firms with higher profitability.

When forced top management turnover can be successfully identified, this approach has shown to work well. However, when forced top management turnover cannot be clearly identified and when the rate of top management turnover is high, as in the context of China, this approach may not be adequate in assessing the quality of corporate governance. The reason is that the large number of top management turnover unrelated to corporate governance significantly limit researchers' ability to detect the impact of forced top management turnover on subsequent firm performance as well as how state ownership affects the relationship between firm performance and forced top management turnover.

## A Behavioral Perspective of Top Management Turnover

We believe that the behavioral theory of organizational search can help solve the above issues and clarify the relationships between firm profitability, state ownership, and top management turnover. Unlike classic economic theories that assume the goal of the firm is to maximize profits, the behavioral theory of organizational search proposes that firms use *satisfying* as a rule in decision making (March and Simon, 1958; Cyert and March, 1963). According to this theory, because organizational search consumes resources and involves risk, its intensity changes in response to the feedback from a comparison between performance and target. When performance meets target, firms consider it satisfactory. In this situation, firms tend to maintain current routines and have limited motivation to search for new things. When performance misses the target, firms consider it as a failure and start to seek alternatives to enhance their prospect of returning performance to the target level. Empirical studies have provided strong support for the behavioral theory of organizational search, showing that firms tend to make decisions of organizational change (Greve, 1998), strategic alliances (Baum *et al.*, 2005), and R&D intensity (Greve, 2003a; Chen and Miller, 2007) on the basis of performance assessment relative to target.

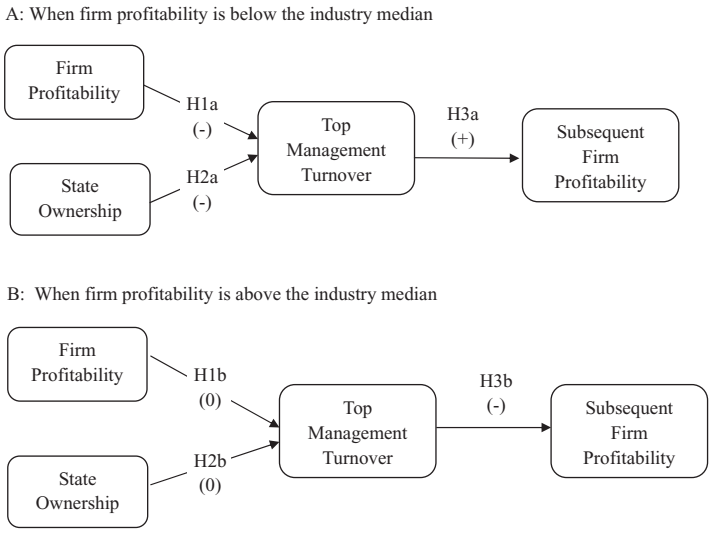
We propose that the behavioral theory of organizational search can also be applied to the decision of forced top management turnover in corporate governance. Forced top management turnover represents an important organizational change, in which the firm attempts to replace low-quality top managers with high-quality successors (Huson *et al.*, 2004). Although prior research shows that firm performance has a negative relationship with top management turnover (Finkelstein *et al.*, 2009), the behavioral theory of organizational search suggests that owners of firms are most likely to dismiss their top managers when performance misses the target. When performance meets the target, owners will consider it satisfactory and are unlikely to dismiss top managers. Top management turnover thus should not be considered as forced or the outcome of corporate governance when it occurs under satisfactory performance. To accurately assess the quality of corporate governance, we propose that it is important to separate top management turnover on the basis of whether firm performance is above or below target.

To apply and test the above behavioral theory-based proposition of top management turnover, the key is to identify the performance target. Scholars have proposed two sources of a firm's performance target. One is the firm's past performance, and the other is the performance of other similar firms (March and Simon, 1958; Cyert and March, 1963). In their seminal book, March and Simon (1958) propose that organizations, like individuals, adjust their goals to the level of past achievement. This proposition suggests that past performance serves as a main source of performance target. In addition, drawing from social comparison theory at the individual level (Festinger, 1954), Cyert and March (1963) propose that a firm's performance target is also influenced by the performance of competitors or other comparable organizations. Empirical research following the behavioral theory of organizational search has confirmed that firms in developed economies such as the US and Japan tend to use their own past performance and the performance of peer firms to form the performance target (e.g., Greve, 1998; 2003a; Baum *et al.*, 2005; Chen and Miller, 2007).

In emerging economies, such as China, firms may not rely on past performance to form a performance target because of the rapid changes and uncertainties they face. Many emerging economies are in the process of transition into a market economy, which is characterized by constant changes in government regulations and competition (Hoskisson, Eden, Lau and Wright, 2000). In such a dynamic and uncertain environment, past performance is hardly a good predictor of future performance. Moreover, what is considered as satisfactory performance in the past may not be an appropriate target in assessing current performance. Because of these concerns, firms operating in a dynamic environment tend to use their peers' performance as the benchmark to assess their own performance (March, 1994). We thus propose that firms in emerging economies use the performance of peer firms as the target to assess the performance of their top managers.

Because some firms aspire to become industry leaders, it would be ideal to survey owners and top managers about which firms they consider peers. However, because of practical concerns, this information is extremely difficult to obtain. Prior research primarily treats all the other firms in the same industry as peers of the focal firm and use industry mean or median performance measures as proxies of peer performance-based target (Greve, 2003b). We thus decided to use industry median profitability as the performance target to develop testable hypotheses from the behavioral perspective of organizational search.

