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COMPENSATION IN CLOSELY HELD FIRMS:
EVIDENCE FROM HONG KONG**

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Ownership Concentration and Executive Compensation in Closely Held Firms: Evidence from Hong Kong

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Abstract

Owners-managers of closely held firms effectively decide on the level of their own compensation. We test the relationship between ownership concentration and executive compensation, using panel data for a sample of 412 Hong Kong firms during 1995-1998. We find a positive relationship between managerial ownership and top executive cash emoluments for levels of ownership of up to 25 percent in small and in family controlled firms, and for up to 5 percent in large firms. We also find no sensitivity of pay to performance in small firms. These findings may indicate that in the presence of information asymmetry between owners-managers and outside investors the former may use their ownership rights to extract higher salaries for themselves. There is also evidence that top executives with larger shareholdings may be using dividends as a way to supplement their cash salaries. Further tests show that the observed relationships do not result from a link between compensation, performance, managerial effort, and managerial ownership. With the exception of boards of directors having an auditing committee, we find that boards cannot prevent this form of expropriation.

Keywords: ownership structure, executive compensation, corporate governance

JEL Classification: G32, G34, G35

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1. Introduction

Firms with concentrated ownership may be subject to agency costs arising from conflicts of interest between majority and minority shareholders. The focus of our paper is the extent to which ownership concentration affects executive compensation, since owner-managers effectively decide on their own compensation. In addition, we examine the role of dividends as a supplement to executive compensation in firms with concentrated ownership. Previous studies of executive compensation have mainly examined the elasticity between top executive pay and firm performance (e.g. Murphy, 1985; Perry and Zenner, 2001). The few studies that have examined the relationship between ownership structure and executive compensation report conflicting findings (Chung and Pruitt, 1996; Goldberg and Idson, 1995). In addition, although there is a stream of literature examining the relationship between ownership concentration and dividend payouts (Schooley and Barney, 1994; Moh'd et al., 1995; White, 1996; Faccio et al., 2001; Fenn and Liang, 2001), this literature views dividends as a mechanism for reducing agency costs by disgorging cash flow to outside investors, rather than as a form of executive compensation, and also reports conflicting findings.

We analyze a sample of 412 publicly traded Hong Kong firms during the period 1995-1998. Hong Kong combines an Asian family-controlled business environment, characterized by high family ownership of listed corporations, and an Anglo-Saxon legal and corporate governance system. Recognizing the possibility that unobserved firm characteristics might affect both executive compensation and ownership concentration, we use an approach similar to Himmelberg et al. (1999), estimating fixed effects at the industry and at the firm level.

Our principal result is that in small market-capitalization firms, there is a positive relationship between managerial ownership and the cash emoluments received by the CEO and the Chairman, for levels of ownership of up to 25 percent, while in large market-capitalization firms the relationship holds only for up to 5 percent ownership. Furthermore, we find no sensitivity of executive compensation to firm performance for small firms. These findings may indicate that in the presence of information asymmetry between owners-managers and outside investors (which is more likely in small firms) the former may use their ownership rights to extract higher salaries for themselves. In addition, family control of the firm reduces the cash compensation of executives with stockholdings representing less than 5 percent of the firm's voting rights but increases the cash compensation of executives holding between 5 and 25 percent of their firm's stock. In the former case, the controlling family has significant power vis-à-vis the executive, whereas in the latter case, we expect that the CEO and the Chairman are more likely to be members of the controlling family. Unlike Chung and Pruitt (1996), the positive relationship that we find between executive compensation and managerial ownership does not result from a positive link between compensation, performance, managerial effort, and ownership, and is therefore consistent with expropriation of outside investors.

The positive relationship between ownership concentration and managerial cash emoluments holds for low levels of ownership because at higher levels the owners-managers can receive substantial amounts of income in the form of dividends. The proportion of cash in the executives' total compensation decreases monotonically with their stock ownership. We also find a positive relationship between dividend yield

and CEO ownership in the 5 to 25 percent range. CEO ownership in this range also increases the likelihood that the firm pays dividends. Both results hold only for small firms. In contrast to previous studies, which attribute the positive relationship between dividend payouts and managerial ownership to the resolution of agency costs of managerial discretion (e.g. Schooley and Barney, 1994; Faccio et al., 2001), our joint examination of dividend payouts and executive compensation points to the opposite conclusion, i.e. that owners-managers may be manipulating dividends in order to top-up their cash compensation.

Our results on executive compensation are not driven by executive compensation proxying for unobservable managerial effort. We find that the relationship between market-to-book and managerial ownership follows the opposite pattern compared to the relationship between executive compensation and managerial ownership. This finding contrasts with the relationship between managerial ownership and firm value found in several U.S. studies (Morck et al., 1988; McConnell and Servaes, 1990; Hermalin and Weisbach, 1991), although our results are similar to Himmelberg et al. (1999) when estimating firm fixed effects.

Finally, with the exception of boards having an audit committee, we find that boards of directors are not sufficiently strong to limit managerial compensation, despite the mandatory introduction of independent non-executive directors.

The paper is organized as follows. The next section presents a brief discussion of the literature on ownership structure and executive compensation. Section 3 describes the data and the variables. Section 4 presents a descriptive analysis of the sample. Section 5 examines in more detail the relationship between executive compensation and managerial ownership. Section 6 analyzes dividend policy. Section 7 tests whether the results can be attributed to executive compensation proxying for unobservable managerial effort. Section 8 concludes.

2. Ownership Structure and Executive Compensation

There is a vast literature on corporate governance, which mainly focuses on widely held firms (for an extensive survey see Shleifer and Vishny, 1997). More recently, La Porta et al. (1999) highlighted the prevalence of concentrated ownership structures outside the U.S. Concentrated ownership is particularly common in Asia (Claessens et al., 2000). Most studies on concentrated ownership focus on the relationship between ownership structure and firm value. For moderate levels of ownership some studies have found a positive relationship between ownership concentration and the company's Tobin's Q (Morck et al., 1988; McConnell and Servaes, 1990), and a positive relationship between stock ownership by managers and firm value (Hermalin and Weisbach, 1991). Himmelberg et al. (1999) show that the relationship may be driven by unobservable firm characteristics that affect both Tobin's Q and ownership concentration. However, firms with concentrated ownership may be subject to agency costs that arise from conflicts of interest between majority and minority shareholders, and the potential expropriation of the latter. This expropriation can influence dividend policy and stock market valuation, as previous research has recognized (La Porta et al., 2000; 2002).

An alternative avenue for potential expropriation of minority shareholders is through executive compensation. Previous studies of executive compensation have mainly examined the elasticity between top executive pay and firm performance (for a survey see Bushman and Smith, 2001). Two papers have examined the relationship between ownership structure and executive compensation with conflicting results. Chung and Pruitt (1996) recognize that the firm's Tobin's Q, executive stock ownership and executive compensation are jointly determined. Stock ownership and compensation are the mechanisms by which executives are bonded in order to act in the best interests of the shareholders. They find that CEO ownership and Tobin's Q are strongly positively correlated, which supports the joint hypothesis that firms with higher levels of intangible assets require higher levels of managerial ownership as a bonding mechanism, and at the same time firms with higher managerial ownership have higher market values. They also find a positive correlation between Tobin's Q and executive compensation, which they interpret as showing that it is optimal for firms with more intangible assets to attract (and pay more to) managers with higher talent. In contrast, Goldberg and Idson (1995) find a negative relationship between executive compensation and the percentage of stock held by the firm's top five shareholders, which they interpret as showing that concentrated ownership reduces agency costs of managerial discretion (a manifestation of which can be executive compensation). The evidence, therefore, is not conclusive.¹

A number of studies on the agency cost implications of dividends (first proposed by Rozeff, 1982), which have examined the relationship between dividend payouts and ownership concentration, view dividends as a mechanism for reducing agency costs by disgorging cash flow to outside investors. This literature does not offer conclusive evidence. Moh'd et al. (1995), and White (1996) find a negative monotonic relationship between the dividend payout ratio and the percentage ownership by insiders. Schooley and Barney (1994) find a negative relationship between CEO ownership and dividend yield for low levels of ownership, and a positive relationship for higher levels of ownership. The interpretation is that at low levels of ownership managerial incentives are aligned with shareholders' interests through managerial stock ownership, whereas at higher levels of ownership they are aligned through higher dividend payouts (i.e. shareholders demand higher payouts at high levels of managerial ownership because management is entrenched). In the same spirit, Faccio et al. (2001) find higher payouts for Asian firms with a shareholder controlling more than 20 percent of voting rights (although, they find no significant results for Hong Kong). In contrast, Fenn and Liang (2001) do not find any relationship between managerial ownership and dividend yield when excluding stock repurchases from the payouts.²

¹ Two additional papers examine the relationship between ownership concentration and stock-based executive compensation. Ryan and Wiggins (2001) find a negative relationship between the proportion of stock options in managerial compensation and CEO stock ownership, which is consistent with the hypothesis that as the CEO owns more stock his/her interests become more closely aligned with shareholders' interests and there is less need for incentive compensation. Toyne et al. (2000) examine the impact of ownership structure on the proportion of stock-performance-based managerial compensation and find a non-linear relationship.

² Eckbo and Verma (1994) use tax policy to explain the relationship between dividend payouts and managerial ownership in Canada. They find that dividend yield decreases monotonically with the voting power of owners-managers, who face a relative tax-penalty for cash dividends (a characteristic of the Canadian tax code) and may extract private benefits from free cash flow. Furthermore, they report that Canadian firms with managerial ownership higher than 50 percent pay no cash dividends in most of the cases. Although, the ownership of Canadian listed firms appears as concentrated as the ownership of Hong Kong firms, in Hong Kong there is no tax on dividends, and no significant institutional ownership. Short et al. (2002) also use a tax explanation when examining the relationship between dividend payouts and institutional ownership in the U.K..

These papers assume that the observed phenomena represent an equilibrium where expropriation of minority shareholders does not take place because outside investors force entrenched owners-managers to disgorge cash. In contrast, La Porta et al. (2000) take an opposing view, and assume that the observed phenomena represent an equilibrium *with* expropriation. They show that firms in countries where there is weak legal protection of minority shareholders (which they associate with civil law countries) pay lower dividends.³

The focus of our paper is the extent to which ownership concentration affects executive compensation in Hong Kong, since owner-managers effectively decide their own compensation. In addition, we examine the role of dividends as a complement of executive compensation in firms with concentrated ownership.

3. Data and Variables

All listed companies in Hong Kong were required to disclose information on directors' compensation in their annual reports, and to introduce at least two independent non-executive directors on their boards, from 31 December 1994, following the adoption of some recommendations of the Cadbury committee report on corporate governance in the U.K. (Cadbury, 1992). Our initial sample was all companies listed on the Stock Exchange of Hong Kong during 1995-1998. After excluding from our sample firms with missing data, the final sample includes 412 firms (1,648 firm-years), which represents approximately two-thirds of all firms listed on the exchange in 1998. All data were obtained from company annual reports, Company Analysis (provided by the Financial Times), the Pacific-Basin Capital Markets Research (PACAP) database, and Datastream.

