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Abstract: To more thoroughly study the effect of ownership on management turnover, firms are classified by ownership simultaneously along two dimensions: types of owners and concentration of ownership. Under this new framework, a unique data set is used to study the sensitivity of management turnover to a company's performance. The study confirms some of the results from previous studies. It also obtained interesting and important new results. It finds evidence that the sensitivity of management turnover to performance is curvilinear in ownership concentration, but in opposite directions under state and private ownership. It also provides evidence allowing us to rank firms in different categories of ownership by their sensitivity of management turnover to performance: Concentrated private ownership has the highest sensitivity, concentrated state ownership the lowest, and the two categories of dispersed ownership, one with a private investor and the other with the state as the largest shareholder, in between. Important policy implications of these findings are discussed.

1. Introduction

The purpose of this paper is to more thoroughly study the effect of ownership on management turnover. To facilitate the study, it adopts a new framework and a unique data set of China's listed companies.

Many authors have recognized the importance of ownership to managerial discipline and studied separately the effect of state and that of concentrated ownership on management turnover. A distinctive feature of our study is that it classifies all firms simultaneously along two dimensions of ownership, i.e., state vis-à-vis private ownership (the "who" or "type" dimension) and that of concentrated vis-à-vis dispersed ownership (the "how much" dimension). This creates a two-by-two framework allowing us to study some traditional questions of interest from new angles and also new questions that have not been studied before, as we will further explain soon.

More precisely, in the two-by-two framework, the four categories of firms are defined as follows (refer to Figure 1).

1) The category Large State consists of firms in which the state is the largest owner and ownership is concentrated. Note that private ownership may or may not exist in these firms. When it does not exist in a firm in this category, the firm has a hundred percent state ownership as in a traditional SOE.

2) The category Large Private consists of firms in which a private investor is the largest owner and ownership is concentrated. Note that state ownership may or may not exist in these firms. When it does not exist in a firm in this category, the firm is a traditional capitalist firm.

3) The category Small State consists of firms in which the state is the largest owner, but the absolute size of state ownership is small.

4) The category Small Private consists of firms in which a private investor is the largest owner and ownership is dispersed.

In such a new and more general framework, we can study the effect of state ownership by comparing firms in categories 1 and 3 with those in categories 2 and 4, study the effect of concentrated ownership by comparing firms in categories 1 and 2 with those in categories 3 and 4, study the effect of concentrated ownership with a distinction made between the cases where the largest owner is the state and those where it is a private investor by comparing firms in categories 1 and 2, and study the effect of diluted state ownership with private ownership by comparing firms in categories 1 and 3.

In the literature studying the importance of ownership to corporate governance, Shleifer and Vishny (1986) are among the first to call our attention to the positive role of concentrated ownership in monitoring management. Johnson et al (2000), however, point out the problem of "tunneling", i.e., "the transfer of resources out of a company to its controlling shareholder". Bebchuk (1999) develops a "rent-protection" theory of large shareholder's lock on control to seek for private benefit.

Much effort has been made to empirically test these theories. Morck et al. (1988) find an inverse U-shaped relationship of corporate performance, measured by Tobin's Q, to concentrated ownership, i.e., performance first improves with ownership concentration and then declines. Gorton and Schmid (2000) find that block holding by banks improves German firms' performance. Kaplan (1994a) and Franks and Mayer (2001) find that management turnover is related to corporate performance rather than concentration of

ownership. However, Denis et al (1997) find that outside blockholder do enhance the sensitivity of executive turnover to performance in US companies, while managerial shareholding weakens it. Kaplan (1994b) finds that concentrated ownership and closer monitoring in Japanese firms lead to less incentive pay received by Japanese managers than by their American counterparts. Yafeh and Yosha (2003) find that concentrated ownership reduces managerial expenditure for private benefit in Japanese firms. Volpin (2002) finds a low sensitivity of turnover to performance in Italy when the control is fully in the hand of one large shareholder and not shared by a group of core shareholders and when the controlling shareholders are also top executives.

A common feature of these studies is that they use data of capitalist firms to study the effect of ownership from the angle of "how much", but not "who". Our study confirms some of the results of these previous studies. For example, it finds an inversely U-shaped relationship between performance and turnover as ownership concentration increases when the largest shareholder is a private investor, which is similar to the concentration-performance relationship found by Morck et al (1988). Beyond that and taking advantage of the two-by-two framework, we further find that, when the state is the largest and concentrated shareholder, turnover sensitivity to performance is significantly lower. Furthermore, it turns out that the turnover sensitivity is also curvilinear in state ownership concentration, although in an opposite direction to that found in private firms.

Empirical study of the impact of state ownership on the performance-turnover relationship is relatively scarce. One of the earlier influential studies was by Groves et al. (1995), which finds that new reform measures introduced in the 1980s did lead to increased managerial turnover in response to poor performance in SOEs in China.

Comparing corporate governance and performance of traditional SOEs with those that have been incorporated, Aivazian et al (2005) find that management turnover is more sensitive to performance in the latter than in the former group of firms. Most recently, Firth et al. (2006) and Kato and Long (2006) find a negative effect of state ownership on the sensitivity of management turnover to performance in China's listed companies.

A common feature of these studies is that they focus on the question of "who", but not that of "how much", in ownership.[1] Our study confirms the finding that the link between management turnover and firm performance is weaker in state-controlled than privately controlled companies regardless of the size of state ownership. Beyond that, we further find that, as mentioned before, the size of state ownership matters. Dispersed ownership helps to increase the sensitivity of management turnover to performance when the state remains the largest shareholder.

Evidence from the study allows us to rank the four categories of companies in a descending order of sensitivity of management turnover to performance: Large Private, Small Private, Small State and Large State. Taking together, these findings suggest that, on the one hand, ownership reforms such as diluting state ownership or making the state a minority shareholder, do contribute to improved governance in SOEs so that these activities should be encouraged. On the other hand, it is doubtful that firms with an ownership structure in favor of state can be as effective in disciplining management as their counterparts with an ownership structure in favor of private investors.

The results and insights obtained from our study not only contribute greatly to the literature studying the impact of ownership on the sensitivity of management turnover to

[1] An exception is Kato and Long (2006), who include shares of the largest owner in a listed company in their model. But, they do not distinguish who the largest shareholder is. As we will show, the size effect is very different when the largest owner is the state as opposed to private.

performance but also have great practical significance. It is worthwhile to observe that most economies in today's world have significant state ownership in some important sectors. However, these days, state ownership is more likely to take a new and flexible form. China is a major example of incorporating traditional SOEs with the state as either a majority or a minority owner in the new companies. Incorporation of SOEs has also happened in Australia under the policy of New Public Management (Wettenhall, 2001). Some scholars, prominently Bardham and Roemer (1992), believe that dominance of state ownership in new and flexible forms is a viable and necessary foundation for an efficient and equitable economy. Our study casts doubt on this belief.

