

EXECUTIVE COMPENSATION STICKINESS AND PEER GROUP BENCHMARKS: EVIDENCE FROM CHINESE FIRMS

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ABSTRACT

This paper examines the phenomenon and effect of peer group on executive compensation stickiness in China's listed firms. We find there has been substantial growth in executive compensation in the past 10 years. Consistent with agency theory, executive compensation is positively related to firm performance. However, pay-for-performance sensitivity is asymmetric, and it is lower when firm performance declines suggesting that there is a characteristic of executive compensation stickiness in Chinese firms. Further, we test the effect of peer group on compensation stickiness. We find that the characteristic of compensation stickiness only exists in the firms whose executive compensation is lower than the compensation of peer group. The evidence suggests that compensation stickiness is an important mechanism to provide retention incentives to firm managers, rather than an agency problem in Chinese firms.

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KEYWORDS: Corporate Governance, Pay-For-Performance Sensitivity, Peer Group, Compensation Stickiness

INTRODUCTION

There are two main strands of research on the relationship between executive compensation and firm performance. The first focuses on the effects of compensation as a tool to decrease the agency cost, and they suggest that the compensation of managers should be linked to firm performance to motivate CEOs to maximize shareholder value (Jensen and Meckling, 1976; Jensen and Murphy, 1990; Murphy, 1999). The second strand focuses on the effects of the managerial power on the compensation, and they suggest that managers use their power to influence the compensation-setting process and acquire more compensation than on the basis of firm performance (Bebchuk et al, 2002; Bebchuk and Fried, 2004). In recent years, some scholars have begun to research on the compensation stickiness, which means the relationship between executive compensation and firm performance is asymmetric where managers are rewarded more for good performance but are punished less for bad performance. They point out that the compensation stickiness is a representation of the problem of corporate governance, and it is harmful to the value of companies (Garvey and Milbourn, 2006; Fang, 2009).

The purpose of this study is to investigate the phenomenon of executive compensation stickiness, and understand the implication of compensation stickiness in Chinese firms. China began a process of market economic reforms in the late 1970s and these reforms are being continued today. The reform process has brought about substantial changes in institutional arrangements for top executive compensation. Prior to market economic reforms, there was a highly structured pay scale system for the managers (Firth et al., 2006), and it had no incentive mechanism to motivate managers. Therefore, early studies do not find any relationship between executive compensation and firm performance in China (Huang and Zhang, 1998;

Wei, 2000). With the enactment of the Company Law and The Code of Corporate Governance for Listed Firms in China in 2002, executive compensation had a major impact, and executives were allowed to share in the profits generated by the companies. Most executive pay is composed of cash salary and bonus at present, and performance based pay is common in China, although very few firms have executive stock option schemes (Firth et al., 2006; Fang, 2009). According to a survey, more than 80% of the firms use incentive pay systems based on performance (Liu and Otsuka, 2004). These reforms on executive compensation are conducive to aligning interests of managers and owners. A series of recent studies reported a positive relationship between management pay and firm performance after the compensation reforms (Firth et al., 2006; Conyon, 2011; Cao, 2011).

Despite China having introduced market reforms some 30 years ago and having become the largest emerging economy with the fastest growing stock market, corporate governance and compensation of top executives are still at the developmental stage. Most listed firms in China originated from partial privatizations, and the Chinese government usually tends to be the largest shareholder in these firms (Sun and Tong, 2003). The government ownership is represented by various entities such as government agencies, state asset management companies, and state-owned enterprises (SOEs) (Chen et al., 2009). These representatives have their own interests, rather than maximize the value of listed firms, and they cannot provide effective monitoring of management. In addition, the product market does not function freely, and the takeover market for firms is almost non-existent in China. Insider control worsens the agency problems, and managers tend to be opportunistic and seek personal benefit rather than company success (Lin et al., 1998). Although, appointment committees, compensation committees, and other committees are now becoming common in China's listed firms, the effectiveness of them has yet to be fully understood (Chen et al., 2006). In this situation, managers are likely to influence the boards of directors in the pay process, and gain relatively more for good performance but lose less for bad performance.