Executive compensation is measured by the natural logarithm of the cash emoluments received by the CEO and the Chairman. Cash emoluments include salary, bonus, housing allowance and other benefits. Most top executives in Hong Kong have significant shareholdings in the firms they manage and receive considerable income in the form of dividends. We also analyze the proportion of cash emoluments in the total compensation received by the CEO and the Chairman, where total compensation includes cash emoluments and dividend income, and the firm's dividend yield (dividend per share divided by share price). All figures are deflated to 1994 constant Hong Kong dollars. Information on stock options awards is generally unavailable, and therefore stock options are not included in the analysis. We discuss the potential impact of this omission on the results in later sections.

Our main independent variable, ownership concentration, is measured as the fraction of total company shares outstanding held by the CEO and his/her immediate family (CEO Ownership) or the Chairman and his/her immediate family (Chairman Ownership). To the extent that there are family members or friends who hold shares that we are unable to trace, our variables may underestimate controlling shareholdings. Motivated by Morck et al. (1988), to allow for non-linearity in the overall relationship between executive compensation and ownership concentration, in most of our analysis we estimate a piece-wise linear specification, where (assuming that the actual ownership fraction is m)

³ For Hong Kong (a common law country), they report median dividends over earnings ratio of 46 percent, compared to 37 percent for the common law sub-sample, 22 percent for the U.S., and 37 percent for the U.K..

Ownership $(0, 0.05) = m$ (if $m < 0.05$), 0.05 (if $m \geq 0.05$)

Ownership $(0.05, 0.25) = 0$ (if $m < 0.05$), $m - 0.05$ (if $0.05 \leq m < 0.25$), 0.20 (if $m \geq 0.25$)

Ownership $(0.25, 1.00) = 0$ (if $m < 0.25$), $m - 0.25$ (if $m \geq 0.25$)

For comparison purposes, we also estimate a linear, and a quadratic specification which include the terms m and m^2 (following McConnell and Servaes, 1990).

Our specifications include two sets of control variables. The first set includes proxies for firm performance. These are return on assets (ROA; net profit divided by total assets), market-to-book ratio (market value of equity divided by book value of equity), debt-to-assets ratio (long-term debt divided by total assets), annual sales growth, and firm size, as proxied by the natural logarithm of the firm's deflated total assets. The market-to-book ratio is likely to capture the proportion of unrecorded intangible assets in addition to being a proxy for firm performance. Our second set of control variables includes proxies for corporate governance. These are CEO duality (dummy variable equal to one when the CEO also serves as chairman of the board of directors), the natural logarithm of the number of directors on the board, the fraction of independent non-executive directors on the board; a proxy for outsider dominated board (dummy variable equal to one if the fraction of independent non-executive directors exceeds 50 percent), and the presence of an auditing committee (dummy variable equal to one if such a committee exists). Finally, in some specifications we analyze the impact of family ownership on CEO and Chairman remuneration by including dummy variables for combined family ownership that exceeds 30 percent and 50 percent. A list of the variables included in the analysis and their definitions appears in Table 1.

Motivated by Himmelberg et al. (1999), we recognize the possibility that unobserved exogenous firm characteristics might affect both executive compensation and ownership concentration. Therefore, we report three different types of regressions: using all firm-year observations pooled, estimating fixed effects at the industry level, and estimating fixed effects at the firm level. All three types of regressions incorporate year dummy variables. All reported p -values in the tables are based on White (1980) heteroskedasticity consistent standard errors.

4. Ownership Concentration, Corporate Governance, and Executive Compensation in Hong Kong: Descriptive Analysis

Descriptive statistics about the sample and the distribution of the variables used in the analysis are reported in Table 2 (we report mean, median, 25% percentile, and 75% percentile figures). The median firm in the sample has total assets of HK\$1.2 billion, debt-to-assets ratio of 5.5 percent, market-to-book of 0.8, and ROA of 3.2 percent. The median CEO ownership is 11 percent, and the median chairman ownership 30 percent. The majority of firms in the sample are family controlled: 75.6 percent of the firms have a family shareholder controlling at least 10 percent of voting rights, 68.9 percent have a shareholder controlling at least 20 percent of the voting rights, and 61.1 percent have a shareholder or family controlling at least 30 percent of voting rights. In 52 percent of all family-controlled firms there is CEO duality, i.e., the CEO is also Chairman of the board of directors (76.5 percent of firms with dual CEOs are family-controlled firms).

The boards of Hong Kong firms have nine directors on average. Following the publication of the Cadbury committee report on corporate governance in the U.K. (Cadbury, 1992), the listing rules of the exchange stipulated the mandatory introduction of at least two independent non-executive directors on all boards from 1995, and the requirement that these directors be clearly identified.⁴ The mean proportion of independent non-executive directors on Hong Kong boards is 31.4 percent (less than three directors, on average). This percentage does not vary by ownership structure or year. Audit, remuneration and nomination committees are not common in Hong Kong. The listing rules of the exchange included guidelines for the recommended introduction of audit committees only in 1998. Just 1.7 percent of the companies in our sample had audit committees in 1995, and 6.3 percent had audit committees in 1998. Remuneration and nomination committees were not mandatory. Only four companies in our sample have remuneration committees.

Descriptive statistics on executive compensation are reported in Table 3. The average CEO (who was not simultaneously chairman) received annually approximately HK\$3.7 million in the form of cash emoluments and almost HK\$13 million as dividend income (in constant 1994 Hong Kong dollars; the Hong Kong dollar is pegged to the U.S. dollar at the rate of HK\$7.8=US\$1). The average dual CEO (holding the positions of CEO and chairman) received HK\$3.5 million in cash and HK\$49 million in dividends. The average chairman (who was not CEO) received annually close to HK\$2.4 million in cash and HK\$42 million in dividends. The cash compensation was lowest for the average chairman who was not CEO, and highest for the average CEO who was not chairman. Dual CEOs received cash compensation in between the two extremes. However, the average chairman received considerably larger amounts of dividend income compared to the average CEO, reflecting the larger shareholdings held by the average chairman.⁵

Interestingly, dividend income for the CEO and the chairman was several times larger compared to cash emoluments. The average CEO who did not hold the position of chairman received almost four dollars in dividends for every dollar received as cash emoluments. For the average dual CEO the ratio of dividend income to cash emoluments was 14:1, and for the average chairman who did not hold the position of CEO almost 18:1. Therefore, top managers with significant shareholdings may care much more about their dividend income compared to their cash salary.⁶

⁴ They must hold less than 1 percent of the total issued share capital of the listed company, have no past or present financial or other interests in the business of the listed company or its subsidiaries, and they must be free from any relationship that could interfere with the exercise of their independent judgment.

⁵ Disclosure of stock-option information for top management is generally limited, incomplete or unclear. An analysis of share options awards for a small sub-sample of firms with enough data to price these options using the Black-Scholes formula (not reported in the tables), indicated that the value of these awards did not constitute a significant portion of total executive compensation.

⁶ The values of the accumulated shareholdings of the average CEO and the average chairman are substantial (not reported in the tables), e.g. HK\$809 million (US\$104 million) and HK\$1.3 billion (US\$167 million), respectively in 1996 (in constant 1994 HK\$).

5. Ownership Concentration and Managerial Cash Emoluments

In this section we report our principal multivariate analysis of the relationship between managerial ownership and cash compensation (Section 5.1), and discuss the impact of firm size (Section 5.2), and family control (Section 5.3) on the results.

Table 4 reports correlations between the variables used in the analysis. As expected, the highest positive correlations in the table are those between the different managerial compensation variables with each other, the different ownership variables with each other, compensation and firm size (proxied by total assets), ownership levels and dividend income, CEO duality and ownership levels. Moderately high correlations are between firm size and number of executive directors on the board (0.35), firm size and debt-to-assets ratio (0.26), market-to-book (or ROA) and managerial compensation. There are negative correlations between the number of directors on the board and ownership levels (from -0.13 to -0.21), and the presence of an auditing committee with managerial compensation and ownership.

5.1. CEO and Chairman cash emoluments

Table 5 reports the results of regressions of CEO and Chairman cash emoluments on CEO and Chairman ownership concentration variables respectively, after controlling for firm performance and corporate governance characteristics. For comparison purposes we report results for a specification linear in CEO (or Chairman) ownership (Panel A), for a quadratic specification (Panel B), and for a piecewise linear specification (Panel C).

In all specifications, we observe a positive relationship between CEO or Chairman stock ownership and the cash emoluments they receive. This result is consistent with top managers using the power derived from their shareholdings in order to extract higher cash salaries for themselves. In the linear specification (Panel A), the positive relationship is statistically significant in the pooled sample (at the 1 percent level), and after estimating industry fixed effects (at the 5 percent level) for both the CEO and the Chairman. However, the coefficients are not significant after estimating firm fixed effects. The results for the quadratic specification (Panel B) imply that the relationship is non-linear. The coefficients of the linear ownership term are positive, and those of the squared term negative (statistically significant at the 1 percent level for both the CEO and Chairman cash emoluments in the pooled regressions after estimating industry fixed effects, but not significant after estimating firm fixed effects). In the piecewise linear specification (Panel C), there is a positive relationship between ownership and cash emoluments for ownership of up to 5 percent. In the regressions of CEO compensation the coefficients are 12.423, 9.397, and 7.231, all statistically significant at the 1 percent level, even after estimating firm fixed effects. In the regressions of chairman compensation they are 11.576 (statistically significant at the 1 percent level), 10.662 (also statistically significant at the 1 percent level), and 2.728 (not statistically significant) respectively.

This positive relationship between top executive ownership and cash compensation suggests some entrenchment at low levels of ownership, particularly for the CEO, since CEOs with higher ownership appear to receive higher salaries. The results for Chairman cash emoluments are similar, although not significant after estimating firm fixed effects. These results are the opposite of those in Goldberg and Idson (1995) but are in line with Chung and Pruitt (1996), who also find a positive relationship between

managerial ownership and executive compensation. However, as we will show in Section 7, the relationship we document does not result from firms with moderate managerial ownership having better performance (as in Chung and Pruitt, 1996), i.e. in our sample executive compensation does not proxy for unobservable managerial effort.

CEO duality is negatively related to CEO cash emoluments and positively related to Chairman cash emoluments in all specifications (most coefficients statistically significant at the 1 percent level). This result is in line with the evidence reported in Table 3, namely that dual CEOs receive lower cash compensation compared to CEOs who do not hold the position of Chairman, and higher cash compensation compared to Chairmen who do not hold the position of CEO.

The board of directors variables do not appear significant in explaining top management cash compensation, with the exception of audit committees, whose presence is negatively related to the cash compensation of the CEO and the Chairman (although, the result does not hold when estimating firm fixed effects). In analysis not reported in the tables, we have examined further the impact of the board of directors variables on executive compensation by including interaction terms between the ownership and board of directors composition variables, using the quadratic specification in order to economize on degrees of freedom. The coefficients of the interaction between executive ownership and the percentage of independent non-executive directors or the outsider dominated board dummy variable are not statistically significant and change signs in different specifications. The coefficients of the interaction between the auditing committee dummy variable and executive ownership are all negative; two are statistically significant (-3.825 , p -value 0.06, in the regression of Chairman cash emoluments estimating firm fixed effects; -3.551 , p -value 0.07, in the regression of CEO cash emoluments estimating industry fixed effects) and three are marginally not significant at the 10 percent level (p -values 0.11-0.14). These results are supportive of the conjecture that the presence of an auditing committee dampens the positive relationship between executive ownership and executive compensation. However, auditing committees were not mandatory during the period under study, and this finding may also be the result of self-selection bias.⁷

With respect to the remaining control variables, firm size (proxied by total assets), and market-to-book ratio are positively related to managerial compensation. In contrast, ROA is negatively related to managerial compensation, which implies a possible link between pay and *under*-performance in Hong Kong. We will examine this result further in the next section.