**FIGURE 1**
**Hypothesized Relationships between Firm Profitability, State Ownership, and Top Management Turnover**




To better illustrate our proposed relationships between firm profitability, state ownership, and top management turnover, we provide a graphical summary of the main hypotheses in Figure 1. Figure 1A summarizes the hypothesized relationships when firm profitability is below the industry median, and Figure 1b summarizes the hypothesized relationships when firm profitability is above the industry median.

When performance is below the industry median, owners of the firms will become dissatisfied. The further firm profitability drops below the industry median, the more dissatisfied owners will become and the more likely they will be to initiate a change in top management. In contrast, when performance is above the industry median, owners of the firms tend to be satisfied. In this situation, they are unlikely to blame and replace top managers. If there is top management turnover in a situation of performance above the industry median, it is likely unrelated to performance of the managers. Therefore, building on the behavior theory of organizational search, we propose the following hypotheses.

*Hypothesis 1a: When firm profitability is below the industry median, it is negatively related to top management turnover.*

*Hypothesis 1b: When firm profitability is above the industry median, it is not related to top management turnover.*

Shleifer and Vishny (1997) suggest that an increase in firm profitability following privatization can be attributed to improvement in corporate governance quality provided by private owners. Although the Chinese government intends to establish a modern corporate system, it is unclear whether state ownership in the listed firms functions to hold managers accountable for firm profitability. Unlike the abrupt changes in Russia and Eastern Europe, the economic reform in China has proceeded in a much more controlled manner with the intention of maintaining social and political stability. In fact, the Chinese government has consistently given social and political stability the highest priority in the course of economic reform. Thus, it will not be surprising if the state continues to pursue social and political objectives at the listed firms. Several recent studies (Sun and Tong, 2003; Liu and Sun, 2005; Wei *et al.*, 2005) find that state ownership is negatively related to economic performance at the listed firms in China. Another study (Chen, Firth, Xin and Xu, 2008) finds that a change in the largest shareholder at the listed firms in China has a positive effect on firm profitability when control is passed from a state entity to a private entity, but has no effect when control is passed from one state entity to another state entity. These findings suggest that state ownership likely weakens the sensitivity of top management turnover to firm profitability.

However, the empirical evidence about the impact of state ownership on top management turnover is not consistent. Although Kato and Long (2006a) find that the sensitivity of top management turnover to firm performance is weaker for the listed firms controlled by the state, Firth *et al.* (2006) report that neither state ownership nor its interaction with firm performance is significantly related to top management turnover at the listed firms in China. Our behavioral perspective suggests that state ownership weakens corporate governance quality only when firm profitability is below the industry median. When profitability is below the industry median, private owners will consider replacing top managers. However, because the state has social and political objectives other than profit maximization, it may object the effort by private owners. Thus, we expect state ownership to have a negative impact on top management turnover. In contrast, when firm profitability is above the industry median, because replacing top managers because of poor performance is not an issue, we do not expect state ownership to have a significant impact on top management turnover.

*Hypothesis 2a: When firm profitability is below the industry median, state ownership is negatively related to top management turnover.*

*Hypothesis 2b: When firm profitability is above the industry median, state ownership is not related to top management turnover.*

In addition to studying the sensitivity of top management turnover to firm profitability, another approach in assessing corporate governance quality is to investigate the impact of top management turnover on subsequent firm profitability. Because effective corporate governance means replacing a poorly performing manager with a more competent successor whose expected quality exceeds that of the predecessor (Huson *et al.*, 2004), top management turnover because of poor performance should lead to a better replacement and thus have a positive impact on subsequent performance. However, Firth *et al.* (2006) and Kato and Long (2006b) do not find convincing evidence that top management turnover leads to an increase in performance at the listed firms in China. Again, given the high rate of top management turnover in China, we believe that it is important to separate turnover on the basis of performance relative to industry median in examining the impact of top management turnover on subsequent firm performance. Only turnover

under performance below industry median reflects effort by owners to discipline management and thus has a positive impact on subsequent performance. When top management turnover occurs under performance above industry median, it is unrelated to corporate governance and thus will not have a positive impact on subsequent performance. Instead, if the outgoing top manager leaves the firm for a better position because of his or her competence, the firm may not be able to find an equally competent successor. In this situation, top management turnover can actually have a negative impact on firm profitability.

*Hypothesis 3a: When firm profitability is below the industry median, top management turnover has a positive impact on subsequent firm profitability.*

*Hypothesis 3b: When firm profitability is above the industry median, top management turnover has a negative impact on subsequent firm profitability.*

Our earlier literature review suggests that the state is not as concerned with firm profitability as private owners in the assessment of managerial performance. Given the high rate of top management turnover at the listed firms in China, it is possible that top management turnover coincides with low profitability at some firms that are controlled by the state. When this happens, it does not mean that these firms replace their top managers because of low profitability or the desire to turn performance around. Instead, it is just a coincidence. In this situation, top management turnover will have no impact on subsequent firm profitability. The positive impact of top management turnover on firm profitability proposed in Hypothesis 3a will likely occur only at firms that are not controlled by the state. Because the largest shareholder usually exerts the strongest influence over the appointment of top managers in China (Firth *et al.*, 2006), we propose the following hypotheses to refine the relationship proposed in Hypothesis 3a.

