

12-1-2010

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Recommended Citation

Firth, M., Leung, T. Y., & Rui, O. M. (2010). Justifying top management pay in a transitional economy. *Journal of Empirical Finance*, 17(5), 852-866. doi: 10.1016/j.jempfin.2010.06.002

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Justifying Top Management Pay in a Transitional Economy

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This version March 26, 2010

Acknowledgements : We thank the editor, Theo Vermaelen, and the reviewer for helpful comments on the paper. We also thank Ronald Masulis and seminar participants at Vanderbilt University, City University, Zhongshan Univeristy and Lingnan Univeristy for helpful comments on previous versions of the paper. Firth acknowledges financial support from the government of the HKSAR (LU340307).

Justifying Top Management Pay in a Transitional Economy

1. Introduction

China's transition from a centrally-planned economy to a market driven economy has been well documented in the literature. In particular, the sustained growth in GNP and the dismantling of the old communist central planning apparatus have been widely lauded by economists and investors everywhere. However, until 2006, the strong economic growth was juxtaposed with poor corporate performance based on accounting numbers and stock market returns (Chen, Firth, and Rui 2006a). In our sample period, 2000 to 2005, corporate profitability improves although stock returns are often negative. A number of factors have placed constraints on firms' performances, including the state's continuing ownership interest in listed firms and the lack of monitoring of, and the absence of incentives for, top management.¹ Old socialist principles still underlie the running of many listed firms and these may have lingering effects on economic efficiency. Manifestations of these principles include the quest for full employment and pay equality between top management and the average worker. One might expect these principles to die harder in state controlled listed firms than in privately controlled listed firms.

Our objective in this paper is to examine top management compensation in China's listed firms. The design of compensation systems is a reflection of a firm's corporate governance and has been the focus of much research in the U.S. and other developed economies.² This research has examined, among other things, whether pay depends on performance (Jensen and Murphy 1990; Core, Holthausen, and Larcker 1999; Conyon and Murphy 2000; Bebchuk and Fried 2006); the role of corporate governance, including board structure and ownership, on compensation (Cheung, Stouraitas, and Wong 2005; Core et al. 1999; Bebchuk and Fried 2006); and whether behavioral theories (e.g., tournament theory or relative deprivation theory) can help explain the disparity

¹ By state we mean central, regional, and municipal government as well as state ministries and wholly government owned enterprises.

² According to Warren Buffet, the way a CEO is compensated is a key test of a firm's commitment to good governance (letter to the shareholders of Berkshire Hathaway, Inc., February 2004). Thus, we can draw insights into a firm's governance by examining top management pay. Buffet opines that he is disappointed in the governance of many firms.

between the top manager's pay and the compensation of other managers and workers (e.g., Bloom 1999; Bognanno 2001; Main, O'Reilly, and Wade 1993; Jirjahn and Kraft 2007; Lazear 1991; Rajgopal and Srinivasan 2008; Bebchuk, Cremers, and Urs 2008). In this paper, we revisit these questions using data from China. In particular, we examine the determinants of pay levels, the pay of top management relative to the average worker, and pay and performance sensitivities and elasticities. .

The listed company sector of the economy has grown dramatically and by 2009 there were now more than 1500 listed firms with a market capitalization exceeding U.S.\$3 trillion, which made it the second largest in the world. Moreover, China has opened up its economy to allow foreigners to invest in its listed firms and to allow full control of firms by foreigners. The changes in the investment landscape call out for research into the way firms operate and, in our case, how top management is compensated.

We find that a firm's performance has a positive impact on top management compensation. A 1000 RMB increase in stockholder wealth results in a 0.0038 RMB increase in the top manager's pay.³ This result is similar to the pay performance sensitivities in U.S. firms during the 1970s (Murphy 1999). We also find that the pay disparity between top managers and the average worker is partially explained by a firm's stock returns and profitability. Thus, any move away from egalitarian pay is justified by performance. The positive pay-performance relation applies to firms regardless of who the major stockholder is.

The paper proceeds as follows. Section 2 outlines the institutional background of China's modern enterprise reforms. This section describes the general framework for setting top executive pay in China and introduces the research questions that we investigate. We present the research design in section 3 and describe the sample, variable selection, and the regression models. Section 4 describes the results of the pay levels tests and the pay and performance relations. Section 5

³ Eight RMB equals one U.S. dollar during the time period of our study. In 2010, the exchange rate has changed to seven RMB to one U.S. dollar.

presents conclusions.

2. Institutional background

At the beginning of the reform process, most listed firms were carved out of state owned enterprises (SOEs). It was the profitable operating units of an SOE that were listed and the non-operating units (e.g., schools, hospitals), non-profitable units, and so-called 'strategic units' were retained by the SOE. When the profitable units were listed, the parent SOE typically kept voting control or else the voting control was passed to a unit of the state. Typically, the free float of shares was 25 to 30%. Over time, the state's ownership has been reduced, but, even now, the state still remains the dominant owner of a majority of listed firms. However, some of the equity carve-out SOEs are now majority owned by a private investor. Additionally, there are a growing number of privately owned businesses that have become listed.

A striking characteristic of the listed firms is that there is a single dominant owner, be it the state or private, which has effective control of the company. On average, the largest single investor owns 46% of a listed firm and the second largest investor owns about 7% (Chen, Firth, and Xu 2009). We are therefore able to characterize a listed firm as state controlled or privately controlled depending on who the major stockholder is. Shleifer (1998), among others, argues that state ownership stifles the creative talents of management and forces firms to pursue policies that help meet government objectives rather than maximize economic efficiency and stockholder wealth. This might imply that state controlled and private controlled listed firms will monitor and incentivize their managers differently. In particular, extrapolating from prior studies (e.g., Shleifer 1998) leads to a prediction that state controlled firms will not use profitability and stockholder wealth as performance measures in setting compensation or, if they do use these measures, they will place less weight on them vis-à-vis private firms. However, there are opposing views and some early evidence in China suggests the state does recognize the need to give incentives to management. For example, in the 1980s the government introduced a contract responsibility system

for SOEs where managers were rewarded if the SOE's performance exceeded the targets specified in the contract (Chen et al. 2006a). Further evidence of the use of performance related pay for the managers of China's SOEs (before the stock exchanges were opened) is given in Groves et al. (1994) and Mengistae and Xu (2004). Firth, Fung, and Rui (2006, 2007a), find mixed evidence on performance-related pay in China's listed firms. Using data from 1998 to 2000, they find that pay is related to accounting performance but not to stock returns. Prior to the reform era, managers' and workers' cash compensation were similar although the managers also enjoyed perquisites that were not available to the general workers. After the reforms began, labor mobility increased as firms competed for the best managers. This leads to an increase in wage dispersion.

2.1. Pay disparities

High pay disparities between different ranks of employees and managers, as exist in many firms in the U.S., can be explained by tournament theory (Lazear and Rosen 1981; Main et al. 1993; Lynch 2005; Lee, Lev, and Yeo 2008; Kale, Reis, and Venkateswaren 2009). Here, pay disparities increase in the upper hierarchies of an organization. This creates strong incentives for lower level managers and employees to compete hard for promotion and they will exert substantial effort and commitment to win the tournament prize (the large increase in compensation that goes with the promotion). The increase in effort will benefit the firm's stockholders.

Low pay disparity can be explained by relative deprivation and distributive justice theories, which say lower level managers and employees feel aggrieved at the high pay of their superiors (Deutsch 1985; Henderson and Fredrickson 2001) and therefore cooperation declines in the organization. The resentment created by high pay disparities can jeopardize the firm's profitability and efficiency (Dye 1984; Lazear 1989; Siegel and Hambrick 2005). An egalitarian approach, where pay differences between top managers and other workers are small, may lead to greater productivity (Bloom 1999; Drago and Garvey 1998; Levine 1991). However, there are

counter-arguments that compressed pay levels reduce incentives and lead to poor corporate performance (Hibbs and Locking 2000; Lallemand, Plasman, and Rycx 2004).

Pay disparity in China, while rising quite sharply in recent years, is nowhere near the levels observed for U.S. firms (Kim and Lu 2009). One reason for this is the state's concern over social harmony. This is especially pertinent given China's history and its continuing espousal of some socialist principles. There has been public unrest about the increasing compensation of executives at listed firms (SCMP 2006, 2009).⁴ The State-owned Assets Supervision and Administration Commission (SASAC), which is a government unit that administers much of the state's stockholdings in listed firms, announced plans to investigate the salary increases of senior executives of state controlled listed firms (SCMP 2007). In light of the importance of pay disparities in China, we analyze the variation in the pay of top executives in a listed firm relative to the average worker's pay, and then examine if pay disparities can be explained by a firm's performance. Presumably, pay disparities are more palatable for workers and for society as a whole if a firm's performance is very good.