Our analysis does not take into account stock option awards, because information disclosure about them is limited. In logit regressions estimated in a sub-sample of firms with available information (not reported in the tables), we found that the likelihood of granting options to the CEO was not related to the fraction of the CEO's stock ownership. Similarly, the probability of granting options to the Chairman was negatively related to the fraction of Chairman stock ownership (statistically significant at the 10 percent level). This result is in line with Ryan and Wiggins (2001), who find a negative relationship between the

⁷ In results not reported in the tables, the presence of a remuneration committee was also associated with a statistically significant negative coefficient. However, there are only four firms with a remuneration committee in our sample and the variable may be capturing firm effects.

proportion of stock options in managerial compensation and CEO stock ownership, and is consistent with the hypothesis that as top managers own more stock, their interests become more closely aligned with those of shareholders, and there is less need for incentive compensation.

5.2. The impact of firm size

For the rest of the analysis we rely on the piecewise linear specification as more informative. In this section, we rank the sample firms based on stock-market capitalization, divide the sample in three equal sub-samples, and perform the same analysis separately in each sub-sample. In Table 6, Panel A reports results for the sub-sample of firms with the lowest stock market capitalization, and Panel B reports results for the sub-sample with the largest market capitalization (results for the sub-sample with medium market capitalization fall between the two extremes, and are not reported in order to economize on space).

The analysis of different sub-samples further supports the conclusion that the positive relationship between managerial ownership and managerial cash compensation is the result of agency costs or managerial entrenchment. Small firms (Panel A) are likely to be characterized by higher information asymmetry between owners-managers and outside investors, since they are followed by fewer analysts and journalists, in comparison with large firms (Panel B). When comparing the results in the two panels, we observe that the statistically significant positive relationship between managerial ownership and cash emoluments in small firms remains for higher levels of ownership, up to 25 percent in some regressions, and there is a negative relationship for ownership levels above 25 percent (for CEO ownership up to 5 percent the result holds even after estimating firm fixed effects in both sub-samples). In contrast, in large firms the positive relationship holds only up to 5 percent ownership and the negative relationship starts immediately over 5 percent. Similar (but slightly weaker) results are obtained in regressions of the cash emoluments received by the remaining executive directors and other senior managers (who are not directors but are among the five highest-paid employees of the company) on total family-ownership levels (these results are not reported in the tables). Overall, these findings may indicate that in the presence of information asymmetry between owners-managers and outside investors the former may be more likely to use their ownership rights to extract higher salaries for themselves.

Board of directors variables are significant, with the exception of audit committees and the percentage of independent non-executive directors on the board in a few specifications (in analysis not reported in the tables, similar results were obtained when estimating interaction terms between ownership and board of directors variables). In addition, for small firms in Panel A, there is a negative relationship between managerial compensation and ROA (which is not significant after deleting the 5 percent of observations with the lowest ROA), a negative relationship between managerial compensation and sales growth (which persists after deleting the 5 percent of observations with the lowest sales growth), and no significant relationship between managerial compensation and the market-to-book ratio (which also persists after deleting the 5 percent of observations with the lowest market-to-book). These results indicate sensitivity of pay to *under*-performance (or at best no sensitivity of executive pay to performance) for small firms and do not hold for large firms.

5.3. The impact of family ownership

In this section, we examine whether family ownership affects managerial compensation. Ideally, we would like to know whether the CEO and the Chairman are members of the controlling family but in practice such data are not readily available. However, anecdotal evidence suggests that this is highly likely when the CEO and the chairman have large shareholdings in the firm they manage or when the same person holds both positions. When we estimate the regressions reported in the previous section replacing CEO and Chairman ownership with family ownership as an explanatory variable, the results are qualitatively similar to those reported in the previous sections (these results are not reported in the tables). This is because, as reported previously in Table 4, family ownership is highly correlated with CEO ownership (correlation coefficient 0.63) and Chairman ownership (correlation coefficient 0.81).

An alternative approach is to examine whether family control changes the sensitivity of executive compensation to managerial ownership, by including interaction terms between family control and managerial ownership. Table 7 reports the results of regressions of CEO and Chairman cash emoluments on ownership (using the piecewise linear specification), after including interactive terms of ownership with a dummy variable indicating that a family controls over 30 percent of voting rights in the firm (Panel A) and over 50 percent of voting rights (Panel B). In line with the results reported in Table 5, Panel C, there is a positive relationship between cash emoluments and CEO or chairman ownership of up to 5 percent (all coefficients statistically significant at the 1 percent level, with the exception of Chairman compensation after estimating firm fixed effects).

Interestingly, the coefficients of the interactions between family control and CEO or Chairman ownership up to 5 percent are all negative. When the top executives own less than 5 percent of the firm's stock and there is a controlling family owning more than 30 or 50 percent, then there is a negative relationship between executive cash compensation and executive ownership. In contrast, the coefficient of the interaction between executive ownership in the 5 to 25 percent range and family control is positive and statistically significant in all specifications except when estimating firm fixed effects (in results not reported in the tables, we observe a similar result in the small firm sub-sample). Therefore, family ownership appears to be associated with lower executive compensation when the CEO and the chairman hold a small percentage of the firm's shares, i.e. when they appear less powerful than the controlling family (which is likely to be the case when they do not belong to the controlling family or when they are younger members). In contrast, family ownership appears to be associated with higher executive compensation when the CEO and the chairman hold significant shareholdings in the firm, i.e. when they appear to be powerful vis-à-vis the controlling family (which is likely to be the case when they belong to the controlling family).

Overall, our results in this section show a positive relationship between CEO (or Chairman) ownership of up to 5 percent and the cash salaries they receive. For small firms (which are characterized by more information asymmetry between insiders and outside investors) and for family controlled firms this relationship can be observed at ownership levels of up to 25 percent. In small firms, we also find no sensitivity of executive pay to performance (or even sensitivity of pay to under-performance). These results indicate that owners-managers may be extracting higher salaries for themselves from the companies they own and manage.

6. Ownership Concentration and Managerial Dividend Income

Following the evidence reported in Section 4, we conjectured that top managers can complement their compensation with dividend income from their shareholdings (which, on average, exceeds significantly their cash emoluments), and this results in a negative or not significant relationship between managerial ownership over 25 percent and executive compensation. To support this claim, in Table 8 we regress the proportion of cash emoluments in total executive compensation (where total compensation includes cash emoluments plus dividend income) on executive ownership and the remaining control variables using the piecewise linear specification. Two results are interesting. First, there is a negative and highly statistically significant relationship between the cash emoluments as a percentage of total compensation and CEO or chairman stock ownership. As expected, the higher the CEO's or the Chairman's stockholdings the lower their cash emoluments as a proportion of total compensation (in results not reported in the tables, this finding also holds in the sub-samples of small and large firms). Second, there is a negative relationship between the proportion of cash in the total compensation and market-to-book (statistically significant in the CEO compensation regressions) or ROA (statistically significant in five out of six specifications). This implies that top executives of poorly performing firms receive a higher proportion of their total compensation in the form of cash emoluments.

As a further test, in Table 9 we regress dividend yield on executive ownership and the remaining control variables (we report results for the sub-samples of small and large firms). In Panel A, for small market capitalization firms there is a positive and statistically significant (at the 1 percent level) relationship between dividend yield and CEO ownership at the 5 to 25 percent range (in results not reported in the tables the relationship also holds when using family ownership as the explanatory variable). In contrast, the relationship is negative in the 0 to 5 percent ownership range. In fact, the relationship between dividend yield and CEO ownership in the 0 to 5 and 5 to 25 percent range for small-cap firms (Table 10, Panel A) shows the *opposite* signs compared to the relationship between cash emoluments and CEO ownership (Table 6, Panel A). In Table 9, Panel B, there is no relationship between dividend yield and ownership concentration for large market capitalization firms. Similarly there is no relationship when the explanatory variable is chairman ownership. Although not conclusive, this result offers further support to the conjecture that CEOs may regard cash compensation and dividend income as substitutes.⁸

Logit models of the likelihood of a firm paying a dividend (not reported in the tables) show a similar pattern. For the whole sample, there is a negative relationship between CEO ownership up to 5 percent and the likelihood that the firm pays a dividend (coefficient -10.049 , p -value 0.10), and a positive relationship between chairman ownership over 25 percent and the likelihood that the firm pays a dividend (coefficient 1.101, p -value 0.07). In the sub-sample of small firms, there is a negative relationship for CEO ownership up to 5 percent (coefficient -20.260 , p -value 0.02), and a positive relationship for CEO ownership in the 5 to 25 percent range (coefficient 6.121, p -value 0.02). When estimating logit models of the likelihood of a firm paying a dividend while having negative earnings at the same time (which would be even more consistent with expropriation), there is a negative relationship between the likelihood of

⁸ In analysis not reported in the tables we found no statistically significant relationship between dividend payout (dividends divided by net income) and managerial ownership, although these regressions use only a smaller sub-sample of observations with positive net income.

paying a dividend and CEO ownership up to 5 percent (coefficient -9.168 , p -value 0.05), and a positive relationship between the likelihood of paying a dividend and CEO ownership in the 5 to 25 percent range (coefficient 2.686 , p -value 0.05) for the whole sample, as well as for the sub-sample of small market capitalization firms (respective coefficients (21.565 , p -value 0.01; 5.788 , p -value 0.01).

Schooley and Barney (1994) also find a negative relationship between CEO ownership and dividend yield for low levels of ownership, and a positive relationship for higher levels of ownership, and Faccio et al. (2001) find that Asian firms with a controlling shareholder holding more than 20 percent of voting rights pay higher dividends. In their assumed “equilibrium without expropriation” framework, they interpret the results as showing that shareholders demand higher payouts at high levels of managerial ownership because management is entrenched. However, whether the observed phenomena represent an equilibrium with or without expropriation is a matter of assumption (e.g. La Porta et al., 2000 do not assume that there is no expropriation). When viewed together with the evidence on managerial compensation, the evidence reported in this section provides support to the conjecture that owner-managers with moderate controlling stakes (over 5 percent of voting rights), particularly in small firms, may be paying higher dividends in order to complement their cash compensation. The results of these earlier studies are also consistent with our interpretation.

7. Sensitivity Tests: Executive Compensation and the Unobservability of Managerial Effort

There is an alternative potential explanation for the positive relationship between executive compensation and managerial ownership that we show in this paper. If firms granting stock to managers have better performance (because these managers are offered better incentives and provide more effort) and there is a link between executive compensation and firm performance, then the positive relationship that we observe between managerial ownership and executive compensation may be the result of compensation proxying for managerial effort. In this section we perform two tests in order to show that our results are not attributed to the unobservability of managerial effort. First, we include interaction terms between managerial ownership and firm performance in the regressions of executive cash emoluments, i.e. we examine the sensitivity of compensation to performance as a function of managerial ownership. A positive coefficient for the interaction term would be consistent with higher managerial compensation being the result of higher effort (in contrast a negative coefficient would show that managers receive higher cash emoluments irrespective of performance). Second, we regress directly firm performance (market-to-book and ROA) on managerial ownership.

