

**CEO Promotion, Relative Performance Measure and Institutions in an Emerging Market:
Evidence from China's Listed State-Owned Enterprise***

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Abstract

This paper investigates CEO turnover and the usefulness of relative performance evaluation (RPE) as a management incentive in an emerging economy lacking market-based competition. In a sample of China's listed state-owned enterprises (SOEs) from the period 2001-2005, we find that 41% of departing CEOs in SOEs is being promoted. The promotion is positively associated with preceding firm performance relative to peers in the same region and this association is more significant than that between the promotion and firm's specific performance. Furthermore, the promotion outperforms other incentive schemes such as CEO demotions by 5%-8% in terms of subsequent Tobin's Q in three years. These consequences persist in undeveloped regions where there are fewer firms listed on the stock market, a lower stock market capitalization, or a higher regional Herfindahl-Hirschman Index (*HHI*). The findings imply that promotion based on RPE provides a critical incentive by creating competitions.

Key Words:

Incentive Scheme, Promotion, Relative Performance Evaluation (RPE), Market Competition, China's SOEs

1. Introduction

Previous studies have implied that the tournament based on relative performance evaluation (RPE) play a crucial role in contracting because RPE gives accurate information on an agent's actions in a competitive market by filtering out the common factors faced by the agent's peers (Antle and Smith, 1986; Gibbons and Murphy, 1990; Barro and Barro, 1990; Dye, 1992; Janakiraman, Lambert and Larcker, 1992; Aggarwal and Samwick, 1999; DeFond and Park, 1999; Garvey and Milbourn, 2003). However, there is little empirical evidence on this issue. This study attempts to fill this void by investigating the incentive role of RPE in a unique institutional setting in China.

In the market competition, RPE provides a more precise measure of the idiosyncratic efforts of agents by eliminating common factors such as market or industry conditions (Diamond and Verrechia, 1982; Holmstrom 1979, 1982). This gives a principal more accurate information on an agent's effort, and thus reduces agency costs. The information role of RPE is enhanced in a competitive environment because agents are more likely to be subject to similar uncertainties and to have more peers, and because any given agent's actions are unlikely to affect the output of other agents (DeFond and Park, 1999; Holmstrom, 1982). However, there is a little evidence that RPE is effective in environments lack of market competition as an incentive to motivate agents' actions. Shleifer (1985) suggests that in theory RPE is the first-best incentive in a highly regulated environment in which regulators determine the price rating, and tends to motivate agents' effort by artificially creating competition. A few studies provide evidence that RPE is a useful incentive in the public sector. For example, Besley and Case (1996) show that the economic performance of a state relative to neighboring states has a positive impact on the re-election prospects of US

governors as a consequence of the states' relative taxation behavior.¹ Matsumura and Shin (2006) find evidence that financial performance improves following the implementation of an incentive scheme that includes relative performance measures in a sample of 214 postal stores in South Korea, because RPE motivates reduced effort when workers perceive unfairness in competition. Those studies only describe the incentive role of RPE in behavioral theories given the regulated environment or public sectors.

A sample of China's state-owned enterprises (SOEs) is a natural laboratory to empirically test the theory of the incentive role of RPE in a weak market competition for several reasons. First, China's SOEs are affiliated with the Chinese bureaucratic hierarchy, and are thus scarcely subject to market-based competition. Although SOEs are listed and traded on the stock, a significant portion of state shares remain non-tradable (Alchian, 1965; Fan et al., 2007; Jensen and Meckling, 1979; Karpoff and Rice, 1989). As the management of SOEs remains under the authority of the Central Committee of the Communist Party of China (CPC), it also lacks a competitive managerial labor market (Li et al., 2005; Grove et al. 1995). Second, China's government has explicitly incorporated relative economic performance criteria into the procedure of evaluating officials since economic reforms were launched in 1980s' (Oi, 1992; Qian et al., 1997; Li et al., 2005; Qian et al., 2000). Government reports or yearbooks and the mass media regularly publish detailed information on relative provincial performance rankings in such varied areas as GDP growth, sales revenue, profit, steel production, and miles of road constructed. Third, there is considerable variation across jurisdictional regions in China in terms of both market development and the extent of government control. A large sample of listed SOEs affiliated with different regional governments thus allows

¹ Besley and Case (1996) indicate that voters choose whether or not to reelect officials based on their performance while in office, using neighboring jurisdictions to evaluate the performance of the incumbent based on tax competition.

us to examine the incentive role of RPE tangled with institutions in regions.

As Chinese governments usually rely on administrative approaches such as appointment and remove of senior officials to administer SOEs and design the incentive schemes for managers in SOEs, this study investigates the research questions as follows. First, how have the incentive schemes been designed in SOEs and what are determinants of incentive schemes? Second, is the incentive scheme linked to firm performance, especially, is it linked to relative performance measure? Third, what consequences have those incentive schemes caused? Forth, how do those incentive schemes work with institutions in Chinese emerging market?

The results reveal several key findings. First, promotion is most frequently adopted in Chinese SOEs as an incentive for CEOs. Among the CEOs leaving office in the study period, 41% were promoted within the firm, or to the parent firm, or to another firm in higher layer of Chinese bureaucratic hierarchy; 15% were demoted (most often internally); 15% were rotated or reassigned to an equivalent-ranking position; 13% entered a government entity; 8% were imprisoned, and 8% were assigned another usually honorary position, such as honorary chairman or supervising board director. Further, the promotion occurs more frequently in SOEs affiliated with the central government, in SOEs located in undeveloped or poorer regions and in SOEs in regulated industries. Second, the promotion is significantly associated with the firm's individual performance (ROA) but more significantly associated with the firm's performance relative to peers in the region. Third, the promotion is positively associated with the subsequent three-year Tobin's q and outperforms other incentive schemes by 5%-8%. These effects are significant in the subsample where there are fewer firms listed on the stock market, a lower stock market capitalization, or a higher regional Herfindahl-Hirschman Index (*HHI*) value.

Our findings make several contributions as follows. First, it extends the literature on executive

compensation and incentive. DeFond and Park (1999) find that RPE is useful in highly competitive environments and that competitive environments are more conducive to RPE. By examining the use of RPE in an emerging market lack of market competition, this study complement prior studies by demonstrating that RPE might lead to tournament and play an important role for incentive in a market lack of competition. Second, our student extends the accounting literature on performance measures. Previous studies have cast doubt on the usefulness of accounting information in a developing economies such as China in which the market is less functional, government intervention is strong, and state-owned firms dominate (Ball et al. 2000, 2003; Bushman et al., 2006; Fan et al. 2002; Opper, 2007; Li et al., 2004). This study implies that accounting measures are useful for contracting in such an environment if they are properly designed. Third, our study sheds insights on the corporate governance of China's SOEs. We look into the executive incentives in SOEs and

The remainder of this paper is organized as follows. Section 2 discusses the background and develops the hypotheses. Section 3 presents the variables measures and research model. Section 4 describes the data and sample. Section 5 reports the results. Section 6 concludes the paper.

2. Background and Hypothesis

2.1 Incentive schemes in China's SOEs

China's SOEs are affiliated with a huge Chinese bureaucratic hierarchy that is lack of market competition. The Chinese governments have ultimate ownership of SOEs that cannot be freely traded in the market (Alchian, 1965; Fan et al., 2007; Jensen and Meckling, 1979; Karpoff and

Rice, 1989).² The lack of market competition is exacerbated by the absence of a large secondary owner who serves as a powerful monitor and benefits from additional firm productivity (Shleifer and Vishny, 1986). In such a bureaucratic hierarchy, the Central Committee of the Communist Party of China (CPC), which functions more or less as the personnel department of this enormous organization, ultimately controls the mobility of officials within the system, maintaining dossiers and tracking managerial careers.³ If an official is separated from the government hierarchy, then his or her career in the political system is disrupted (Li et al. 2005). Hence, Chinese government officials have few options outside the internal labor market.⁴ This highly centralized personnel machine relies heavily on administrative means of control such as personnel appointments and removes. Monetary rewards play a much less prominent role either in implicit contracts or remuneration in a bureau. In part, this is because the relationship between a bureaucratic superior and his or her subordinates is authoritative, and administrative compulsion is more likely to elicit compliance than would be the case under market pressure. In addition, the lock-in effect, coupled with the huge difference in the personal benefits of staying in power and relinquishing power, greatly reinforces the incentive for Chinese officials to remain in office.⁵

2.2 The relative performance measure as explicit incentive in China's SOEs

The Chinese government has explicitly incorporated relative performance evaluation (RPE) into the control mechanism of the bureaucratic hierarchy. The use of RPE encourages better economic

² Although many SOEs are listed on the stock market, some or all of their state assets or shares are non-transferable. The restrictions on trading shares means that businesses are less subject to market forces.

³ In China, personnel control is centralized in the hands of the Communist Party of China (CPC) and the government. The State-owned Assets Supervision and Administration Commission (SASAC), authorized by the CCP at the state or local level and the government, takes responsibility for this as an investor of state-owned assets on behalf of the central or local government, and one of its tasks is to select and appoint the management of state-owned enterprises (please refer to the Web page of the SASAC at www.sasac.gov.cn for more details).

⁴ Since the mid-1990s, China's private sector, which is relatively free of the Party's control, has grown into a large employer in the labor market, and there is thus a possibility for officials to quit the government and be employed by private firms.