2.2. *How is top management compensation set?*

China's *Company Law* (1993, as amended in 1999) and *The Code of Corporate Governance for Listed Firms in China (The Code)* issued by the China Securities Regulatory Commission (CSRC; the CSRC is the official regulator of securities markets and listed firms in China), set out the duties and obligations of the board of directors. One of the duties is to set top management pay including the compensation of the executive directors. As mentioned earlier, most listed firms have a controlling stockholder and this stockholder makes recommendations to the board on a variety of matters, including compensation. The right to make these recommendations is enshrined in *The Code*. Moreover, the largest shareholder is usually represented on the board and, in the case of

⁴ This public unrest is mirrored recently in the developed economies. For example, there is widespread outrage in the U.S. and Europe at the increases in top executive pay at firms that concurrently or subsequently report large losses, fire large parts of the workforce, and that receive financial assistance from the state.

private controlled firms, is often actively engaged in running the business. Chinese firms are also required to have supervisory boards although these are considered to be quite weak and ineffective (Tong 2003) and exert little influence on executive pay. *The Code* explicitly advocates the use of incentive based bonus compensation although it is silent on the measurement of performance and the bonus formulae.

The state exerts some influence on top management pay and especially for state controlled listed firms. In 2009, the Ministry of Finance issued a circular to state owned listed firms in the finance sector asking them to reduce the compensation of top executives by at least 10% for firms that report increases in profits and by at least 20% for firms that report profit declines (SCMP 2009). The Ministry stated that the reduction in compensation is aimed at maintaining social equality, protecting the rights and interests of the nation and shareholders, and to improve corporate governance. In the eyes of the Ministry, the relative compensations of top managers are too high and they lead to public anger and resentment. This leads to pressure to reduce top management compensation at state controlled listed firms. However, the difference in managers' pay reductions for profit-increasing and profit-decreasing firms signifies that the state recognizes a need for performance-differentiated pay.

Top executives receive cash compensation in the form of a salary and a bonus. Stock options have only been allowed since 2008 and approval is required from the regulator (the CSRC) for the introduction of a scheme. One reason for the restriction on stock options is that there is no obvious source for the stock that would be issued once the options are exercised. Stock repurchases (the source of shares for stock option schemes in the U.S.) are not allowed and any new issue of stock requires regulatory approval, which is difficult to get.

Another form of compensation for managers is perquisites. Perquisites include allowances for entertainment, traveling, training expenses, meeting expenses, and driver expenses. These allowances are granted to the executives and any unused allowances are typically pocketed by them.

This is an important source of income for managers and the pocketed perquisites (perks) could exceed the cash compensation in some firms.

The Code lays out recommendations for governance (for example, since 2003 one third of directors need to be independent and the CSRC vets their claims of independence). While these are recommended guidelines they are *de-facto* law as the stock exchanges and the CSRC take disciplinary action if firms do not comply. Compensation committees became a requirement from the beginning of 2002.⁵

2.3. Issues

While our study is exploratory in nature, we nevertheless set out to examine a number of important issues. These issues include understanding the influence of ownership and governance on the setting of pay levels, evaluating the differences in pay between top management and workers, and the relation between pay and performance. Top management pay relative to the average worker's pay is a sensitive issue in China because of its impact on social harmony. Increased differences may be justified by superior firm performance and so we examine this issue. Agency theory predicts that effective reward systems that relate pay to performance, will enhance firm value. We therefore examine pay sensitivities and elasticities.

Overall, China has experienced high rates of economic growth and the development of legal, financial, institutional, and governance environments has been very rapid. However, the market development has not been equal across China's regions. In fact there is tremendous variation in the degree of market development and some regions in China's hinterland are little changed since the beginning of the reforms. Chen et al. (2006b) and Firth, Fung, and Rui (2007b) find that regional differences can have a profound effect on fraud, the informativeness of accounting reports, and other corporate events. With this in mind, we examine whether the level of market development has

⁵ To examine whether the introduction of compensation committees has an effect on our results we partition our sample into observations from 1999 to 2001 and those from 2002 to 2005. We find the results are similar across the two sub-periods.

an impact on the pay-performance relation and the pay disparity-performance relation.⁶

3. Research design

3.1. Sample

Our sample is non-financial companies listed on the Shanghai and Shenzhen stock exchanges (China's two stock markets) in the period 2000 to 2005. Although firms have been required to publish top executive pay since 1998, many of them did not comply with the regulations in the first two years and so we begin collecting data in 2000. The data on compensation and company characteristics are collected from the CSMAR database and from annual reports. Missing data substantially reduce the number of observations we can use and the final sample size is 4,233 firm-years. Information on perquisites (perks) is hand collected from firms' financial statements. Firms disclose the total perks paid but do not identify the names of those who receive them. We believe most of the perks are paid to the top management.

The total of the executive directors' compensation has to be disclosed in a firm's financial statements. This compensation is salary and bonus; unfortunately most firms do not distinguish between salary and bonus and instead they report one lump sum. In the later years of our sample period the pay of the CEO or managing director is disclosed but the data are incomplete in the earlier years. Firms also disclose the collective pay of the three highest paid directors and we use the average of this pay as one of the dependent variables (there are more data on the pay of the three highest paid directors than the pay of the CEO and so we use the former).⁷ In China, the top executives sit on the firm's board and so the three highest paid directors will be the three highest paid managers.

3.2. Variables

⁶ Our analysis of regional differences has its counterpart in international studies where research has investigated whether differences in corporate governance and institutional frameworks across countries affects a firm's decisions.

⁷ The average is computed as the total pay of the three highest paid directors, divided by three.

We use three dependent variables in the levels analyses. They are the log of the average compensation of the three highest paid executive directors (LnCOMP) and the average executive director's compensation relative to the average worker's pay, which we measure in two ways. First, we divide the average executive director's pay for a firm divided by the average worker's pay of the same firm; this is denoted 'RelCOMP'. Second, we run a regression of COMP on the average worker's pay and the cost of living of the province where the firm is located. Thus:

$$COMP = \alpha_0 + \beta_1 \text{AverageCOMP} + \beta_2 \text{COST} \quad (1)$$

where COMP is the average compensation of the three highest paid executive directors, AverageCOMP is the average compensation of the workers of the firm, and COST is the regional cost of living per household. The coefficients are estimated for each two digit industry and for each year. The fitted values for the model for each firm-year are then compared to the actual pay and the difference is called abnormal compensation (AbnCOMP). AbnCOMP is used as our third dependent variable. Positive values of AbnCOMP indicate the top management is paid more than the "norm" and negative values imply managers are paid less than the "norm".

We use two measures of performance in the levels tests. These are stock returns (RET) and return on assets (ROA).⁸ Stock return is the annualized rate of return for the year. Return on assets is operating income divided by total assets.⁹ We include a number of control variables in the regression models. These controls include variables that prior research has shown to be important in explaining the level of top executive pay. We use the standard deviation of stock return (SDRET) and return on assets (SDROA) as measures of risk. Log of board size (LnBoardSize), the proportion of independent directors (IndDir), and directors' stockholdings (DirHolding) are included as governance variables. We use Log of total assets (Lnasset) as our measure of a firm's size; firm size is theoretically and empirically linked to top management compensation (Gabaix and Landier 2008).

⁸ We also use return on sales and earnings per share as other measures of performance. These two variables give results that are similar to those for ROA and so we do not discuss them further.

⁹ We also use net income as an alternative to operating income in sensitivity tests. As the results are qualitatively the same we do not separately tabulate them.

Leverage (DA) is total debt divided by total assets and the market to book ratio (MB) represents growth opportunities.

We include two additional variables in the regression which are important controls given the China context of our study. Private is a dummy variable that is coded one (1) if the controlling stockholder is a private entity or person; Private is coded zero (0) if the dominant stockholder is the state (central, regional, or municipal government or an associated ministry or agency). State controlled firms may be more subject to political interference and the managers are more likely to be political appointees or former civil servants. LnCost is the log of the annual cost of living in the region where the firm is located; these figures are taken from official government statistics. The cost of living may be a factor that helps explain compensation. Industry and year dummies are additional controls.¹⁰ Industry is based on the CSRC's expanded list of industries.

3.3. Regression models

The general form of the regression models is as follows:

$$COMP = \beta_0 + \beta_1 PERF + \beta_2 CONTROLS \quad (2)$$

The three measures of compensation (LnCOMP, RelCOMP, and AbnCOMP) are described in the previous section. We run the regressions with both contemporaneously and lagged independent variables. As both sets of results are similar, we just report the results using contemporaneously measured independent variables. We do not use panel models because some of the variables (e.g., governance and ownership variables) do not change over time and so their impact will be washed-out in panel models. We use robust standard errors to correct for firm clustering, heterogeneity, and autocorrelation.

In the pay and performance analyses we use change in compensation from one year to the next as the dependent variable. The independent variable is the change in performance. The models are:

¹⁰ Kim and Lu (2009) argue that inter-dependence in tasks can have an impact on pay dispersion and this impact varies across industries. Hence, we control for industry.

$$\Delta COMP = \beta_0 + \beta_1 \Delta PERF \quad (3)$$

$$\Delta \ln COMP = \beta_0 + \beta_1 \Delta \ln PERF \quad (4)$$

Equation (3) is used to measure sensitivities and equation (4) is used to measure elasticities. PERF is stockholder wealth or operating income.