The plan for the rest of the paper is as follows. Section 2 summarizes China's experience in the SOE reform to provide the institutional background for this study. Section 3 describes the data. Section 4 presents descriptive statistics of ownership, performance and executive turnover. Section 5 presents the regression results. Section 6 discusses the policy implications of our findings. Section 7 summarizes the paper.

2. State enterprise reform in China.

China started to reform its SOEs in the late 1970's when economic reform was incepted. In the 1980s, the effort focused mainly on providing better incentives to SOE managers (see Groves et al, 1995; and Groves 1994). In the 1990s, to deepen the reform, a greater effort is made to restructure governance in SOEs. One of the most important measures in this regard is the enactment of Company Law in 1993. The Law was later amended three times, most recently in 2005. The Company Law grants SOE managers the right to run an SOE without governmental interference. It also encourages SOEs to

incorporate so that they can have a formal governance structure similar to that in modern corporations in the west. Since then, many SOEs, including many of the largest and most important ones, have been incorporated and listed in Shanghai or Shenzhen Stock Exchange. The effort of incorporation over more than a decade's time has turned China into the eighth largest stock market in the world with more than 1300 listed companies and a total of issued capital over $90 billion by May 2006.[2] The continuous reform effort and measures introduced in both the 1980s and the 1990s injected strong momentum into many SOEs, speeding up their growth. By one measure, the total fixed assets of China's state enterprises grew from RMB 345 billion yuan in 1980 to 2009 billion yuan in 2003,[3] although during the same time period the share of the state sector in GDP declined from 76 percent to 35 percent.[4]

It is critical to understand that incorporation is not equivalent to privatization and rapid growth is not equivalent to high efficiency. When an SOE is being incorporated, the government may allow it to sell partial ownership to private investors.[5] But, the state typically maintains a significant, likely a dominant ownership stake in the firm. This way, the state can maintain its control over the firm. The figures in Table 1 show that, in 2005, 83 percent of China's listed companies had a share block exceeding 25 percent of ownership, and one third of them exceeding 50 percent. These figures suggest that, in terms of ownership concentration, listed companies in China are more similar to their

[2] The data can be found at the Shenzhen and Shanghai Stock Exchanges websites.
[3] Data source: China Statistics Yearbook, 1981, p. 260, and 2004, pp. 534-536. Data of both years are deflated to the 1978 constant RMB value using Retail Price Index (RPI). RPI is reported in China Statistics Yearbook 2004, Table 9-2.
[4] Data source: the total output value for state and nonstate sectors are reported in China Statistics Yearbook, 1981, p. 53, and 2004, p. 208. Based on these data, the share of state sector in economy is calculated for the two years.
[5] Li, Wu and Li (2004) call this phenomenon of partial privatization of China's SOEs as "privatization in the margin".

German and Japanese counterparts, with shares often concentrated in the hands of large block holders, whereas in the United States shares are usually more diversely held. The difference is that, in China, the block shareholder is typically the state, whereas in Germany and Japan, they are typically institutions, e.g., banks, families or other companies. The numbers in the parentheses in Table 1 show the percentage of listed companies where the state is the largest shareholder among the companies with a share block exceeding, respectively, 25, 50, and 75 percent. As can be seen from these numbers, the government is the largest shareholder in most of China's listed companies.

All listed companies in China have a similar organizational structure of corporate governance, no matter who owns the company, since these companies are subject to the same set of laws. The structure consists of the shareholders' assembly, the board of directors, and the management. By the Company Law, the term of a director is no more than three years. But a director may serve consecutive terms if reelected. The board of directors is composed of five to nineteen members. The board may appoint or dismiss the chief executive officer (CEO) and decide his or her compensation. The CEO is directly responsible to the board. CEO may recommend to the board vice presidents and other senior executives. Thus, in China's listed companies, CEO is placed above other managers in the managerial hierarchy. In this respective, Chinese companies are similar to US companies where CEO has a greater power in corporate issues than other executives. In contrast, German companies have two boards: the board of directors and the management board. The entire management board is responsible for daily operation of a company, while CEO does not have much more authority than other managers in the

board. Recognizing this difference, we follow those studying US companies to examine the turnover of the CEO, rather than that of the management board.

Pertaining to state companies, a government agency known as the "State-owned Assets Supervision and Administration Commission of the State Council" (SASAC) represents the state to perform the right of ownership. SASAC was first established in 2003 by the State Council to supervise central government-owned enterprises. Provincial SASACs have also been formed to supervise state enterprises controlled by provincial governments. SASAC's designated mission is to maximize the value of state assets. It is the bureaucrats in this agency who nominate directors representing the state, decide their compensation and influence the company's strategic decisions.[6] In firms where the state is the largest shareholder, through the state directors on the board, through SASAC, the government basically appoints CEOs. Considering the different objectives of government and its bureaucrats on the one side and private investors and their agents on the other side, one can expect different patterns of personnel appointments in SOEs than in private firms.

3. Data and Variables

The data we use in the study are from China's two stock exchanges: Shenzhen and Shanghai. They are ideal for the purpose of our study as China's strategy to reform its inefficient SOEs is like a controlled experiment. The essence of this strategy is to avoid massive privatization, instead try to make SOEs more efficient by introducing managerial incentives, incorporating them and mimicking the governance structure of

[6] The central government SASAC's website is www.sasac.gov.cn. The website shows personnel changes in state enterprises directly under the supervision of SASAC.

publicly traded companies in mature market economies in the west. While overall a significant level of state ownership in the economy is maintained, especially in sectors deemed critical for national interests, investment by foreign or domestic private investors of various sizes are allowed in SOEs. This has transformed China into an economy in which firms with exclusive state ownership, exclusive private ownership and those with mixed state and private ownership, coexist side by side and each counts for a significant portion of the economy. Furthermore, the governance structure of all listed companies with different ownership types is comparable due to the legal requirements imposed by the government and its supervisory agency Chinese Security Regulation Committee (CSRC). Thus, observed differences in executive turnover are more directly attributable to ownership than to specific features of corporate governance.

The data from Shanghai Stock Exchange and Shenzhen Stock Exchange provide complete information of a company from the year it becomes listed to the year it is delisted, or year 2005 which is the most recent year of available data. Thus, the dataset is an unbalanced panel, consisting of, on average, five years' data of 1500 companies. For an individual company, the number of years listed ranges from 1 to 16 years. A company's financial performance variables are abundant including total sales, total assets, profit before taxes, return to assets and annual return to stock.