⁵ The chairman of the board of an SOE may be promoted to a leading position in the local or central government, such as Vice Mayor, Vice Province Governor, or State Secretary.

performance by artificially creating competition among regions or local governments. In the economic reforms implemented since the 1980s, the Chinese central government has pursued an explicit policy of stimulating regional competition, such as encouraging regions to “get rich first.” Indeed, both the lobbying position of a local government and the careers of local governor in a higher government entity or the central government are determined by local economic performance relative to similar jurisdictions or areas (Oi, 1992; Montinola et al., 1995; Qian and Xu, 1993; Qian and Weingast, 1997). In the contest, Chinese government would like to select “elites” to lead the bureaucratic hierarchy and one of the major channels of elite recruitment appears to promote persons based on the rankings of performance in related fields (Li and Bachman, 1989).⁶ In addition, government reports or yearbooks and the mass media regularly publish detailed information on relative provincial performance rankings in such varied areas as GDP growth, sales revenue, profit, steel production, and miles of road constructed. In an analysis of 520 Chinese SOEs, Maskin et al. (2000) find that firm performance across regions is more useful than inter-industry performance, and document a positive relationship between the lobbying status of a Chinese province (as measured by the ranking of the provincial per capita number of Central Committee members in the Party Congress) and its economic performance ranking in terms of growth rate one year before the Party Congress.⁷ Second, the use of RPE may be especially helpful in less competitive markets to mitigate the information costs and efficiency problems arising from political competition encouraged by the central government. In the appraisals of SOE managers, the government or regulator may evaluate economic outcomes by firm-specific earnings, thus

⁶ By analyzing 247 mayors of 1986 in China, Li and Bachman (1989) find that more than 80 percent have worked in industrial fields and taken the superior position such as factory director. They state that elites will be co-opted to serve in various formal organizations, and will be expected to defend and advance institutional interests.

⁷ Chen et al. (2005) find that the turnover of provincial leaders hinges on provincial economic performance relative to their immediate predecessors.

requiring firms to reveal private information (Stigler, 1971; Laffont, 1994).⁸ ⁹ When RPE is used, an SOE's performance is related to other similar firms in the same region. In this case managers may make greater effort to adjust to changes in circumstances to improve firm performance, much as they would in a competitive market.

This setting with weak market competition and the explicit policy of RPE make it ideal to test the incentive and the role RPE for incentive.

3. Variables and models

3.1 Incentive schemes in China's SOEs

Based on administrative means of personnel control in China's SOEs (Huang, 1998), we classify the incentives as follows:

Promotion. Promotion has substantial motivation effects when employees know in advance that there is a likelihood of promotion and are aware of the personal benefits afforded by the higher position. According to Gibbs (1996), promotion is usually based on one of two extreme models: the first is to run a contest or tournament and the second is to set a quota or absolute performance standard. Although these seemingly disparate means are almost identical in terms of their incentive properties, the tournament model based on relative performance measures is generally more applicable in empirical work. Lazear and Rosen (1981) suggest that it might be less costly to observe relative performance than to measure the level of a worker's individual output when monitoring is so difficult that moral hazard is a serious problem. While promotion on the basis of

⁸ More precisely, under the Chinese political hierarchy, the State Assets Supervision and Administration Commission (SASAC) governs China's SOEs on behalf of the state or local government (see the graph in Appendix B). SOEs officially report their operational performance to the SASAC in their respective jurisdiction, and the SASAC at the local level reports directly to the administrative level of the SASAC directly above it. The SASAC of the State Council reports directly to the State Council.

⁹ The SASAC's mandate includes the drafting of laws and regulations regarding state-owned assets, the management of state assets, and the hiring and firing of the top executives of SOEs.

RPE might be preferable in an undeveloped market with a serious monitoring problem such as the information cost and efficiency problems mentioned above, it is an open issue to be tested. Here, promotion is identified as: i) a CEO being appointed as chairman of the board or vice-chairman within a firm; ii) a chairman of the board or CEO being appointed as a senior executive in the parent firm; iii) a chairman of the board or a CEO being appointed as a senior executive in another SOE in an equivalent bureaucratic layer or to an equal-ranking position in another SOE in a higher bureaucratic layer.

Entering government. Future opportunities for SOE managers include entering a government entity to take up a position in an industrial bureau or administrative division of the government or even as a governor, such as a mayor, provincial governor, or party secretary. The incentive effect derives from SOE managers observing that government positions will not be snatched up by outsiders every time they become available, and that incumbents in these positions are afforded certain privileges, such as a secretary, company car, and access to political resources.

Rotation. Rotation is a practice whereby officials are regularly rotated in bureaucratically equivalent positions. For example, the CEO of ChinaTelecom Co., a company held by the central government, may be reassigned to manage ChinaUnicom Co., which is also held by the central government. A chairman of the board or CEO taking up an equivalent position in an SOE affiliated with the equivalent layer of government is classed as a rotation.

Demotion. Demotion is defined as: i) a chairman of the board being appointed as the director, CEO, or executive of the firm or other SOE affiliated with the equivalent bureaucratic layer; and ii) a CEO being appointed as a non-chief executive in the firm or other SOE affiliated with the equivalent bureaucratic layer. Relinquishing power greatly reinforces the incentive for SOE managers, because terminated managers lose the major source of benefits associated with such

power. Existing studies, which focus on privately held firms in developed market economies, have tested the relation between the forced management turnover (presumably demotion) and firm performance. For example, some demonstrate that forced management turnover is significantly negatively associated with firm-specific accounting performance (Brickley, 2003; EHW, 2003; Kaplan, 1994; Weisbach, 1988); others find that the disciplinary turnover is negatively related to the RPE (Cannella et al. 1995; DeFond et al., 1999; Huson et al., 2003).

Imprisonment. If SOE managers engage in gross misconduct, then they may suffer consequences beyond losing their jobs or being demoted or fined, such as serving a prison sentence. The risk of litigation acts as an incentive in undeveloped markets while legal enforcement is weak (Sun et al., 2006).

Other honorary positions. The managers of SOEs may be assigned to an honorary yet virtually powerless position, such as honorary chairman of the board, non-executive director of the board, grass-roots party secretary, or chairman of a supervisory committee. Whatever gloss may be put on this, they lose the decision rights that they had as chairman of the board or CEO. Because the difference in these positions is subtle, they are grouped under the heading “other honorary positions.”

3.2 Relative performance evaluation (RPE)

In an attempt to encourage regions to “get rich first,” the Chinese government evaluates economic performance by comparing performance between regions. For the administration of the nation, China is partitioned into jurisdictions based on provincial units. There are 31 provincial units, including four directly ruled municipalities, 22 provinces, and five autonomous regions.¹⁰

¹⁰ The four direct-ruled municipalities are Beijing, Shanghai, Tianjing, and Chongqing. The 22 provinces are Hebei, Shanxi, Liaoning, Jilin, Heilongjiang, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, Shandong, Henan, Hubei, Hunan, Guangdong, Hainan,

Based on this jurisdictional partitioning, the Chinese bureaucratic hierarchy broadly consists of four layers for administration of SOEs: central, provincial, municipal, and county (see Appendix A for more details). Hence, SOEs in the same bureaucratic layer and located in the same provincial unit are defined as a reference group. There are 124 (31 provincial units * 4 layers) reference groups in total. The RPE is then defined as a firm i 's return on assets (ROA) less the average ROA in the reference group.

3.3 Other factors

$SIZE_{it}$, which is measured as the log of the total assets of a firm, is a proxy for firm size. Berry et al. (2000) suggest that an increase in size increases management entrenchment, and thus top executives are less likely to be found “incompetent.”

DA_{it} , which is the debt-to-assets ratio of a firm, is a proxy for leverage risk or financial distress. This is included because Gilson (1990) provides evidence that management turnover is greater in financially distressed firms.

$OWNERSHIP_{it}$, which is the percentage of state ownership ultimately held by the government, is a proxy for the level of government ownership. Highly concentrated ownership will presumably give the controlling shareholder more incentive to monitor management (La Porta et al., 2000). When the incumbent manager is doing a poor job, the controlling owner has a strong incentive to select the “right” person to ensure that management acts in his or her interests (Fama and Jensen, 1983; Jensen and Meckling, 1976). This factor often determines the adoption by state owners of administrative means as an incentive.

Sichuan, Guizhou, Yunnan, Shanxi, Gansu, and Qinghai. The five autonomous regions are Inner Mongolia, Guangxi, Tibet, Ningxia, and Xinjiang.

$Indusmb_{it}$, which is the industry (two-digit SIC code) median market-to-book ratio, is a surrogate for the investment opportunity set (IOS). Previous research indicates that the IOS may be associated with management change because firms with a good IOS demand high-quality managers and thus engage in more frequent management changes (Smith and Watts, 1992).

AGE is included because it affects the retirement or termination incentives. When an incumbent chairman or CEO is close to retirement, the incentive effect of promotion should be stronger (Kale et al., 2009).

$Employee_{it}$, which is the log of the number of employees in a firm, is included to control for the effect of political factors on the selection of managers by the Chinese political hierarchy, because both SOEs and politicians have a social obligation to maintain the rate of employment (Fan et al., 2007).

GDP_{it} , which is the log of the local (provincial) gross domestic product (GDP), is included to control for variety in economic conditions across regions (Fan et al., 2007).

HHI_{it} , which is the industrial Herfindahl-Hirschman Index by two-digit SIC code,¹¹ is included to control for industrial competition. Strong industrial competition reinforces the usefulness of RPE in contracts (DeFond and Park, 1999).

4. Data and sample

¹¹ The industrial HHI is calculated by squaring the market share of each firm competing in an industry and then summing the resulting numbers. It is expressed as

$$HHI = s_1^2 + s_2^2 + s_3^2 + \dots + s_n^2, \text{ where } s_n \text{ is the market share of the } i\text{th firm in the industry.}$$

The closer a market is to being a monopoly, the higher its level of ownership concentration (and the weaker its competition). If, for example, there were only one firm in an industry, then that firm would have a 100% market share, and the HHI would equal 10,000 (100^2), indicating a monopoly. In contrast, if there were thousands of firms competing in an industry, then each would have a nearly 0% market share, and the HHI would be close to zero, indicating near perfect competition.