4. Results

4.1. Descriptive statistics

Table 1 Panel A shows the means, medians, and standard deviations of the variables. The mean and median compensation for the highest paid executive director are 150,300 RIMB and 106,100 RMB, respectively (this is the total pay for the three highest paid directors of a firm divided by three). Managers in private controlled listed firms have a higher mean but lower median compensation than top managers in state controlled listed firms. RelCOMP has a median of 3.42 which indicates that the average top management pay is about three and a half times the wage of the average worker. This is much lower than in the U.S. (Hay Group 1991; Financial Times 2007; Kim and Lu 2009). On the face of it, pay disparity is low and this is consistent with the government's avowed intent to avoid social disharmony created by wide wealth gaps. Even in private controlled firms, the compensation disparity is quite small (mean and median RelCOMP are 6.18 and 4.16 for private firms and 4.67 and 3.17 for state firms). However, RelCOMP is statistically significantly higher for private compared to state controlled listed firms. AbnCOMP is a measure of abnormal relative compensation used in our regression models. The negative signs on AbnCOMP for state-owned firms indicate that the compensation of the top managers relative to the average worker is lower than in private controlled listed firms.

TABLE 1 HERE

In the levels analyses, our performance measures, RET and ROA, are industry-adjusted. Here, we deduct the median industry performance from the firm's performance number to obtain a relative performance measure for the firm. Relative performance abstracts away economic and

industry trends and reflects the success of the firm's top managers vis-à-vis their competitors. We use the CSRC industrial classification to define industry membership. The performance metrics of state-owned listed firms are similar to those of the private firms; this finding is similar to Chen et al. (2009).

On average, state controlled firms are larger than private controlled firms. The average MB ratios (mean = 3.01 and median = 2.42) reflect strong growth opportunities. Private controlled firms have higher MB ratios. Directors' shareholdings are very low. Table 1 also shows COMP, RelCOMP, and AbnCOMP by year (Panel C), industry (Panel D), and province (Panel E). Compensation and relative compensation has increased (Panel C) over the six years of the study. Pay disparity (CompRel) is high in the textiles and apparel industry and low in other manufacturing industries and power, gas, and water (Panel D). There are some compensation and relative compensation differences across regions (Panel E). We control for location in the regressions by using the cost of living (LnCost) for each region.

We show the correlation matrix in Table 2; in general, the correlations among the dependent variables are low. Variance inflation factors are quite small in the regression models and so multicollinearity is unlikely to be a major factor in interpreting the coefficients.

TABLE 2 HERE

4.2. Regression results

Table 3 gives the regression results for the levels analyses. LnCOMP is significantly and positively related to industry adjusted stock returns and to industry adjusted profitability. Top executive pay therefore depends on a firm's performance. We examine this issue in greater depth in Table 4 where we calculate pay and performance sensitivities and elasticities. The negative signs on the risk variables, SDRET and SDROA, indicate that if a firm's performance is more variable than that of their competitors (we use relative performance measures), then the top managers

receive lower compensation. Private controlled listed firms pay their top managers more than do state controlled listed firms. As expected, size (LnAsset) and cost of living (LnCost) are positively associated with compensation. There is a positive and significant relation between directors' stockholdings and compensation. Higher stockholdings may indicate that the directors have more power and can use this to pay themselves more. Firms with foreign listings pay higher compensation to their top managers.

TABLE 3 HERE

Table 3 also shows the results for top executive compensation relative to the average wage (RelCOMP and AbnCOMP). Stock returns (RET) and operating profit performance (ROA) are significantly and positively related to the pay disparities (relative pay) in firms. This suggests that a managers' high pay relative to the average worker is being justified by reference to a firm's superior industry adjusted performance. Given the egalitarian nature of China's socialist past, high management compensation draws very negative publicity. Strong financial performance relative to the industry norm might help justify high pay disparities. Private controlled firms have higher pay disparities. One reason for this is that the state's desire for social harmony through pay parity (SCMP 2009) has less influence in private firms. Large firms have higher pay dispersion and this may reflect a larger number of hierarchies in the organization. The results also show that firms located in regions with low costs of living have higher AbnComp and directors' shareholdings are positively related to AbnComp.

4.3. The pay and performance relation

Following Murphy (1985, 1999) we examine pay-performance sensitivities and pay-performance elasticities. For the sensitivity analyses, we regress change in pay (Δ COMP) on change in performance. As is standard in the literature, we express the change in pay for a 1000RMB change in shareholder wealth or a 1000 RMB change in operating profit. We also

examine pay-performance elasticities. Here, we regress the change in log pay ($\Delta \ln \text{COMP}$) on the change in log performance.

We use two measures of performance. These are change in stockholder wealth (ΔSW) and change in operating income (ΔOI). For elasticities we use the change in log wealth ($\Delta \ln \text{SW}$) and change in log operating income ($\Delta \ln \text{OI}$). Shareholder wealth is the change in a firm's market capitalization plus dividends paid out. Market capitalization is the share price times the number of shares outstanding at the beginning of the year. Operating income excludes non-core income, special items, and taxes. However, in sensitivity tests, we use net income as a replacement for operating income and find that the results are similar.

Table 4 gives the regression results for pay-performance sensitivities. Sensitivities are shown in Panel A and elasticities in Panel B. ΔSW and ΔOI have positive and significant coefficients in the ΔCOMP regressions. As ΔCOMP is in thousands and ΔSW is in millions, we interpret the coefficient of 0.0039 as a top manager receiving an additional 0.0039 RMB in pay per 1000 RMB increase in stockholder wealth. As a comparison, Murphy (1999) reported an additional CEO pay of 0.4 cents per \$1000 increase in stockholder wealth for U.S. firms in the 1970s. The sensitivity rose to 1.4 cents in the 1990s. Thus, the sensitivity of pay to performance for Chinese firms in 2000-2005 is similar to that in the U.S. in the 1970s. Change in pay is also sensitive to changes in operating income. A 1000 RMB increase in operating income gives 0.0304 RMB increase in pay. The evidence shows that pay depends on performance. Using data from 1998 to 2000, Firth et al. (2005) find that the pay of top managers is sensitive to operating performance but not to shareholder wealth. Our results from a later period show that managers are now rewarded on the basis of increasing stockholder wealth.

TABLE 4 HERE

In order to see if the sensitivities are different between private controlled and state firms we

interact ΔSW and ΔOI with Private, which is a dummy variable coded one if the listed firm is controlled by a private investor. While the interaction terms are positive they are not significant at conventional levels. Thus, there is no significant evidence that private controlled firms have higher pay-performance sensitivities.

In panel B, we show the elasticities. The coefficients on $\Delta \ln SW$ and $\Delta \ln OI$ are positive and statistically significant. A one percent increase in SW leads to a 0.71 percent increase in top management pay. There is no significant difference in pay and performance elasticities between private controlled and state controlled listed firms.

TABLE 4 HERE

4.4. The impact of regional development on compensation

As discussed in section 2.3., there are vast regional differences in China with respect to market development. In order to see if regional development has an impact on the pay-performance sensitivities and elasticities, we divide our sample into firms located in the more developed provinces and those located in the less developed provinces. To operationalize this procedure, we make use of a regional development index compiled by China's National Economic Research Institute (NERI).

The market development index captures the following aspects: (1) the relations between government and markets, such as the role of markets in allocating resources and enterprise burden in addition to normal taxes; (2) the development of non-state business, such as the ratio of industrial output by the private sector to total industrial output; (3) development of product markets, including considerations such as regional trade barriers; (4) development of factor markets such as FDI and mobility of labor; (5) development of market intermediaries and the legal environment (e.g., the protection of property rights). A high index score signifies a province with a strong and well established market development (good law enforcement, strong institutional investors, etc.). Fan

and Wang (2003) give an extensive description of the index. Based on this index, we call a province with an above median score a “more developed region” and firms in these provinces are examined separately from firms in provinces with below median market development scores (“less developed region”).

We classify regions as more developed if the market development index is above the median of and we classify other regions as less developed. We re-run the pay and performance relation regressions for those firms located in more developed regions and for those firms located in less developed regions. The results are shown in Table 5, panel A, for more developed regions and in Table 5, panel B, for less developed regions.

TABLE 5 HERE

The results in Panel A (for firms located in more developed regions) are similar to the results in Table 4 (all firms). One exception is that the $\Delta \text{LnSW} * \text{Private}$ coefficient is negatively significant. This suggests compensation sensitivity to change in stockholder wealth is lower for private controlled firms in well developed regions. In Panel B (firms located in less developed regions), ΔOI and ΔLnSW have the expected positive signs but they are not statistically significant.

4.5. *Perquisites*

Our final analyses examine the perquisites data. There are several studies using U.S. data and most of them conclude that perks are wasteful¹¹. Yermack (2006) finds that a CEO’s perks are not related to their cash and stock option compensation but are negatively related to stock returns. Bebchuk and Fried (2006) describe managers’ perks as camouflaged compensation that tries to avoid the scrutiny of stockholders and investors; they conclude that perks are unrelated to a

¹¹ Lavelle and Grover (2005) and Hodgson (2004) give examples of management perks in the U.S., which they view as being wasteful. However, one study by Rajan and Wulf (2006) concludes that perks are a way to help superior managers become more productive.

manager's performance. Grinstein, Weinbaum, and Yehuda (2009) find that the stock market reacts negatively to announcements of perks in the U.S. and therefore shareholder value is reduced. Andrews, Lin, and Yi (2009) provide similar evidence. In China, perks are often in the form of cash (e.g., cash allowances for travel, cash allowances for entertainment), and surpluses (i.e., allowances minus expenditures) are often pocketed by the top executives. Based on an analysis of a few cases known to the authors we believe the proportion of surplus to total allowances is similar across firms.