On the other hand, since the managerial labor market is not well established and there is a shortage of high quality managers in China, management turnover could be more costly for Chinese firms. There is evidence that boards of directors are concerned about managerial retention. Therefore, the boards are more likely to be reluctant to decrease the top executive pay to retain talented managers when firm performance decreases, especially when executive compensation is lower relative to their peer group. There is evidence that in lower pay companies, the boards will reduce the pay-for-performance sensitivity when performance is down, but increase pay-for-performance sensitivity when performance is up. In this aspect, compensation stickiness may be considered a mechanism to provide retention incentives to managers, rather than an agency problem in China's listed firms. The remainder of this paper is organized as follows: The next section is the literature review. Section 3 discusses the methodology and data. Section 4 examines the relationship between growth of top executive compensation and firm performance. It also examines the sticky characteristic in executive compensation. Based on these analyses, we examine the role of peer group on executive compensation stickiness. Section 5 offers further checks and Section 6 concludes the paper.

LITERATURE REVIEW

The most important function of compensation committees is that design suitable compensation arrangements for corporate managers. Agency theory suggests that executive compensation should be linked to firm performance to motivate CEOs to maximize shareholder value (Jensen and Meckling, 1976; Jensen and Murphy, 1990; Murphy, 1999). However, Bebchuk et al (2002) pointed out that executives have power to influence their own pay, and they use that power to extract rents. Furthermore, the desire to camouflage rent extraction might lead to the use of inefficient pay arrangements that provide suboptimal incentives and thereby hurt shareholder value. In addition, Gaver and Gaver (1998) found most top executives in American firms were rewarded with extra bonuses when firm performance increased, but were not penalized when firm performance decreased. Garvey and Milbourn (2006) split executives pay into two elements: pay for luck and pay for skills, and they argued there is an asymmetry benchmarking in

executive compensation: executives are rewarded for good luck while they protect themselves from being penalized for bad luck (i.e., executive compensation increases for good industry performance is larger than marginal decreases for bad industry performance). Fang (2009) also found there is a sticky characteristic in top executive compensation in Chinese firms, and he pointed that it is a signal of poor corporate governance. That means managers trend to influence the compensation-setting process, and get the best compensation arrangements for themselves in China.

In fact, however, firm performance is not the only consideration factor in the executive pay-setting process. An important method used to determine executive compensation is to compare the current level of compensation with the compensation at a peer group of similar companies. Most compensation committees consider the peer group factor in the pay-setting process, and affirm that pay above the median of the peer group is competitive and below the median is below market (Bizjak et al., 2008). In a contrasting viewpoint, it is an efficient way to determine the reservation wage of the CEO (Holmstrom and Kaplan, 2003). That means, when firm performance decreases, the board of directors cannot decrease their top executive compensation immediately. They need to compare it with the compensation in similar companies, and decrease it less if it is lower than other executive pay in similar companies.

Bizjak et al. (2008) provide empirical evidence on the relation between executive compensation and peer group compensation. They find that the use of peer group compensation is widespread and has a significant impact on CEO compensation. Faulkender and Yang (2010) also find that peer group compensation can affect the executive compensation. In addition, they analyze the features of the disclosed compensation peer groups, and they find that firms appear to select highly paid peers to justify their CEO compensation. Bizjak et al. (2011) further point out that although peer groups are largely selected based on characteristics that reflect the labor market for managerial talent, but they are constructed in a manner that biases compensation upward, particularly in firms outside the Standard & Poor's (S&P) 500. Albuquerque et al. (2013) argue that peer group compensation is an efficient mechanism used to gauge the market wage necessary to retain valuable human capital, and the choice of highly paid peers represents a reward for unobserved CEO talent. Although some studies have focused on the existence of executive compensation stickiness, few have further analyzed the implications of it. Why is compensation stickiness widespread? Is it a problem of corporate governance or an important mechanism of compensation design? In this paper, we explore the implications of compensation stickiness in the background of the Chinese institutional environment.

METHODOLOGY AND DATA

Relationship between Compensation Growth and Firm Performance

We employ panel data regression with fixed-effects to estimate our model. This approach controls for heterogeneity in firm quality, and the problem of omission of variables that could cause statistical bias in the estimation of parameters in our models. To test the relationship between pay and performance we use the following regression model:

$$\Delta PAY_{it} = \alpha_i + \beta_{it} \Delta PERF_{it} + ControlX_{it} + \varepsilon \quad (1)$$

where, ΔPAY_{it} is the growth of executive cash compensation in firm i at time t , and it equals $PAY_t - PAY_{t-1}$.