In Table 10 we report the results of the regressions of cash emoluments including interaction terms between managerial ownership and market-to-book (Panel A) or ROA (Panel B). The interaction terms are either not statistically significant or have negative signs that are consistent with expropriation, i.e. high compensation irrespective of performance. In the regressions of CEO cash emoluments, none of the interaction terms are statistically significant, either for market-to-book or for ROA. In contrast, in the regressions of Chairman cash emoluments there is a negative and statistically significant interaction term between chairman ownership up to 5 percent and market-to-book, which is consistent with Chairmen of firms with worse performance receiving higher cash compensation. This is the range of Chairman

shareholdings associated with a positive relationship between cash compensation and Chairman ownership in Section 5. Similarly, in Panel B there is no significant coefficient of the interaction terms, with the exception of the negative coefficient for the interaction of ownership up to 5 percent and ROA after estimating firm fixed effects. We find similar results when estimating the regressions in the sub-samples of small and large firms separately (not reported in the tables). The results in Table 10 are not consistent with the relationship between compensation and ownership being attributed to the unobservability of managerial effort.

We also regress market-to-book and ROA on managerial ownership. In Table 11 there is a negative and statistically significant relationship between market-to-book and CEO or chairman ownership up to 5 percent. This was the range of ownership that was associated with higher executive compensation in Section 5. The results of the regression estimated separately in the sub-samples of small and large firms (not reported here) show the same pattern. It is particularly interesting that this relationship between market-to-book and managerial ownership is the opposite of what has been found in many U.S. studies (Morck et al., 1988; McConnell and Servaes, 1990; Hermalin and Weisbach, 1991). However, in line with the results reported by Himmelberg et al. (1999), there is no relationship between managerial ownership and market-to-book after estimating firm fixed effects. We note also that CEO duality is negatively related to market-to-book.

In Table 12 there is a positive and statistically significant relationship between ROA and CEO ownership of up to 5 percent in the pooled and industry fixed effects specifications. However, the result does not hold for Chairman ownership. Similarly, in results not reported in the tables, there is no significant relationship between CEO (or Chairman) ownership at any level and ROA in the sub-samples of small and large firms, or between market-to-book or ROA and family ownership (unlike our results on executive compensation and managerial ownership). Therefore, overall we cannot attribute the relationship between executive compensation and executive ownership to the unobservability of managerial effort. Our results are more consistent with expropriation.⁹

8. Conclusions

This paper examines the relationship between ownership structure and managerial compensation using data from a sample of 412 publicly traded Hong Kong companies, through the period 1995-1998. We are interested in the extent to which owners-managers are able to pay themselves higher salaries when managing the firms they own. In addition, we examine dividend policy as a form of managerial compensation in firms with concentrated ownership.

For low levels of managerial ownership, we find a positive relationship between the cash emoluments received by the CEO (or Chairman), and the respective ownership levels of the CEO (or Chairman),

⁹ The relationship between managerial ownership, firm performance and executive compensation is also affected by the potential degree of agency costs within the firm, which can be proxied by the proportion of intangible assets, R&D or advertising expenses. Our specifications include the market-to-book ratio as a regressor, which is likely to capture unrecorded intangible assets. Generally, intangible assets, R&D and advertising expenses are not significant in Hong Kong. Out of 412 firms in the sample, 104 are in real estate and construction, 44 in textiles, 40 in the financial sector, 19 in the food sector etc., so that the vast majority of firms operate in industries with little intangible assets and limited R&D.

which cannot be attributed to executive compensation being a proxy for unobservable managerial effort, and holds after controlling for firm performance and board of directors composition. In small firms and in family controlled firms this relationship holds for levels of ownership up to 25 percent, whereas, in large firms the relationship holds for ownership up to 5 percent. In addition, small firms exhibit no sensitivity of executive pay to performance. With size likely to be positively related to information disclosure, the smaller the firm the more likely it is for owners-managers to use their ownership rights to extract higher cash salaries for themselves. This action is significant at low levels of ownership because large shareholders receive most of their income in the form of dividends. To this effect, we also find a positive relationship between dividend yield and higher levels of CEO ownership. The presence of an audit committee on the firm's board is associated with lower levels of managerial compensation, whereas the presence of independent non-executive directors does not appear effective in limiting executive compensation.

Our results differ from previous studies in three important respects. First, the positive relationship that we find between executive compensation and managerial ownership does not result from a positive link between compensation, performance, managerial effort, and ownership as in Chung and Pruitt (1996), and is therefore consistent with expropriation of outside investors. Second, we provide evidence that the positive relationship between dividend payouts and high managerial ownership may not necessarily result from the resolution of agency problems as assumed by Schooley and Barney (1994) and Faccio et al. (2001). Instead, owners-managers may be using dividend income in order to complement their cash salaries. And third, we find the opposite relationship between managerial ownership and firm value than the one documented by Morck et al. (1988), McConnell and Servaes (1990), and Hermalin and Weisbach (1991). However, in line with the results reported by Himmelberg et al. (1999), we find no relationship between managerial ownership and market-to-book after estimating firm fixed effects.

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Table 1. Definitions of the variables used in the empirical analysis

Variable	Definition
Ln(CEO cash emoluments)	Natural logarithm of the cash emoluments received by the CEO, where cash emoluments include salary, bonus, housing allowance and other benefits, deflated to 1994 constant HK\$
Ln(chairman cash emoluments)	Natural logarithm of the cash emoluments received by the Chairman, where cash emoluments include salary, bonus, housing allowance and other benefits, deflated to 1994 constant HK\$
Dividend income	Income derived from the director's shareholding in the firm (number of shares held multiplied by dividend per share)
Total compensation	Cash emoluments plus dividend income
CEO (or Chairman) Ownership	Ownership fraction of the CEO (or Chairman)
CEO (or Chairman) Ownership (0, 0.05)	<i>Ownership</i> (if <i>Ownership</i> < 0.05), or 0.05 (if <i>Ownership</i> ≥ 0.05)
CEO (or Chairman) Ownership (0.05, 0.25)	0 (if <i>Ownership</i> < 0.05), or <i>Ownership</i> - 0.05 (if 0.05 ≤ <i>Ownership</i> < 0.25), or 0.20 (if <i>Ownership</i> ≥ 0.25)
CEO (or Chairman) Ownership (0.25, 1.00)	0 (if <i>Ownership</i> < 0.25), or <i>Ownership</i> - 0.25 (if <i>Ownership</i> ≥ 0.25)
Family Ownership > 30%	Dummy variable indicating that there exists a family owning more than 30% of the firm's outstanding shares
Family Ownership > 50%	Dummy variable indicating that there exists a family owning more than 50% of the firm's outstanding shares
CEO duality	Dummy variable equal to one when the CEO also serves as Chairman of the board of directors
Ln(number of directors)	Natural logarithm of the number of directors on the board
Percent independent non-executive directors	Fraction of independent non-executive directors on the board

Table 1 (Continued)

Variable	Definition
Outsider dominated board	Dummy variable equal to one if the fraction of independent non-executive directors on the board exceeds 50 percent
Audit committee	Dummy variable equal to one if such a committee exists
Market-to-book	Market value of equity divided by book value of equity
ROA	Net income divided by total assets
Debt-to-assets	Long-term debt divided by total assets
Sales growth	Annual change in sales (turnover)
Ln(total assets)	Natural logarithm of the firm's deflated total assets
Dividend yield	Dividend per share divided by earnings per share
Loss dummy	Dummy variable equal to one if the firm's net income is negative

Table 2. Summary statistics for sample of Hong Kong firms (1995-1998)

<i>Panel A. Sample descriptive statistics</i>				
	Mean	25% Percentile	Median	75% Percentile
Total assets (HK\$ billion)	1.6	0.5	1.2	3.6
Debt-to-assets ratio (%)	9.1	0.7	5.5	14.3
Sales growth (%)	23.0	-13.3	6.6	26.0
Market-to-book ratio	1.4	0.5	0.8	1.5
ROA (%)	0.0	0.0	3.2	7.2
CEO Ownership (%)	22.9	0.0	11.0	46.5
Chairman Ownership (%)	29.5	0.1	30.0	51.9
Directors (number)	9.0	7.0	9.0	11.0
Independent non-executive directors (%)	31.4	22.2	28.6	40.0
CEO cash emoluments (HK\$ million)	3.6	1.2	2.4	4.2
Chairman cash emoluments (HK\$ million)	2.9	0.9	1.7	3.6
<i>Panel B. Family ownership distribution</i>				
	Firm-years (number)	Percent of total (%)		
Family Ownership (0, 10%)	402	24.4		
Family Ownership (10%, 20%)	110	6.7		
Family Ownership (20%, 30%)	129	7.8		
Family Ownership (30%, 100%)	1,007	61.1		

The table shows ownership concentration, board of directors, and other firm characteristics descriptive statistics for a sample of 412 publicly traded Hong Kong firms during 1995-1998. Variable definitions appear in Table 1. All figures are in HK\$ millions (Hong Kong's currency is pegged to the US\$ at the rate of HK\$7.8=US\$1), and are deflated to constant 1994 HK\$ using the retail price index.

Table 3. Average compensation of directors and senior managers of Hong Kong firms during 1995-1998 (in HK\$ millions)

	1995	1996	1997	1998
<i>A. Chief executive officer (non-Chairman)</i>				
Cash emoluments	3.4	3.5	4.1	3.6
Dividend income	11.2	8.5	12.1	19.2
Total	14.6	11.9	16.2	22.9
<i>B. Dual chief executive officer (Chairman/CEO)</i>				
Cash emoluments	3.2	3.4	3.4	4.0
Dividend income	52.7	55.5	45.9	41.3
Total	55.9	58.8	49.3	45.3
<i>C. Chairman (non-CEO)</i>				
Cash emoluments	2.2	2.1	2.7	2.4
Dividend income	39.5	37.2	44.1	46.3
Total	41.7	39.3	46.7	48.7

The table shows average compensation of chief executive officers, and chairmen of the board, for a sample of 412 publicly traded Hong Kong firms during 1995-1998. Variable definitions appear in Table 1. All figures are in HK\$ millions (Hong Kong's currency is pegged to the US\$ at the rate of HK\$7.8=US\$1), and are deflated to constant 1994 HK\$ using the retail price index.