4.1 Data

Regarding CEO's turnover, we track where a CEO has gone after being removed by reading the annual reports of the firms and searching the major news and business publications, including the top 50 newspapers and news wire services. Firms are excluded from the sample if a CEO was removed due to "natural" reasons, which include i) natural retirement or the expiration of an acting position; ii) death; iii) change of ownership, such as privatization; and iv) resignation, or if there are missing values. The final sample includes 462 listed SOEs in China for the period 2001 to 2005.

All of the financial data, including return on assets (ROA), total assets, debt, sales, percentage shareholding, market-to-book ratio, managers' ages, number of employees, and Tobin's q, are obtained from the China Securities Markets and Accounting Research (CSMAR) database. The institutional data, such as local (provincial) GDP, are collected from government yearbooks.

4.2 Sample description

Table 1 shows the number and frequency of incentive schemes used in SOEs from the raw data without processing the other variables. The sample consists of 1,159 firm years in the period 2001 to 2005 in which a CEO left his or her position. After leaving office, 41 percent of CEOs were promoted, among which half were promoted to the position of chairman or vice-chairman within the firm and the other half were promoted to top management in the parent firm. In addition, 15 percent of removed CEOs get demoted, 15% being rotated, 13% entering government, 8% being imprisoned, and 8% taking an honorary position.

[Table 1]

Table 2 shows the distribution of the incentive schemes by partitions based on institutions. The

Panel A of Table 2 presents the distribution by bureaucratic layers with which SOEs are affiliated. The promotion is more commonly used for incentives in all bureaucratic layers, compared with other incentives. At the central level of administration,¹² especially, promotion occurs more frequently than that at other local levels of administration, 43% of removed CEOs being promoted (10% more than that at the county level). CEOs at the county level are more frequently demoted. CEOs at the middle level - the city level or provincial level, are more likely to enter governments or be imprisoned.

The Panel B of Table 2 presents the distribution of the sample by regions ranked by local GDPs.¹³ The frequency of promotion (50%) is the highest in the poorest area, the North, where the market is undeveloped and market forces are weakest. The frequency of demotion or imprisonment is higher in the richer areas of the Northeast and East. The potential reasons are that the regulations and legal enforcement are more effective in more developed areas. The frequency of entering government is 21% in the less developed area - the Southwest.

The Panel C of Table 2 describes the distribution of the sample by industries according to the one-digit Chinese SEC code. The table shows that promotion is more common in the regulated industries. For example, there are 41% of CEOs being promoted in the mining (B) industry, 59% in the power, oil, and water (D) industries, 44% in the transportation (F) industry, and 50% in the banking and finance (I) industries. In strategic industries such as telecoms (G) and banking and

¹² There are several layers of government ownership: central, provincial, municipal, and county (please see details in Appendix A). Save for the central level, the other levels are called local government ownership. As central government ownership of such companies as energy or defense-related firms is considered key to national security, the central government maintains significant absolute or relative controlling stakes in these enterprises, and central government ownership occupies a substantial share of the economy.

¹³ According to the *Government Yearbook*, China is partitioned into six administrative areas: North, which consists of five provincial units (Beijing, Tianjing, Heibei, Shanxi, and Inner Mongolia); Northeast, which consists of three provincial units (Liaoning, Jilin, and Heilongjiang); East, which consists of seven provincial units (Shanghai, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, and Shandong); Central, which consists of six provincial units (Henan, Hubei, Hunan, Guangdong, Guangxi, and Hainan); Southwest, which consists of five provincial units (Chongqing, Sichuan, Guizhou, Yunnan, and Tibet); and Northwest, which consists of five provincial units (Shanxi, Gansu, Qinghai, Ningxia, and Xinjiang). The less developed areas are poorer, with a lower GDP.

finance (I), the rotation of key personnel is more frequent. The agricultural production (A) and media and communications (L) industries have a lower frequency of promotion and a higher frequency of demotion. In the heavy construction (E) and transportation (F) industries, which are critical to the national economy, and in the social service and infrastructure (K) industries, chairmen and CEOs are more frequently appointed as government officials, and are also most frequently appointed as top-ranking government leaders. Criminal conduct most frequently occurs in the real estate (J), social service and infrastructure (K), and media and communications (L) industries. This implies that managerial misconduct in these industries carries a greater litigation risk. In summary, the results imply that promotion is the most frequently used incentive scheme in the higher bureaucratic layers of government control and in the poorer or undeveloped regions and regulated industries where the market is less free.

[Table 2]

Panel A of Table 3 reports the descriptive statistics for the sample firms and shows the tests of differences. A control group consists of firms without CEO turnover. The comparison is between firms with different incentive schemes and the control group. The first two variables are firm-specific accounting measures of firm performance used in previous studies (Engel et al., 2003; Chang and Wong, 2004; Kato and Long, 2006; Weisbach, 1988). Firms in which the departing manager was promoted on average demonstrate both positive current performance (ROA_{it}) and positive lagged performance (ROA_{it-1}). The average lagged performance (ROA_{it-1}) is significantly higher in this sample than in the non-turnover sample (t-value = -2.39, significant at the 5% level). Firms in which the departing manager was demoted on average underperform those in the non-turnover sample in terms of both current and lagged performance (ROA_{it} : t-value = 2.09, significant at the 5% level; ROA_{it-1} : t-value = 1.78, significant at the 10% level). Firms in which

the departing manager was assigned to another honorary position also on average underperform those in the non-turnover sample in terms of both measures of firm-specific performance (ROA_{it} : t-value = 2.43, significant at the 5% level; ROA_{it-1} : t-value = 2.55, significant at the 5% level). Although the firms in which the departing manager was imprisoned underperform the control group, the difference is not significant.

The next variable of interest is the RPE measure. The lagged performance (RPE_{it-1}) is significantly higher in the turnover sample than in the non-turnover sample (t-value = -2.01, significant at the 5% level). Firms in which the departing manager was assigned to another honorary position on average underperform the non-turnover group in terms of relative performance (t-value = 2.28, significant at the 5% level for RPE_{it-1}).

Several of the firm characteristics variables are also associated with management change. Firm size, as proxied by $SIZE_{it}$, has a significant effect on certain incentive schemes, with demotion and rotation occurring significantly more often in smaller firms compared with the control group. However, firm size does not significantly affect the frequency of promotion, entering government, imprisonment, or assignment to another honorary position. DA_{it} , which is the debt-to-assets ratio of a firm, is a proxy for leverage risk or financial distress. Firms in which the departing manager was rotated have a significantly lower leverage risk (t-value = 2.87, significant at the 1% level). Firms in which the departing manager was promoted also have a lower leverage risk, but the difference is not significant. Firms in which the departing manager was imprisoned have a higher leverage risk, but again the difference is not significant. $OWNERSHIP_{it}$, or the percentage of state ownership ultimately held by the government as a proxy for government ownership, has a limited impact, in that firms in which the departing manager was rotated have a significantly higher level

of government ownership (t-value = -1.96, significant at the 5% level for $OWNERSHIP_{it}$). There is almost no difference in the level of government ownership between the promotion group and the control sample. None of the other between-group differences are significant.

$Indusmb_{it}$ (industry median market-to-book ratio by two-digit SIC code), which is a surrogate for the investment opportunity set (IOS), has some effect in firms in which the departing manager was promoted or rotated, as their IOS ($Indusmb_{it}$) is significantly higher. There is no significant difference in the values for this variable among the other groups. Excluding natural retirement or termination, Table 3 shows AGE to have some effect, with managers forced to leave office being on average significantly younger than the managers in the control sample. Among those forced to leave or reappointed, however, the promotion group has the highest average age of 47.1 years. This is consistent with the argument of Kale et al. (2009) that when an incumbent chairman or CEO is close to retirement, the incentive effect of promotion should be stronger. Finally, the remaining variables affecting management change are institutional factors. $Employee_{it}$, which is the log of the number of employees and controls for the effect of non-economic factors on the selection of managers, is significantly lower in the demotion, rotation, and entering government incentive groups. However, there is no significant difference between the promotion group and the control sample. GDP_{it} is the log of local (provincial) GDP and controls for variation in economic conditions across regions (Fan et al., 2007). In the sample of firms in regions with a significantly lower local GDP, which indicates a poorer or undeveloped economic environment, only the promotion incentive is adopted. HHI_{it} , which is the industrial Herfindahl-Hirschman Index by two-digit SIC code and controls for industrial competition, is higher among firms in which the departing manager entered government, indicating that these firms operate in near-monopoly industries. The group of firms in which the departing manager was reassigned to another honorary

position are mainly in the more competitive industries with a lower industrial HHI.

[Table 3: Panel A]

5. Results

5.1 Association between incentive schemes and prior firm performance

This section presents empirical evidence on the relation between incentive schemes and preceding RPE. Logistic regression model is employed for the data analysis. The dependent variable is the likelihood of an incentive scheme, whether demotion, rotation, promotion, entering government, imprisonment, or being assigned another honorary position, being used. The independent variable is the preceding performance of the firm (preceding RPE), and personal features, institutional factors, and the preceding firm characteristics are included as control variables. Industry dummy and year dummy variables are also included, but for the sake of brevity the results are not reported in the table. Table 4 reports the summary results of the logistic regressions.