Executive compensation is the aggregated pay of the top three officers, not only the CEO, defined as the sum of basic salary, bonus, stipends, and other benefits to the top three officers. We only use the cash compensation of the top officers, because it is the most important part of incentive contract in Chinese companies, and it is consistent with previous research in China (Firth et al., 2007; Kato et al., 2006; Wang and Xiao, 2011; Conyon and He 2011). The main independent variable is $\Delta PERF_{it}$, which is the change of

firm performance in firm i at time t , and it equals $PERF_{it} - PERF_{it-1}$. Firm performance is defined in two ways. First, we use the change in stock value (stock value $_t$ - stock value $_{t-1}$) following Jensen and Murphy (1990). Second, we use an accounting-based measure of performance. Fang (2009) points out that most boards of directors in Chinese companies use net profit-based criteria to evaluate firm performance and management contribution. We select the change of net profit and net profit (excluding extraordinary gains or losses) to represent accounting-based performance. It is expected that these independent variables are positively related with compensation; i.e., $\beta_1 > 0$, regardless of the chosen performance variable. In addition, following previous studies (e.g. Firth et al., 2007; Faulkender and Yang, 2010; Conyon and He 2011), a set of control variables, X_{it} , are also included in model (1), and these variables are defined in Table 1.

Table 1: Variable Descriptions

Variable	Description
PAY $_t$	Total executive compensation, i.e., the aggregated pay of the top three officers, defined as the sum of basic salary, bonus, stipends, and other benefits.
Δ PAY $_t$	Periodic change in PAY or $PAY_t - PAY_{t-1}$
Δ WEALTH $_t$	Change in stock value or stock value $_t$ - stockvalue $_{t-1}$
WDOWN $_t$	Dummy variable of unity if the Δ WEALTH < 0 , and zero otherwise.
PROFIT1 $_t$	Net profit in year t
Δ PROFIT1 $_t$	Change in net profit or profit $_{1t}$ - net profit $_{1,t-1}$
P1DOWN $_t$	Dummy variable of unity if the Δ PROFIT1 < 0 , and zero otherwise.
PROFIT2 $_t$	net profit (excluding extraordinary gains or losses) in year t
Δ PROFIT2 $_t$	Change in net profit (excluding extraordinary gains or losses) or profit $_{2t}$ - net profit $_{2,t-1}$
P2DOWN $_t$	Dummy variable of unity if the Δ PROFIT2 < 0 , and zero otherwise.
Δ ASSET $_t$	Change in total assets or total asset $_t$ - total asset $_{t-1}$
Δ SALES $_t$	Change in sales or sales $_t$ - sales $_{t-1}$
LN(S) $_{t-1}$	Natural log of sales, used to measure firm size
GROWTH $_{t-1}$	The market value of the firm divided by the book value of assets (market-to-book), used to measure firm growth opportunities
LG1_OWN $_t$	Share ownership of the largest shareholder, used to measure ownership concentration
STATA_OWN $_t$	Share ownership of the State, used to measure the degree of government control.
BOARD_SIZE $_t$	Number of individuals on the main board
IND_DIR $_t$	Percentage of independent directors in the board
COMBINE $_t$	Equal to one if the posts of CEO and chairperson are combined, and zero otherwise
EPS $_t$	Earnings per share, used to measure the profitability of equity
LEV $_t$	The ratio of total liabilities to total assets, used to measure the degree of financial leverage

This table shows the definitions of variables.

Compensation Stickiness

To test compensation stickiness in Chinese firms we introduce a dummy variable PERDOWN $_{it}$ in regression model, which equals to one if performance decreases (Δ PERF $_{it} < 0$) in firm i at time t , and otherwise equal to zero. The model is:

$$\Delta PAY_{it} = \alpha_i + \beta_1 \Delta PERF_{it} + \beta_2 PERDOWN_{it} + \beta_3 \Delta PERF_{it} \times PERDOWN_{it} + ControlX_{it} + \varepsilon \tag{2}$$

Given our use of three performance measures, there are three $PERDOWN_{it}$ variables (WDOWN, P1DOWN, and P2DOWN) in model (2). Following Garvey and Milbourn (2006), we include an interaction-term, $PERF_{it} \times PERDOWN_{it}$ to make specific inferences regarding the relationship between compensation and its drivers in model (2). If executives are paid for good performance but not punished equally for bad performance, the pay-performance sensitivities will be lower when performance is bad. If there is pay-performance stickiness in Chinese firms, then β_3 should be negative, regardless of the performance variable we choose. The control variables, X_{it} , remain the same as in model (1).