Table 4. Correlations between the variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(1) Ln(CEO cash emoluments)	1.00	0.09	0.86	0.12	0.76	0.43	0.40	0.07	-0.02	0.03	0.04	0.02	0.00	0.00	-0.08	0.18	0.03	0.04
(2) Ln(CEO dividend income)		1.00	0.20	0.61	0.14	0.04	0.10	0.09	-0.02	0.05	0.14	0.70	0.39	0.39	0.28	0.03	-0.01	-0.15
(3) Ln(chairman cash emoluments)			1.00	0.13	0.70	0.35	0.31	0.07	-0.02	0.01	0.02	0.11	0.04	0.01	0.14	0.12	-0.01	-0.05
(4) Ln(chairman dividend income)				1.00	0.13	0.07	0.24	0.07	0.00	0.16	0.21	0.33	0.62	0.50	-0.01	0.07	-0.05	-0.07
(5) Ln(executive directors cash emoluments)					1.00	0.48	0.31	0.08	-0.02	0.05	0.03	0.07	0.07	0.08	-0.05	0.06	0.10	0.01
(6) Ln(senior manager cash emoluments)						1.00	0.48	0.06	-0.02	0.02	0.09	-0.07	-0.08	-0.04	-0.07	0.22	0.06	0.09
(7) Ln(total assets)							1.00	0.26	0.01	-0.05	0.17	-0.15	-0.15	-0.13	-0.10	0.35	0.10	0.19
(8) Debt-to-assets ratio								1.00	0.05	-0.01	-0.03	-0.02	-0.04	-0.03	-0.05	0.08	0.00	-0.02
(9) Sales growth									1.00	0.00	0.04	0.00	0.02	0.00	0.01	0.01	0.01	0.00
(10) Market-to-book ratio										1.00	0.02	-0.05	0.03	0.02	-0.07	0.03	-0.01	-0.01
(11) Net profit over total assets ratio											1.00	0.04	0.07	0.06	-0.01	0.02	0.00	0.02
(12) CEO Ownership												1.00	0.67	0.63	0.32	-0.16	-0.01	-0.11
(13) Chairman Ownership													1.00	0.81	0.08	-0.21	-0.03	-0.13
(14) Family Ownership														1.00	0.01	-0.13	-0.03	-0.11
(15) CEO duality															1.00	-0.18	-0.01	-0.07
(16) Ln(number of directors)																1.00	0.03	0.10
(17) Outsider dominated board																	1.00	0.05
(18) Audit committee																		1.00

The table reports correlations of the variables used in the multivariate analysis of this section. Variable definitions appear in Table 1.

Table 5. Regressions of CEO and chairman cash emoluments on managerial ownership

Dependent variable Estimated relationship	Ln(CEO cash emoluments) CEO cash emoluments = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)			Ln(chairman cash emoluments) Chairman cash emoluments = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)		
	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
A. Linear specification						
CEO (or Chairman) Ownership	0.521 (0.00)***	0.225 (0.05)*	-0.068 (0.67)	0.380 (0.00)***	0.302 (0.01)**	-0.164 (0.26)
CEO duality	-0.173 (0.00)***	-0.122 (0.02)**	-0.117 (0.13)	0.438 (0.00)***	0.428 (0.00)***	0.312 (0.00)***
Ln(number of directors)	0.179 (0.11)	0.190 (0.09)*	0.216 (0.12)	0.262 (0.03)**	0.266 (0.02)**	0.214 (0.12)
Percent independent non-executive directors	0.002 (0.99)	0.412 (0.21)	-0.005 (0.98)	0.228 (0.53)	0.723 (0.04)**	0.305 (0.26)
Outsider dominated board	-0.048 (0.79)	-0.137 (0.40)	0.036 (0.74)	-0.253 (0.21)	-0.349 (0.07)*	-0.121 (0.28)
Audit committee	-0.263 (0.01)***	-0.227 (0.02)**	-0.150 (0.29)	-0.733 (0.00)***	-0.611 (0.00)***	0.005 (0.97)
Ln(total assets)	0.322 (0.00)***	0.366 (0.00)***	0.205 (0.00)***	0.280 (0.00)***	0.347 (0.00)***	0.190 (0.00)***

Table 5 (Continued)

Dependent variable Estimated relationship	Ln(CEO cash emoluments) CEO cash emoluments = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)			Ln(chairman cash emoluments) Chairman cash emoluments = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)		
	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
Debt-to-assets	-0.531 (0.05)**	0.156 (0.51)	0.021 (0.94)	-0.136 (0.63)	0.422 (0.09)*	0.119 (0.62)
Sales growth	-0.011 (0.32)	-0.003 (0.86)	-0.002 (0.85)	-0.014 (0.22)	-0.004 (0.82)	-0.003 (0.77)
Market-to-book	0.017 (0.05)**	0.022 (0.02)**	0.006 (0.40)	0.013 (0.05)**	0.020 (0.01)***	0.010 (0.08)*
ROA	-0.185 (0.05)**	-0.143 (0.13)	-0.126 (0.05)**	-0.168 (0.08)*	-0.171 (0.08)*	-0.088 (0.20)
No of observations	1629	1629	1629	1627	1627	1627
Adjusted R ²	0.17	0.34	0.82	0.14	0.32	0.83
<i>B. Quadratic specification</i>						
CEO (or Chairman) Ownership	2.979 (0.00)***	1.987 (0.00)***	0.129 (0.74)	2.913 (0.00)***	2.411 (0.00)***	-0.089 (0.83)
CEO (or Chairman) Ownership ²	-3.893 (0.00)***	-2.744 (0.00)***	-0.291 (0.59)	-3.959 (0.00)***	-3.262 (0.00)***	-0.115 (0.85)
CEO duality	-0.224 (0.00)***	-0.160 (0.00)***	-0.123 (0.12)	0.435 (0.00)***	0.424 (0.00)***	0.312 (0.00)***

Table 5 (Continued)

Dependent variable Estimated relationship	Ln(CEO cash emoluments) CEO cash emoluments = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)			Ln(chairman cash emoluments) Chairman cash emoluments = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)		
	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
Ln(number of directors)	0.178 (0.11)	0.195 (0.08)*	0.217 (0.12)	0.255 (0.03)**	0.267 (0.02)**	0.216 (0.12)
% Independent non-executive directors	-0.001 (0.99)	0.424 (0.20)	-0.006 (0.98)	0.129 (0.72)	0.683 (0.05)*	0.304 (0.27)
Outsider dominated board	-0.085 (0.65)	-0.161 (0.34)	0.035 (0.75)	-0.240 (0.24)	-0.342 (0.07)*	-0.121 (0.28)
Audit committee	-0.265 (0.01)**	-0.241 (0.01)**	-0.150 (0.29)	-0.710 (0.00)***	-0.613 (0.00)***	0.006 (0.97)
Ln(total assets)	0.343 (0.00)***	0.376 (0.00)***	0.203 (0.00)***	0.302 (0.00)***	0.360 (0.00)***	0.190 (0.00)***
Debt-to-assets	-0.488 (0.06)*	0.180 (0.45)	0.019 (0.94)	-0.069 (0.81)	0.485 (0.05)*	0.120 (0.62)
Sales growth	-0.008 (0.52)	-0.001 (0.93)	-0.002 (0.88)	-0.010 (0.41)	-0.001 (0.95)	-0.003 (0.78)
Market-to-book	0.020 (0.03)**	0.024 (0.01)**	0.006 (0.39)	0.015 (0.01)***	0.022 (0.00)***	0.010 (0.08)*
ROA	-0.184 (0.05)**	-0.144 (0.13)	-0.128 (0.04)**	-0.187 (0.05)*	-0.183 (0.06)*	-0.089 (0.20)

Table 5 (Continued)

Dependent variable	Ln(CEO cash emoluments)			Ln(chairman cash emoluments)		
	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
Estimated relationship	CEO cash emoluments = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)			Chairman cash emoluments = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)		
No of observations	1629	1629	1629	1627	1627	1627
Adjusted R ²	0.19	0.35	0.82	0.16	0.33	0.83
C. Piecewise linear specification						
CEO (or Chairman) Ownership (0.00, 0.05)	12.423 (0.00)***	9.397 (0.00)***	7.231 (0.00)***	11.576 (0.00)***	10.662 (0.00)***	2.728 (0.39)
CEO (or Chairman) Ownership (0.05, 0.25)	-0.050 (0.93)	-0.488 (0.40)	-1.616 (0.02)**	0.336 (0.64)	-0.199 (0.78)	-0.847 (0.28)
CEO (or Chairman) Ownership (0.25, 1.00)	-0.599 (0.02)**	-0.436 (0.09)*	-0.093 (0.76)	-0.865 (0.00)***	-0.581 (0.02)**	-0.128 (0.68)
CEO duality	-0.209 (0.00)***	-0.146 (0.01)***	-0.120 (0.12)	0.431 (0.00)***	0.422 (0.00)***	0.311 (0.00)***
Ln(number of directors)	0.181 (0.11)	0.197 (0.08)*	0.221 (0.11)	0.248 (0.04)**	0.261 (0.03)**	0.217 (0.12)
% Independent non-executive directors	0.043 (0.90)	0.462 (0.16)	0.035 (0.88)	0.160 (0.66)	0.719 (0.04)**	0.301 (0.27)
Outsider dominated board	-0.092 (0.62)	-0.163 (0.33)	0.026 (0.81)	-0.288 (0.21)	-0.357 (0.06)*	-0.121 (0.28)
Audit committee	-0.251 (0.02)**	-0.224 (0.03)**	-0.135 (0.33)	-0.696 (0.00)***	-0.596 (0.00)***	0.009 (0.95)

Table 5 (Continued)

Dependent variable Estimated relationship	Ln(CEO cash emoluments) CEO cash emoluments = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)			Ln(chairman cash emoluments) Chairman cash emoluments = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)		
	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
Ln(total assets)	0.349 (0.00)***	0.378 (0.00)***	0.195 (0.00)***	0.306 (0.00)***	0.363 (0.00)***	0.189 (0.00)***
Debt-to-assets	-0.426 (0.10)	0.226 (0.33)	0.021 (0.94)	0.001 (0.99)	0.541 (0.03)**	0.121 (0.61)
Sales growth	-0.013 (0.26)	-0.006 (0.72)	-0.004 (0.65)	-0.011 (0.34)	-0.002 (0.91)	-0.003 (0.77)
Market-to-book	0.023 (0.02)**	0.026 (0.01)**	0.007 (0.35)	0.015 (0.01)**	0.022 (0.00)***	0.010 (0.08)*
ROA	-0.216 (0.02)**	-0.169 (0.07)*	-0.143 (0.02)**	-0.193 (0.04)**	-0.192 (0.05)**	-0.090 (0.20)
No of observations	1629	1629	1629	1627	1627	1627
Adjusted R ²	0.20	0.35	0.82	0.17	0.33	0.83

The table reports results of regressions of CEO and Chairman cash emoluments on CEO and Chairman ownership, after controlling for firm performance and corporate governance variables. Panels A-C report results for a linear, quadratic, and piece-wise linear specification respectively. Variable definitions appear in Table 1. The table reports three different types of regressions: using all firm-year observations pooled (*pooled sample*), estimating fixed effects at the industry level (*industry fixed effects*), and estimating fixed effects at the firm level (*firm fixed effects*). All regressions include an intercept and year dummy variables. Intercepts, year dummy and fixed effects coefficients are not reported. *Adjusted R²* reflects the inclusion of fixed effects. Reported *p*-values in parentheses are based on White (1980) heteroskedasticity consistent standard errors.