We investigate the determinants of perks compensation in Table 6. The first two columns relate to the log of perks only (LnPERK) and columns 3 and 4 relate to abnormal perks (AbnPERK). Abnormal perks is the residual from a regression of perks on a firm's size (log of sales), number of countries the firm operates in or sells to, and the number of industry segments the firm operates in. These factors are expected to help explain perks and the residuals represent abnormal perks.

LnPERK and AbnCOMP are not related to performance. Perks (or excessive perks) are compensation but because they are not 'direct' and are not publicly linked to named executives, managers may feel there is no need to justify them (i.e., the compensation is "disguised" or camouflaged as business expenses).¹² The non-significant coefficients on the performance variables do not support Rajan and Wulf's conclusion (from the U.S.) that perks are a valuable incentive. Older firms pay higher perks while firm size has no significant association with LnPerk and AbnPerk. Table 6 shows that the coefficients on Private are not statistically significant. Thus, there is no statistical evidence that state owned listed firms have higher perks.

In Table 7 we show the perks and performance relation. LnPERKS is not related to performance. The Private interaction terms are not significant.

TABLE 7 HERE

¹² Unfortunately, we are unable to determine exactly what amount of the perks is compensation and what the legitimate business expenses are. Neither are we able to individually identify who receives the perks compensation. These data problems represent limitations to our research.

5. Summary and conclusions

Top management pay has been and continues to be a focus of fierce debate among academics, practitioners, and the public at large. At the forefront of the debates is how to properly incentivize top managers and how to prevent abuses by management. The focus of our study is the compensation of top management in China's listed firms. To date, comparatively little compensation research has been conducted using Chinese data.

Our sample data are from 2000 to 2005 and so we cover the later period of the economic reforms. Top management compensation is low by international and even regional standards. Part of this is explained by the low cost of living in China. Another explanation is that firms are adhering to the government's call for social harmony by keeping pay disparities between top management and workers comparatively low. The median management to worker pay is just 3.42. However, these conclusions are tempered by the fact that top managers receive perquisites which we believe often end up in the managers' pockets. We therefore include perks in our tests although the highly aggregated nature of the data places limits on our tests.

We find that there is a positive relation between pay and performance. The sensitivity of pay to increases in stockholder wealth is similar to that in the U.S. in the 1970s. Pay disparity is positively related to performance and this suggests performance is used to justify top managers earning a lot more than the average employee; this justification is important in the transition from a centrally planned socialist system to a market based economy. Performance also explains changes in compensation.

Our results show that private controlled firms pay more to their top management after accounting for other factors. However, the variables that are significant in explaining compensation are the same for both private controlled and state controlled firms. China is characterized as having great disparities in wealth and market development across different regions of the country. However, our results are robust to the different levels of market development. We also carry out some

preliminary analyses on the levels of perquisites and find that they are not dependent on a firm's performance. However, there are caveats to working with perks data and so a more complete analysis awaits future research.

Our study is exploratory in nature as there are few stylized facts about top management compensation in China and the data lack the necessary detail to carry out certain tests. Nevertheless, we have been able to summarize some important characteristics of executive compensation and examine the determinants of pay and pay disparities. Our research has also identified a number of issues that future research can address if and when appropriate data become available.

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Table 1
Descriptive Statistics

Comp is the average annual compensation of the three highest paid directors ('000,000). LnComp is the log value of the average annual compensation of the three highest paid directors. CompRel is the ratio of the average annual compensation of the three highest paid directors to the average annual salary of an employee (total cash paid to employees to total number of employees). AbnComp is abnormal compensation ('000,000). LnCompPerk is the log value of total annual compensation and perk consumption of directors. LnPerk is log value of perk compensation. AbnPerk is abnormal perk ('000,000). Perk compensation includes administrative expenses, traveling expenses, business entertainment expenses, communication expenses, overseas training expenses, director meeting expenses, driver expenses and bonus for directors. RET is industry-adjusted cumulative daily raw return for the year. SDRET is the standard deviation of the daily raw return for the year. ROA is industry-adjusted return on assets. SDROA is the standard deviation of return on assets for five years. ROS is industry-adjusted return on sales. SDROS is the standard deviation of return on sales for five years. EPS is industry-adjusted earnings per share. SDEPS is the standard deviation of earnings per share for five years. BoardSize is the number of directors on the board. LnBoardSize is the log value of the number of directors on the board. IndDir is the percentage of the number of independent directors to total number of directors on the board. LnAsset is the log value of total assets. LnCost is the log value of the living expenditure level of the province where the firm is located. LnFirmAge is the log value of the number of years the firm has been established. DA is the ratio of debt to total assets. MB is the ratio of market value of equity to book value of equity. DirHolding is the percentage of director shareholdings to total shares outstanding. Foreign is the proportion of firms that have a foreign listing. CompChg is the change in average annual compensation of the three highest paid directors. CompRelChg is the change in the ratio of the average annual compensation for the three highest paid directors to the average annual salary of an employee. AbnCompChg is the change in abnormal compensation. ROAChg is the change in industry-adjusted return on assets. ROSChg is the change in industry-adjusted return on sales. EPSChg is the change in industry-adjusted earnings per share. LnAssetChg is the change in total assets. DAChg is the change in debt to total assets. MBChg is the change in the ratio of market value of equity to book value of equity.

Panel A: Descriptive Statistics for Levels Regression Model

	All Firms N = 4233			State-Owned Firms N = 3124			Privately-Owned Firms N = 1109		
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation
Comp	0.1530	0.1061	0.1697	0.1481	0.1066	0.1522	0.1543	0.0967	0.1996
LnComp	11.5296	11.5721	0.9237	11.5290	11.5918	0.9180	11.5324	11.5096	0.9408
CompRel	5.0641	3.4183	5.3550	4.6699	3.1687	4.8428	6.1785	4.1593	6.4635
AbnComp	-0.0013	-0.0259	0.2321	-0.0044	-0.0268	0.2265	0.0075	-0.0229	0.2472
LnCompPerk	15.6095	15.6231	1.8781	15.6602	15.7150	1.8561	15.4649	15.3892	1.9333
LnPerk	12.7771	15.8662	7.0068	12.8933	15.9353	6.9482	12.4428	15.6592	7.1664
AbnPerk	-0.4241	-1.3738	7.7519	-0.6211	-1.3322	7.3039	0.1422	-1.4937	8.8957
RET	0.0155	-0.0026	0.2588	0.0210	-0.0008	0.2590	0.0006	-0.0088	0.2578
SDRET	0.0234	0.0227	0.0069	0.0233	0.0226	0.0072	0.0236	0.0231	0.0058
ROA	0.0117	0.0001	0.0705	0.0131	0.0012	0.0702	0.0079	-0.0030	0.0715
SDROA	0.0329	0.0262	0.0264	0.0326	0.0257	0.0264	0.0338	0.0278	0.0263
ROS	0.0128	-0.0013	0.1266	0.0033	-0.0078	0.1172	0.0394	0.0206	0.1469
SDROS	0.0642	0.0448	0.0766	0.0597	0.0427	0.0727	0.0768	0.0516	0.0854
EPS	0.0191	0.0003	0.2803	0.0260	-0.0003	0.2825	-0.0003	0.0033	0.2734
SDEPS	0.0390	0.0053	0.1630	0.0335	0.0050	0.1284	0.0545	0.0062	0.2339
BoardSize	9.7407	9.0000	2.2372	9.9294	9.0000	2.2891	9.2087	9.0000	1.9937
LnBoardSize	2.2508	2.1972	0.2257	2.2699	2.1972	0.2262	2.1971	2.1972	0.2156
IndDir	0.2661	0.3333	0.1290	0.2626	0.3333	0.1290	0.2759	0.3333	0.1288
LnAsset	21.2465	21.1595	0.8826	21.3538	21.2654	0.8996	20.9459	20.9217	0.7572
LnCost	8.8549	8.7123	0.2843	8.8589	8.7123	0.2920	8.8443	8.7123	0.2615
LnFirmAge	1.7718	1.7918	0.5494	1.7702	1.7918	0.5403	1.7778	1.7918	0.5740
DA	0.4741	0.4841	0.1726	0.4663	0.4759	0.1734	0.4964	0.5116	0.1686
MB	3.0139	2.4265	1.9322	2.9343	2.3933	1.8462	3.2415	2.5248	2.1412
DirHolding	0.0024	0.0001	0.0298	0.0006	0.0001	0.0069	0.0076	0.0001	0.0567
Foreign	0.0884			0.1034			0.0460		

Table 1 (continued)
Descriptive Statistics

Panel B: Descriptive Statistics for Change Regression Model (N=2721)