*Hypothesis 4a: When firm profitability is below the industry median, top management turnover has a positive impact on subsequent firm profitability if the state is not the largest shareholder.*

*Hypothesis 4b: When firm profitability is below the industry median, top management turnover has no impact on subsequent firm profitability if the state is the largest shareholder.*

## METHODS

### Sample

Our sample consists of 1,203 firms listed in China's SHSE and SZSE during 1999 to 2002. Most of the firms are partially privatized former SOEs, and 821 firms were listed prior to 1999. Our dataset is an unbalanced panel that consists of a total of 4,343 firm-year observations. All the data are obtained from the Chinese Stock Market and Accounting Research database (CSMAR), which is compiled using information from the listed firms' annual and semi-annual reports. The CSMAR database is regarded as an authoritative data source of the listed firms in China. The fact that Kato and Long (2006a; 2006b) use the same database makes our results directly comparable to theirs.

### Measures

**Top Management Turnover.** Prior research on top management turnover primarily focuses on the CEO, who is often considered the top executive of the company, particularly in the US where about 80 per cent of the CEOs also hold the title of board chair (Finkelstein *et al.*, 2009). In China the situation is more complicated. Traditionally, Chinese firms use the titles of General Manager (GM) or President to designate top managers. Only recently some firms start to adopt the title of CEO. For the purpose of simplicity, we treat GMs and Presidents as equivalents of CEOs. However, individuals holding these titles are not necessarily top managers at the listed firms. Unlike in the US, CEO duality is far less common at the listed firms in China. In our sample, about 80 per cent of the firms have separate CEOs and board chairs. Moreover, many board chairs work full time and receive the highest pay from their company. In essence, these board chairs are the actual top managers (Kato and Long, 2006a).

Given this complexity, we take the following approach to identify top managers. When the CEO is also the board chair, we treat him or her as the top manager of the firm. When the CEO is not the board chair, we treat the CEO as the top manager if the board chair is not a full-time employee or does not receive the highest pay from the firm. Otherwise, we treat the board chair as the top manager. Our approach is similar to Kato and Long (2006a; 2006b), but different from Firth *et al.* (2006) who treat all board chairs as the top manager. We measure *top management turnover* as a dummy variable, coded 1 if there was a top manager turnover during the year at the firm, and 0 otherwise. There are 1,130 top management turnovers in our sample, indicating a 26 per cent annual turnover rate, which is slightly higher than the 24 per cent turnover rate reported by Kato and Long (2006a).

**Firm Profitability.** We use ROA and EPS to measure firm profitability. ROA is a widely used measure of profitability in turnover studies (Huson *et al.*, 2004). We calculate ROA as net income divided by total assets. EPS, defined as net income divided by the weighted average number of shares of common stocks outstanding, is one of the most important financial ratios used to evaluate firm performance. In China all listed firms must disclose their EPS to the public in their semi-annual and annual reports, required by the China Securities Regulatory Commission (CSRC). CSRC also specifies a calculation formula to be followed by all the listed firms so that EPS represents a consistent measure of profitability comparable across firms. Because of the regulation and public attention, it is reasonable to treat EPS as an important indicator owners use to evaluate managerial performance in China.[3]

To examine the impact of top management turnover on subsequent firm profitability, we calculate the *change in firm profitability* as the difference in ROA and EPS between the following year (t + 1) and the year (t) when top management

turnover occurs. We also create a variable, *change in industry profitability*, calculated as the difference in industry ROA and EPS between year t + 1 and year t to control for potentially confounding industry effects. Our use of the change in firm profitability to examine the impact of top management turnover is consistent with recent studies by Huson *et al.* (2004) and Kato and Long (2006b), and makes our findings comparable to theirs.

**State Ownership and Ownership Structure-related Control Variables.** The ownership structure of the listed firms in China can be classified into three primary groups – state shares, legal entity shares, and public shares (Sun and Tong, 2003). State shares represent about one-third of the total shares and enable the government to continue to exert influence over the listed firms. Legal entity shares represent about one-quarter of the total shares. Like state shares, legal entity shares are not tradable and many of them are ultimately controlled by the state through its control over the legal entities (usually large SOEs). However, there exist important differences between state and legal entity shares, which have different implications for the relationship between firm profitability and top management turnover. Many legal entities, unlike the state, have close business connections with the listed firms in which they have ownership (Sun and Tong, 2003). Moreover, they have profit objectives and expect financial returns from their investments (Firth *et al.*, 2006). Because these legal entities and their managers can benefit directly from the listed firms' good performance and get hurt by their poor performance, they have some incentives to monitor the firms they own on the basis of profitability (Liu and Sun, 2005). Compared with individual shareholders, legal entities are better equipped with the power to monitor and discipline managers through their influence over the boards of directors. Hovey, Li and Naughton (2003) find that legal entity shares are positively related to firm valuation in China.