Table 6. Regressions of CEO and chairman cash emoluments for sub-samples according to market capitalization

Dependent variable Estimated relationship	Ln(CEO cash emoluments) CEO cash emoluments = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)			Ln(chairman cash emoluments) Chairman cash emoluments = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)		
	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
<i>A. Small market capitalization firms</i>						
CEO (or Chairman) Ownership (0.00, 0.05)	5.501 (0.08)*	5.434 (0.08)*	7.625 (0.03)**	7.141 (0.08)*	5.688 (0.15)	-0.560 (0.42)
CEO (or Chairman) Ownership (0.05, 0.25)	2.229 (0.01)**	1.391 (0.11)	-1.319 (0.24)	2.724 (0.01)***	2.057 (0.05)**	0.959 (0.42)
CEO (or Chairman) Ownership (0.25, 1.00)	-1.340 (0.00)***	-1.308 (0.00)***	-0.133 (0.77)	-1.302 (0.00)***	-1.180 (0.00)***	-0.516 (0.29)
CEO duality	-0.131 (0.11)	-0.079 (0.33)	-0.009 (0.93)	0.400 (0.00)***	0.407 (0.00)***	0.370 (0.01)**
Ln(number of directors)	0.117 (0.51)	0.112 (0.54)	0.167 (0.34)	0.088 (0.62)	0.051 (0.78)	0.115 (0.52)
% Independent non-executive directors	-0.887 (0.08)*	-0.559 (0.32)	0.484 (0.27)	-1.417 (0.01)***	-0.959 (0.08)*	0.169 (0.74)
Outsider dominated board	0.359 (0.12)	0.323 (0.16)	0.104 (0.55)	0.280 (0.32)	0.211 (0.43)	0.085 (0.64)
Audit committee	-0.641 (0.04)**	-0.553 (0.02)**	-0.578 (0.01)***	-0.372 (0.20)	-0.318 (0.18)	-0.319 (0.04)**

Table 6 (Continued)

Dependent variable	Ln(CEO cash emoluments)			Ln(chairman cash emoluments)		
	CEO cash emoluments = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)			Chairman cash emoluments = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)		
Estimation method	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
Ln(total assets)	0.420 (0.00)***	0.481 (0.00)***	0.036 (0.75)	0.388 (0.00)***	0.457 (0.00)***	0.020 (0.87)
Debt-to-assets	-1.172 (0.00)***	-0.930 (0.01)**	-0.051 (0.93)	-0.800 (0.02)**	-0.639 (0.09)*	0.028 (0.96)
Sales growth	-0.022 (0.01)***	-0.017 (0.15)	-0.002 (0.91)	-0.035 (0.01)**	-0.025 (0.00)***	-0.014 (0.25)
Market-to-book	0.017 (0.41)	0.025 (0.36)	-0.006 (0.66)	0.007 (0.63)	0.016 (0.46)	-0.010 (0.42)
ROA	-0.288 (0.00)***	-0.298 (0.00)***	-0.106 (0.25)	-0.323 (0.00)***	-0.355 (0.00)***	-0.076 (0.49)
No of observations	535	535	535	535	535	535
Adjusted R ²	0.16	0.23	0.81	0.18	0.30	0.82
<i>B. Large market capitalization firms</i>						
CEO (or Chairman) Ownership (0.00, 0.05)	22.890 (0.00)***	26.365 (0.00)***	9.861 (0.04)**	16.763 (0.00)***	21.834 (0.00)***	11.063 (0.12)
CEO (or Chairman) Ownership (0.05, 0.25)	-3.616 (0.00)***	-6.705 (0.00)***	-2.651 (0.12)	-1.895 (0.24)	-4.474 (0.01)**	-2.046 (0.29)

Table 6 (Continued)

Dependent variable Estimated relationship	Ln(CEO cash emoluments) CEO cash emoluments = $f(\text{CEO}$ ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)			Ln(chairman cash emoluments) Chairman cash emoluments = $f(\text{Chairman ownership, CEO duality,}$ board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)		
	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
CEO (or Chairman) Ownership (0.25, 1.00)	-0.018 (0.96)	0.566 (0.19)	-0.152 (0.65)	-0.722 (0.10)*	-0.159 (0.73)	-0.353 (0.40)
CEO duality	-0.290 (0.01)***	-0.306 (0.00)***	-0.260 (0.22)	0.460 (0.00)***	0.336 (0.00)***	0.226 (0.11)
Ln(number of directors)	-0.104 (0.53)	-0.074 (0.66)	0.357 (0.10)	0.088 (0.61)	0.153 (0.41)	0.264 (0.31)
% Independent non-executive directors	-0.486 (0.41)	0.219 (0.64)	-0.792 (0.04)**	0.137 (0.82)	0.828 (0.15)	-0.135 (0.81)
Outsider dominated board	0.324 (0.19)	-0.047 (0.83)	0.177 (0.37)	0.025 (0.93)	-0.324 (0.22)	0.003 (0.99)
Audit committee	-0.062 (0.62)	-0.055 (0.67)	0.065 (0.81)	-0.680 (0.01)***	-0.509 (0.07)*	0.481 (0.19)
Ln(total assets)	0.327 (0.00)***	0.320 (0.00)***	0.227 (0.10)*	0.277 (0.00)***	0.301 (0.00)***	0.081 (0.54)
Debt-to-assets	0.670 (0.22)	1.970 (0.00)***	0.353 (0.34)	1.627 (0.00)***	2.311 (0.00)***	0.408 (0.24)
Sales growth	0.004 (0.94)	0.054 (0.25)	0.014 (0.71)	0.054 (0.26)	0.098 (0.04)**	0.003 (0.95)

Table 6 (Continued)

Dependent variable Estimated relationship	Ln(CEO cash emoluments) CEO cash emoluments = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)			Ln(chairman cash emoluments) Chairman cash emoluments = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)		
	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
Market-to-book	0.022 (0.08)*	0.033 (0.00)***	0.003 (0.57)	0.020 (0.02)**	0.029 (0.00)***	0.006 (0.30)
ROA	0.646 (0.14)	1.154 (0.01)***	-0.052 (0.86)	0.912 (0.03)**	1.338 (0.00)***	-0.009 (0.97)
No of observations	549	549	549	548	548	548
Adjusted R ²	0.15	0.39	0.81	0.13	0.34	0.82

The table reports results of regressions of CEO and Chairman cash emoluments on CEO and Chairman ownership, after controlling for firm performance and corporate governance variables. Sample firms are also ranked based on stock market capitalization and divided into three equal sub-samples. Panel A reports results for the sub-sample of firms with the lowest stock market capitalization, and Panel B reports results for the sub-sample with the largest market capitalization. Variable definitions appear in Table 1. The table reports three different types of regressions: using all firm-year observations pooled (*pooled sample*), estimating fixed effects at the industry level (*industry fixed effects*), and estimating fixed effects at the firm level (*firm fixed effects*). All regressions include an intercept and year dummy variables. Intercepts, year dummy and fixed effects coefficients are not reported. *Adjusted R²* reflects the inclusion of fixed effects. Reported *p*-values in parentheses are based on White (1980) heteroskedasticity consistent standard errors.

Table 7. Regressions of CEO and chairman cash emoluments controlling for family ownership

Dependent variable Estimated relationship	Ln(CEO cash emoluments) CEO cash emoluments = f (CEO ownership, family ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)			Ln(chairman cash emoluments) Chairman cash emoluments = f (Chairman ownership, family ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)		
	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
CEO (or Chairman) Ownership (0.00, 0.05)	17.626 (0.00)***	14.970 (0.00)***	9.880 (0.00)***	14.848 (0.00)***	14.547 (0.00)***	4.014 (0.25)
CEO (or Chairman) Ownership (0.05, 0.25)	-2.278 (0.00)***	-2.630 (0.00)***	-1.782 (0.08)*	-0.702 (0.41)	-1.583 (0.07)*	-0.666 (0.53)
CEO (or Chairman) Ownership (0.25, 1.00)	0.459 (0.74)	1.306 (0.36)	-0.111 (0.89)	-1.850 (0.03)**	-0.935 (0.39)	-2.133 (0.03)**
CEO (or Chairman) Ownership (0.00, 0.05) * Family Ownership >30%	-12.159 (0.00)***	-13.880 (0.00)***	-7.811 (0.02)**	-13.122 (0.06)*	-14.673 (0.02)**	-7.660 (0.16)
CEO (or Chairman) Ownership (0.05, 0.25) * Family Ownership >30%	4.401 (0.00)***	4.530 (0.00)***	1.210 (0.31)	3.621 (0.05)*	4.243 (0.02)**	1.034 (0.50)
CEO (or Chairman) Ownership (0.25, 1.00) * Family Ownership >30%	-1.301 (0.36)	-1.921 (0.19)	0.143 (0.87)	0.925 (0.31)	0.254 (0.82)	2.254 (0.03)**

A. Family ownership >30%

Table 7 (Continued)

Dependent variable	Ln(CEO cash emoluments)			Ln(chairman cash emoluments)		
	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
Estimated relationship	CEO cash emoluments = f (CEO ownership, family ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)			Chairman cash emoluments = f (Chairman ownership, family ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)		
Estimation method	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
CEO duality	-0.232 (0.00)***	-0.171 (0.00)***	-0.134 (0.09)*	0.422 (0.00)***	0.412 (0.00)***	0.306 (0.00)***
Ln(number of directors)	0.168 (0.14)	0.170 (0.13)	0.218 (0.11)	0.245 (0.04)**	0.255 (0.03)**	0.216 (0.12)
% Independent non-executive directors	0.045 (0.90)	0.449 (0.17)	0.013 (0.96)	0.151 (0.68)	0.705 (0.04)**	0.331 (0.22)
Outsider dominated board	-0.084 (0.65)	-0.155 (0.35)	0.029 (0.79)	-0.257 (0.21)	-0.357 (0.06)*	-0.124 (0.26)
Audit committee	-0.231 (0.03)**	-0.206 (0.04)**	-0.127 (0.36)	-0.696 (0.00)***	-0.592 (0.00)***	0.004 (0.98)
Ln(total assets)	0.347 (0.00)***	0.378 (0.00)***	0.196 (0.00)***	0.308 (0.00)***	0.365 (0.00)***	0.202 (0.00)***
Debt-to-assets	-0.418 (0.11)	0.243 (0.30)	0.034 (0.89)	0.025 (0.93)	0.559 (0.03)**	0.144 (0.53)
Sales growth	-0.011 (0.30)	-0.004 (0.81)	-0.002 (0.79)	-0.011 (0.33)	-0.002 (0.91)	-0.005 (0.63)
Market-to-book	0.023 (0.02)**	0.026 (0.01)***	0.007 (0.33)	0.016 (0.01)**	0.023 (0.00)***	0.010 (0.09)*

Table 7 (Continued)

Dependent variable Estimated relationship	Ln(CEO cash emoluments) CEO cash emoluments = f (CEO ownership, family ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)			Ln(chairman cash emoluments) Chairman cash emoluments = f (Chairman ownership, family ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)		
	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
ROA	-0.202 (0.03)**	-0.150 (0.11)	-0.141 (0.03)**	-0.189 (0.05)**	-0.187 (0.06)*	-0.096 (0.18)
No of observations	1629	1629	1629	1627	1627	1627
Adjusted R ²	0.20	0.35	0.83	0.17	0.33	0.83
<i>B. Family ownership >50%</i>						
CEO (or Chairman) Ownership (0.00, 0.05)	15.311 (0.00)**	12.558 (0.00)**	7.337 (0.01)**	14.731 (0.00)**	13.974 (0.00)**	4.164 (0.22)
CEO (or Chairman) Ownership (0.05, 0.25)	-1.909 (0.01)**	-2.210 (0.00)**	-1.589 (0.09)*	-1.537 (0.07)*	-2.015 (0.02)**	-1.316 (0.16)
CEO (or Chairman) Ownership (0.25, 1.00)	1.863 (0.00)**	1.642 (0.01)**	-0.036 (0.96)	1.287 (0.05)**	1.376 (0.03)**	-0.076 (0.91)
CEO (or Chairman) Ownership (0.00, 0.05) *	-7.271 (0.08)*	-9.759 (0.02)**	-0.425 (0.91)	-14.410 (0.20)	-17.787 (0.08)*	-7.914 (0.17)
Family Ownership >50%	3.162 (0.03)**	3.601 (0.01)**	-0.183 (0.90)	5.555 (0.07)*	6.276 (0.02)**	2.513 (0.16)
CEO (or Chairman) Ownership (0.25, 1.00) *	-2.714 (0.00)**	-2.298 (0.00)**	0.063 (0.94)	-2.723 (0.00)**	-2.494 (0.00)**	-0.279 (0.73)
Family Ownership >50%						