There are two measures of executive turnover: the turnover of board directors and that of CEO. Director turnover is measured by the percentage of directors who had an involuntary turnover in a year, i.e., who left the board for reasons other than illness, retirement, death or quitting as of the total number of directors at the beginning of the year. We consider leaving the board at the completion of a term also as involuntary

turnover because, according to the Company Law, directors can be re-elected. If a director is not re-elected, there can only be one reason: the supervising government authority does not want him or her to be re-elected. CEO turnover equals one if the CEO of a company left involuntarily and is zero otherwise. We exclude voluntary turnover because it does not reflect corporate control. However, some voluntary turnover may be in fact involuntary. With the hint from the board, poorly performing executives may choose to resign to avoid embarrassment. By excluding all voluntary turnovers, we may underestimate the extent of truly involuntary turnover.

The data set has three variables pertaining to ownership: the largest owner of a company, the percentage of shares owned by the largest owner, and the total percentage of shares owned by different kinds of owners. Based on the nature and shares of the largest owner, we create four dummy variables: (1) companies with a large ownership stake controlled by the state, i.e. the large ownership=1 and the largest owner=the state; (2) the large ownership controlled by a nonstate investor, i.e. the large ownership=1 and the largest owner=nonstate; (3) dispersed shareholding with the state as the largest shareholder, i.e. the large ownership=0 and the largest owner=state; (4) dispersed shareholding with a nonstate investor as the largest shareholder, i.e. the large ownership=0 and the largest owner=nonstate. [7] Different cut-off levels are used to define the large shareholding, specifically 50%, 33%, and 25%. Table 2 shows the composition of four kinds of companies under different definitions of large ownership. As can be seen

[7] In China, state shares take two forms: shares directly owned by SASAC or different levels of government (CSRC names these shares "state shares."), and state legal entity shares (invested by SOEs.) There is some difference between these two kinds of shareholders as listed companies controlled by the state legal entity were said to have more autonomy than those controlled directly by the government. However, typically, these kinds of shareholders are grouped together and known as state shares. In our definitions of large or small state ownership, we use the state share definition in the general sense and include both types of owners, government and SOEs.

there, roughly seventy percent of companies have the largest shareholder being the state. Among them, half have the state ownership exceeding 50 percent.

Over time, state ownership may be reduced and sold to private investors. If this kind of switch is triggered by performance, the classification of a company by ownership into one of the four categories would be endogenous. An examination of the data reveals that moving across categories is not frequent. Of 12549 company-year observations, only 1.82 percent or 228 observations had moved from the category of Large State to that of Small State, which is the most common kind of move. The second most frequent move is from Small State to Small Private. Hence, generally speaking, the listed companies are quite stable in their belonged categories.

4. Ownership, Performance and Turnover

In this section, we provide some initial evidence of performance and executive turnover of the four groups of companies. Regardless of the measure used, companies with large state shareholding have the best financial performance, followed by large private shareholding, small state and small private. State companies especially those with a large state shareholding also have larger assets. Despite good performance, companies with large state shareholding have a higher director and CEO turnover rate than those with large private shareholding.[8] CEOs in the four groups of companies have similar

[8] The CEO turnover rate we calculated is lower than Firth et al (2006) and Kato and Long (2006). Kato and Long documented an average of 24 percent of CEO turnover. Firth et al obtained the estimate of about 45 percent turnover of chairmen of the board and 20 percent was "forced." We use a much longer panel of data than these two studies. In earlier years, executive turnover was less common. Also, we use more restrictive definition of involuntary turnover. Both factors lead to a lower estimated turnover rate.

characteristics. However, CEOs in state companies tend to be slightly older, more likely to be a party member and less likely to have a post-college education.

Better performance of companies with large state shareholding may not be due to better management, but rather to monopoly status or other advantages granted by the government. If state companies' good performance is not really due to good management, then a high turnover rate of their executives would be reasonable. To examine how much the good performance of state companies is due to good management and how much due to monopoly power and governmental preferential treatment, we demonstrate industry distribution of the four kinds of companies and compute the average profit of each kind given a specific industry.

As shown in Table 4, companies with large state ownership are more likely to be in mining and utility industries that are generally considered as being monopolistic and have a higher profit level. On the other hand, large state companies are also likely to be in quite competitive industries such as manufacturing. Within an industry, except in utility, information technology, real estate and service, large state companies tend to have a better performance than other kinds of companies. Although large state companies' better performance in a competitive industry may be partially attributable to factors such as lower borrowing cost and better market access, it seems difficult to completely rule out the importance of management.[9]

5. Regression Results

[9] In a separate paper, we study the lagged performance after executive turnover in large state companies and find evidence of worse performance after a CEO turnover. The finding supports the argument that performance in these companies is at least partially attributable to management.

In the regression model, we use *Large_State*, *Large_Nonstate, Small_State* to denote, respectively, company groups (1), (2), and (3) above. Group (4), which consists of companies with diverse shareholding and the largest shareholder being private, is used as the base group for comparison. The model is specified as the follows.

$$\begin{aligned} \text{Turnover} = {} & \alpha + \beta_1 \text{Large\_State} + \beta_2 \text{Large\_Private} + \beta_3 \text{Small\_State} \\ & + \beta_4 \text{Large\_State} * \text{Performance} + \beta_5 \text{Large\_Private} * \text{Performance} \\ & + \beta_6 \text{Small\_State} * \text{Performance} + \beta_7 \text{Small\_Private} * \text{Performance} \\ & + \kappa X_i + \sum_i \varsigma_i \text{Industry}_i + \sum_j \tau_j \text{Year}_j + \varepsilon \end{aligned} \quad (1)$$

In the model, *Turnover* denotes director or CEO turnover and *Performance* the company's one-year lag pre-tax profit. Explanatory variables include dummy variables of the three company groups and the interaction of the four group dummies with performance. Our main interest is in the coefficient estimates of the four interaction variables. They suggest how executive turnover changes with the company's performance in the four kinds of companies. The estimates are generally expected to have a negative sign, suggesting reduced executive turnover with better performance. However, the size of the estimates may differ across groups. F-tests are conducted to test whether or not these estimates are significantly different across groups. Control variables in the model include the sizes of the companies and industries to which they belong, with size approximated by sale volumes and industries given by the Standard Classification of Industries by China Securities Regulatory Commission (CSRC). Year dummies are also included to control for all time-specific factors such as business cycle. In the CEO turnover estimation, CEO's personal characteristics such as age, gender, party membership, education attainment, and job tenure, are also included as additional control variables.