Effect of Peer Group

To analyze the influence of peer groups on compensation stickiness we construct a peer group for every company's executives, and rank them according to compensation levels of their peers. Firms seldom report the composition of their compensation peer groups in China, but most peer groups are selected by similar size in similar industries (Bizjak et. al, 2008). Following Bizjak et. al (2008), we divide our sample into 21 industries (There are 13 "industries" in China: A: Agriculture and fishery, B: Mining, C: Manufacturing; D: Electricity, water and other energy manufacturing and supply; E: Construction; F: Transportation and logistics; G: Information technology; H: Wholesale and retail; I: Finance and Insurance; J: Real estate; K: Service; L: Communication; M: Others. Manufacturing industry (C) is the biggest in China, and scholars typically divide it into 10 sub-industries. In addition, Due to its highly regulated nature, Finance and Insurance industry (I) is excluded from our sample. As a result, there are 21 "industries" in our sample). For each year, we rank all firms in every industry according to the size (total assets). We classify firms as large (small) firm group if their size is larger (smaller) than the median size in the industry. Thus, we form 42 peer groups for this study. We rank all firms in every peer group based on the level of the prior-period compensation. We classify executives as "lower compensation" if their prior-period compensation is lower than median executive compensation, or else "higher compensation." Thus we form two groups: one is higher compensation, and the other is lower compensation.

Most compensation committees consider pay above the median in a peer group to be competitive and consider compensation levels below the median to be below market (Bizjak et. al, 2008). Because there are retention incentives in firms (to prevent falling below the reservation wage), the firms whose prior executive compensation is below the median tend to be under pressure to increase their executive compensation, regardless of their performance. As a result, there is a significant potentially sticky characteristic in the lower compensation group. This means that, in model (2), we expect the value of β_3 in the lower compensation group to be larger and more significant than that of the higher compensation group.

Sample

Our study uses data of firms listed on the Shanghai Stock Exchange or the Shenzhen Stock Exchange, and the sample period is from 1/1/2002 to 12/31/2012. We collect annual data from the China Center for Economic Research Sinofin Information Service (CCER/SinoFin). This database has been used in previous research of China's listed firms (Cao et al., 2011; Conyon and He, 2011). Our original data consists of almost the entire population of publicly traded firms from years 2002 to 2012. In order to estimate the regression models we required non-missing data on main variables, such as executive compensation, stock value, profit, size, sales, and so on. Also, in our empirical work we analyze the relationship between the change of compensation ($PAY_t - PAY_{t-1}$) and the change of performance ($PERF_t - PERF_{t-1}$), so this requires the firms to have at least two consecutive years of data. In addition, consistent with the previous literature, we exclude firms in the financial services industries, due to their unique accounting standards and incomplete information on the main variables used in our analysis. Our final sample consists of 2050 firms and 13,517 firm-year observations between 2002 and 2012.

Descriptive Statistics

Table 2 presents the descriptive statistics on executive compensation (Panel A) and firm performance (Panel B) for the sample firms. Panel A shows the mean (median) of executive compensation over the 2002-2012 sample period is about 2,652,420 (1,847,000) RMB. This compensation level is much lower than for top executives in the U.S., and other developed countries (Brick et al., 2006; Kato et al., 2007; Wang and Xiao, 2011; Conyon and He, 2011). However, we find a steady increase in executive compensation from 2002 to 2012. In 2002, the mean (median) is 966,140 (729,960) RMB, and it increases to 4,579,570 (3,446,250) RMB in 2012. The growth rate in executive compensation across our sample period is as high as 374% (372%).