Public shares are tradable on the stock market and represent about one-third of the total shares. It is reasonable to believe that as the proportion of public shares increases, firms will be under more market pressure. However, because public shares are dispersed among millions of individual investors and China's Company Law does not have a clear definition of minority shareholders' rights of proposition, owners of public shares are not able to protect their interests through shareholders' general meetings (Zhang, 2004). Given the weak legal protection of minority shareholder interests, it is not clear what impact public shares would have on top management turnover. We thus include public ownership, calculated as the proportion of public shares, as a control variable in the analysis.[4]

Some listed firms in China issue B-shares, which are traded in foreign currencies and are open to foreign investors. Bai, Liu, Lu and Song (2004) point out that firms that issue B-shares must adopt international accounting standards and have their financial statements audited by internationally-recognized accounting firms. Compared with firms that only issue A-shares, these firms can be viewed as operating in a better developed market environment. A dummy variable of *B-share* is created to control for the effect of financial transparency and international auditing on firms issuing B-shares.

**Other Control Variables.** We use two variables to control for the impact of top manager power on turnover. One is duality, measuring whether the top manager holds both the CEO and board chair positions. Holding both positions enables the top manager to not only exert control over board agendas and decisions (Weisbach, 1988), but also reduce the risk of a power contest by a separate CEO or board chair (Shen and Cannella, 2002). The other is top manager tenure, measured by the number of years the top manager has been in office. Top managers with a short tenure tend to be less powerful and face a higher risk of turnover than top managers with a long tenure (Shen and Cannella, 2002). Stock ownership is another widely used measure of top manager power in studies of turnover (Finkelstein *et al.*, 2009). At the listed firms in China, however, the amount of executive stock ownership is trivial. In fact, employee ownership, which includes executive ownership, represents less than .01 per cent of the total shares outstanding (Zhang, 2004). Thus, we do not include top manager ownership in the analysis.

We use three variables to control for the impact of the boards of director on top manager turnover. The first is board size, measured by the number of directors. Although Yermack (1996) argues that larger boards are less effective in monitoring management and are more susceptible to the influence of the CEO, Li and Naughton (2007) find that board size is positively related to short-term performance of initial public offerings in China. The second is the number of outside directors. Fama and Jensen (1983) argue that outside directors have an incentive to monitor management and to build their reputation as experts in decision control. Weisbach (1988) finds a stronger relationship between performance and CEO turnover when the boards are dominated by outside directors. The third is the frequency of board meetings. Boards that meet more frequently tend to devote more time to corporate governance (Chen, Firth, Gao and Rui, 2006).[5]

Top manager age, firm size (natural logarithm of the total assets), and industry, year, and province dummies are also included in our analysis as control variables. Top manager age is used to control for turnover because of retirement. Firm size is included to control for any effect it may have on top management turnover. Industry and year dummies are used to control for differences between industries and over time with respect to the degree of privatization, stock market development and corporate governance. One special feature of China is the imbalanced regional development. Factors such as economic development, market competitiveness, and legal environment can exert significant impacts on corporate governance quality. To address this issue, we use a set of province dummies to control for differences in regional development in the analysis. Table 1 provides summary statistics of our variables, except for the industry, year and province dummies.

**Statistical Analysis** Consistent with Firth *et al.* (2006) and Kato and Long (2006a), we use logit models to examine

**TABLE 1**
**Summary Statistics of Key Variables**

| Variables | No. of obs. | Mean | Median | Standard Deviation |
|---|---|---|---|---|
| Turnover | 4302 | .26 | 0 | .42 |
| ROA | 4279 | .02 | .04 | .12 |
| EPS | 4285 | .14 | .19 | .40 |
| State ownership | 4278 | .32 | .32 | .27 |
| Legal entity ownership | 4278 | .27 | .20 | .26 |
| Public ownership | 4258 | .35 | .34 | .13 |
| B-share | 4286 | .08 | 0 | .27 |
| Duality | 4278 | .19 | 0 | .39 |
| Tenure | 4286 | 2.72 | 2 | 1.90 |
| Age | 3047 | 47.64 | 47 | 7.41 |
| Board size | 4264 | 9.63 | 9 | 2.52 |
| Outside directors | 4271 | .82 | 0 | 1.18 |
| Board meeting frequency | 4318 | 6.38 | 6 | 3.18 |
| Firm size | 4286 | 20.92 | 20.85 | .87 |

the impact of firm profitability and state ownership on top management turnover. In our logit models, the probability function of top management turnover can be expressed as

$$Pr(turnover) = f(profitability,\ state\ ownership,\ control\ variables) \quad (1)$$

Because f (.) = exp (.) / {1 + exp (.)}, using $X$ to denote the vector of predictors and $B$ to denote the vector of coefficients, the probability function of top management turnover can be expressed as

$$Pr(turnover) = \exp(XB)/\{1+\exp(XB)\} \quad (2)$$

The odds of turnover, defined as the ratio of the probability of turnover to the probability of no turnover, thus is

$$Odds = Pr(turnover)/\{1-Pr(turnover)\} = \exp(XB) \quad (3)$$

Equation 3 shows that the odds of turnover increases as the probability of turnover increases. When Pr(*turnover*) < .5, the odds of turnover is less than one; when Pr(*turnover*) = .5, the odds of turnover equals one; and when Pr(*turnover*) > .5, the odds of turnover is greater than one. Taking the natural logarithm on both sides of Equation 3, we get the logit transform of the probability of top management turnover

$$\text{Logit}(\Pr(\text{turnover})) = \ln(\text{odds}) = \text{BX} \quad (4)$$

Equation 4 shows that the coefficients $B$ in a logit model can be interpreted in the same way as in a regular ordinary least squares (OLS) regression. A significant, positive coefficient $b_1$ for variable $x_1$ means that a unit increase in $x_1$ results in an increase in the logarithm of the odds of turnover by $b_1$, suggesting that $x_1$ has a positive impact on turnover. In contrast, if $b_1$ is negative, it means that a unit increase in $x_1$ results in a decrease in the logarithm of the odds of turnover by $b_1$, suggesting that $x_1$ has a negative impact on turnover.