In another variation, the model is specified as follows:

$$\begin{aligned}\text{Turnover} = {} & \alpha + \beta\text{Performance} + \gamma\text{State\_Sharepct} + \varphi\text{State\_Sharepct2} \\ & + \delta\text{Nonstate\_Sharepct} + \eta\text{Nonstate\_Sharepct2} \\ & + \mu\text{State\_Sharepct*Performance} + \nu\text{State\_Sharepct2*Performance} \\ & + \rho\text{Nonstate\_Sharepct*Performance} + \xi\text{Nonstate\_Sharepct2*Performance} \\ & + \kappa\text{X}_\text{i} + \sum_i \varsigma_i \text{Industry}_i + \sum_j \tau_j \text{Year}_\text{j} + \varepsilon \qquad (2)\end{aligned}$$

The main feature of model 2 is to include *sharepct* to measure continuous changes in shareholding. The value of *sharepct* equals the percentage of shares held by the largest owner in a company. To allow the curvilinear effect of ownership concentration on management turnover, we also include the squared term, *sharepct2*. To distinguish state and private block holdings, *State_ Sharepct* is used to indicate the share percentage held by the largest shareholder where the largest shareholder is state. *Nonstate_Sharepct* is used for the share percentage held by the largest shareholder where the largest shareholder is nonstate. The interaction of *State_Sharepct* and *Nonstate_Sharepct* with performance shows the impact of increased ownership concentration on executive turnover when the largest shareholder is, respectively, the state and nonstate. The interaction between *state_ or nonstate_sharepct2* and *performance* captures the curvilinear effect of ownership concentration on executive turnover when performance improves.

To control for firm-specific factors affecting executive turnover, we utilize the panel data to estimate the fixed effect specification of the above models. The cross-sectional model is estimated with both within- and across-company variation. The effect of performance on executive turnover is identified by comparing turnover in two companies with different performance as well as turnover in the same company in different years. In contrast, only the within-company variation is used to estimate the

fixed effect model. The effect of performance on turnover is identified by variation in turnover in the same company in different years. Year dummy variables are excluded from the fixed effect estimations.

Tables 5 through 7 document the estimates of model 1 with the cut-off level for large ownership set at 50%, 33%, and 25% respectively. In these tables, the effects of state ownership conditional on different levels of share concentration are compared. In general, state large shareholding is associated with less sensitive executive turnover to performance than private large shareholding regardless of the cutoff level used to define large shareholding; small state ownership has a weaker performance-turnover link than small private ownership. In some cases, due to the limited number of observations in those groups (e.g. the number of state or private companies that has a large shareholder holding 50% or more shares is small), the effect is not statistically significant.

In Table 8, we show the effect of state vis-à-vis private ownership on executive turnover allowing for continuous effect of concentrated ownership. The results show that shareholding concentration has a different impact on the performance-turnover sensitivity under the state and private ownership. Under the private ownership, the presence of private blockholding enhanced the performance-turnover link and the effect was curvilinear, suggesting an inverse U-shaped relationship between control effectiveness and the private ownership concentration. This result is consistent with Morck et al (1988). Under state ownership, ownership concentration leads to less sensitive CEO turnover to performance. The results pertaining to the director turnover are somewhat ambiguous.

We have also estimated equations (1) and (2) using a slightly different definition of state shareholding. Instead of letting the state ownership equal to one if the largest shareholder is the state, we let the state ownership equal to one if there is any state share in a company, i.e. when it is greater than zero. Similarly, by interacting with large or small shareholding, we create the four group dummies, large state ownership, large private, small state and small private. The estimation results are reported in the tables in the Appendix, Table A1 to Table A3. The pattern of results is similar to what we reported in Tables 5, 6 and 7.

So far, all the estimations are conducted using one-year lag pre-tax profit as the measure of company's performance. To check the robustness of the results, we also estimate the model with two- and three-year lag pre-tax profit and other performance variables such as annual return to stock and return to assets. The results are similar to those that have been reported in the paper. [10]

6. Policy implications

The results of this study have clear and important policy implications. With regard to private ownership, our study suggests that concentrated ownership is positive for managerial discipline, as found in existing literature. With regard to state ownership, our study suggests that, when the state remains the largest owner in a firm, more scattered ownership can help discipline managers. It is even better if the state gives up being the largest owner, or completely withdraws its ownership from a firm. These findings are consistent with previous findings that the reform efforts have had a positive efficiency effect on China's SOEs. But they also suggest that the positive effect is not a reason for

[10] For brevity, these results are not reported in the paper. They are available upon request.

complacency or against privatization, since firms with state ownership do not have as sensitive a link between executive turnover and performance as private firms. These findings do not support the view of Bardham and Roemer (1992) that, while improving efficiency, state ownership can be as efficient as private ownership. Neither do they support the view that in transition to a market economy, privatization is thus not necessary because measures to improve incentives and corporate governance are adequate for SOEs to achieve the highest efficiency.[11]

At a deeper level, Laffont and Tirole (1993) have raised the question why SOEs cannot replicate incentives in private firms for managers and thereby become as efficient. Our study finds that state ownership has a significant effect on management turnover. Since executive appointments in SOEs are made by politicians, our findings suggest the importance of scrutinizing politicians' incentives to solve this puzzle.

It might be argued that the turnover-performance link is weaker in SOEs because the state (politicians) wants to use "high turnover" as a pressure for managers to work harder, as a reward for good managers (i.e., by promoting them up and away), or as a way to more promptly reallocate competent managers to poorly performing companies in hope of turning the companies around. It is theoretically also possible that the proven competent SOE managers are rewarded with better market opportunities. In any of these situations, empirically, we would find a weakened turnover-performance link in SOEs.

Alternatively, the weak turnover-performance link could be explained by the grabbing hand theory of politicians proposed by Shleifer and Vishny (1994, 1999) and Frye and Shleifer (1997). The essence of this explanation is that politicians prefer to

[11] For example, see President Jiang Zemin's Report to the 15th National Congress of the Communist Party of China, September 12, 1997.

appoint their confidants to key executive positions so that they can more conveniently enjoy some private benefits. Since a confidant in a more profitable company is likely to bring more private benefit, such a company is a place of more political wrestling for executive appointments, weakening the link between turnover and performance and thereby hurting efficiency.

It is beyond the scope of this paper to fully discuss and empirically test these competing explanations of the effect of state ownership on the sensitivity of management turnover to performance. Casual observations suggest that, in China's SOEs, executives at very "fat" positions are more likely to be either "promoted" to less enviable positions or prosecuted for economic crimes. The frequent occurrence of the latter events has caused major discussions in Chinese media (government controlled or not) and calls for a better protection of successful entrepreneurs in the state sector. These observations are consistent with the explanation of the weak link of executive turnover with performance by the grabbing-hand theory. We also observe that, due to an immature market for business executives, it has been rare for executives of China's major SOEs to leave their current positions for better market opportunities. While far from being conclusive, these observations do not support the view that a weak link between turnover and performance is explainable by an efficiency-enhancing reward system.[12] In a separate paper, we study the implications of executive turnover for performance in SOEs. We find evidence that an executive turnover leads to the statistically significant poorer performance in an SOE.