Table 2: Descriptive Statistics

Panel A: Executive Compensation(Thousands Rmb)						
Year	Mean	Median	Standard Deviation	Number of Observations		
2002	966.14	729.96	827.45	726		
2003	1,204.28	904.76	1,092.05	975		
2004	1,439.15	1,082.60	1,282.77	1,099		
2005	1,589.51	1,191.58	1,480.41	1,188		
2006	1,753.96	1,328.95	1,511.00	1,186		
2007	2,312.21	1,700.00	2,228.81	1,221		
2008	2,742.20	1,998.28	2,919.88	1,318		
2009	2,995.40	2,260.00	2,784.91	1,383		
2010	3,620.29	2,638.00	3,678.94	1,481		
2011	4,041.82	3,089.20	3,738.48	1,820		
2012	4,579.57	3,446.25	4,461.44	1,120		
Total Compensation	2,652.42	1,847.00	3,003.24			

Panel B: Firm Performance (Millions Rmb)						
Year	ΔWEALTH		PROFIT1		PROFIT2	
	Mean	Median	Mean	Median	Mean	Median
2002	2,583.91	1,918.73	49.21	28.93	44.52	25.54
2003	2,475.98	1,539.76	60.48	31.33	54.18	29.55
2004	2,151.13	1,276.12	78.00	31.55	70.46	28.54
2005	1,754.72	969.56	70.75	26.26	63.35	23.96
2006	2,889.85	1,449.62	97.35	36.31	72.79	26.62
2007	9,037.65	4,154.80	199.71	72.72	132.65	39.51
2008	3,547.90	1,683.22	153.63	54.86	108.78	31.69
2009	7,746.56	4,104.02	200.22	70.29	141.43	44.92
2010	8,456.90	4,522.45	314.86	97.13	231.70	68.44
2011	5,812.43	3,025.58	315.86	94.92	230.37	67.34
2012	6,074.80	3,064.36	296.76	91.69	215.49	67.35
Total Sample	5,067.93	2,398.75	183.23	56.63	135.30	39.99

This table shows the descriptive statistics results. Panel A shows results for executive compensation. Panel B shows results for firm performance. Data are for the period 1/1/2001 until 12/31/2012.

Performance statistics of the firms (panel B) show that the mean (median) of the change in stock value is 5,067,930,000 (2,398,750,000) RMB. The mean (median) of net profit is 183,230,000 (56,630,000) RMB. The mean (median) of net profit (excluding the extraordinary gains or losses) is 135,300,000 (39,990,000) RMB. We also find a steady increase in executive compensation from 2002 to 2012. The growth rates across our sample period are 135% (59%), 503% (217%), 384% (164%), respectively. To estimate the annual growth rates of executive compensation and firm performance, we run regressions of the logarithm of executive compensation and the logarithm of performance on a linear time trend. The results indicate that executive compensation has grown by about 16% per year ($\beta = 0.157$, $t = 71.52$), stock value has grown by about 12% per year ($\beta = 0.123$, $t = 45.78$), net profit has grown by about 14% per year ($\beta = 0.135$, $t = 29.47$), and net profit (excluding the extraordinary gains or losses) has grown by about 13% per year ($\beta = 0.129$, $t = 27.08$). We observe that the growth rate of executive compensation has grown faster than firm performance, and the time trend of the growth of compensation is more significant than the performance variable.

RESULTS

Pay-For-Performance Sensitivities

Table 3 reports estimates of models (1) and (2). Column (1), (3), and (5) show the relationship between executive compensation and firm performance. Column (1) uses change in stock value as the measure of performance, column (3) uses change in net profit, and column (5) uses change in net profit (excluding the extraordinary gains or losses). As predicted, the regression coefficient on performance is positive ($\beta_1 > 0$) in all three performance measures.