We first run the analysis using the full sample. We then split the sample on the basis of whether firm profitability is above or below the industry median, and run the analysis separately using the split samples. Because we have an unbalanced panel data, we cluster the observations at the firm-level and use robust standard errors to calculate the *z*-statistics in the analysis.

In the analysis of the impact of top management turnover on subsequent firm profitability, because we have a rather short panel and some of the variables such as state share and public share are relatively stable, it is not appropriate to use fixed-effects models. We decide to cluster the observations at the firm level and conduct the analysis using OLS regression.

Three of our hypotheses (H1b, H2b, and H4b) are null hypotheses, predicting no relationship between the variables of interest. Cohen (1988) suggests that a null hypothesis can be accepted when the relationship between two variables is trivial, i.e., when the statistical test is not significant and the sample size is sufficient for the risk of Type II error ($\beta$) to be equal to the commonly accepted risk of Type I error ($\alpha$) of .05. A power analysis can be used to determine the sample size needed to detect a nontrivial effect at $\alpha = .05$ and a power of .95 (i.e., $\beta = .05$). When the sample size is large enough to have a power of .95 and the results of the statistical test is not significant, then the null hypothesis can be accepted as being supported. That is, "the conclusion is justified that no nontrivial effects exist, at the $\beta = .05$ level" (Cohen, 1990: 1309). For a conservative t-test of the null hypothesis (small effect size of $r^2 = .01$ and $\alpha = \beta = .05$), the number of observations needed is 1308 (Cohen, Cohen, West and Aiken, 2003: 654). Our sample size is large enough to meet this requirement.

## RESULTS

Table 2 reports the results of logit regression analysis of top management turnover at the listed firms in China. Firm profitability is measured by ROA in Panel A, and it is measured by EPS in Panel B. In both panels, Model 1 analyzes the full sample, Model 2 analyzes the sub-sample in which firm profitability is above the industry median, and Model 3 analyzes the sub-sample in which firm profitability is below the industry median.

Model 1 of Panel A shows that the coefficients for both ROA ($b = -3.46$, $p < .001$) and state ownership ($b = -.44$, $p < .05$) are negative and statistically significant when the full sample is used in the analysis. However, after we split the sample using industry median ROA, the results show that the coefficients for ROA and state ownership are only significant for the sub-sample in which firm ROA is below the industry median (Model 3: $b = -2.27$, $p < .01$ for ROA; $b = -.93$, $p < .001$ for state ownership), but not significant for the sub-sample in which firm ROA is above the industry median (Model 2: $b = -.87$, n.s. for ROA; $b = -.04$, n.s. for state ownership).

When EPS is used as the measure of firm profitability, the results in Panel B show a similar pattern. Model 1 shows that the coefficients for EPS ($b = -.88$, $p < .001$) and state ownership ($b = -.44$, $p < .05$) are negative and statistically significant in the full sample analysis. After we split the sample using industry median EPS, they are only significant for the sub-sample in which firm EPS is below the industry median (Model 3: $b = -.52$, $p < .05$ for EPS; $b = -1.02$, $p < .001$ for state ownership), but not for the sub-sample in which firm EPS is above the industry median (Model 2: $b = -.53$, n.s. for EPS; $b = -.08$, n.s. for state ownership). These results support our hypotheses that firm profitability is negatively related to top management turnover when it is below the industry median (H1a), but is not related to top management turnover when it is above the industry median (H1b); and that state ownership is negatively related to top management turnover when firm profitability is below the industry median (H2a), but is not related to top management turnover when firm profitability is above the industry median (H2b).

Among the control variables, duality and firm size are negatively related to turnover; board meeting frequency and age are positively related to turnover; B-share is positively related to turnover when firm profitability is below the industry median; and public ownership is positively related to turnover when firm profitability is above the industry median.

Table 3 reports the results of OLS regression analysis of change in firm profitability following top management turnover. Panel A examines change in ROA, and Panel B examines change in EPS. Results in Model 1 of Panel A shows that the coefficient for top management turnover under performance below the industry median are positive and statistically significant ($b = .01$, $p < .05$) and the coefficient for top management turnover under performance above the industry median is negative and statistically significant ($b = -.02$, $p < .001$). Results in Model 1 of Panel B show a similar pattern. The coefficient for top management turnover under performance below the industry median are positive and statistically significant ($b = .06$, $p < .01$) and the coefficient for top management turnover under performance above the industry median is negative and statistically significant ($b = -.03$, $p < .05$). These findings support our hypotheses that top management turnover has a positive impact on subsequent firm profitability when it occurs under performance below the industry median (H3a), but has a negative impact on firm profitability when it occurs under performance above the industry median (H3b).

After we further refine top management turnover under performance below industry median on the basis of whether the state is the largest shareholder, we find that the positive coefficients for top management turnover under performance below industry median are only significant when the state is not the largest shareholder, ($b = .02$, $p < .05$ in Model 2 of Panel A; $b = .07$, $p < .01$ in Model 2 of Panel B), but not significant when the state is the largest shareholder ($b = .00$, n.s. in Model 2 of Panel A; $b = .04$, n.s. in Model 2 of Panel B). These results support our hypotheses that when firm profitability is below the industry median, top management turnover has a positive impact on subsequent firm profitability if the state is not the largest shareholder (H4a), but has no impact if the state is the largest shareholder (H4b).