There is evidence to support the usefulness of RPE in promotion incentive schemes. After deleting the top and bottom 1% of the distribution for the financial variables used in the regression, the final sample consists of 462 unique SOEs and 2,056 firm-year observations, including all listed SOEs that underwent and did not undergo management change. As reported in the table, the likelihood of promotion is significantly positively associated with the firm's preceding firm-specific accounting performance (coefficient of $ROA_{it-1} = 3.91$; p-value = 0.093) and also significantly positively associated with the firm's preceding relative accounting performance (coefficient of $RPE_{it-1} = 3.82$; p-value = 0.060). However, its sensitivity to RPE (RPE_{it-1}) is more significant. Among the control variables, GDP_{it-1} is significantly negatively

associated with the likelihood of promotion, supporting the usefulness of RPE as an incentive in less developed markets. HHI_{it-1} is significantly positively associated with the likelihood of promotion. This result can be explained by the argument of DeFond and Park (1999) that the usefulness of RPE is greater in highly competitive industries. Previous studies also demonstrate that when firm performance deteriorates, shareholders are likely to discipline managers by demoting them or terminating their positions (Banker and Datar, 1989; Bushman et al., 2004; Chang and Wong, 2004; Engel et al., 2003; Holmstrom and Milgrom, 1991; Kato and Long, 2006; Murphy and Zimmerman, 1993; Weisbach, 1988). As suggested by these studies, the likelihood of demotion is negatively associated with the firm's preceding firm-specific accounting performance (coefficient of $ROA_{it-1} = -0.39$), but not significantly so (p-value = 0.895), and significantly positively associated with the departing manager's age (coefficient of $AGE = -1.95$; p-value = 0.075). In addition, the likelihood of imprisonment is significantly negatively associated with the firm's preceding firm-specific accounting performance (coefficient of $ROA_{it-1} = -3.81$; p-value = 0.090). This is consistent with evidence in previous studies that when firms violate regulations or laws, they suffer severe financial distress (Sun and Zhang, 2006; Agrawal, et al., 1999). Imprisonment is more likely to occur in more developed regions with a higher GDP. This may be because legal enforcement in these regions is stronger. Interestingly, managers demoted or imprisoned are generally younger in age.

[Table 4]

5.2 Incentive schemes and subsequent firm performance

5.2.1 Univariate tests

Panel B of Table 3 shows that the average Tobin's q for the promotion group of firms is higher,

and the difference is positively significant. Table 3 reports the descriptive statistics for the sample firms using between-group mean tests. As in Panel A, where the sample consisting of firms in which there was no management change is taken as the control group, the average firm performance after the adoption of an incentive scheme is reported and its difference from the average for the control sample is tested. The average Tobin's q is highest in the year of promotion among all firms in the management change sample and significantly higher than the control group. The average Tobin's q 1 year, 2 years, and 3 years after promotion remains high, and is second only to that of the entering government incentive, although the difference is not significant. Although the entering government group has the highest Tobin's q over the long term, the difference is not significant. In contrast, the demotion group has the lowest post Tobin's q. The average Tobin's q 1 or 2 years after demotion is significantly lower than that of the control group (significant at the 1% level). The average Tobin's q 3 years after demotion is also significantly lower than that of the control group, although at the 10% significance level. The reassignment to another honorary position group also has a lower post Tobin's q that is significantly lower than that of the control group 2 or 3 years after incentive implementation (both significant at the 1% level). In summary, disciplinary mechanisms such as demotion provide a weaker management incentive, whereas promotion and entering government may provide a stronger incentive under the Chinese political hierarchy, which is characterized by a lack of free-market conditions or competitive managerial labor market.

[Table 3: Panel B]

5.2.2 Regression results

Regression analyses are performed to examine the effects of incentive schemes with RPE on

firm performance (post-performance). The dependent variable is post-performance, which is the average Tobin's q 1 year, 2 years, or 3 years after the incentive scheme was implemented. The independent variables include dummy variables for the incentive schemes, relative performance evaluation (*RPE*), and the interaction between an incentive scheme and *RPE*. When an incentive scheme is chosen as the test variable, the remaining schemes are included as control variables. For example, when "promotion" is the test variable, the dummy variables of demotion, rotation, entering government, imprisonment, and assignment to another position are included as control variables. The industry dummy and year dummy variables are also included, but for the sake of brevity are not reported in the table.

Using the sample of all listed SOEs that underwent and did not undergo management changes, the multivariate regression results show no significant evidence that promotion with *RPE* is positively associated with the post Tobin's q. The dummy variable for promotion is positively associated with the Tobin's q 1, 2, and 3 years after the implementation of the incentive scheme (coefficients are 0.08, 0.06, 0.05 respectively), but not significantly so. The association between the interaction of promotion and *RPE* is mixed and insignificant. As with "promotion," the dummy variable for entering government is also positively and insignificantly associated with the post Tobin's q. Interestingly, the interaction of entering government and *RPE* is significantly and negatively associated with the Tobin's q 2 years after implementation. Although it improves firm performance significantly, the entering government incentive relies less on the use of *RPE*. In the regression, the dummy variable for demotion is negatively associated with the post Tobin's q, but not significantly so. The dummy variable for rotation is significantly and negatively associated with the Tobin's q 1, 2, and 3 years after implementation. The interaction of rotation and *RPE* is significantly and negatively associated with the Tobin's q 1 year after implementation. These

findings imply that rotation, which also relies less on RPE, decreases a firm's post-change performance. Overall, rotation provides a significantly weaker management incentive. Consistent with the statistics in Panel B of Table 3, demotion provides a weaker incentive, but not significantly so. Promotion and entering government provide a stronger incentive, but again not significantly so.

[Table 5]

To provide more evidence on the effect of incentive schemes with RPE, the whole sample is partitioned into two subsamples according to the level of market competition in the region or provincial unit. The regression model testing the effect of promotion in Section 5.2 is run again. Again, the independent variables include a dummy variable for promotion, relative performance evaluation (RPE), the interaction of promotion and RPE, dummy variables for the other incentive schemes, an industry dummy, and year dummies.

Table 6 shows that promotion and the interaction of promotion with RPE are significantly positively associated with the post Tobin's q in regions with weak market-based competition. Panel A partitions the sample into high- and low-competition subsamples by the yearly median value of the number of firms listed in a given region (province) (LLSV, 1997). The results show that the dummy variable for promotion is significantly and positively associated with the Tobin's q 1 and 2 years after management change if there are fewer listed firms in a region, which indicates that the market is undeveloped and less competitive. The interaction of promotion and RPE is also significantly positive for the Tobin's q 1 and 2 years after implementation in undeveloped and less competitive regions (the effect of $Promotion * RPE_{it-1}$ on the Tobin's q 1 year after implementation is 17.57 with a p-value of 0.026, and that of the Tobin's q 2 years after implementation is 13.55 with a p-value of 0.096). However, the positive effect of promotion with

RPE does not persist nor is it significant for firms in regions with a greater number of listed firms. Panel B partitions the sample by the yearly median value of stock market capitalization in a region (province) (LLSV, 1997).¹⁴ The results show that the dummy variable for promotion and the interaction of promotion and RPE are significantly positively associated with the Tobin's q 1 and 2 years after implementation for firms in regions with a lower stock market capitalization in which the market is undeveloped and less competitive. Consistent with Panel A, the positive effect of promotion with RPE does not persist nor is it significant for firms in regions with a higher stock market capitalization. Panel C divides the sample by the yearly median value of the number of initial public offerings of equity in a region (province) (LLSV, 1997). The results show that the dummy variable for promotion and the interaction of promotion and RPE are positive, but not significantly so, if fewer firms issue IPOs in a given region (province), thus implying a less developed market. However, the dummy variable for promotion and the interaction of promotion and RPE are negative and not significant when more firms issue IPOs in a region (province). Panel D partitions the sample by the yearly median value of the regional Herfindahl-Hirschman Index (*HHI*) in a region (province) (DeFond and Park, 1999).¹⁵ Differing from the aforementioned partitioning scenarios, a higher HHI index indicates a monopoly or a less competitive market, whereas a value close to zero indicates near perfect competition. The results show that the dummy variable for promotion and the interaction of

¹⁴ Stock market capitalization is the number of shares times the market price per share (if the state shares are non-tradable, then the market price of tradable shares is used as the market price per share).

¹⁵ The regional HHI is calculated by squaring the market share of each firm competing in a region or provincial unit, and then summing the resulting numbers. It is expressed as

$$HHI = s_1^2 + s_2^2 + s_3^2 + \dots + s_n^2, \text{ where } s_n \text{ is the market share of the } i\text{th firm in a region or provincial unit.}$$

The closer a market is to being a monopoly, the higher its level of ownership concentration (and the weaker its competition). If, for example, there were only one firm in a region or provincial unit, that firm would have a 100% market share, and the HHI would equal 10,000 (100^2), indicating a monopoly. In contrast, if there were thousands of firms competing, then each would have a nearly 0% market share, and the HHI would be close to zero, indicating near perfect competition.

promotion and RPE are significantly positively associated with the Tobin's q 1 year after the implementation of an incentive scheme or management change for firms in regions with a higher Herfindahl-Hirschman Index (*HHI*) and thus an undeveloped and less competitive market. The positive effect of promotion with RPE on the Tobin's q 2 and 3 years after implementation remains, but is not significant. Consistently, the effect of promotion with RPE on post-performance is negative and insignificant for firms in regions with a lower Herfindahl-Hirschman Index (*HHI*). Partitioning the sample provides evidence that promotion with RPE is a stronger management incentive in regions lacking market-based competition.

[Table 6]

6. Conclusion

The primary motivation for this study is to empirically examine the incentives and usefulness of relative performance evaluation (RPE) for incentives in an emerging market lack of market competition. A sample of Chinese SOEs is used for testing this argument for two reasons. First, China's SOEs are affiliated with governments without free-market conditions and competitive managerial labor market. Second, the Chinese government formally incorporates RPE in the control mechanisms for administration.

The findings of this study show that promotion is the most frequently used for incentives in SOEs. Regression analysis shows that promotion is more significantly associated with a firm's preceding RPE. Then the effects of promotion on firm performance after a CEO turnover is examined, and the results show that promotion results in a higher Tobin's q than other incentive schemes. Further, we conduct the tests based on subsamples partitioned by the level of market competition and find that the promotion is significantly and positively associated with Tobin's q 1

and 2 years in subsequent periods in regions with fewer listed firms, a lower stock market capitalization, or a higher regional Herfindahl-Hirschman Index (*HHI*), implying the promotion provides a positive incentive in an undeveloped and less competitive market.