[12] If anything, a move in the opposite direction, i.e., from a governmental position to a fat managerial position, seems to be considered by many as a reward. China's largest economic center the municipal of Shanghai seems to have an implicit policy of rewarding loyal party members by appointing them to fat managerial positions in the last years before retirement.

This cast further doubt on the argument that politicians are using high turnovers as a measure to promote better managerial effort and efficiency.

7. Summary

Adopting a new and more general framework and using a unique data set, we have more thoroughly examined the effect of state vis-a-vis private ownership and concentrated vis-à-vis dispersed ownership on the sensitivity of executive turnover to a company's performance. The study has produced consistent and convincing evidence that the sensitivity in question depends on both who the owner is and how concentrated ownership is. Compared with those dominated by private ownership, three distinctive features of management turnover in companies with significant state ownership emerged. First, it is generally higher. Second, it is less sensitive to performance. And third, its sensitivity to performance further declines as ownership becomes more concentrated, while the opposite is true in private firms as found in both this and previous studies.

Our findings have the policy implication that a certain degree of concentration is beneficial for efficiency in private firms. They also suggest that reform measures such as diluting state ownership or the state yielding the largest shareholding position are helpful, but not adequate for improving efficiency in SOEs. These findings are reasons for skepticism that SOEs can ever replicate private incentives for managers, as those responsible for executive appointments might have motivations other than best efficiency in SOEs. Justification for maintaining the state ownership in a transitional economy thus has to be based on considerations other than efficiency.

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Table 1: Concentration of Ownership and Sate Ownership

Year[1]	Number of Listed Companies	Proportion of Companies with a share block greater than 25%	The largest shareholder being State[2]	Proportion of Companies with a share block greater than 50%	The largest shareholder being State[2]	Proportion of Companies with a share block greater than 75%	The largest shareholder being State[2]
1993	219	75.8	(70.48)	35.16	(74.03)	2.74	(100.00)
1994	345	81.45	(73.67)	40.58	(74.29)	6.09	(80.95)
1995	381	83.46	(75.16)	40.94	(81.41)	4.99	(94.74)
1996	599	85.31	(76.91)	41.4	(81.85)	4.01	(95.83)
1997	821	85.87	(80.43)	44.21	(84.57)	4.26	(97.14)
1998	931	87.33	(79.46)	45.33	(84.83)	4.73	(95.45)
1999	1031	88.07	(78.52)	45.59	(85.96)	4.85	(96.00)
2000	1193	87.43	(78.81)	45.43	(86.35)	4.61	(92.73)
2001	1256	86.23	(78.39)	43.79	(86.36)	3.98	(90.00)
2002	1327	86.44	(74.89)	42.5	(84.93)	3.84	(94.12)
2003	1388	84.51	(70.08)	40.13	(80.43)	3.39	(91.49)
2004	1487	82.58	(66.61)	38.6	(78.22)	4.17	(90.32)
2005	1476	82.52	(63.14)	34.55	(73.73)	1.29	(89.47)

Notes:

1. Due to the limited number of companies, summary statistics prior to 1993 were not reported.
2. In parenthesis is the percentage of companies with the state being the largest shareholder among those that have a large share block of at least 25, 50, or 75%.

Table 2: Distribution of four groups of companies

	Percentage		Percentage		Percentage
Large[1] State[4] Ownership	34.00	Large[2] State Ownership	53.06	Large[3] State Ownership	62.48
Large[1] Private	7.91	Large[2] Private	15.24	Large[3] Private	22.78
Small[1] State	35.30	Small[2] State	16.24	Small[3] State	6.83
Small[1] Private	22.79	Small[2] Private	15.45	Small[3] Private	7.91
Number of observations =12549[5]	*100%*		*100%*		*100%*

Note:

1. Large[1] or small[1] indicates whether the company has a large shareholder holding 50% or more shares.
2. Large[2] or small[2] indicates whether the company has a large shareholder holding 33% or more shares.
3. Large[3] or small[3] indicates whether the company has a large shareholder holding 25% or more shares.
4. State or private indicates whether the largest shareholder is the state or private.
5. The total number of company-year observations is 12549.

Table 3: Performance and executive turnover of four groups of companies

	Large State Ownership[1]	Large Private[1]	Small State[1]	Small Private[1]
Performance				
Sales[2]	2.10	1.43	0.84	0.85
Asset[2]	2.83	2.39	2.34	2.20
Pre-tax profit[2]	0.18	0.11	0.06	0.05
Return to Asset	0.044	0.029	0.024	-0.02
Average Yearly Return to Stock	0.068	0.060	0.048	0.01
Executive turnover				
Average board of director turnover[3]	0.023	0.018	0.026	0.033
CEO turnover[4]	0.10	0.04	0.10	0.10
CEO Characteristics				
CEO age	47.60	45.80	47.58	45.14
CEO female	0.03	0.03	0.04	0.03
CEO communist party member	0.28	0.24	0.31	0.24
CEO having more than college degree	0.20	0.26	0.22	0.30
CEO having college degree	0.78	0.72	0.76	0.67
CEO having high school degree	0.02	0.02	0.02	0.03
CEO having less than high school degree	0.001	0.002	0.01	0.004

Note:

1. Large or small indicates whether the company has a large shareholder holding 50% or more shares. State or private indicates whether the largest shareholder is the state or private.
2. Sales, asset, and pre-tax profit are in RMB billion Yuan (1 billion Yuan is equivalent to 130 million dollars).
3. Director turnover indicates on average the percentage of directors being displaced a year in a board.
4. CEO turnover indicates the percentage of companies with CEO being displaced in a year.