In comparison, we find that the coefficients for top management turnover under performance above the industry median are negative and significant for change in ROA, regardless whether the state is the largest shareholder (Model 2 of Panel A: $b = -.01$, $p < .05$ when the state is the largest shareholder; $b = -.02$, $p < .001$ when the state is not the largest shareholder).

Among the control variables, change in industry profitability shows a consistent positive impact, and public ownership shows a consistent negative impact on change in firm profitability in all the models in Table 3.

## DISCUSSION AND CONCLUSIONS

The purpose of this study is to clarify the relationship between firm profitability and top management turnover, as well as the impact of state ownership on it, at the listed firms in China. One explanation for the positive impact of privatization on firm profitability is that privatization improves corporate governance quality by making managers more accountable for firm financial performance (Shleifer and Vishny, 1997). However, recent studies of the listed firms in China do not find convincing evidence that state ownership weakens the negative relationship between firm profitability and top management turnover, or that top management turnover has a positive impact on subsequent financial performance (Firth *et al.*, 2006; Kato and Long, 2006a; 2006b). These findings cast doubts on the argument that privatization improves corporate governance quality in China.

We argue that the lack of strong support for the argument that privatization makes managers more accountable for financial performance can be attributable to the difficulty in identifying forced top management turnover in China. Building on the behavioral theory of organizational search (March and Simon, 1958; Cyert and March, 1963), we propose that top management turnover reflects the outcome of corporate governance only when firm

**TABLE 2**
**Logit Regression Analysis of Top Management Turnover in China**

**Panel A: Profitability Measured by ROA**

| | Model 1 | | Model 2 | | Model 3 | |
|---|---|---|---|---|---|---|
| | Coefficient | *z*-statistics | Coefficient | *z*-statistics | Coefficient | *z*-statistics |
| Firm profitability | –3.46 | –4.58*** | –.87 | –.34 | –2.27 | –2.91** |
| State ownership | –.44 | –2.41* | –.04 | –.16 | –.93 | –3.46*** |
| Public ownership | .71 | 1.65† | 1.97 | 3.15** | –.64 | –1.03 |
| B-share | .52 | 2.48* | .02 | .04 | .63 | 2.17* |
| Duality | –1.03 | –7.39*** | –1.20 | –5.62*** | –.91 | –5.01*** |
| Tenure | –.00 | –.07 | .05 | 1.25 | –.03 | –1.04 |
| Age | .03 | 4.48*** | .04 | 3.87*** | .03 | 2.77** |
| Board size | –.00 | –.07 | –.01 | –.51 | .01 | .35 |
| Outside director | .09 | 1.34 | .04 | .38 | .17 | 1.68† |
| Board meeting frequency | .21 | 9.91*** | .21 | 7.97*** | .22 | 6.54*** |
| Firm size | –.17 | –2.59** | –.22 | –2.19* | –.18 | –1.92† |
| Constant | –.56 | –.39 | –1.00 | –.48 | .25 | .12 |
| Number of turnover | 1130 | | 398 | | 732 | |
| Number of observation | 3005 | | 1511 | | 1494 | |
| Pseudo R-squared | .13 | | .13 | | .15 | |

**Panel B: Profitability Measured by EPS**

| | Model 1 | | Model 2 | | Model 3 | |
|---|---|---|---|---|---|---|
| | Coefficient | *z*-statistics | Coefficient | *z*-statistics | Coefficient | *z*-statistics |
| Firm profitability | –.88 | –4.19*** | –.53 | –1.19 | –.52 | –2.37* |
| State ownership | –.44 | –2.44* | –.08 | –.29 | –1.02 | –3.86*** |
| Public ownership | .79 | 1.83† | 2.09 | 3.40*** | –.46 | –.75 |
| B-share | .54 | 2.55* | .07 | .20 | .78 | 2.73** |
| Duality | –1.02 | –7.31*** | –1.10 | –5.29*** | –.94 | –4.97*** |
| Tenure | –.01 | –.37 | .02 | .62 | –.02 | –.71 |
| Age | .03 | 4.46*** | .03 | 2.85** | .03 | 3.10** |
| Board size | –.01 | –.05 | –.01 | –.54 | .01 | .27 |
| Outside director | .09 | 1.40 | .05 | .51 | .21 | 2.14* |
| Board meeting frequency | .21 | 9.94*** | .23 | 8.72*** | .20 | 6.23*** |
| Firm size | –.15 | –2.11* | .01 | .12 | –.24 | –2.64** |
| Constant | –1.09 | –.75 | –5.45 | –2.52* | 1.88 | .90 |
| Number of turnover | 1130 | | 387 | | 743 | |
| Number of observation | 3013 | | 1533 | | 1480 | |
| Pseudo R-squared | .13 | | .12 | | .15 | |

Notes: In both panels, Model 1 reports results using the full sample, Model 2 reports results using the sub-sample in which firm profitability is above the industry median, and Model 3 reports results using the sub-sample in which firm profitability is below the industry median. The *z*-statistics are calculated using robust standard errors (clustered by firm) that account for potential heteroskedasticity and time series autocorrelation within each firm.
†p < .10; *p < .05; **p < .01; ***p < .001.