Table 7 (Continued)

Dependent variable	Ln(CEO cash emoluments)			Ln(chairman cash emoluments)		
	CEO cash emoluments = f (CEO ownership, family ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)	Industry fixed effects	Firm fixed effects	Chairman cash emoluments = f (Chairman ownership, family ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)	Industry fixed effects	Firm fixed effects
Estimation method	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
CEO duality	-0.223 (0.00)***	-0.163 (0.00)***	-0.124 (0.12)	0.422 (0.00)***	0.414 (0.00)***	0.312 (0.00)***
Ln(number of directors)	0.164 (0.14)	0.180 (0.11)	0.221 (0.11)	0.244 (0.04)**	0.255 (0.03)**	0.222 (0.11)
% Independent non-executive directors	0.097 (0.78)	0.505 (0.12)	0.038 (0.87)	0.188 (0.60)	0.739 (0.03)**	0.306 (0.26)
Outsider dominated board	-0.082 (0.65)	-0.155 (0.34)	0.024 (0.82)	-0.248 (0.22)	-0.347 (0.07)*	-0.119 (0.28)
Audit committee	-0.226 (0.03)**	-0.206 (0.04)**	-0.133 (0.34)	-0.678 (0.00)***	-0.585 (0.00)***	0.013 (0.93)
Ln(total assets)	0.350 (0.00)***	0.376 (0.00)***	0.195 (0.00)***	0.309 (0.00)***	0.363 (0.00)***	0.191 (0.00)***
Debt-to-assets	-0.424 (0.10)	0.247 (0.29)	0.022 (0.93)	-0.025 (0.93)	0.524 (0.04)**	0.103 (0.66)
Sales growth	-0.011 (0.32)	-0.004 (0.81)	-0.004 (0.66)	-0.009 (0.46)	-0.000 (0.99)	-0.003 (0.81)
Market-to-book	0.023 (0.02)**	0.026 (0.01)**	0.007 (0.34)	0.016 (0.01)***	0.023 (0.00)***	0.011 (0.08)*

Table 7 (Continued)

Dependent variable Estimated relationship	Ln(CEO cash emoluments) CEO cash emoluments = f (CEO ownership, family ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)		Ln(chairman cash emoluments) Chairman cash emoluments = f (Chairman ownership, family ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)	
	Pooled sample	Firm fixed effects	Pooled sample	Firm fixed effects
ROA	-0.214 (0.02)**	-0.164 (0.08)*	-0.191 (0.05)**	-0.089 (0.20)
No of observations	1629	1629	1627	1627
Adjusted R ²	0.20	0.36	0.17	0.34

The table reports results of regressions of CEO and Chairman cash emoluments on CEO and Chairman ownership, after controlling for firm performance, family control, and corporate governance variables. Variable definitions appear in Table 1. The table reports three different types of regressions: using all firm-year observations pooled (*pooled sample*), estimating fixed effects at the industry level (*industry fixed effects*), and estimating fixed effects at the firm level (*firm fixed effects*). All regressions include an intercept and year dummy variables. Intercepts, year dummy and fixed effects coefficients are not reported. *Adjusted R²* reflects the inclusion of fixed effects. Reported *p*-values in parentheses are based on White (1980) heteroskedasticity consistent standard errors.

Table 8. Regressions of CEO and chairman cash emoluments as a percentage of total compensation on managerial ownership

Dependent variable	Cash emoluments as a percentage of total CEO compensation		Cash emoluments as a percentage of total Chairman compensation			
	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
Estimated relationship	CEO compensation		Chairman compensation		Cash emoluments as a percentage of total CEO compensation	
	Cash emoluments as a percentage of total CEO compensation = $f(\text{CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables})$		Cash emoluments as a percentage of total Chairman compensation = $f(\text{Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables})$		Cash emoluments as a percentage of total Chairman compensation = $f(\text{Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables})$	
Estimation method	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
CEO (or Chairman) Ownership (0.00, 0.05)	-6.993 (0.00)***	-6.955 (0.00)***	-3.406 (0.00)***	-8.360 (0.00)***	-8.986 (0.00)***	-6.226 (0.00)***
CEO (or Chairman) Ownership (0.05, 0.25)	-0.669 (0.00)***	-0.627 (0.00)***	-1.248 (0.00)***	-0.689 (0.00)***	-0.456 (0.03)**	-0.559 (0.08)*
CEO (or Chairman) Ownership (0.25, 1.00)	-0.505 (0.00)***	-0.502 (0.00)***	-0.297 (0.00)***	-0.425 (0.00)***	-0.450 (0.00)***	-0.469 (0.00)***
CEO duality	-0.011 (0.37)	-0.021 (0.12)	-0.023 (0.39)	0.027 (0.05)*	0.025 (0.08)*	-0.023 (0.36)
Ln(number of directors)	0.018 (0.43)	0.029 (0.23)	0.131 (0.00)***	0.026 (0.34)	0.041 (0.15)	0.114 (0.01)***
% Independent non-executive directors	0.042 (0.52)	0.116 (0.08)*	0.077 (0.38)	0.042 (0.56)	0.127 (0.08)*	-0.008 (0.93)
Outsider dominated board	-0.031 (0.40)	-0.042 (0.25)	-0.060 (0.11)	-0.021 (0.61)	-0.034 (0.40)	-0.022 (0.61)
Audit committee	0.055 (0.04)**	0.028 (0.29)	-0.005 (0.88)	-0.002 (0.96)	-0.034 (0.43)	0.009 (0.80)

Table 8 (Continued)

Dependent variable	Cash emoluments as a percentage of total CEO compensation			Cash emoluments as a percentage of total Chairman compensation		
	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
Estimated relationship	Cash emoluments as a percentage of total CEO compensation = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)					
Estimation method	CEO compensation			Chairman compensation = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)		
Ln(total assets)	-0.057 (0.00)***	-0.061 (0.00)***	-0.228 (0.42)	-0.076 (0.00)***	-0.078 (0.00)***	-0.047 (0.02)**
Debt-to-assets	-0.096 (0.10)*	-0.007 (0.91)	-0.228 (0.01)**	-0.099 (0.13)	0.021 (0.76)	-0.127 (0.17)
Sales growth	0.009 (0.11)	0.009 (0.18)	0.011 (0.03)**	0.014 (0.07)*	0.013 (0.11)	0.016 (0.01)***
Market-to-book	-0.002 (0.08)*	-0.003 (0.02)**	-0.004 (0.10)	-0.002 (0.66)	-0.002 (0.55)	0.002 (0.96)
ROA	-0.178 (0.01)***	-0.164 (0.01)***	-0.058 (0.07)*	-0.214 (0.01)***	-0.196 (0.01)**	-0.046 (0.26)
No of observations	1630	1630	1630	1628	1628	1628
Adjusted R ²	0.58	0.59	0.80	0.55	0.57	0.79

The table reports results of regressions of CEO and Chairman cash emoluments as a percentage of total compensation, after controlling for firm performance and corporate governance variables. Variable definitions appear in Table 1. The table reports three different types of regressions: using all firm-year observations pooled (*pooled sample*), estimating fixed effects at the industry level (*industry fixed effects*), and estimating fixed effects at the firm level (*firm fixed effects*). All regressions include an intercept and year dummy variables. Intercepts, year dummy and fixed effects coefficients are not reported. *Adjusted R²* reflects the inclusion of fixed effects. Reported *p*-values in parentheses are based on White (1980) heteroskedasticity consistent standard errors.

Table 9. Regressions of dividend yield on managerial ownership

Main explanatory variable	Explanatory variable: CEO ownership			Explanatory variable: Chairman ownership		
	Dividend yield = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales to-book, ROA, year dummy variables)	Industry fixed effects	Firm fixed effects	Dividend yield = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales to-book, market-to-book, ROA, year dummy variables)	Industry fixed effects	Firm fixed effects
Estimation method	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
CEO (or Chairman) Ownership; (0.00, 0.05)	-0.553 (0.00)***	-0.599 (0.00)***	-0.706 (0.02)**	-0.313 (0.13)	-0.435 (0.08)*	-0.504 (0.12)
CEO (or Chairman) Ownership; (0.05, 0.25)	0.143 (0.00)***	0.136 (0.00)***	0.232 (0.03)**	0.086 (0.12)	0.105 (0.14)	0.181 (0.10)
CEO (or Chairman) Ownership; (0.25, 1.00)	-0.019 (0.37)	-0.021 (0.33)	-0.046 (0.32)	0.020 (0.35)	0.013 (0.57)	0.028 (0.59)
CEO duality	0.000 (0.92)	0.001 (0.80)	0.024 (0.17)	0.001 (0.90)	0.000 (0.93)	0.023 (0.19)
Ln(number of directors)	-0.004 (0.72)	-0.000 (0.97)	0.008 (0.65)	0.001 (0.95)	0.005 (0.74)	0.014 (0.45)
% Independent non-executive directors	0.035 (0.30)	0.035 (0.34)	0.091 (0.03)**	0.043 (0.19)	0.046 (0.21)	0.097 (0.02)**
Outsider dominated board	0.014 (0.43)	0.013 (0.47)	0.009 (0.66)	0.015 (0.42)	0.013 (0.50)	0.008 (0.69)
Audit committee	0.015 (0.15)	0.015 (0.15)	-0.009 (0.60)	0.012 (0.30)	0.012 (0.30)	-0.006 (0.74)

Panel A. Small market capitalization firms

Table 9 (continued)

Main explanatory variable	Explanatory variable: CEO ownership			Explanatory variable: Chairman ownership		
	Dividend yield = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)	Industry fixed effects	Firm fixed effects	Dividend yield = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)	Industry fixed effects	Firm fixed effects
Estimated relationship						
Estimation method	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
Ln(total assets)	0.002 (0.56)	0.003 (0.54)	0.000 (0.97)	0.003 (0.49)	0.003 (0.49)	0.002 (0.84)
Debt-to-assets	0.023 (0.24)	0.024 (0.25)	0.022 (0.71)	0.024 (0.26)	0.024 (0.28)	0.021 (0.69)
Sales growth	-0.001 (0.03)**	-0.001 (0.01)**	-0.002 (0.14)	-0.002 (0.06)*	-0.002 (0.03)**	-0.002 (0.08)*
Market-to-book	-0.002 (0.21)	-0.003 (0.04)**	-0.001 (0.29)	-0.002 (0.26)	-0.002 (0.07)*	-0.001 (0.33)
ROA	0.002 (0.82)	0.001 (0.90)	0.007 (0.41)	0.000 (0.98)	-0.001 (0.94)	0.003 (0.76)
Loss dummy	-0.030 (0.00)***	-0.028 (0.00)***	-0.013 (0.05)**	-0.029 (0.00)***	-0.028 (0.00)***	-0.012 (0.08)*
No of observations (firm-years)	548	548	548	548	548	548
Adjusted R ²	0.10	0.10	0.29	0.10	0.09	0.29