	<u>Mean</u>	<u>Median</u>	<u>Standard Deviation</u>
CompChg	0.2800	0.0997	0.8303
CompRelChg	0.1582	-0.0140	0.9512
AbnCompChg	-0.3297	-0.1876	1.9173
RET	0.0103	-0.0044	0.2684
SDRET	0.0239	0.0232	0.0078
ROAChg	0.0915	0.0053	0.6939
SDROA	0.0320	0.0259	0.0251
ROSchg	0.0626	0.0030	0.5718
SDROS	0.0656	0.0448	0.0795
EPSChg	-0.0484	-0.0043	1.5743
SDEPS	0.0495	0.0056	0.1935
LnBoardSize	2.2496	2.1972	0.2204
LnDir	0.2828	0.3333	0.1166
LnAssetChg	0.1196	0.0760	0.2512
LnCost	8.8500	8.7123	0.2818
LnFirmAge	1.8048	1.7918	0.5390
DA	0.0800	0.0334	0.3635
MB	-0.1398	-0.2240	0.5016
DirHolding	0.0019	0.0001	0.0259
Foreign	0.0824		

Panel C: By Year

	<u>LnComp</u>			<u>CompRel</u>			<u>AbnComp (scaled by 1,000)</u>		
	<u>Mean</u>	<u>Median</u>	<u>Standard Deviation</u>	<u>Mean</u>	<u>Median</u>	<u>Standard Deviation</u>	<u>Mean</u>	<u>Median</u>	<u>Standard Deviation</u>
2000	10.42	10.37	0.79	2.71	2.21	2.56	-8.98	-8.74	710.59
2001	11.11	11.11	0.87	4.33	2.99	4.57	-5.37	-22.67	81.95
2002	11.39	11.44	0.84	4.73	3.52	4.62	-0.33	-23.64	113.60
2003	11.63	11.66	0.85	5.34	3.76	5.27	2.06	-32.76	175.09
2004	11.77	11.80	0.87	5.72	3.77	6.09	6.49	-34.86	176.88
2005	11.75	11.78	0.91	5.27	3.50	5.77	2.52	-37.77	180.98

Table 1 (continued)
Descriptive Statistics

Panel D: By Industry

	LnComp			CompRel			AbnComp (scaled by 1,000)		
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation
Agriculture	11.19	11.30	0.80	5.64	4.18	5.05	5.73	-3.95	71.70
Mining	11.59	11.51	0.88	6.43	3.23	6.59	22.73	-23.16	139.33
Food and Beverage	11.38	11.39	0.94	5.48	3.55	5.64	16.09	-20.50	159.77
Textile and Apparel	11.50	11.50	0.92	7.65	4.95	8.57	10.31	-32.44	175.87
Paper Making and Printing	10.92	10.94	0.98	3.98	3.45	2.40	-46.40	-43.10	51.63
Petroleum, Chemicals and Plastics	11.20	11.25	0.96	4.80	3.25	5.08	-1.94	-21.93	118.17
Electronics	11.82	11.83	0.83	6.16	4.25	5.12	-11.38	-38.10	170.77
Metal and Non-metal	11.35	11.30	1.01	5.37	3.52	5.46	3.07	-38.14	167.60
Machinery, Equipment and instrument	11.40	11.48	0.94	4.88	3.23	5.24	2.91	-27.47	180.58
Medicine and Biological Product	11.74	11.80	0.88	6.22	4.28	5.92	6.13	-33.06	177.06
Other Manufacturing Industries	11.41	11.45	0.80	2.55	1.86	1.80	-5.33	-20.56	66.14
Power, Gas and Water	11.49	11.60	0.93	2.69	2.18	2.28	-4.75	-21.25	89.34
Architecture	11.57	11.63	0.89	4.05	3.78	3.49	5.30	-28.13	135.91
Transportation	11.73	11.75	0.82	3.60	2.78	4.16	-3.75	-21.47	126.93
Information Technology	11.81	11.84	0.82	4.19	2.85	4.00	-15.39	-52.47	194.78
Retail	11.78	11.76	0.82	5.21	4.17	4.42	-55.13	-11.66	659.56
Real Estate	11.82	11.93	0.96	3.48	1.67	5.71	-0.87	-31.77	229.07
Hotels, Tourism and Public Services	11.69	11.63	0.78	5.99	3.72	6.55	-1.24	-17.93	101.63
Communication	11.32	11.33	0.52	3.43	1.82	3.19	-4.14	-22.13	62.38
Conglomerates	11.56	11.58	0.86	5.13	3.81	5.19	5.95	-19.76	109.06

Table 1 (continued)
Descriptive Statistics

Panel E: By Province

	LnComp			CompRel			AbnComp		
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation
Anhui	11.36	11.28	0.94	5.54	4.49	4.23	31.18	-6.00	129.98
Beijing	11.95	11.85	0.86	4.86	3.06	5.81	24.59	-21.99	154.61
Fujian	11.75	11.65	0.83	5.02	3.50	4.47	-55.23	-32.87	299.38
Gansu	10.93	10.94	0.96	4.51	2.99	4.09	16.39	-19.77	423.40
Guangdong	11.98	12.01	0.85	6.08	3.97	6.71	81.13	32.44	192.98
Guangxi	11.85	11.98	0.83	6.20	5.17	4.89	11.43	-28.31	154.14
Guizhou	11.22	11.27	0.93	4.65	3.28	4.74	-3.76	-18.21	97.26
Hainan	11.21	11.15	0.85	3.42	3.15	3.11	-4.81	-33.73	115.88
Hebei	11.35	11.31	0.91	4.43	3.17	4.13	2.96	-28.14	95.99
Heilongjiang	11.04	11.00	0.91	5.03	3.40	5.02	56.17	-4.97	161.63
Henan	11.50	11.38	1.01	6.99	4.73	6.07	-14.88	-10.86	280.81
Hubei	11.31	11.41	0.87	6.00	4.75	5.04	26.28	-5.28	141.75
Hunan	11.45	11.48	0.91	6.19	4.08	7.20	22.70	-28.46	257.45
Inner Mongolia	11.04	10.99	1.02	5.04	2.86	6.73	21.39	-9.53	236.23
Jiangsu	11.66	11.70	0.81	4.61	4.14	3.24	-6.10	-29.71	105.52
Jiangxi	11.02	11.06	0.96	3.76	2.38	3.53	-22.64	-34.07	81.65
Jilin	11.07	11.07	0.93	3.88	2.72	3.57	-15.63	-26.72	78.69
Liaoning	11.21	11.35	0.92	4.36	2.79	5.46	-33.27	-46.06	87.70
Ningxia	11.04	10.88	0.75	3.83	2.46	4.04	-44.02	-52.75	51.77
Qinghai	10.77	10.58	0.79	2.59	1.68	2.83	-36.72	-39.19	59.09
Shaanxi	11.01	10.91	0.67	5.24	2.85	5.67	1.18	-10.04	304.58
Shandong	11.43	11.57	0.97	6.03	3.88	6.82	-5.32	-38.05	107.70
Shanghai	11.82	11.85	0.77	3.70	2.56	4.19	-29.77	-33.75	226.40
Shanxi	10.89	10.84	1.06	5.32	2.68	7.05	-56.63	-58.15	68.15
Sichuan	11.17	11.16	0.87	4.53	3.11	4.62	-18.19	-26.11	67.83
Tibet	11.37	11.24	0.54	5.30	3.97	3.37	24.79	-4.19	107.66
Xinjiang	11.31	11.39	0.59	4.32	2.73	4.89	10.18	-32.64	170.50
Yunnan	11.53	11.55	0.90	4.75	3.97	4.06	3.13	-42.11	249.33
Zhejiang	11.93	11.93	0.82	5.83	4.16	5.85	-48.93	-61.73	120.53

Table 2
Correlation Coefficients

RET is industry-adjusted cumulative daily raw return for the year. SDRET is the standard deviation of the daily raw return for the year. ROA is industry-adjusted return on assets. SDROA is the standard deviation of return on assets for five years. ROS is industry-adjusted return on sales. SDROS is the standard deviation of return on sales for five years. EPS is industry-adjusted earnings per share. SDEPS is the standard deviation of earnings per share for five years. LnBoardSize is the log value of the number of directors on the board. IndDir is the percentage of the number of independent directors to total number of directors on the board. LnAsset is the log value of total assets. LnCost is the log value of the living expenditure level of the province where the firm is located. LnFirmAge is the log value of the number of years the firm has been established. DirHolding is the percentage of director shareholdings to total shares outstanding. Foreign is a dummy variable which takes the value of 1 if the firm issues B-shares or H-shares and 0 otherwise. ROAChg is the change in industry-adjusted return on assets. ROSChg is the change in industry-adjusted return on sales. EPSChg is the change in industry-adjusted earnings per share. LnAsset is the change in total assets. DAChg is the change in debt to total assets. MBChg is the change in the ratio of market value of equity to book value of equity. p-values are shown in parentheses.