**TABLE 3**
**OLS Regression Analysis of Change in Firm Profitability following Top Management Turnover**

**Panel A: Change in ROA**

| Variables | Model 1 | | Model 2 | |
|---|---|---|---|---|
| | Coefficient | t-statistics | Coefficient | t-statistics |
| Turnover under performance below industry median | .01 | 2.21*** | | |
| When state is the largest shareholder | | | .00 | .05 |
| When state is not the largest shareholder | | | .02 | 2.42* |
| Turnover under performance above industry median | –.02 | –3.58*** | | |
| When state is the largest shareholder | | | –.01 | –2.04* |
| When state is not the largest shareholder | | | –.02 | –3.53*** |
| Change in industry profitability | 1.00 | 4.01*** | 1.00 | 3.94*** |
| State ownership | .00 | .52 | .00 | .64 |
| Public ownership | –.04 | –2.14* | –.04 | –2.10* |
| B-share | –.00 | –.25 | –.00 | –.16 |
| Duality | –.00 | –.09 | –.00 | –.09 |
| Board size | .00 | .28 | –.00 | –.27 |
| Outside director | .00 | .09 | .00 | .06 |
| Board meeting frequency | .00 | .40 | .00 | .43 |
| Firm size | –.00 | –.23 | –.00 | –.21 |
| Constant | .02 | .41 | .02 | .42 |
| No. of observations | 3845 | | 3845 | |
| R-squared | .11 | | .11 | |

**Panel B: Change in EPS**

| Variables | Model 1 | | Model 2 | |
|---|---|---|---|---|
| | Coefficient | t-statistics | Coefficient | t-statistics |
| Turnover under performance below industry median | .06 | 2.77** | | |
| When state is the largest shareholder | | | .04 | .82 |
| When state is not the largest shareholder | | | .07 | 2.72** |
| Turnover under performance above industry median | –.03 | –2.16* | | |
| When state is the largest shareholder | | | –.02 | .52 |
| When state is not the largest shareholder | | | –.03 | –1.83† |
| Change in industry profitability | 1.00 | 3.71*** | 1.00 | 3.69*** |
| State ownership | –.01 | –.29 | –.01 | –.23 |
| Public ownership | –.14 | –2.25* | –.14 | –2.24* |
| B-share | –.02 | –.43 | –.02 | –.40 |
| Duality | .02 | 1.01 | .02 | 1.03 |
| Board size | .00 | .46 | .00 | .48 |
| Outside director | –.01 | –.49 | –.01 | –.50 |
| Board meeting frequency | –.00 | –.87 | –.00 | –.83 |
| Firm size | .00 | .13 | .00 | .13 |
| Constant | –.06 | –.26 | –.07 | –.27 |
| No. of observations | 3859 | | 3859 | |
| R-squared | .14 | | .14 | |

Notes: The t-statistics are estimated using robust standard errors (clustered by firm) that account for potential heteroskedasticity and time series autocorrelation within each firm.
†p < .10; *p < .05; **p < .01; ***p < .001.

performance misses the target, but not when firm performance meets the target. Empirically, we find that firm profitability is negatively related to top management turnover when it is below target (measured by industry median profitability), but is not related to top management turnover when it is above target. These findings provide strong support for our proposition.

Moreover, we find that top management turnover has a positive impact on firm ROA and EPS when it occurs under performance below target, but has a negative impact when it occurs under performance above target. This finding has two implications. First, it highlights the importance of distinguishing top management turnovers occurring under performance below target from those occurring under performance above target in studying the impact of privatization on corporate governance quality. The reason is that we find them to have opposite effects on firm performance and only the former represents the outcome of corporate governance. This finding can explain why Firth *et al.* (2006) and Kato and Long (2006b) find little evidence that top management turnover has a positive impact on firm performance, because they use all top management turnover in the analysis. Second, the above finding suggests that corporate governance is effective at the listed firms in China because top management turnover under performance below target does have a positive impact on subsequent firm profitability.

Regarding the role of state ownership in corporate governance, we find evidence that it reduces top management turnover when firm profitability is below target. This finding suggests that state ownership weakens the sensitivity of top management turnover to firm profitability. Moreover, we find that performance-related top management turnover has a positive impact on subsequent firm profitability only when the state is not the largest shareholder. When the state is the largest shareholder, it has no impact on subsequent firm profitability. These findings provide direct support for the argument that state ownership weakens corporate governance quality at partially privatized firms (Sun and Tong, 2003; Gupta, 2005).

Our control variables also generate some interesting findings. Public ownership shows a positive impact on top management turnover when profitability is above the industry median and a negative impact on subsequent firm profitability. These findings suggest that firms with a higher level of public ownership tend to experience more turnover unrelated to poor performance. Moreover, we find no evidence that public ownership in China increases top management turnover when profitability is below the industry median. A possible explanation is that the diffusion of public ownership among individual investors makes it less effective in corporate governance (Zhang, 2004). B-share and board meeting frequency show a positive impact on top management turnover when profitability is below industry median, suggesting that firms that issue B-shares and have more frequent board meetings tend to hold top managers more accountable for firm financial performance. Lastly, consistent with research in the US (e.g., Weisbach, 1988; Shen and Cannella, 2002), we find that duality and firm size have a negative impact, and age has a positive impact on top management turnover in China.