Table 3: Regression Results of Pay-For-Performance Sensitivities

Independent Variables	Dependent Variable: Δ Pay					
	(1)	(2)	(3)	(4)	(5)	(6)
Δ wealth	0.01*** (4.66)	0.01*** (4.38)				
wdown		-190.94*** (-4.24)				
Δ wealth \times wdown		-0.01*** (-2.33)				
Δ profit1			0.18*** (5.52)	0.19*** (5.67)		
p1down				-71.28 (-1.22)		
Δ profit1 \times p1down				-0.23 (-1.44)		
Δ profit2					0.38*** (7.82)	0.40*** (7.91)
p2down						-133.95*** (-2.62)
Δ profit2 \times p1down						-0.35** (-2.08)
Δ asset	0.00 (0.11)	0.00 (0.17)	0.00 (0.26)	0.00 (0.28)	0.00 (0.27)	0.00 (0.30)
Δ sales	0.02*** (2.79)	0.02*** (2.74)	0.00 (0.06)	0.00 (-0.02)	0.00 (-0.34)	0.00 (-0.44)
ln(s)	58.87*** (3.28)	60.32*** (3.35)	48.24*** (2.68)	46.71*** (2.59)	42.38** (2.36)	36.88** (2.04)
Growth	176.88 (1.56)	121.55 (1.05)	201.74* (1.78)	205.99* (1.82)	223.91* (1.98)	228.29** (2.02)
lg1_own	531.58** (2.47)	517.28** (2.40)	503.02** (2.33)	493.56** (2.29)	481.53** (2.24)	453.38** (2.10)
stata_own	1.33 (1.41)	1.21 (1.27)	1.47 (1.55)	1.49 (1.58)	1.41 (1.50)	1.40 (1.48)
board_size	11.12* (1.88)	10.46* (1.76)	10.55* (1.78)	10.29* (1.73)	9.92* (1.68)	9.35 (1.58)
ind_dir	0.56 (0.25)	0.51 (0.23)	0.29 (0.13)	0.29 (0.13)	0.05 (0.02)	0.13 (0.06)
Combine	43.61 (0.84)	37.29 (0.72)	37.37 (0.72)	37.58 (0.73)	32.75 (0.63)	32.22 (0.62)
Eps	265.66*** (7.68)	245.02*** (7.04)	216.30*** (5.99)	220.30*** (5.30)	179.97*** (4.93)	177.53*** (4.41)
lev	22.61 (0.89)	22.82 (0.89)	21.80 (0.85)	22.29 (0.87)	21.54 (0.85)	24.46 (0.96)
#obs.	13517	13517	13517	13517	13517	13517
r^2	0.033	0.036	0.033	0.033	0.034	0.035

This table shows regression results based on equation (1) and (2): (2) The first figure in each cell is the regression coefficient. The second figure in each cell is the t-statistic. *, **, *** indicate significance at 10%, 5% and 1% level, respectively. We also control industries fixed-effect, year fixed-effect, and firm fixed-effect in our model.

Executive compensation in our data is in thousands of RMB, and performance is in millions of RMB. Therefore, the regression coefficient β_1 can be interpreted as the RMB increase in executive compensation for every 1,000 RMB increase in firm performance. The coefficient β_1 in Column (1) implies that the executive compensation will be 0.01 RMB more per 1,000 RMB increase in shareholder value, all else equal. This result is much lower than the reported in research for the U.S., U.K., and other countries (Jensen

and Murphy, 1990; Brick et al., 2006; Merhebi et al., 2006). The coefficient β_1 in column (3) (column (5)) imply that the executive compensation will be 0.18 (0.38) RMB more per 1,000 RMB increase in net profit (net profit (excluding the extraordinary gains or losses)), all else equal. We find the pay-for-performance sensitivity is much higher when we used accounting-based measures of performance. This result is consistent with the argument of Fang (2009), and indicates that most boards of directors in Chinese use net profit-based criteria to evaluate firm performance and management contribution, especially the net profit excluding the extraordinary gains or losses. These results show that the growth of executive compensation is associated with firm performance and it could be interpreted as an important motivation mechanism to make executives focus on annual firm performance and management in China.

Compensation Stickiness

In order to test the executive compensation stickiness, we observe the coefficients of PERFDOWN dummy variables and interaction-term of firm performance and PERFDOWN dummy variables in column (2), (4), and (6) of Table 3. The coefficient on PERFDOWN is negative (-190.94, -71.28, and -133.95, respectively), and most PERFDOWN dummy variables are significant (except PIDOWN), implying that executive compensation decreases when performance is bad. We also find that the coefficients on the interaction-term of firm performance and PERFDOWN dummy variables are negative ($\beta_3 < 0$), and significant in column (2) and (6). As anticipated, the pay-performance sensitivity is lower when performance is poor.