Panel A: Correlation Coefficients for Levels Regression Model

	RET	SDRET	ROA	SDROA	ROS	SDROS	EPS	SDEPS	LnBoardSize	IndDir	Private	LnAsset	LnCost	LnFirmAge	DA	MB	DirHolding
SDRET	0.102 (0.00)	1.000	-0.141 (0.00)	0.015 (0.32)	-0.080 (0.00)	0.151 (0.00)	-0.181 (0.00)	0.074 (0.00)	-0.051 (0.00)	0.062 (0.00)	0.031 (0.04)	-0.164 (0.00)	0.017 (0.25)	0.112 (0.00)	0.150 (0.00)	-0.039 (0.01)	0.025 (0.09)
ROA	0.234 (0.00)	-0.141 (0.00)	1.000	0.376 (0.00)	0.391 (0.00)	-0.006 (0.69)	0.467 (0.00)	-0.068 (0.00)	0.027 (0.08)	0.041 (0.01)	-0.039 (0.01)	0.103 (0.00)	0.080 (0.00)	-0.030 (0.04)	-0.132 (0.00)	0.096 (0.000)	0.028 (0.06)
SDROA	0.039 (0.01)	0.015 (0.32)	0.376 (0.00)	1.000	0.104 (0.00)	0.427 (0.00)	0.073 (0.00)	0.052 (0.00)	-0.009 (0.53)	-0.081 (0.00)	0.022 (0.14)	-0.074 (0.00)	0.070 (0.00)	0.231 (0.00)	0.003 (0.83)	0.186 (0.00)	-0.019 (0.20)
ROS	0.130 (0.00)	-0.080 (0.00)	0.391 (0.00)	0.104 (0.00)	1.000	0.127 (0.00)	0.254 (0.00)	-0.098 (0.00)	-0.046 (0.00)	0.016 (0.28)	0.111 (0.00)	-0.045 (0.00)	-0.037 (0.01)	-0.089 (0.00)	-0.211 (0.00)	0.045 (0.00)	0.034 (0.02)
SDROS	-0.001 (0.97)	0.151 (0.00)	-0.006 (0.69)	0.427 (0.00)	0.127 (0.00)	1.000	-0.094 (0.00)	0.063 (0.00)	-0.086 (0.00)	-0.146 (0.00)	0.108 (0.00)	-0.244 (0.00)	0.057 (0.00)	0.215 (0.00)	0.027 (0.07)	0.221 (0.00)	-0.033 (0.03)
EPS	0.335 (0.00)	-0.181 (0.00)	0.467 (0.00)	0.073 (0.00)	0.254 (0.00)	-0.094 (0.00)	1.000	-0.109 (0.00)	0.061 (0.00)	0.046 (0.00)	-0.064 (0.00)	0.256 (0.00)	0.062 (0.00)	-0.107 (0.00)	-0.168 (0.00)	0.015 (0.31)	0.040 (0.01)
SDEPS	-0.037 (0.01)	0.074 (0.00)	-0.068 (0.00)	0.052 (0.00)	-0.098 (0.00)	0.063 (0.00)	-0.109 (0.00)	1.000	-0.028 (0.06)	0.025 (0.09)	0.025 (0.10)	-0.101 (0.00)	0.004 (0.80)	0.080 (0.00)	0.152 (0.00)	-0.059 (0.00)	-0.005 (0.75)
LnBoardSize	0.008 (0.60)	-0.051 (0.00)	0.027 (0.08)	-0.009 (0.53)	-0.046 (0.00)	-0.086 (0.00)	0.061 (0.00)	-0.028 (0.06)	1.000	-0.022 (0.15)	-0.146 (0.00)	0.208 (0.00)	0.052 (0.00)	-0.023 (0.13)	0.010 (0.51)	-0.052 (0.00)	-0.005 (0.73)
IndDir	0.020 (0.19)	0.062 (0.00)	0.041 (0.01)	-0.081 (0.00)	0.016 (0.28)	-0.146 (0.00)	0.046 (0.00)	0.025 (0.09)	-0.022 (0.15)	1.000	0.028 (0.06)	0.154 (0.00)	0.040 (0.01)	0.193 (0.00)	0.111 (0.00)	-0.432 (0.00)	0.057 (0.00)
Private	-0.030 (0.04)	0.031 (0.04)	-0.039 (0.01)	0.022 (0.14)	0.111 (0.00)	0.108 (0.00)	-0.064 (0.00)	0.025 (0.10)	-0.146 (0.00)	0.028 (0.06)	1.000	-0.218 (0.00)	-0.024 (0.11)	0.017 (0.24)	0.090 (0.00)	0.047 (0.00)	0.102 (0.00)
LnAsset	0.110 (0.00)	-0.164 (0.00)	0.103 (0.00)	-0.074 (0.00)	-0.045 (0.00)	-0.244 (0.00)	0.256 (0.00)	-0.101 (0.00)	0.208 (0.00)	0.154 (0.00)	-0.218 (0.00)	1.000	0.131 (0.00)	-0.037 (0.01)	0.147 (0.00)	-0.317 (0.00)	-0.025 (0.09)
LnCost	0.063 (0.00)	0.017 (0.25)	0.080 (0.00)	0.070 (0.00)	-0.037 (0.01)	0.057 (0.00)	0.062 (0.00)	0.004 (0.80)	0.052 (0.00)	0.040 (0.01)	-0.024 (0.11)	0.131 (0.00)	1.000	0.182 (0.00)	0.022 (0.15)	0.089 (0.00)	0.039 (0.01)
LnFirmAge	0.015 (0.32)	0.112 (0.00)	-0.030 (0.04)	0.231 (0.00)	-0.089 (0.00)	0.215 (0.00)	-0.107 (0.00)	0.080 (0.00)	-0.023 (0.13)	0.193 (0.00)	0.017 (0.24)	-0.037 (0.01)	0.182 (0.00)	1.000	0.200 (0.00)	-0.002 (0.87)	-0.114 (0.00)
DA	-0.006 (0.71)	0.150 (0.00)	-0.132 (0.00)	0.003 (0.83)	-0.211 (0.00)	0.027 (0.07)	-0.168 (0.00)	0.152 (0.00)	0.010 (0.51)	0.111 (0.00)	0.090 (0.00)	0.147 (0.00)	0.022 (0.15)	0.200 (0.00)	1.000	0.096 (0.00)	-0.022 (0.15)
MB	0.187 (0.00)	-0.039 (0.01)	0.096 (0.00)	0.186 (0.00)	0.045 (0.00)	0.221 (0.00)	0.015 (0.31)	-0.059 (0.00)	-0.052 (0.00)	-0.432 (0.00)	0.047 (0.00)	-0.317 (0.00)	0.089 (0.00)	-0.002 (0.87)	0.096 (0.00)	1.000	-0.030 (0.05)

Table 2 (continued)
Correlation Coefficients

Panel A: Correlation Coefficients for Levels Regression Model (continued)

	RET	SDRET	ROA	SDROA	ROS	SDROS	EPS	SDEPS	LnBoardSize	IndDir	Private	Lnasset	LnCost	LnFirmAge	DA	MB	DirHolding
DirHolding	-0.013 (0.38)	0.025 (0.09)	0.028 (0.06)	-0.019 (0.20)	0.034 (0.02)	-0.033 (0.03)	0.040 (0.01)	-0.005 (0.75)	-0.005 (0.73)	0.057 (0.00)	0.102 (0.00)	-0.025 (0.09)	0.039 (0.01)	-0.114 (0.00)	-0.022 (0.15)	-0.030 (0.05)	1.000
Foreign	0.025 (0.09)	0.042 (0.00)	0.056 (0.00)	0.053 (0.00)	-0.012 (0.42)	0.008 (0.61)	-0.002 (0.87)	0.015 (0.33)	0.056 (0.00)	0.032 (0.03)	-0.081 (0.00)	0.223 (0.00)	0.223 (0.00)	0.151 (0.00)	0.014 (0.36)	0.063 (0.00)	-0.023 (0.13)