Table 4: Industry Distribution and Performance

	Large State Ownership[1]		Large Private[1]		Small State[1]		Small Private[1]		
	Industry distribution[2]	Average profit	Industry distribution	Average profit	Industry distribution	Average profit	Industry distribution	Average profit	Average Profit
Agriculture	1.78	(0.066)[3]	1.72	(0.023)	2.53	(0.016)	2.31	(0.017)	0.031
Mining	2.02	(1.793)	2.12	(0.084)	0.75	(0.097)	0.42	(0.258)	1.101
Manufacturing	65.62	(0.139)	58.53	(0.078)	48.98	(0.040)	51.68	(0.054)	0.087
Utility	4.52	(0.489)	2.02	(0.901)	4.84	(0.133)	2.13	(0.158)	0.309
Construction	2.51	(0.084)	2.22	(-0.025)	0.84	(0.036)	1.26	(0.051)	0.059
Transportation, storage	4.31	(0.249)	4.34	(0.157)	3.73	(0.091)	3.29	(0.077)	0.155
Information technology	4.27	(0.127)	6.96	(0.339)	5.17	(0.048)	9.34	(0.001)	0.080
Wholesale and retail	5.72	(0.056)	6.05	(-0.015)	13.51	(0.036)	4.62	(0.007)	0.035
Finance and insurance	0.02	(.)[4]	0.2	(0.150)	1.33	(0.713)	0.98	(0.544)	0.657
Real estate	3.05	(0.138)	6.26	(0.158)	4.13	(0.077)	5.31	(0.064)	0.099
Services	2.74	(0.126)	0.71	(0.191)	4.47	(0.048)	3.6	(0.045)	0.071
Median and entertainment	0.94	(0.080)	2.52	(0.001)	0.5	(0.021)	1.33	(-0.037)	0.020
Diverse	2.51	(0.069)	6.36	(0.017)	9.22	(0.022)	13.74	(0.023)	0.027
	100%		*100%*		*100%*		*100%*		

Note:

1. Large or small indicates whether the company has a large shareholder holding 50% or more shares; State or private indicates whether the largest shareholder is the state or private.
2. Industry dummies are created based on China Security Regulation Commission (CSRC) Industry classification system. It indicates the company's major industry. "Diverse" indicates that the company operates in diverse industries.
3. In parenthesis is the average pre-tax profit for each group of companies in the corresponding industry. The last column shows the average profit for each industry including all groups of companies. Pre-tax profit is in RMB billion Yuan (1 billion Yuan is equivalent to 130 million dollars).
4. The number is missing because there is only one company belonging to that cell.

Table 5: Managerial Turnover and Profit: Large[1]

	OLS		Fixed Effect	
	Director Turnover	CEO Turnover	Director Turnover	CEO Turnover
Large[1] State Ownership	0.002	-0.036***	-0.069***	-0.042**
	(0.002)	(0.010)	(0.006)	(0.020)
Large[1] Private Ownership	-0.009**	-0.041**	-0.025***	0.006
	(0.004)	(0.019)	(0.008)	(0.031)
Small[1] State Ownership	0.002	-0.036***	-0.039***	-0.042***
	(0.002)	(0.010)	(0.005)	(0.015)
Large[1] State * Pre-tax Profit_ lag 1	-0.004	-0.004	-0.035***	-0.009**
	(0.009)	(0.015)	(0.005)	(0.017)
Large[1] Private * Pre-tax Profit_ lag 1	-0.014*	-0.036	-0.026*	-0.089
	(0.008)	(0.122)	(0.015)	(0.095)
Small[1] State * Pre-tax Profit_ lag 1	0.004	-0.080***	-0.008	-0.077**
	(0.006)	(0.021)	(0.009)	(0.030)
Small[1] Private * Pre-tax Profit_ lag 1	-0.049***	-0.123***	-0.051***	-0.106**
	(0.009)	(0.046)	(0.011)	(0.048)
Constant	0.008	0.361***	0.062***	0.258***
	(0.026)	(0.038)	(0.018)	(0.068)
Adjusted R-square	0.17	0.08		
Number of observations	10936	9617	10936	9617
P-value of F-test: Large[1] State * Profit = Large[1] Private* Profit	0.20	0.80	0.56	0.41
P-value of F-test: Small[1] State * Profit= Small[1] Private * Profit	0.0001***	0.39	0.003***	0.60

Note:

1. Large or small indicates whether the company's largest shareholder holds 50% or more shares.
2. For the CEO turnover, the coefficient estimates of linear probability model with White-corrected standard errors are reported. Both the director and CEO turnover estimations include the control for sales, industry and year dummies. The CEO turnover regression also includes CEO's age, gender, education, job tenure, and party membership status.
3. * p<0.1; ** p<0.05; *** p<0.01

Table 6: Managerial Turnover and Profit: Large[2]

	OLS		Fixed Effect	
	Director Turnover	CEO Turnover	Director Turnover	CEO Turnover
Large[2] State Ownership	-0.002	-0.045***	-0.063***	-0.051***
	(0.003)	(0.011)	(0.005)	(0.018)
Large[2] Private Ownership	-0.010***	-0.035**	-0.023**	-0.016
	(0.003)	(0.015)	(0.006)	(0.023)
Small[2] State Ownership	0.003	-0.042***	-0.033***	-0.044**
	(0.003)	(0.013)	(0.005)	(0.018)
Large[2] State * Pre-tax Profit-Lag1	-0.004	-0.012	-0.034***	-0.016
	(0.003)	(0.015)	(0.005)	(0.017)
Large[2] Private * Pre-tax profit-Lag1	-0.018***	-0.083	-0.028**	-0.093
	(0.007)	(0.075)	(0.012)	(0.067)
Small[2] State * Pre-tax profit-Lag1	0.004	-0.065***	-0.006	-0.059
	(0.008)	(0.025)	(0.015)	(0.046)
Small[2] Private * Pre-tax Profit_ lag 1	-0.056***	-0.120**	-0.060***	-0.108*
	(0.010)	(0.054)	(0.014)	(0.056)
Constant	0.009	0.357***	0.066***	0.263***
	(0.025)	(0.037)	(0.018)	(0.068)
Adjusted R-square	0.17	0.08		
Number of observations	10936	9617	10936	9617
P-value of F-test: Large[1] State * Profit = Large[1] Private* Profit	0.04**	0.35	0.65	0.26
P-value of F-test: Small[1] State * Profit= Small[1] Private * Profit	0.0001***	0.32	0.007***	0.50

Note:

1. Large or small indicates whether the company's largest shareholder holds 33% or more shares.
2. For the CEO turnover, the coefficient estimates of linear probability model with White-corrected standard errors are reported. Both the director and CEO turnover estimations include the control for sales, industry and year dummies. The CEO turnover regression also includes CEO's age, gender, education, job tenure, and party membership status.
3. * p<0.1; ** p<0.05; *** p<0.01.