The regression coefficient β_3 in column (2) is -0.01, and it implies that when stock value decreases, the pay-for-performance sensitivity of executive compensation is equal to $\beta_1 + \beta_3 = 0$ (and the F value of $(\beta_1 + \beta_3)$ is statistically insignificant in the regression model). Similarly, the regression coefficient β_3 in column (6) is -0.35, and it implies that when net profit (excluding the extraordinary gains or losses) decreases, the pay-for-performance sensitivity of executive compensation is equal to $\beta_1 + \beta_3 = 0.05$ (and the F value of $(\beta_1 + \beta_3)$ is statistically insignificant in the regression model). From these interaction-term regression coefficients we find that the sticky characteristic is substantial, and almost equal to the relationship between executive compensation and firm performance. The result means that the compensation of managers is no longer linked strongly to firm performance when firm performance decreases. Overall, these results indicate that there is a sticky characteristic in executive compensation, and managers are rewarded more for good performance but are punished less for poor performance in Chinese companies. These findings are consistent with studies Gaver and Gaver (1998) and Garvey and Milbourn (2006) in U.S.

Effect of Peer Group

We analyze the effect of peer group on compensation stickiness, and interpret the implication of compensation stickiness in this subsection. Based on the discussion above, we expect that the compensation stickiness is larger when performance is down for executives who are paid below their peers; i.e., β_3 is more negative for executive compensation below the peer group median. To test how the compensation stickiness varies by peer group pay ranking, we divided the sample into two groups: higher compensation group, and lower compensation group, and then we estimated model (2) using these two groups, separately. The results are presented in Table 4. The first (last) three columns represent the alternative measures of firm performance in higher (lower) compensation group. Table 4 makes it clear that there is an asymmetry in compensation stickiness between the two groups. The coefficients on the interaction-term of firm performance and PERFDOWN dummy variables (β_3), as predicted, are larger and more significant in the lower compensation group. Even more important, coefficients of compensation stickiness are not statistically significant in higher compensation group.

Table 4: Regression Results of Pay-For-Performance Sensitivities (Higher Compensation Group Vs. Lower Compensation Group)

Independent Variables	Dependent Variable: ΔPay					
	Panel A Higher Compensation Group			Panel B Lower Compensation Group		
	(1)	(2)	(3)	(4)	(5)	(6)
Δwealth	0.01** (2.34)			0.01*** (5.18)		
wdown	-251.60*** (-2.98)			-66.27** (-2.08)		
Δwealth×wdown	-0.01 (-1.26)			-0.02*** (-4.06)		
Δprofit1		0.17*** (3.57)			0.72*** (11.59)	
p1down		-98.79 (-0.77)			-85.74** (-2.38)	
Δprofit1×p1down		-0.16 (-0.59)			-0.80*** (-6.29)	
Δprofit2			0.41*** (5.52)			0.76*** (10.58)
p2down			-144.29 (-1.33)			-113.35*** (-3.46)
Δprofit2×p2down			-0.31 (-1.06)			-0.86*** (-6.17)
Δasset	0.00 (0.13)	0.00 (0.30)	0.00 (0.47)	0.00 (-0.03)	-0.01 (-0.77)	0.00 (0.05)
Δsales	0.02* (1.89)	0.00 (-0.06)	-0.01 (-0.69)	0.01** (2.04)	0.00 (0.17)	0.01 (0.73)
ln(s)	129.29* (1.91)	70.34 (1.03)	25.28 (0.37)	66.78*** (6.67)	55.16*** (5.56)	54.41*** (5.47)
growth	27.96 (0.12)	139.73 (0.59)	188.44 (0.80)	287.37*** (3.73)	294.02*** (3.94)	320.37*** (4.29)
lg1_own	280.60 (0.58)	239.31 (0.49)	239.51 (0.49)	707.49*** (4.97)	601.72*** (4.25)	586.15*** (4.12)
stata_own	2.09 (1.08)	2.40 (1.24)	2.19 (1.13)	0.05 (0.07)	0.33 (0.52)	0.41 (0.63)
board_size	4.16 (0.35)	3.39 (0.29)	2.22 (0.19)	19.75*** (4.84)	18.71*** (4.64)	18.64*** (4.62)
ind_dir	1.04 (0.24)	0.82 (0.19)	0.51 (0.12)	-0.86 (-0.54)	-0.98 (-0.62)	-0.88 (-0.56)
combine	24.95 (0.25)	28.29 (0.28)	23.06 (0.23)	30.59 (0.84)	25.47 (0.71)	20.43 (0.57)
eps	442.40*** (5.93)	407.26 (4.68)	345.79*** (4.04)	105.54*** (4.54)	-2.86 (-0.10)	28.53 (1.08)
lev	133.19 (0.74)	134.19 (0.74)	130.45 (0.72)	9.91 (0.78)	6.89 (0.55)	9.38 (0.74)
#obs.	6835	6835	6835	6682	6682	6682
r ²	0.033	0.032	0.033	0.041	0.041	0.042