APPENDIX

Appendix A: the characteristics of Chinese bureaucratic layers (source: Chinese Government Year Books)

From the bottom to top, there are four layers of administration of state-owned enterprises (SOEs) based on the jurisdictions. The provincial units are basic jurisdictional partitions.

1. County level

This level is under the jurisdiction of the county level and consists of around 2,148 counties and 48,697 townships.

2. Municipal level

This level is under the jurisdiction of the municipal level and consists of around 333 municipalities/cities.

3. Provincial level

This level consists of 22 provinces including Heibei, Shanxi, Liaoning, Jilin, Heilongjiang, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, Shandong, Henan, Hubei, Hunan, Guangdong, Hainan, Sichuan, Guizhou, Yunnan, Shanxi, Gansu, and Qinghai; the five autonomous regions including Inner Mongolia, Guangxi, Tibet, Ningxia, and Xinjiang; as well as the 4 “directly ruled municipalities” of Beijing, Tianjin, Shanghai, and Chongqing (Chongqing was affiliated with Sichuan Province before 1997 but has been one of the “directly ruled municipalities” since then).

4. Central level

The central level is the ultimate level and the Central Government (guided by the Communist Party) holds the ultimate control rights.

References:

Alchian, A., 1965. Some economics of property rights. II *Politico* 30, 816-829.

Aggarwal, Rajesh K., and Andrew A. Samwick, 1999, Executive compensation, strategic competition, and relative performance evaluation: Theory and evidence, *Journal of Finance* 54, 1999-2043.

Antle, R., Smith, A., 1986. An empirical investigation of the relative performance evaluation of corporate executives. *Journal of Accounting Research* 24, 1-39.

Banker, R. D. and Datar, S. M., 1989. Sensitivity, precision, and linear aggregation of signals for performance evaluation. *Journal of Accounting Research* 27, 21-39.

Ball, Ray, Kothari, S. P. and Robin, Ashok, 2000. The effect of international institutional factors on properties of accounting earnings. *Journal of Accounting and Economics* 29, 1-51.

Ball, R., Robin, A., and Wu, J., 2003. Accounting standards, the institutional environment and issuer incentives: effect on timely loss recognition in China. *Asia Pacific Journal of Accounting and Economics* 7, 71-96.

Barro, Jason R., and Robert J. Barro, 1990, Pay, performance, and turnover of bank CEOs, *Journal of Labor Economics*, 8, p. 48-481.

- Berry, Tammy K., John M. Bizjak, Michael L. Lemmon, and Lalitha Naveen. 2000. CEO turnover and firm diversification. Working paper.
- Besley, Timothy and Anne Case. 1996. Does Electoral Accountability Affect Economic Policy Choices? Evidence from Gubernatorial Term Limits. *The Quarterly Journal of Economics*, Vol. 110, No. 3., 769-798.
- Brickley, J. A., 2003. Empirical research on CEO turnover and firm-performance: a discussion. *Journal of Accounting and Economics*, 36, 227-233.
- Bushman, R., Chen, Q., Engel, E., and Smith, A., 2004. Financial accounting information, organizational complexity and corporate governance systems. *Journal of Accounting and Economics* 37 (3).
- Bushman, R. and Piotroski, Joseph D., 2006. Financial reporting incentives for conservative accounting: the influence of legal and political institutions. *Journal of Accounting and Economics* 42, 107-148.
- Cannella, Albert A., Fraser, Donald R. and Lee, D. Scott, 1995. Firm failure and managerial labor markets evidence from Texas banking. *Journal of Financial Economics* 38, 185-210.
- Chang, Eric C. and Wong, Sonia M. L., 2004. Chief Executive Officer Turnovers and the Performance of China's Listed Enterprises. Working paper.
- Chen, Ye, Hongbin Li and Lian, Zhou. 2005. Relative performance evaluation and the turnover of provincial leaders in China. *Economics Letters* 88, 421-425.
- Diamond, D.W., Verrechia, R.E., 1982. Optimal managerial contracts and equilibrium security prices. *Journal of Finance* 37, 275-287.

- DeFond, L. Mark and Chul W. Park. 1999. The effect of competition on CEO turnover. *Journal of Accounting and Economics* 27, 35-56.
- Dye, R., 1992. Relative performance evaluation and project selection. *Journal of Accounting Research* 30, 27-52.
- Engel, Ellen, Rachel M. Hayes, and Xue Wang. 2003. CEO turnover and properties of accounting information. *Journal of Accounting and Economics* 36, 197–226.
- Fama, Eugene F and Jensen, Michael C, 1983. Separation of Ownership and Control. *Journal of Law & Economics* 26 (2): 301-325.
- Fan, J. and Wong, T.J., 2002. Corporate ownership structure and the informativeness of accounting earnings in East Asia. *Journal of Accounting and Economics* 33: 401–425.
- Fan, Joseph P. H., Wong, T. J. and Zhang, Tianyu, 2007. Politically connected CEOs, corporate governance, and Post-IPO performance of China's newly partially privatized firms. *Journal of Financial Economics* 84 (2), 330-357.
- Garvey, Gerald T., and Todd T. Milbourn, 2003, Incentive compensation when executives can hedge the market: Evidence of relative performance evaluation in the cross-section, *Journal of Finance* 58 (4), p. 1557-1582.
- Gibbons, R., Murphy, K., 1990. Relative performance evaluation and chief executive officers. *Industrial and labor relations* 43 (Special issue), 30-51.
- Gibbs, M., 1996. Promotion and Incentives. Mimeo, University of Chicago.

- Gilson, S. C., 1990. Management turnover and financial distress. *Journal of Financial Economics*, 25, 241-262.
- Groves, T., Y. Hong, J. McMillan and B. Naughton. 1995. China's Evolving Managerial Labor Market. *Journal of Political Economy* 103, 873-892.
- Holmstrom, B., 1979. Moral hazard and observability. *Bell Journal of Economics* 10, 74-91.
- Holmstrom, B., 1982. Moral hazard in teams. *Bell Journal of Economics* 13, 324-340.
- Holmstrom, B. and Milgrom, P., 1991. Multitask principal-agent analyses: Incentives contracts, asset ownership, and job design. *Journal of Law, Economics and Organization* 7, 24-52.
- Huang, Yasheng, 1998. The industrial organization of Chinese government. Working paper.
- Huson, Mark R., Malatesta, Paul H. and Parrino, Robert, 2004. Managerial succession and firm performance. *Journal of Financial Economics* 74, 237-275.
- Janakiraman, S., Lambert, R., Larker, D., 1992. An empirical investigation of the relative performance evaluation hypothesis. *Journal of Accounting Research* 30, 53-69.
- Jensen, M., and Meckling, W., 1976. Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* 3, 305-360.
- Jensen, M., and Meckling, W., 1979. Rights and production functions: an application to labor-managed firms and codetermination. *Journal of Business* 52, 469-506.
- Kale, Jayant R., Reis, Ebru and Venkateswaran, Anand, 2009. Rank-order tournaments and incentive alignment: the effect on firm performance. *Journal of Finance* LXIV (3): 1479-1512.

- Kaplan, S. N. & Minton, B. A., 1994. Appointments of outsiders to Japanese boards: determinants and implications for managers. *Journal of Financial Economics*, 36, 225-258.
- Karpoff, J. M. and Rice, E. M., 1989. Organizational form, share transferability, and firm performance. *Journal of Financial Economics* 24, 69-105.
- Kato, Takao and Cheryl Long. 2006. CEO Turnover, Firm Performance and Enterprise Reform in China: Evidence from New Micro Data. IZA discussion paper No. 1914.
- Laffont, Jean-Jacques. 1994. The new economics of regulation ten years after. *Econometrica* 62, 507-537.
- La Porta, R. & Shleifer, A., 1997. Legal determinants of external finance. NBER working paper.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W., 2000. Investor protection and corporate governance. *Journal of Financial Economics*, 58 (1-2), 3-27.
- Lazear, Edward P. and Rosen, Sherwin, 1981. Rank-order tournaments as optimum incentive contracts. *Journal of Political Economy* 89 (5), 841-864.
- Li, Cheng and Bachman, David, 1989. Localism, elitism, and immobilism: elite formation and social change in post-mao China. *World Politics* 42 (1), 64-94.
- Li, Hongbin and Lian, Zhou. 2005. Political Turnover and Economic Performance: The Incentive Role of Personnel Control in China. *Journal of Public Economics* 89, 1743-1762.
- Li, S., S.H. Park, and S. Li. 2004. The great leap forward: the transition from relation-based governance to rule-based governance. *Organizational Dynamics* 33(1), 63-78.

Maskin, E., Y. Qian and C. Xu. 2000. Incentives, Scale Economies, and Organization Forms.

Review of Economic Studies 67:359-78.

Matsumura, Ella Mae and Shin, Jae Yong, 2006. An empirical analysis of an incentive plan with

relative performance measures: evidence from a postal service. *The Accounting Review* 81

(3): 533-566.

Montinola, G., Y. Qian, and B. Weingast. 1995. Federalism, Chinese Style: The Political Basis

for Economic Success in China. *World Politics* 48, 50-81.

Murphy, K. J. and Zimmerman, J. L., 1993. Financial Performance Surrounding CEO Turnover,

Journal of Accounting and Economics 16, 273-315.

Oi, J. 1992. Fiscal Reform and the Economic Foundations of Local State Corporatism in China.

World Politics 45: 99-126.

Opper, Sonja, and Stefan Brehm. 2007. Networks versus Performance: Political Leadership

Promotion in China. Working paper.

Qian, Yingyi, 2000. Government control in corporate governance as a transitional institution:

lessons from China. Working paper.

Qian, Y., and B. Weingast. 1997. Federalism as a Commitment to Preserving Market Incentives.

Journal of Economic Perspectives 11:83-92.