Table 7: Managerial Turnover and Profit: Large[3]

	OLS		Fixed Effect	
	Director Turnover	CEO Turnover	Director Turnover	CEO Turnover
Large[3] State Ownership	-0.002	-0.032**	-0.056***	-0.026
	(0.003)	(0.015)	(0.007)	(0.023)
Large[3] Private Ownership	-0.008**	-0.003	-0.013***	0.023
	(0.004)	(0.017)	(0.007)	(0.023)
Small[3] State Ownership	0.001	-0.042**	-0.041***	-0.031
	(0.004)	(0.018)	(0.008)	(0.025)
Large[3] State * Pre-tax Profit- Lag1	-0.005	-0.015	-0.036***	-0.022
	(0.003)	(0.015)	(0.005)	(0.017)
Large[3] Private * Pre-tax profit- Lag1	-0.022***	-0.110**	-0.033***	-0.067
	(0.007)	(0.051)	(0.010)	(0.051)
Small[3] State Ownership* Pre-tax profit- Lag1	0.013	-0.042**	0.017	-0.009
	(0.009)	(0.021)	(0.017)	(0.053)
Small[3] Private Ownership* Pre-tax profit- Lag1	-0.069***	-0.128	-0.072***	-0.226**
	(0.013)	(0.087)	(0.014)	(0.087)
Constant	0.008	0.335***	0.066***	0.240***
	(0.026)	(0.036)	(0.019)	(0.069)
Adjusted R-square	0.17	0.08		
Number of observations	10936	9617	10936	9617
P-value of F-test: Large[1] State * Profit = Large[1] Private* Profit	0.01***	0.06*	0.83	0.38
P-value of F-test: Small[1] State * Profit= Small[1] Private * Profit	0.0001***	0.31	0.0002***	0.03**

Note:

1. Large or small indicates whether the company's largest shareholder holds 25% or more shares.
2. For the CEO turnover, the coefficient estimates of linear probability model with White-corrected standard errors are reported. Both the director and CEO turnover estimations include the control for sales, industry and year dummies. The CEO turnover regression also includes CEO's age, gender, education, job tenure, and party membership status.
3. * p<0.1; ** p<0.05; *** p<0.01.

Table 8: Managerial Turnover and Profit: Share Percentage

	OLS		Fixed Effect	
	Director Turnover	CEO Turnover	Director Turnover	CEO Turnover
Pre-tax Profit- lag 1	-0.003	-0.105**	-0.008	-0.106*
	(0.011)	(0.042)	(0.018)	(0.063)
State Share Percentage[1]	-0.048**	-0.114	-0.195***	-0.150
	(0.021)	(0.083)	(0.041)	(0.150)
State Share Percentage Squared	0.045**	0.128	0.087**	0.152
	(0.022)	(0.085)	(0.043)	(0.151)
Non-state Share Percentage	-0.064**	0.129	-0.056	0.096
	(0.027)	(0.109)	(0.049)	(0.178)
Non-state Share Percentage Squared	0.055	-0.260*	-0.017	-0.143
	(0.036)	(0.144)	(0.061)	(0.214)
State Share Percentage * Pre-tax Profit- lag 1	0.006	0.269*	-0.098*	0.251
	(0.037)	(0.139)	(0.056)	(0.190)
State Share Percentage Squared * Pre-tax Profit- lag 1	-0.008	-0.189	0.046	-0.165
	(0.032)	(0.117)	(0.044)	(0.148)
Non-state Share Percentage * Pre-tax Profit- lag 1	-0.240***	-0.143	-0.390***	-0.082
	(0.073)	(0.398)	(0.112)	(0.483)
Non-state Share Percentage Squared * Pre-tax Profit- lag 1	0.331***	0.340	0.558***	0.142
	(0.094)	(0.712)	(0.149)	(0.802)
Constant	0.008	0.273***	0.081***	0.245***
	(0.062)	(0.053)	(0.020)	(0.075)
Adjusted R-square	0.18	0.08		
Number of observations	10936	9617	10936	9617

Note:

1. State share percentage equals the percentage of shares held by the largest shareholder when it is the state. Private share percentage equals the percentage of shares held by the largest owner when it is private.
2. For the CEO turnover, the coefficient estimates of linear probability model with White-corrected standard errors are reported. Both the director and CEO turnover estimations include the control for sales, industry and year dummies. The CEO turnover regression also includes CEO's age, gender, education, job tenure, and party membership status.
3. * p<0.1; ** p<0.05; *** p<0.01

Appendix Table A1: Managerial Turnover and Profit: Large[1] and State_a

	OLS		Fixed Effect	
	Director Turnover	CEO Turnover	Director Turnover	CEO Turnover
Large[1] State_a Ownership	0.003	-0.027**	-0.082***	-0.026
	(0.003)	(0.012)	(0.006)	(0.020)
Large[1] Private_a Ownership	-0.013**	-0.021	-0.026***	0.004
	(0.004)	(0.021)	(0.009)	(0.033)
Small[1] State_a Ownership	0.003	-0.025***	-0.053***	-0.024
	(0.003)	(0.011)	(0.005)	(0.016)
Large[1] State_a * Pre-tax Profit_ lag 1	-0.002	-0.004	-0.032***	-0.011
	(0.003)	(0.016)	(0.005)	(0.017)
Large[1] Private_a * Pre-tax Profit_ lag 1	-0.012	-0.078	-0.024	-0.149
	(0.015)	(0.137)	(0.023)	(0.107)
Small[1] State_a * Pre-tax Profit_ lag 1	-0.002	-0.087***	-0.011	-0.073**
	(0.006)	(0.022)	(0.008)	(0.029)
Small[1] Private_a * Pre-tax Profit_ lag 1	-0.049***	-0.115**	-0.061***	-0.108**
	(0.011)	(0.051)	(0.014)	(0.052)
Constant	0.009	0.370***	0.077***	0.240***
	(0.031)	(0.036)	(0.018)	(0.068)
Adjusted R-square	0.17	0.08		
Number of observations	10936	9617	10936	9617

Note:

1. Large or small indicates whether the company's largest shareholder holds 50% or more shares.
2. State_a or private_a indicates whether the company has any state shares. If the total percentages of state shares are greater than zero, state_a=1, otherwise state_a=0;
3. For the CEO turnover, the coefficient estimates of linear probability model with White-corrected standard errors are reported. Both the director and CEO turnover estimations include the control for sales, industry and year dummies. The CEO turnover regression also includes CEO's age, gender, education, job tenure, and party membership status.
4. * p<0.1; ** p<0.05; *** p<0.01