Panel B: Correlation Coefficients for Change Regression Model

	RET	SDRET	ROAChg	SDROA	ROSchg	SDROS	EPSChg	SDEPS	LnBoardSize	IndDir	Private	LnAssetChg	LnCost	LnFirmAge	DACHg	MBChg	DirHolding
SDRET	0.130 (0.00)	1.000	0.033 (0.07)	0.016 (0.38)	0.030 (0.10)	0.118 (0.00)	-0.017 (0.35)	0.129 (0.00)	-0.060 (0.00)	0.012 (0.50)	0.018 (0.33)	-0.101 (0.00)	0.007 (0.70)	0.101 (0.00)	0.004 (0.83)	0.050 (0.01)	0.018 (0.32)
ROAChg	0.104 (0.00)	0.033 (0.07)	1.000	0.031 (0.09)	0.723 (0.00)	0.145 (0.00)	0.285 (0.00)	0.111 (0.00)	0.001 (0.96)	-0.013 (0.49)	-0.007 (0.70)	-0.070 (0.00)	-0.006 (0.76)	0.046 (0.01)	-0.027 (0.14)	-0.038 (0.04)	-0.017 (0.35)
SDROA	0.039 (0.03)	0.016 (0.38)	0.031 (0.09)	1.000	0.032 (0.08)	0.473 (0.00)	0.010 (0.57)	0.110 (0.00)	-0.022 (0.22)	-0.095 (0.00)	0.052 (0.00)	0.035 (0.05)	0.068 (0.00)	0.235 (0.00)	-0.037 (0.04)	0.008 (0.66)	-0.026 (0.16)
ROSchg	0.072 (0.00)	0.030 (0.10)	0.723 (0.00)	0.032 (0.08)	1.000	0.073 (0.00)	0.236 (0.00)	0.103 (0.00)	-0.002 (0.92)	0.000 (0.98)	0.015 (0.42)	-0.007 (0.72)	-0.006 (0.74)	0.035 (0.05)	-0.049 (0.01)	-0.005 (0.78)	-0.009 (0.61)
SDROS	-0.008 (0.65)	0.118 (0.00)	0.145 (0.00)	0.473 (0.00)	0.073 (0.00)	1.000	0.001 (0.96)	0.176 (0.00)	-0.077 (0.00)	-0.144 (0.00)	0.120 (0.00)	-0.055 (0.00)	0.065 (0.00)	0.213 (0.00)	-0.028 (0.12)	0.007 (0.69)	-0.031 (0.09)
EPSChg	0.238 (0.00)	-0.017 (0.35)	0.285 (0.00)	0.010 (0.57)	0.236 (0.00)	0.001 (0.96)	1.000	0.027 (0.14)	-0.023 (0.20)	0.010 (0.60)	-0.037 (0.04)	0.105 (0.00)	0.013 (0.46)	0.018 (0.34)	-0.064 (0.00)	-0.001 (0.95)	-0.006 (0.74)
SDEPS	-0.064 (0.00)	0.129 (0.00)	0.111 (0.00)	0.110 (0.00)	0.103 (0.00)	0.176 (0.00)	0.027 (0.14)	1.000	-0.032 (0.08)	0.045 (0.01)	0.076 (0.00)	-0.141 (0.00)	0.029 (0.11)	0.136 (0.00)	-0.015 (0.41)	0.007 (0.72)	-0.006 (0.73)
LnBoardSize	0.003 (0.89)	-0.060 (0.00)	0.001 (0.96)	-0.022 (0.22)	-0.002 (0.92)	-0.077 (0.00)	-0.023 (0.20)	-0.032 (0.08)	1.000	-0.068 (0.00)	-0.151 (0.00)	0.015 (0.40)	0.059 (0.00)	-0.025 (0.17)	0.010 (0.59)	-0.025 (0.18)	-0.003 (0.85)
IndDir	0.004 (0.82)	0.012 (0.50)	-0.013 (0.49)	-0.095 (0.00)	0.000 (0.98)	-0.144 (0.00)	0.010 (0.60)	0.045 (0.01)	-0.068 (0.00)	1.000	-0.003 (0.85)	-0.043 (0.02)	0.076 (0.00)	0.208 (0.00)	-0.018 (0.31)	-0.201 (0.00)	0.037 (0.04)
Private	-0.044 (0.02)	0.018 (0.33)	-0.007 (0.70)	0.052 (0.00)	0.015 (0.42)	0.120 (0.00)	-0.037 (0.04)	0.076 (0.00)	-0.151 (0.00)	-0.003 (0.85)	1.000	0.003 (0.86)	-0.023 (0.20)	0.030 (0.10)	0.023 (0.20)	0.015 (0.40)	0.097 (0.00)
LnAssetChg	0.184 (0.00)	-0.101 (0.00)	-0.070 (0.00)	0.035 (0.05)	-0.007 (0.72)	-0.055 (0.00)	0.105 (0.00)	-0.141 (0.00)	0.015 (0.40)	-0.043 (0.02)	0.003 (0.86)	1.000	-0.012 (0.52)	-0.138 (0.00)	0.353 (0.00)	-0.016 (0.37)	0.011 (0.54)
LnCost	0.065 (0.00)	0.007 (0.70)	-0.006 (0.76)	0.068 (0.00)	-0.006 (0.74)	0.065 (0.00)	0.013 (0.46)	0.029 (0.11)	0.059 (0.00)	0.076 (0.00)	-0.023 (0.20)	-0.012 (0.52)	1.000	0.193 (0.00)	-0.037 (0.04)	-0.042 (0.02)	0.032 (0.08)
LnFirmAge	0.010 (0.58)	0.101 (0.00)	0.046 (0.01)	0.235 (0.00)	0.035 (0.05)	0.213 (0.00)	0.018 (0.34)	0.136 (0.00)	-0.025 (0.17)	0.208 (0.00)	0.030 (0.10)	-0.138 (0.00)	0.193 (0.00)	1.000	-0.077 (0.00)	-0.029 (0.11)	-0.107 (0.00)
DACHg	-0.035 (0.05)	0.004 (0.83)	-0.027 (0.14)	-0.037 (0.04)	-0.049 (0.01)	-0.028 (0.12)	-0.064 (0.00)	-0.015 (0.41)	0.010 (0.59)	-0.018 (0.31)	0.023 (0.20)	0.353 (0.00)	-0.037 (0.04)	-0.077 (0.00)	1.000	0.061 (0.00)	0.000 (0.99)
MBChg	0.311 (0.00)	0.050 (0.01)	-0.038 (0.04)	0.008 (0.66)	-0.005 (0.78)	0.007 (0.69)	-0.001 (0.95)	0.007 (0.72)	-0.025 (0.18)	-0.201 (0.00)	0.015 (0.40)	-0.016 (0.37)	-0.042 (0.02)	-0.029 (0.11)	0.061 (0.00)	1.000	-0.020 (0.27)
DirHolding	-0.016 (0.39)	0.018 (0.32)	-0.017 (0.35)	-0.026 (0.16)	-0.009 (0.61)	-0.031 (0.09)	-0.006 (0.74)	-0.006 (0.73)	-0.003 (0.85)	0.037 (0.04)	0.097 (0.00)	0.011 (0.54)	0.032 (0.08)	-0.107 (0.00)	0.000 (0.99)	-0.020 (0.27)	1.000
Foreign	0.018 (0.32)	0.039 (0.03)	0.005 (0.77)	0.048 (0.01)	-0.017 (0.34)	-0.005 (0.80)	0.008 (0.68)	0.089 (0.00)	0.075 (0.00)	0.035 (0.05)	-0.099 (0.00)	-0.055 (0.00)	0.234 (0.00)	0.158 (0.00)	-0.034 (0.06)	0.017 (0.36)	-0.020 (0.27)

Table 3

Determinants of Compensation and Relative Compensation

LnCOMP is the log value of the average annual compensation of the three highest paid directors. RelCOMP is the ratio of the average annual compensation of the three highest paid directors to the average annual salary of an employee (total cash paid to employees to total number of employees). AbnCOMP is abnormal compensation. RET is industry-adjusted cumulative daily raw return for the year. SDRET is the standard deviation of the daily raw return for the year. ROA is industry-adjusted return on assets. SDROA is the standard deviation of return on assets for five years. LnBoardSize is the log value of the number of directors on the board. IndDir is the percentage of the number of independent directors to total number of directors on the board. Private is a dummy variable which is coded 1 if the firm is a privately owned firm and 0 otherwise. LnAsset is the log value of total assets. LnCost is the log value of the living expenditure level of the province where the firm is located. LnFirmAge is the log value of the number of years the firm has been established. DirHolding is the percentage of director shareholdings to total shares outstanding. Foreign is a dummy variable which takes the value of 1 if the firm issues B-shares or H-shares and 0 otherwise. t-statistics are computed using robust standard errors.

	Beta Coefficient t-statistics)					
	LnCOMP N=4233		RelCOMP N=4233		AbnCOMP N=4233	
Intercept	-2.2002 (-2.76)	-1.6007 (-2.12)	-12.5960 (-1.87)	-11.6987 (-1.91)	-0.7157 (-3.26)	-0.5667 (-2.81)
RET	0.2426 (4.49)**		0.8759 (2.26)*		0.0393 (2.73)**	
SDRET	-8.1400 (-3.42)**		-21.1974 (-1.48)		-0.9892 (-2.26)*	
ROA		3.2560 (11.50)**		7.1778 (3.40)**		0.5604 (6.70)**
SDROA		-1.1842 (-1.69)		-2.4824 (-0.53)		0.0425 (0.24)
LnBoardSize	0.1831 (2.33)*	0.1927 (2.49)*	1.5749 (3.07)**	1.5243 (2.96)**	0.0374 (1.31)	0.0385 (1.38)
IndDir	0.1911 (0.82)	0.0993 (0.45)	0.6836 (0.48)	0.3317 (0.23)	0.0493 (0.78)	0.0305 (0.50)
Private	0.1148 (2.54)*	0.1191 (2.75)**	1.7515 (4.98)**	1.7404 (5.04)**	0.0316 (2.60)**	0.0319 (2.69)**
LnAsset	0.2875 (10.65)**	0.2651 (10.38)**	0.8609 (4.04)**	0.8468 (4.21)**	0.0488 (7.10)**	0.0432 (7.10)**
LnCost	0.7403 (10.55)**	0.7048 (10.10)**	-0.6734 (-1.32)	-0.7800 (-1.54)	-0.0495 (-3.11)**	-0.0553 (-3.53)**