This table shows regression results based on equation (2). (2) Panel A shows the results for the sample of higher compensation group. Panel B shows the results for the sample of lower compensation group. The first figure in each cell is the regression coefficient. The second figure in each cell is the t-statistic. *, **, *** indicate significance at the 10%, 5% and 1% level, respectively. We also control industries fixed-effect, year fixed-effect, and firm fixed-effect in our model.

The regression coefficient β_3 in column (1) is -0.01, and in column (4) is -0.02. It implies that when stock value decreases, the decline in pay-for-performance sensitivity will be 100% more in the lower compensation group, all else equal. The regression coefficient β_3 in column (2) is -0.16, and in column (5) is -0.80, implying that when net profit decreases, the decrease in pay-for-performance sensitivity is 400% more in the lower compensation group, all else equal. The regression coefficient β_3 in column (3) is -0.31, and in column (6) is -0.86. This implies that when stock value decreases, the decrease in the pay-for-performance sensitivity is 177% more in the lower compensation group, all else equal. Furthermore, all the regression coefficients on $\Delta\text{PERF} \times \text{PERDOWN}$ (β_3) in the higher compensation group are

insignificant. In addition, we find that the pay-for-performance sensitivity is more pronounced when firm performance is up for executives who are paid below their peers. The regression coefficient β_1 in column (1) is 0.013, and in column (4) is 0.014 for the performance of value to shareholders; the regression coefficient β_1 in column (2) is 0.17, and in column (5) is 0.72 for the performance of net profit; the regression coefficient β_1 in column (3) is 0.41, and in column (6) is 0.76 for the performance of net profit excluding the extraordinary gains or losses. These results imply that when performance increases, the increase of pay-for-performance sensitivity is 8%, 324%, and 85% more relative to the performance criterion in the lower compensation group, all else equal.

The results are consistent with our expectation that compensation stickiness is larger and more significant and pay-for-performance sensitivity is higher in the lower compensation group. Even more important, firms who paid managers higher compensation in the prior year do not display the characteristic of compensation stickiness. The result suggests that compensation stickiness is an important mechanism to provide a retention incentive, rather than the problem of corporate governance in Chinese firms. Under a retention motive, boards of directors need to prevent executive compensation from falling below the reservation wage. So when executive compensation is already low in the peer group, boards of directors will insulate the CEO from getting penalized for bad performance.

CONCLUDING COMMENTS

In this paper we investigate the relationship between the level of executive compensation and change in firm performance in China's publicly traded firms. Previous research (Firth et al., 2006; Conyon and He, 2011) has examined how firm performance affects executive compensation. We extend this research and analyze a sticky characteristic in executive compensation, and how peer groups affect the sticky characteristic. We use sample of Chinese firms listed on the Shanghai Stock Exchange or the Shenzhen Stock Exchange to test the sticky characteristic, and document a number of important findings. First, we find that the growth of executive compensation is positively correlated to firm performance, regardless of how we measure performance (as market-based performance or accounting-based performance). The result is consistent with agency theory that executive compensation is an effective tool to decrease the agency cost. Second, we find that there is a sticky characteristic in executive compensation. That means top managers are rewarded more for good performance but are punished less for bad performance. Third, we show that peer group is an important determinant of the executive compensation stickiness. The characteristic of compensation stickiness only exists in the firms whose executive compensation is lower than the median compensation in their peer group. The result supports the retention incentive view that boards of directors compare the current level of the executive compensation with the compensation in a peer group of similar companies when they determine executive compensation. If the compensation is lower than the median compensation in the peer group, boards of directors are reluctant to decrease their executive compensation to prevent the executive compensation from falling below the reservation wage and exposing the firm to the risk of losing executives. The paper has a natural limitation in the selection of peer groups. While industry-size-based grouping is a simple way of identifying peer groups, it may not be the most suitable approach. Therefore, to better understand the effect of peer group on CEO compensation, future studies could focus on the development of theories that optimally define firm-specific peer groups. Such an approach would lead to stronger conclusions due to better modeling of this phenomenon.

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