Qian, Y., and C. Xu. 1993. Why China's Economic Reforms Differ: The M-form Hierarchy and

Entry/Expansion of the Non-State Sector. *Economics of Transition* 1:135-70.

Shleifer, Andrei. 1985. A Theory of Yardstick Competition. *The RAND Journal of Economics* 16, No. 3, 319-327.

Shleifer, A. and Vishny, R.W., 1986. Large shareholders and corporate control. *Journal of Political Economy* 94, 461–488.

Smith, C. & Watts, R. (1992). The investment opportunity set and corporate financing, dividend and compensation policies. *Journal of Financial Economics*, 32, 263-292.

Stigler, George J., 1971. The theory of economic regulation. *The Bell Journal of Economics and Management Science* 2 (1), 3-21.

Sun, Peng and Zhang, Yi, 2006. Is There Penalty for Crime: Corporate Scandal and Management Turnover in China. Working paper.

Weisbach, 1988. Outside directors and CEO turnover. *Journal of Financial Economics* 20, 431-460.

Table 1: Incentive plans for the administration of CEOs in China's SOEs during 2001-2005. This table summarizes the number and frequency of SOEs adopting the administrative means for incentive mechanism such as promotion, demotion, rotation, entering government entities, imprisonment and others in a sample of raw data. The total sample consists of 1650 firm-year observations where CEO has been forced to leave the office in the SOEs. The observation number shows the number of sample. Freq. shows the percentage of the total sample.

Classification of CEO turnover	Observation No.	Freq.
Demotion	183	0.15
Promotion		
Within firm	238	0.21
To parent firm	220	0.19
To the other firm within bureaucratic hierarchy	16	0.01
subtotal	474	0.41
Rotation	169	0.15
Entering government		
Industry bureau	54	0.05
Administration division	57	0.05
Governor of government	38	0.03
subtotal	149	0.13
Imprisonment	96	0.08
Others		
As board director	40	0.03
As party secretary/supervisory committee/honorary position	48	0.04
subtotal	88	0.08
Total	1159	1.00

Table 2: Incentive plans for CEOs in China's SOEs by partitions.

Panel A: this table summarizes the number and frequency of SOEs adopting the administrative means for incentive mechanism such as promotion, demotion, rotation, entering government entities, imprisonment and others by four bureaucratic layers – the county, city, province and central level. The total sample consists of 1650 firm-year observations where CEO has been forced to leave the office in the SOEs. No. shows the number of sample. Freq. shows the percentage of the total sample in the bureaucratic layer.

	County		City		Province		Central	
	No.	Freq.	No.	Freq.	No.	Freq.	No.	Freq.
Demotion	10	0.23	51	0.16	69	0.16	47	0.14
Rotation	10	0.23	35	0.11	46	0.1	78	0.22
Promotion								
Within firm	9	0.21	80	0.25	92	0.21	61	0.18
To parent firm	3	0.07	47	0.15	88	0.2	82	0.24
To the other firm within bureaucratic hierarchy	2	0.05	6	0.02	4	0.01	4	0.01
subtotal	14	0.33	133	0.42	184	0.42	147	0.43
Entering government								
Industry bureau	-	-	20	0.06	20	0.05	14	0.04
Administration division	2	0.05	10	0.03	35	0.08	10	0.03
Governor of government	2	0.05	8	0.02	15	0.03	13	0.04
subtotal	4	0.1	38	0.11	70	0.16	37	0.11
Imprisonment	1	0.02	43	0.13	31	0.07	21	0.06
Others								
As board director	3	0.07	13	0.04	20	0.05	10	0.03
As party secretary/supervisory committee/honorary position	1	0.02	11	0.03	23	0.05	8	0.02
subtotal	4	0.09	24	0.07	43	0.1	18	0.05
Total	43	1	324	1	443	1	348	1

Table 2: Incentive plans for CEOs in China's SOEs by partitions.

Panel B: this table summarizes the number and frequency of SOEs adopting the administrative means for incentive mechanism such as promotion, demotion, rotation, entering government entities, imprisonment and others by six administrative areas - North, Northeast, East, Central, Southwest and Northwest. The total sample consists of 1650 firm-year observations where the chairman or CEO has been forced to leave the office in the SOEs. No. shows the number of sample. Freq. shows the percentage of the total sample in the area.

	North (Mean GDP 36.32*)		Southwest (Mean GDP 41.31*)		Northwest (Mean GDP 45.55*)		Northeast (Mean GDP 46.58*)		East (Mean GDP 87.18*)		Central (Mean GDP 99.79*)	
	No.	Freq.	No.	Freq.	No.	Freq.	No.	Freq.	No.	Freq.	No.	Freq.
Demotion	18	0.12	19	0.18	32	0.12	19	0.21	49	0.19	40	0.14
Rotation	34	0.23	12	0.12	41	0.16	10	0.11	22	0.08	50	0.17
Promotion												
Within firm	34	0.23	27	0.26	59	0.22	14	0.16	46	0.18	62	0.21
To parent firm	38	0.26	11	0.11	48	0.18	19	0.21	55	0.21	49	0.17
To the other firm within bureaucratic hierarchy	1	0.01	1	0.01	0	0	0	0	7	0.03	7	0.02
subtotal	73	0.5	39	0.38	107	0.4	33	0.37	108	0.42	118	0.4
To government entities												
Industry bureau	5	0.03	8	0.08	8	0.03	6	0.07	12	0.05	15	0.05
Administration division	1	0.01	5	0.05	18	0.07	4	0.04	10	0.04	19	0.07
Governor of government	2	0.01	8	0.08	3	0.01	8	0.09	7	0.03	10	0.03
subtotal	8	0.05	21	0.21	29	0.11	18	0.2	29	0.12	44	0.15
Imprisonment	5	0.03	9	0.09	26	0.1	3	0.03	25	0.1	28	0.09
Others												
As board director	5	0.03	2	0.02	11	0.04	5	0.06	12	0.05	11	0.04
As party sectary/supervisory committee/honorary position	3	0.02	2	0.02	17	0.06	2	0.02	15	0.06	4	0.01
subtotal	8	0.05	4	0.04	28	0.1	7	0.08	27	0.11	15	0.05
Total	146	1	104	1	263	1	90	1	260	1	295	1

* money unit= 1 million RMB

Table 2: Incentive plans for CEOs in China's SOEs by partitions.

Panel C: this table summarizes the number and frequency of SOEs adopting the administrative means for incentive mechanism such as promotion, demotion, rotation, entering government entities, imprisonment and others by 1-digit industry. The total sample consists of 1650 firm-year observations where the chairman or CEO has been forced to leave the office in the SOEs. No. shows the number of sample. Freq. shows the percentage of the total sample in the industry.

	A		B *		C		D *		E		F *		G	
	Agriculture production		Mining		Manufacturing & Petrochemicals		Power, oil & water		Heavy construction		Transportation		Telecom	
	No.	Freq.	No.	Freq.	No.	Freq.	No.	Freq.	No.	Freq.	No.	Freq.	No.	Freq.
Demotion	6	0.2	5	0.19	120	0.17	11	0.18	1	0.08	7	0.15	4	0.08
Rotation	3	0.1	5	0.19	94	0.13	7	0.11	0	0	3	0.06	11	0.22
Promotion														
Within firm	8	0.27	3	0.11	151	0.21	12	0.19	1	0.08	10	0.21	12	0.24
To parent firm	0	0	8	0.3	123	0.17	25	0.4	5	0.38	11	0.23	8	0.16
To the other firm within bureaucratic hierarchy	0	0	0	0	14	0.02	0	0	0	0	0	0	0	0
subtotal	8	0.27	11	0.41	288	0.4	37	0.59	6	0.46	21	0.44	20	0.4
To government entities														
Industry bureau	0	0	4	0.15	19	0.03	1	0.02	2	0.15	5	0.1	4	0.08
Administration division	4	0.1	0	0	30	0.04	4	0.07	1	0.08	6	0.12	2	0.04
Governor of government	3	0.1	0	0	31	0.04	0	0	0	0	0	0	2	0.04
subtotal	7	0.2	4	0.15	80	0.11	5	0.09	3	0.23	11	0.22	8	0.16
Imprisonment	1	0.03	2	0.07	59	0.08	2	0.03	1	0.08	4	0.08	4	0.08
Others														
as board director	1	0.03	0	0	29	0.04	0	0	2	0.15	2	0.04	2	0.04
as party secretary/supervisory committee/honorary position	4	0.13	0	0	34	0.05	0	0	0	0	0	0	1	0.02
subtotal	5	0.16	0	0	63	0.09	0	0	2	0.15	2	0.04	3	0.06
Total	30	1	27	1	704	1	62	1	13	1	48	1	50	1

(to be continued)

	H		I *		J		K		L		M	
	Wholesale trade & Retails		Banking & Financial institutes		Real Estate		Social service & Infrastructure		Media & Communication		Others	
	No.	Freq.	No.	Freq.	No.	Freq.	No.	Freq.	No.	Freq.	No.	Freq.
Demotion	7	0.1	0	0	3	0.08	4	0.11	2	0.4	7	0.1
Rotation	12	0.18	2	0.5	5	0.14	7	0.2	2	0.4	18	0.25
Promotion												
Within firm	14	0.21	2	0.5	5	0.14	7	0.2	0	0	15	0.21
To parent firm	11	0.16	0	0	9	0.24	3	0.09	0	0	17	0.23
To the other firm within bureaucratic hierarchy	2	0.03	0	0	0	0	0	0	0	0	0	0
subtotal	27	0.4	2	0.5	14	0.38	10	0.29	0	0	32	0.44
To government entities												
Industry bureau	3	0.04	0	0	5	0.14	5	0.14	0	0	6	0.08
Administration division	5	0.07	0	0	1	0.03	1	0.03	0	0	3	0.04
Governor of government	0	0	0	0	0	0	2	0.06	0	0	0	0
subtotal	8	0.11	0	0	6	0.17	8	0.23	0	0	9	0.12
Imprisonment	6	0.09	0	0	6	0.16	6	0.17	1	0.2	4	0.05
Others												
As board director	6	0.09	0	0	1	0.03	0	0	0	0	3	0.04
As party secretary/supervisory committee/honorary position	2	0.03	0	0	2	0.05	0	0	0	0	0	0
subtotal	8	0.12	0	0	3	0.08	0	0	0	0	3	0.04
Total	68	1	4	1	37	1	35	1	5	1	73	1

* Regulated industry

Table 3: summary statistics for incentive plans, firm performance measures and other variables. This table presents the mean values of firm performance measures and other variables for the subsample of incentive plans. The mean values of a control group, consisting of firms in which there was no turnover in those top managers, chairman or CEO, are also provided. Then the difference between the incentive group and control group is computed in the next column with t-test in the parenthesis. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels.