Table 3 (continued)

	Beta Coefficient (t-statistics)					
	LnCOMP		RelCOMP		AbnCOMP	
LnFirmAge	-0.0887 (-2.61)**	-0.0591 (-1.78)	-0.1367 (-0.52)	-0.0870 (-0.33)	-0.0181 (-1.70)	-0.0163 (-1.46)
DA	-0.0955 (-0.84)	0.0917 (0.85)	1.2136 (1.64)	1.5470 (2.16)*	-0.0403 (-1.44)	-0.0001 (0.00)
MB	0.0014 (0.11)	-0.0149 (-1.38)	-0.1168 (-1.59)	-0.1288 (-1.91)	-0.0009 (-0.27)	-0.0045 (-1.45)
DirHolding	1.5159 (4.68)**	1.3237 (4.13)**	11.2316 (1.55)	10.8209 (1.47)	0.2308 (2.12)*	0.1928 (1.79)
Foreign	0.1843 (2.57)**	0.1570 (2.21)*	0.8102 (1.21)	0.7222 (1.10)	0.0159 (0.50)	0.0125 (0.40)
Industry Dummies Included						
Year Dummies Included						
Adjusted R ²	0.3425	0.3877	0.1026	0.1085	0.0555	0.0805
F-statistics	62.2296	75.4341	14.4471	15.3101	7.9060	11.2855
p-value	0.00	0.00	0.00	0.00	0.00	0.00

* for significance at 0.05 level.

** for significance at 0.01 level.

Table 4
Pay and Performance Sensitivities and Elasticities

	Coefficient (t-value)							
	Sensitivities				Elasticities			
Intercept	0.0068 (1.74)	0.0050 (1.30)	0.0066 (1.59)	0.0047 (1.15)	0.0070 (0.27)	-0.0050 (-0.20)	0.0059 (0.20)	-0.0257 (-1.01)
Δ SW	0.0039 (3.77)**		0.0038 (3.54)**					
Δ OI		0.0304 (2.90)**		0.0287 (2.68)**				
Δ SW*Private			0.0057 (1.72)					
Δ OI*Private				0.0707 (1.33)				
Δ LnSW					0.0677 (2.14)*		0.0981 (1.45)	
Δ LnOI						0.7100 (4.55)**		0.7058 (6.19)**
Δ LnSW*Private							-0.0548 (-0.80)	
Δ LnOI*Private								0.0730 (0.21)
Private			0.0023 (0.85)	0.0010 (0.42)			0.0133 (0.64)	0.0325 (1.84)
Adjusted R ²	0.0272	0.0253	0.0277	0.0264	0.0429	0.0554	0.0436	0.0566
F-statistics	4.6105	4.3504	4.3917	4.2239	6.7901	8.1480	6.4154	8.1401
p-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

* for significance at 0.05 level.

** for significance at 0.01 level.

Table 5

Pay and Performance Sensitivities and Elasticities for Firms Located in More Developed Regions and
Less Developed Regions

Panel A: Firms Located in More Developed Regions

	Coefficient (t-value)			
	Sensitivities		Elasticities	
Intercept	0.0060 (1.13)	0.0046 (0.86)	0.0279 (0.93)	-0.0235 (-0.81)
Δ SW	0.0038 (3.07)**			
Δ OI		0.0345 (3.22)**		
Δ SW*Private	0.0074 (1.83)			
Δ OI*Private		0.0737 (1.15)		
Δ LnSW			0.2086 (5.12)**	
Δ LnOI				0.6136 (5.43)**
Δ LnSW*Private			-0.1720 (-3.80)**	
Δ LnOI*Private				0.1192 (0.32)
Private	0.0036 (1.00)	0.0018 (0.56)	0.0004 (0.02)	0.0355 (1.70)
Adjusted R ²	0.0292	0.0295	0.0438	0.0478
F-statistics	3.4638	3.4887	4.7439	5.1076
p-value	0.00	0.00	0.00	0.00

Panel B: Firms Located in Less Developed Regions

	Coefficient (t-value)			
	Sensitivities		Elasticities	
Intercept	0.0067 (1.17)	0.0043 (0.79)	0.0022 (0.04)	-0.0325 (-0.65)
Δ SW	0.0045 (2.88)**			
Δ OI		0.0099 (0.68)		
Δ SW*Private	0.0005 (0.15)			
Δ OI*Private		0.0406 (0.70)		
Δ LnSW			0.0521	

ΔLnOI			(0.80)	0.9354
$\Delta \text{LnSW} * \text{Private}$			0.1718	(3.08)**
			(1.40)	
$\Delta \text{LnOI} * \text{Private}$				0.0893
				(0.13)
Private	0.0025	0.0022	0.0503	0.0313
	(0.68)	(0.75)	(1.12)	(0.94)
Adjusted R ²	0.0213	0.0130	0.0492	0.0708
F-statistics	1.7887	1.4800	2.8785	3.7682
p-value	0.01	0.06	0.00	0.00

Table 6

An Analysis of Perk Compensation

LnPERK is log value of perk compensation. AbnPERK is abnormal perk. Perk compensation includes administrative expenses, traveling expenses, business entertainment expenses, communication expenses, overseas training expenses, director meeting expenses, driver expenses and bonus for directors. RET is industry-adjusted cumulative daily raw return for the year. SDRET is the standard deviation of the daily raw return for the year. ROA is industry-adjusted return on assets. SDROA is the standard deviation of return on assets for five years. LnBoardSize is the log value of the number of directors on the board. IndDir is the percentage of the number of independent directors to total number of directors on the board. Private is a dummy variable which is coded 1 if the firm is a privately owned firm and 0 otherwise. LnAsset is the log value of total assets. LnCost is the log value of the living expenditure level of the province where the firm is located. LnFirmAge is the log value of the number of years the firm has been established. DirHolding is the percentage of director shareholdings to total shares outstanding. Foreign is a dummy variable which takes the value of 1 if the firm issues B-shares or H-shares and 0 otherwise. t-statistics are computed using robust standard errors.

	Beta Coefficient (t-statistics)			
	LnPERK N=3579		AbnPERK N=3575	
Intercept	9.6811 (1.17)	5.6412 (0.68)	-0.9128 (-0.09)	-0.1044 (-0.01)
RET	0.3073 (0.61)		-0.4388 (-0.71)	
SDRET	-57.9540 (-3.25)**		-13.9901 (-0.63)	
ROA		-0.4220 (-0.16)		0.5351 (0.19)
SDROA		5.9697 (0.79)		-2.5539 (-0.38)
LnBoardSize	-0.7282 (-0.95)	-0.7404 (-0.97)	-0.1920 (-0.24)	-0.1596 (-0.20)
IndDir	-3.4052 (-1.49)	-3.5664 (-1.55)	7.4153 (1.38)	7.4457 (1.38)
Private	-0.8229 (-1.95)	-0.7717 (-1.82)	0.7739 (1.53)	0.8128 (1.60)
LnAsset	-0.3922 (-1.36)	-0.2484 (-0.89)	0.1585 (0.44)	0.1405 (0.39)
LnCost	0.7671 (1.09)	0.6989 (0.98)	-0.3903 (-0.53)	-0.4579 (-0.60)
LnFirmAge	1.0526 (3.06)**	1.0009 (2.78)**	0.3298 (0.86)	0.3909 (0.96)
DA	1.9528 (1.63)	1.4039 (1.20)	1.9993 (1.95)	1.9863 (1.99)*
MB	-0.1015 (-0.80)	-0.0967 (-0.81)	0.1700 (0.81)	0.1496 (0.75)
DirHolding	-8.6851 (-1.92)	-8.7245 (-1.96)*	-4.4290 (-1.42)	-4.2727 (-1.37)
Foreign	-0.5456 (-0.73)	-0.6485 (-0.85)	0.3939 (0.49)	0.3597 (0.45)
Industry Dummies Included				
Year Dummies Included				
Adjusted R ²	0.0446	0.0428	0.0127	0.0123
F-statistics	5.6468	5.4442	2.2837	2.2385
p-value	0.00	0.00	0.00	0.00

* for significance at 0.05 level.

** for significance at 0.01 level.

Table 7
Perk and performance Sensitivities and Elasticities

	Coefficient (t-value)			
	Sensitivity		Elasticity	
Intercept	0.0159 (2.10)	0.0166 (2.23)	0.4064 (0.97)	0.3792 (0.92)
Δ SW	-0.0012 (-0.49)			
Δ OI		0.0099 (0.76)		
Δ SW*Private	0.0124 (1.13)			
Δ OI*Private		0.0932 (1.06)		
Δ LnSW			0.1350 (0.39)	
Δ LnOI				-0.3825 (-0.20)
Δ LnSW*Private			-0.1716 (-0.34)	
Δ LnOI*Private				-1.7018 (-0.35)
Private	0.0096 (1.53)	0.0046 (1.15)	-0.4745 (-1.28)	-0.4308 (-1.10)
Adjusted R ²	0.0001	0.0001	0.0002	0.0001
F-statistics	0.7491	0.7652	0.8805	0.8845
p-value	0.80	0.78	0.63	0.63