Appendix Table A2: Managerial Turnover and Profit: Large^2 and state_a

	OLS		Fixed Effect	
	Director Turnover	CEO Turnover	Director Turnover	CEO Turnover
Large^2 State_a Ownership	-0.002	-0.041***	-0.077***	-0.035*
	(0.003)	(0.013)	(0.005)	(0.019)
Large^2 Private_a Ownership	-0.015***	-0.034*	-0.023***	-0.005
	(0.004)	(0.015)	(0.007)	(0.027)
Small^2 State_a Ownership	0.003	-0.030**	-0.048***	-0.020
	(0.003)	(0.014)	(0.005)	(0.018)
Large^2 State_a * Pre-tax Profit_ lag 1	-0.002	-0.012	-0.029***	-0.017
	(0.003)	(0.015)	(0.005)	(0.017)
Large^2 Private_a * Pre-tax Profit_ lag 1	-0.014	-0.124	-0.031*	-0.158**
	(0.012)	(0.086)	(0.018)	(0.072)
Small^2 State_a * Pre-tax Profit_ lag 1	-0.004	-0.079***	-0.015	-0.065
	(0.008)	(0.026)	(0.012)	(0.043)
Small^2 Private_a * Pre-tax Profit_ lag 1	-0.057***	-0.093*	-0.063***	-0.086
	(0.012)	(0.055)	(0.016)	(0.062)
Constant	0.012	0.381***	0.066***	0.244***
	(0.031)	(0.035)	(0.018)	(0.068)
Adjusted R-square	0.17	0.08		
Number of observations	10936	9617	10936	9617

Note:

1. Large or small indicates whether the company's largest shareholder holds 33% or more shares.
2. State_a or private_a indicates whether the company has any state shares. If the total percentages of state shares are greater than zero, state_a=1, otherwise state_a=0;
3. For the CEO turnover, the coefficient estimates of linear probability model with White-corrected standard errors are reported. Both the director and CEO turnover estimations include the control for sales, industry and year dummies. The CEO turnover regression also includes CEO's age, gender, education, job tenure, and party membership status.
4. * p<0.1; ** p<0.05; *** p<0.01.

Appendix Table A3: Managerial Turnover and Profit: Large[3] and state_a

	OLS		Fixed Effect	
	Director Turnover	CEO Turnover	Director Turnover	CEO Turnover
Large[3] State_a Ownership	-0.001	-0.033*	-0.066***	-0.009
	(0.004)	(0.019)	(0.007)	(0.026)
Large[3] Private_a Ownership	-0.008*	-0.015	-0.008	0.022
	(0.004)	(0.021)	(0.007)	(0.027)
Small[3] State_a Ownership	0.003	-0.042**	-0.050***	-0.012
	(0.005)	(0.021)	(0.008)	(0.026)
Large[3] State_a * Pre-tax Profit_ lag 1	-0.003	-0.016	-0.032***	-0.023
	(0.003)	(0.015)	(0.005)	(0.017)
Large[3] Private_a * Pre-tax Profit_ lag 1	-0.023**	-0.114**	-0.035***	-0.099*
	(0.010)	(0.055)	(0.014)	(0.053)
Small[3] State_a * Pre-tax Profit_ lag 1	0.004	-0.054**	0.004	-0.028
	(0.008)	(0.022)	(0.014)	(0.049)
Small[3] Private_a * Pre-tax Profit_ lag 1	-0.075***	-0.112	-0.093***	-0.188*
	(0.016)	(0.097)	(0.023)	(0.104)
Constant	0.007	0.371***	0.077***	0.223***
	(0.031)	(0.038)	(0.019)	(0.070)
Adjusted R-square	0.17	0.08		
Number of observations	10936	9617	10936	9617

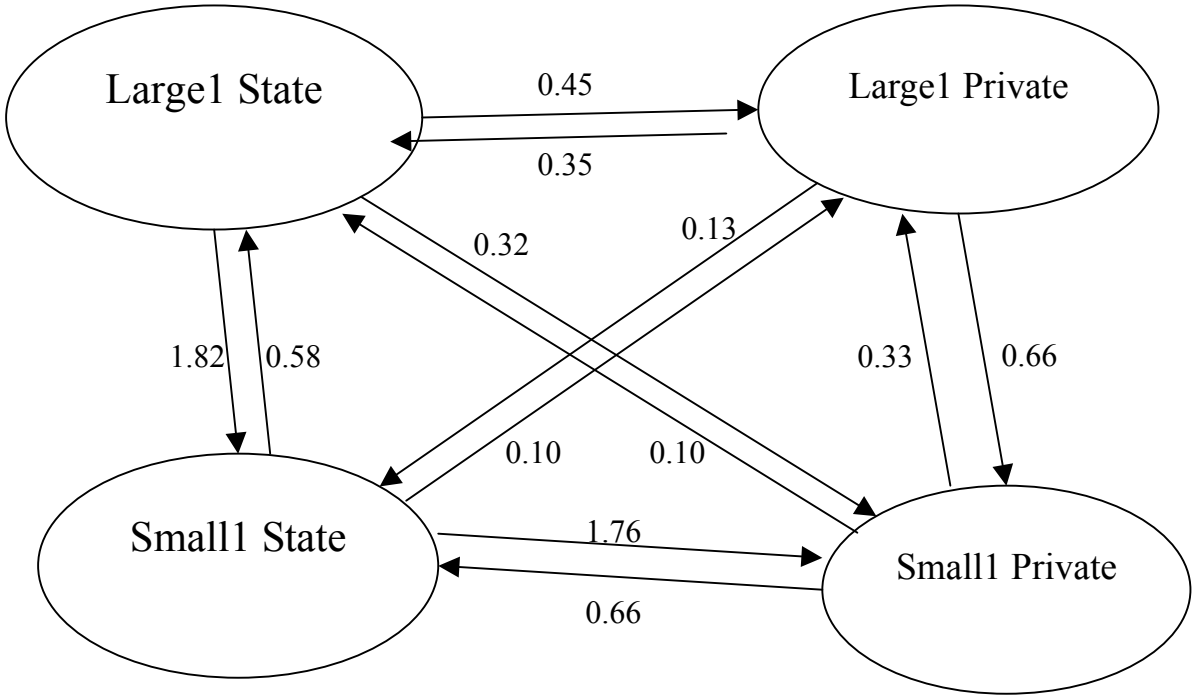
Note:

1. Large or small indicates whether the company's largest shareholder holds 25% or more shares.
2. State_a or private_a indicates whether the company has any state shares. If the total percentages of state shares are greater than zero, state_a=1, otherwise state_a=0;
3. For the CEO turnover, the coefficient estimates of linear probability model with White-corrected standard errors are reported. Both the director and CEO turnover estimations include the control for sales, industry and year dummies. The CEO turnover regression also includes CEO's age, gender, education, job tenure, and party membership status.
4. * p<0.1; ** p<0.05; *** p<0.01.

Figure 1: Classification of Four Groups of Companies

Ownership	Concentration: Large	Concentration: Small
state	1)	3)
private	2)	4)

Figure 2: Move between Groups



Note:

1. Large[1] or small[1] indicates whether the company has a large shareholder holding 50% or more shares.
2. State or private indicates whether the largest shareholder is the state or private.
3. The number indicates the percentage of companies switching between groups.