	Control group	Demotion		Rotation		Promotion		Government		Imprisonment		Other	
	Mean	Mean	Diff. (t-test)	Mean	Diff. (t-test)	Mean	Diff. (t-test)	Mean	Diff. (t-test)	Mean	Diff. (t-test)	Mean	Diff. (t-test)
Panel A: Preceding firm performance & Characteristics													
ROA _{it}	0.029	0.017	-0.012(2.09**)	0.017	-0.012(1.92*)	0.029	0(-0.06)	0.027	-0.002(0.23)	0.014	-0.015(1.12)	0.015	-0.014(2.43**)
ROA _{it-1}	0.03	0.018	-0.012(1.78*)	0.03	0(-0.01)	0.037	0.007(-2.39**)	0.031	0.001(-0.15)	0.026	-0.004(0.24)	0.01	-0.02(2.55**)
RPE _{it-1}	0.0001	-0.008	-0.008(1.28)	0	-0.0001(0.12)	0.006	0.006(-2.01**)	-0.003	-0.0031(0.45)	-0.002	-0.002(0.12)	-0.019	-0.02(2.28**)
Size _{it}	21.44	21.22	-0.22(2.33**)	21.3	-0.14(1.66*)	21.45	0.01(-0.07)	21.38	-0.06(0.56)	21.48	0.04(-0.22)	21.21	-0.23(1.41)
DA _{it}	0.061	0.049	-0.012(0.95)	0.036	-0.025(2.87***)	0.056	-0.005(0.87)	0.047	-0.014(1.25)	0.067	0.006(-0.50)	0.081	0.02(-0.92)
Ownership _{it}	0.338	0.347	0.009(-0.30)	0.374	0.036(-1.96**)	0.338	0(0.06)	0.318	-0.02(1.18)	0.322	-0.016(0.57)	0.289	-0.05(1.65)
Indusmb _{it}	2.333	2.533	0.2(-1.59)	2.626	0.293(-2.06**)	2.434	0.101(-1.67*)	2.458	0.125(-1.07)	2.482	0.149(-0.89)	2.241	-0.092(0.70)
Age	48.82	44.92	-3.9(4.63***)	45.73	-3.09(3.91***)	47.1	-1.72(3.17***)	46.1	-2.72(3.62***)	44.97	-3.85(2.84***)	45.71	-3.11(2.22**)
Employee _{it}	7.588	7.088	-0.5(2.34**)	7.135	-0.453(2.50**)	7.453	-0.135(1.32)	7.27	-0.318(1.92*)	7.398	-0.19(0.70)	7.635	0.047(-0.17)
GDP _{it}	7433.2	7629.6	196.4(-0.27)	7651.6	218.4(-0.31)	6359.7	-1074(3.66***)	7493.7	60.5(-0.12)	9488.7	2055.5(-2.49**)	8060.6	627.4(-0.64)
HHI _{it}	0.075	0.07	-0.005(0.85)	0.077	0.002(-0.15)	0.079	0.004(-0.74)	0.095	0.02(-1.75*)	0.09	0.015(-0.94)	0.056	-0.019(4.03***)
Panel B: Post- Firm Value													
Tobinq 0 yr after turnover	1.692	1.591	-0.101(1.18)	1.655	-0.037(0.43)	1.834	0.142(-1.79*)	1.825	0.133(-1.23)	1.622	-0.07(0.62)	1.608	-0.084(0.50)
Tobinq 1 yr after turnover	1.628	1.445	-0.183(2.75***)	1.616	-0.012(0.14)	1.692	0.064(-0.82)	1.777	0.149(-1.40)	1.639	0.011(-0.10)	1.483	-0.145(0.99)
Tobinq 2 yr after turnover	1.823	1.59	-0.233(2.71***)	1.768	-0.055(0.63)	1.805	-0.018(0.22)	2.048	0.225(-1.62)	1.706	-0.117(1.13)	1.568	-0.255 (2.04**)
Tobinq 3 yr after turnover	1.998	1.792	-0.206(1.85*)	1.943	-0.055(0.61)	1.95	-0.048(0.64)	2.133	0.135(-1.08)	1.892	-0.106(0.77)	1.59	-0.408(4.31***)
Obs. #	1621		49		63		193		71		35		24

Table 4: regression results of the relation between the incentive plans and preceding firm performance measures. This table reports the results of a logistic regression. The dependent variable is the likelihood of one of incentive plans – demotion, rotation, promotion, entering government, imprisonment, or others. The independent variables include the preceding firm performance (preceding RPE) and the preceding firm characteristics, personal feature and institutional factors as control variables. The industry dummy and year dummy variables are also included, but for the sake of brevity, their results are not reported in the table. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels.

	Demotion		Rotation		Promotion		Government		Imprisonment		Other	
Intercept	7	7.31	-2.82	-2.74	-12.12	-11.83	-13.21	-13.48	-13.94	-14.09	-7.5	-7.69
	(0.975)	(0.974)	(0.987)	(0.988)	(0.948)	(0.950)	(0.943)	(0.941)	(0.950)	(0.948)	(0.969)	(0.968)
ROA _{it-1}	-0.39		-0.95		3.19		-3		-3.81		-1.46	
	(0.895)		(0.739)		(0.093*)		(0.147)		(0.090*)		(0.708)	
RPE _{it-1}		1.13		-0.44		3.82		-3.62		-4.09		-2.53
		(0.747)		(0.891)		(0.060**)		(0.126)		(0.123)		(0.552)
Size _{it-1}	-0.49	-0.50	-0.01	-0.01	0.03	0.03	0.26	0.27	0.39	0.39	-0.36	-0.36
	(0.058*)	(0.050**)	(0.975)	(0.954)	(0.782)	(0.819)	(0.174)	(0.173)	(0.112)	(0.116)	(0.347)	(0.356)
DA _{it-1}	-0.47	-0.45	-3.44	-3.42	-1.63	-1.66	-1.44	-1.44	-0.66	-0.60	3.41	3.45
	(0.840)	(0.848)	(0.237)	(0.239)	(0.166)	(0.159)	(0.463)	(0.463)	(0.792)	(0.810)	(0.200)	(0.194)
Ownership _{it-1}	0.35	0.34	2.62	2.61	-0.52	-0.48	0.15	0.13	-0.95	-1.00	-0.63	-0.67
	(0.765)	(0.771)	(0.004***)	(0.004***)	(0.365)	(0.400)	(0.873)	(0.888)	(0.463)	(0.440)	(0.724)	(0.707)
Indusmb _{it-1}	-0.35	-0.35	0.002	0.001	-0.11	-0.12	-0.04	-0.04	-0.07	-0.06	0.18	0.18
	(0.266)	(0.259)	(0.991)	(0.996)	(0.516)	(0.493)	(0.866)	(0.882)	(0.831)	(0.845)	(0.757)	(0.751)
Age	-1.95	-1.97	-2.45	-2.45	-0.01	-0.04	-1.16	-1.12	-2.47	-2.43	-0.92	-0.89
	(0.075*)	(0.072*)	(0.017**)	(0.017**)	(0.983)	(0.947)	(0.201)	(0.220)	(0.038**)	(0.041**)	(0.553)	(0.569)
Employee _{it-1}	-0.09	-0.08	-0.08	-0.07	0.01	0.01	-0.14	-0.14	-0.32	-0.32	-0.06	-0.07
	(0.562)	(0.601)	(0.567)	(0.577)	(0.874)	(0.857)	(0.221)	(0.227)	(0.040**)	(0.041**)	(0.838)	(0.827)
GDP _{it-1}	-0.04	-0.04	0.097	0.10	-0.33	-0.34	-0.05	-0.05	0.68	0.68	-0.27	-0.28
	(0.889)	(0.889)	(0.718)	(0.714)	(0.008***)	(0.007***)	(0.807)	(0.820)	(0.038**)	(0.037**)	(0.385)	(0.376)
HHI _{it-1}	0.34	0.36	-5.21	-5.19	2.83	2.86	3.05	2.98	-1.5	-1.53	-4.68	-4.78
	(0.915)	(0.909)	(0.120)	(0.120)	(0.058*)	(0.056*)	(0.096*)	(0.105)	(0.631)	(0.622)	(0.596)	(0.589)
Year_Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Indus_Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quasi R-square	0.01	0.01	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01
Obs. #	2056		2056		2056		2056		2056		2056	

Table 5: regression analyses of the effect of the incentive plans with RPE on the post- firm performance in a full sample. This table reports the results of a multivariate regression. The dependent variable is post-performance - the average Tobin's q of 1 year, 2 years, or 3 years after the incentive plan being implemented. The independent variables include the dummy variable of one incentive scheme (X), relative performance evaluation (RPE) and interaction of the incentive scheme (X) and RPE. If one incentive scheme is chosen as test variable, then the remainders are included as control variables. For example, when the “promotion” is the test variable, the remainders – the dummy variable of demotion, rotation, entering government, imprisonment, or others are the control variables. The industry dummy and year dummy variables are also included, but for the sake of brevity, their results are not reported in the table. ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels.