## Limitations

Although our study helps clarify the relationships between firm profitability, state ownership, and top management turnover in China, the findings should be interpreted in light of their limitations. One limitation is concerned with the treatment of all the other firms in the same industry as the focal firm's peers and the use of an industry median profitability as the focal firm's performance target. Although this practice is widely adopted in research on the behavioral theory of organizational search (Greve, 2003b), we encourage researchers to survey top managers directly about their performance target. Another limitation is concerned with the use of a 1-year lag in assessing the impact of top management turnover on subsequent firm profitability. Because of China's fast economic growth and high rate of top management turnover, we believe that our choice is reasonable and justified. However, it is important to validate the robustness of our findings using a longer lag, such as 2 or 3 years.

## Implications for Future Research and Practice

Despite the above limitations, our study has important implications for future research and practice. First, it contributes to the literature on privatization by convincingly showing that state ownership in partial privatization weakens corporate governance quality by holding top managers less accountable for firm profitability. Although our sample only consists of the listed firms in China, we believe that our findings can be generalized to partial privatization in other economies because states and government bureaucrats in general tend to pursue social and political objectives other than profit maximization (Shleifer and Vishny, 1997). To corroborate our findings, it is important for future research to examine the relationships between firm profitability, state ownership, and top management turnover using data from other economies, especially emerging economies such as India and Russia that have a different political system.

Second, our study has implications for research on top management turnover in other emerging economies where it is difficult to identify forced turnover because of the lack of information. To examine the quality of corporate governance, our study shows that it is important to analyze forced turnovers only, especially when the interest is to understand the impact of top management turnover on firm performance. The behavioral theory of organizational search (March and Simon, 1958; Cyert and March, 1963) proves to be useful in our study in helping separate top management turnovers caused by performance from those unrelated to performance. Future research can examine whether this approach also enhances the understanding of top management turnover in other emerging economies.

Third, regarding future study of top management turnover in China, we suggest that researchers investigate two related issues. One is about the frequency of top management turnover. Consistent with recent research (e.g., Firth *et al.*, 2006; Kato and Long, 2006a), our study shows a high rate (about 26 per cent) of top management turnover at the listed firms in China. The average tenure of the departed top managers in our sample is only about 4 years. Prior research

suggests that frequent top management turnover can have a negative impact on firm strategy and performance in the US (Finkelstein *et al.*, 2009). It is important to investigate whether top management turnover frequency has a similar impact in China. The other is to study top management turnover unrelated to firm performance. Our study shows that a significant number of top management turnovers in China occur when performance is above the industry median (see Table 2 for the numbers of turnover in the split samples) and have a negative impact on subsequent firm profitability. We believe that it is important for future research to investigate what factors cause these turnovers and what actions firms can take to reduce their negative effect on subsequent performance.

Lastly, our study has some important implications for policy and managerial practice. Our findings clearly show that state ownership weakens the relationship between firm profitability and top management turnover. Together with recent studies (e.g., Sun and Tong, 2003; Gupta, 2005; Liu and Sun, 2005; Wei *et al.*, 2005) that report a negative impact of state ownership on firm financial performance in partial privatization, our study suggests that states should continue to dilute their ownership in partially privatized firms to further improve these firms' economic performance. For investors, our study suggests that they should be cautious in investing in firms in which the state still has a large share of ownership. Lastly, because top management turnover has a negative impact on subsequent firm profitability when it occurs under performance above the industry median, we suggest that firms strive to prevent this type of turnover. One possible mechanism is to reduce the mobility of top managers by granting them long-term incentive plans such as stock ownership and stock options. If the turnover is inevitable, firms should have a succession plan and an heir apparent in place so that its negative impact on performance can be minimized (Shen and Cannella, 2003; Behn, Riley and Yang, 2005).

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## NOTES

1. For U.S. corporations, the annul CEO turnover rate is about 12 per cent, and the average age for outgoing CEOs is about 62 years old (Huson *et al.*, 2004).
2. We also tried to classify top management turnover in our sample into "forced" and "normal" on the basis of the reasons given by the firms, and obtained similar results. Namely, we find that firm profitability has a negative impact on both what we classified as "forced turnover" and "normal turnover".
3. We do not use stock market-based performance measures for two reasons. First, because the majority of shares held by the state and legal entities are not publicly tradable, we believe that firm profitability is more important than stock return in evaluating managerial performance. Second, Morck, Yueng and Yu (2000) find that more than 80 per cent of the stocks in China move in the same direction in a given week, suggesting that stock return is less informative of firm performance in China than in developed economies. In separate analysis using stock return as a performance measure, we find that it has no impact on top management turnover.
4. Because having state ownership, legal entity ownership, and public ownership simultaneously in the analysis leads to the problem of multicollinearity, we treat legal entity ownership as the benchmark group in our models.
5. There is also a board of supervisors in China. The duty of the supervisory board is to ensure that the board of directors and management abide by laws and regulations and follow due procedures. However, the supervisory board is only equipped with the right of monitoring and supervision, without the right to select managers and directors or to veto the decisions of management and the board. Moreover, members of the supervisory board are determined by the board of directors (Zhang, 2004). The board of supervisors has been described as more "decorative" than functional (Tenev and Zhang, 2002). In additional analysis, we find that the results are essentially the same with or without the inclusion of the supervisory board (its size and meeting frequency) as control variables.

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