Independent Variables	X							RPE _{it-1}	X*RPE _{it-1}	Incentvie_Dummy	Year_Dummy	Indus_Dummy	Adj. R-square	Obs. #
	Intercept	Demotion	Rotation	Promotion	Government	Imprisonment	Other							
Panel A: Dependent variable is Tobinq 1 year after the turnover														
	1.69 (<.001***)	-0.15 (-1.00)						1.44 (0.001***)	0.27 (0.950)	Yes	Yes	Yes	0.14	2056
	1.7 (<.001***)		-0.33 (0.014***)					1.56 (<.001***)	-10.91 (0.012***)	Yes	Yes	Yes	0.14	2056
	1.69 (<.001***)			0.08 (0.293)				1.54 (<.001***)	-1.72 (0.343)	Yes	Yes	Yes	0.14	2056
	1.69 (<.001***)				0.09 (0.44)			1.55 (<.001***)	-2.78 (0.209)	Yes	Yes	Yes	0.14	2056
	1.69 (<.001***)					-0.11 (0.507)		1.46 (<.001***)	-0.27 (0.889)	Yes	Yes	Yes	0.14	2056
	1.69 (<.001***)						0.05 (0.813)	1.42 (<.001***)	6.01 (0.419)	Yes	Yes	Yes	0.14	2056
Panel B: Dependent variable is Tobinq 2 year after the turnover														
	1.47 (<.001***)	-0.14 (0.356)						1.14 (0.013***)	0.41 (0.929)	Yes	Yes	Yes	0.23	2056
	1.47 (<.001***)		-0.39 (0.006***)					1.21 (0.009***)	-5.61 (0.227)	Yes	Yes	Yes	0.23	2056
	1.47 (<.001***)			0.06 (0.484)				1.18 (0.012***)	-0.64 (0.739)	Yes	Yes	Yes	0.23	2056
	1.47 (<.001***)				0.21 (0.100*)			1.36 (0.004***)	-5.61 (0.017**)	Yes	Yes	Yes	0.23	2056
	1.47 (<.001***)					-0.25 (0.138)		1.15 (0.015**)	0.01 (0.995)	Yes	Yes	Yes	0.23	2056
	1.47 (<.001***)						-0.15 (0.525)	1.12 (0.014***)	7.06 (0.374)	Yes	Yes	Yes	0.23	2056
Panel C: Dependent variable is Tobinq 3 year after the turnover														
	1.27 (<.001***)	-0.15 (0.279)						1.03 (0.015**)	-0.59 (0.889)	Yes	Yes	Yes	0.25	2056
	1.27 (<.001***)		-0.29 (0.029**)					1.06 (0.012***)	-3.65 (0.392)	Yes	Yes	Yes	0.25	2056
	1.27 (<.001***)			0.05 (0.487)				1.01 (0.020**)	0.26 (0.885)	Yes	Yes	Yes	0.25	2056
	1.27 (<.001***)				0.15 (0.195)			1.08 (0.012***)	-1.49 (0.493)	Yes	Yes	Yes	0.25	2056
	1.27					-0.22		1.14	-2.29	Yes	Yes	Yes	0.25	2056

(<.001***)		(0.153)	(0.008***)	(0.221)						
1.27		-0.27	1	8.76	Yes	Yes	Yes	0.25	2056	
(<.001***)		(0.218)	(0.018***)	(0.230)						

Table 6: regression analyses of the effect of the promotion incentive with RPE on the post- firm performance in a subsample partitioned by the extent of market competition of the region. The dependent variable is post-performance - the average Tobin's q of 1 year, 2 years, or 3 years after the adoption of incentive plan. The independent variables include the dummy variable of promotion incentive, relative performance evaluation (RPE) and interaction of the promotion incentive and RPE. Then the remainders – the dummy variable of demotion, rotation, entering government, imprisonment, or others are included as control variables. The industry dummy and year dummy variables are also included. Panel A partitions the sample into high- and low-competition subsamples by the yearly median value of the number of firms listed in a given region (province) (LLSV, 1997). Panel B partitions the sample by the yearly median value of stock market capitalization in a region (province) (LLSV, 1997). Panel C divides the sample by the yearly median value of the number of initial public offerings of equity in a region (province) (LLSV, 1997). Panel D partitions the sample by the yearly median value of the regional Herfindahl-Hirschman Index (*HHI*) in a region (province) (DeFond and Park, 1999). ***, **, and * indicate statistical significance at 1%, 5%, and 10% levels.

Panel A: partition the sample into high- and low- competitive region according to the number of listed firms in the region of year (LLSV, 1997)								
	Tobinq 1 yr after turnover		Tobinq 2 yr after turnover		Tobinq 3yr after turnover			
	High	Low	High	Low	High	Low		
Intercept	1.64 (<.001***)	2.08 (<.001***)	1.38 (<.001***)	1.91 (<.001***)	1.12 (<.001***)	1.71 (<.001***)		
Promotion	-0.01 (0.890)	0.35 (0.040**)	-0.02 (0.852)	0.29 (0.089*)	0.04 (0.631)	0.09 (0.574)		
RPE _{it-1}	1.41 (0.003***)	1.67 (0.226)	1.23 (0.014***)	0.48 (0.736)	1.09 (0.017**)	0.34 (0.803)		
Promotion*RPE _{it-1}	-2.61 (0.154)	17.57 (0.026**)	-1.51 (0.445)	13.55 (0.096*)	-0.46 (0.798)	6.93 (0.372)		
Incentive_Dummy	Yes	Yes	Yes	Yes	Yes	Yes		
Year_Dummy	Yes	Yes	Yes	Yes	Yes	Yes		
Indus_Dummy	Yes	Yes	Yes	Yes	Yes	Yes		
Adj. R-square	0.15	0.15	0.23	0.24	0.25	0.24		
Obs. #	1646	410	1646	410	1646	410		
Panel B: partition the sample into high- and low- competitive region according to the stock market capitalization in the region of year (LLSV, 1997)								
	High		Low		High		Low	
	High	Low	High	Low	High	Low	High	Low
Intercept	1.7 (<.001***)	2.05 (<.001***)	1.32 (0.001***)	1.97 (0.001***)	1.06 (0.004***)	1.74 (<.001***)		
Promotion	-0.01 (0.930)	0.31 (0.072*)	-0.01 (0.898)	0.31 (0.070*)	0.04 (0.670)	0.16 (0.318)		
RPE _{it-1}	1.19 (0.011***)	2.75 (0.033**)	1.21 (0.019**)	0.35 (0.779)	1.06 (0.024**)	0.25 (0.833)		
Promotion*RPE _{it-1}	-2.44 (0.178)	18.86 (0.026**)	-1.56 (0.436)	16.79 (0.040**)	-0.46 (0.800)	9.74 (0.204)		
Incentive_Dummy	Yes	Yes	Yes	Yes	Yes	Yes		
Year_Dummy	Yes	Yes	Yes	Yes	Yes	Yes		
Indus_Dummy	Yes	Yes	Yes	Yes	Yes	Yes		
Adj. R-square	0.15	0.13	0.23	0.23	0.26	0.23		
Obs. #	1628	428	1628	428	1628	428		
Panel C: partition the sample into high- and low- competitive region according to the number of initial public offerings of equity in a region of year (LLSV, 1997)								
	High		Low		High		Low	
	High	Low	High	Low	High	Low	High	Low
Intercept	1.70 (<.001***)	1.96 (<.001***)	1.42 (<.001***)	1.53 (<.001***)	1.15 (<.001***)	1.34 (0.001***)		
Promotion	-0.005 (0.958)	0.02 (0.893)	-0.05 (0.540)	0.14 (0.424)	0.03 (0.777)	0.03 (0.879)		
RPE _{it-1}	1.00 (0.03**)	1.98 (0.025**)	0.19 (0.675)	2.82 (0.010***)	-0.03 (0.943)	3.91 (0.002***)		
Promotion*RPE _{it-1}	-1.89 (0.278)	1.69 (0.686)	-0.19 (0.911)	2.69 (0.601)	0.67 (0.710)	3.54 (0.553)		
Incentive_Dummy	Yes	Yes	Yes	Yes	Yes	Yes		
Year_Dummy	Yes	Yes	Yes	Yes	Yes	Yes		
Indus_Dummy	Yes	Yes	Yes	Yes	Yes	Yes		
Adj. R-square	0.16	0.20	0.20	0.16	0.21	0.19		
Obs. #	1767	289	1767	289	1767	289		
Panel D: partition the sample into high- and low- competitive region according to the regional HHI of year (DP, 1999)								
	High		Low		High		Low	
	High	Low	High	Low	High	Low	High	Low
Intercept	1.46 (<.001***)	1.70 (<.001***)	0.99 (0.012***)	1.60 (<.001***)	0.77 (0.033**)	1.37 (<.001***)		
Promotion	-0.05 (0.557)	0.46 (0.001***)	-0.03 (0.739)	0.32 (0.05**)	0.03 (0.709)	0.13 (0.403)		
RPE _{it-1}	1.67 (0.001***)	0.59 (0.543)	1.47 (0.005***)	-0.28 (0.801)	1.24 (0.011***)	0.48 (0.639)		
Promotion*RPE _{it-1}	-3.08 (0.117)	8.64 (0.085*)	-1.81 (0.376)	7.63 (0.188)	-0.80 (0.672)	6.50 (0.215)		
Incentive_Dummy	Yes	Yes	Yes	Yes	Yes	Yes		
Year_Dummy	Yes	Yes	Yes	Yes	Yes	Yes		
Indus_Dummy	Yes	Yes	Yes	Yes	Yes	Yes		
Adj. R-square	0.15	0.11	0.23	0.24	0.25	0.28		
Obs. #	1524	532	1524	532	1524	532		