Table 9 (continued)

Main explanatory variable	Explanatory variable: CEO ownership			Explanatory variable: Chairman ownership		
	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
Estimated relationship	Dividend yield = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales to-book, ROA, year dummy variables)			Dividend yield = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales to-book, ROA, year dummy variables)		
Estimation method	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
<i>Panel B. Large market capitalization firms</i>						
CEO (or Chairman) Ownership; (0.00, 0.05)	-0.318 (0.15)	-0.107 (0.61)	-0.469 (0.38)	0.016 (0.94)	0.269 (0.20)	0.236 (0.45)
CEO (or Chairman) Ownership; (0.05, 0.25)	0.121 (0.09)*	0.070 (0.33)	0.006 (0.96)	0.035 (0.61)	-0.014 (0.84)	-0.054 (0.50)
CEO (or Chairman) Ownership; (0.25, 1.00)	0.004 (0.88)	-0.005 (0.83)	0.009 (0.70)	0.012 (0.63)	0.003 (0.89)	0.006 (0.80)
CEO duality	-0.000 (0.91)	-0.001 (0.73)	0.004 (0.48)	0.002 (0.65)	-0.000 (0.99)	0.001 (0.87)
Ln(number of directors)	-0.011 (0.05)**	-0.008 (0.25)	-0.023 (0.28)	-0.010 (0.08)*	-0.006 (0.34)	-0.021 (0.33)
% Independent non-executive directors	-0.070 (0.00)***	-0.063 (0.01)***	-0.023 (0.61)	-0.070 (0.00)***	-0.063 (0.01)***	-0.020 (0.66)
Outsider dominated board	0.032 (0.00)***	0.031 (0.00)***	0.028 (0.06)*	0.033 (0.00)***	0.032 (0.00)***	0.025 (0.08)*
Audit committee	-0.015 (0.00)***	-0.009 (0.09)*	-0.012 (0.36)	-0.012 (0.03)**	-0.005 (0.33)	-0.009 (0.49)

Table 9 (continued)

Main explanatory variable	Explanatory variable: CEO ownership			Explanatory variable: Chairman ownership		
	Dividend yield = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)	Industry fixed effects	Firm fixed effects	Dividend yield = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)	Industry fixed effects	Firm fixed effects
Estimation method	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
Ln(total assets)	0.003 (0.05)*	0.001 (0.78)	-0.008 (0.55)	0.003 (0.04)**	0.001 (0.72)	-0.012 (0.35)
Debt-to-assets	-0.008 (0.65)	0.001 (0.98)	0.044 (0.34)	-0.004 (0.80)	0.004 (0.88)	0.037 (0.42)
Sales growth	-0.005 (0.15)	-0.006 (0.14)	-0.002 (0.40)	-0.005 (0.17)	-0.005 (0.14)	-0.002 (0.45)
Market-to-book	-0.000 (0.42)	-0.000 (0.73)	-0.001 (0.26)	-0.000 (0.33)	-0.000 (0.61)	-0.001 (0.20)
ROA	0.196 (0.08)*	0.223 (0.07)*	0.239 (0.15)	0.192 (0.09)*	0.220 (0.08)*	0.235 (0.16)
Loss dummy	0.023 (0.25)	0.025 (0.26)	0.020 (0.32)	0.022 (0.28)	0.024 (0.29)	0.018 (0.37)
No of observations (firm-years)	549	549	549	549	549	549
Adjusted R ²	0.15	0.17	0.37	0.15	0.18	0.37

The table reports results of regressions of dividend yield on managerial ownership. Sample firms are ranked based on stock market capitalization and divided into three equal sub-samples. Panel A reports results for the sub-sample of firms with the lowest market capitalization, and Panel B reports results for the sub-sample with the largest market capitalization. Variable definitions appear in Table 1. The table reports three different types of regressions: using all firm-year observations pooled (*pooled sample*), estimating fixed effects at the industry level (*industry fixed effects*), and estimating fixed effects at the firm level (*firm fixed effects*). All regressions include an intercept and year dummy variables. Intercepts, year dummy and fixed effects coefficients are not reported. *Adjusted R²* reflects the inclusion of fixed effects. Reported *p*-values in parentheses are based on White (1980) heteroskedasticity consistent standard errors.

Table 10. Regressions of CEO and chairman cash emoluments on ownership and performance interactions

Dependent variable Estimated relationship	Ln (CEO cash emoluments) CEO cash emoluments = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)			Ln (Chairman cash emoluments) Chairman cash emoluments = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)		
	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
CEO (or Chairman) Ownership (0.00, 0.05)	12.607 (0.00)***	9.978 (0.00)***	7.595 (0.00)***	12.572 (0.00)***	11.726 (0.00)***	3.555 (0.26)
CEO (or Chairman) Ownership (0.05, 0.25)	0.004 (0.99)	-0.596 (0.40)	-1.770 (0.01)***	0.049 (0.94)	-0.578 (0.41)	-1.091 (0.16)
CEO (or Chairman) Ownership (0.25, 1.00)	-0.827 (0.04)**	-0.537 (0.15)	-0.081 (0.80)	-0.816 (0.00)***	-0.502 (0.05)**	-0.046 (0.88)
CEO (or Chairman) Ownership (0.00, 0.05) * Market-to-book	-0.267 (0.69)	-0.626 (0.49)	-0.780 (0.11)	-0.942 (0.02)**	-1.100 (0.01)***	-0.864 (0.08)*
CEO (or Chairman) Ownership (0.05, 0.25) * Market-to-book	-0.023 (0.96)	0.134 (0.77)	0.241 (0.42)	0.257 (0.01)**	0.342 (0.00)***	0.285 (0.18)
CEO (or Chairman) Ownership (0.25, 1.00) * Market-to-book	0.180 (0.46)	0.075 (0.75)	-0.015 (0.91)	-0.030 (0.19)	-0.047 (0.09)*	-0.056 (0.27)
CEO duality	-0.209 (0.00)***	-0.147 (0.00)***	-0.130 (0.10)*	0.432 (0.00)***	0.423 (0.00)***	0.310 (0.00)***

A. Ownership / Market-to-book interactions

Table 10 (continued)

Dependent variable Estimated relationship	Ln (CEO cash emoluments) CEO cash emoluments = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)			Ln (Chairman cash emoluments) Chairman cash emoluments = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)		
	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
Ln(number of directors)	0.166 (0.14)	0.187 (0.10)*	0.218 (0.11)	0.242 (0.04)**	0.253 (0.03)**	0.220 (0.11)
Percent independent non-executive directors	0.027 (0.94)	0.450 (0.17)	0.038 (0.87)	0.157 (0.67)	0.711 (0.04)**	0.333 (0.22)
Outsider dominated board	-0.097 (0.60)	-0.167 (0.32)	0.023 (0.83)	-0.256 (0.21)	-0.353 (0.06)*	-0.125 (0.25)
Audit committee	-0.252 (0.02)**	-0.225 (0.03)**	-0.133 (0.34)	-0.694 (0.00)***	-0.594 (0.00)***	0.013 (0.93)
Ln(total assets)	0.352 (0.00)***	0.380 (0.00)***	0.197 (0.00)***	0.307 (0.00)***	0.364 (0.00)***	0.195 (0.00)***
Debt-to-assets	-0.427 (0.11)	0.228 (0.33)	0.049 (0.85)	0.010 (0.97)	0.552 (0.03)**	0.132 (0.58)
Sales growth	-0.012 (0.26)	-0.006 (0.72)	-0.004 (0.63)	-0.011 (0.34)	-0.001 (0.91)	-0.004 (0.74)
Market-to-book	0.020 (0.05)*	0.025 (0.02)**	0.008 (0.37)	0.021 (0.08)*	0.025 (0.04)**	0.020 (0.01)**
ROA	-0.215 (0.02)**	-0.163 (0.08)*	-0.138 (0.02)**	-0.190 (0.05)**	-0.189 (0.05)*	-0.093 (0.18)

Table 10 (continued)

Dependent variable	Ln (CEO cash emoluments)			Ln (Chairman cash emoluments)		
	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
Estimated relationship	CEO cash emoluments = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)			Chairman cash emoluments = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)		
Estimation method	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
No of observations	1629	1629	1629	1627	1627	1627
Adjusted R2	0.20	0.35	0.82	0.16	0.33	0.83
<i>B. Ownership / ROA interactions</i>						
CEO (or Chairman) Ownership (0.00, 0.05)	12.546 (0.00)***	9.584 (0.00)***	6.457 (0.00)***	11.585 (0.00)***	10.711 (0.00)***	1.876 (0.56)
CEO (or Chairman) Ownership (0.05, 0.25)	-0.107 (0.86)	-0.582 (0.32)	-1.536 (0.02)**	0.330 (0.65)	-0.211 (0.77)	-0.680 (0.37)
CEO (or Chairman) Ownership (0.25, 1.00)	-0.552 (0.03)**	-0.378 (0.14)	-0.079 (0.79)	-0.860 (0.00)***	-0.579 (0.02)**	-0.128 (0.68)
CEO (or Chairman) Ownership (0.00, 0.05) * ROA	-2.119 (0.74)	-6.838 (0.34)	-5.307 (0.30)	0.918 (0.89)	-0.611 (0.94)	-0.209 (0.08)*
CEO (or Chairman) Ownership (0.05, 0.25) * ROA	2.135 (0.48)	2.934 (0.32)	0.156 (0.94)	-0.260 (0.93)	0.811 (0.78)	2.156 (0.29)
CEO (or Chairman) Ownership (0.25, 1.00) * ROA	-1.700 (0.21)	-1.875 (0.17)	0.077 (0.94)	-0.134 (0.92)	-0.285 (0.82)	-0.296 (0.73)
CEO duality	-0.211 (0.00)***	-0.147 (0.00)***	-0.116 (0.14)	0.431 (0.00)***	0.421 (0.00)***	0.311 (0.00)***

Table 10 (continued)

Dependent variable Estimated relationship	Ln (CEO cash emoluments) CEO cash emoluments = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)			Ln (Chairman cash emoluments) Chairman cash emoluments = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)		
	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
Ln(number of directors)	0.184 (0.10)	0.202 (0.07)*	0.216 (0.11)	0.247 (0.04)**	0.261 (0.03)**	0.216 (0.12)
% Independent non-executive directors	0.058 (0.87)	0.480 (0.15)	0.015 (0.95)	0.163 (0.66)	0.722 (0.04)**	0.297 (0.28)
Outsider dominated board	-0.093 (0.62)	-0.167 (0.32)	0.030 (0.78)	-0.259 (0.21)	-0.356 (0.06)*	-0.117 (0.29)
Audit committee	-0.254 (0.02)**	-0.231 (0.02)**	-0.131 (0.35)	-0.696 (0.00)***	-0.597 (0.00)***	0.010 (0.95)
Ln(total assets)	0.349 (0.00)***	0.378 (0.00)***	0.195 (0.00)***	0.307 (0.00)***	0.363 (0.00)***	0.187 (0.00)***
Debt-to-assets	-0.446 (0.09)*	0.199 (0.39)	0.017 (0.95)	-0.001 (0.99)	0.540 (0.03)**	0.102 (0.67)
Sales growth	-0.013 (0.25)	-0.006 (0.72)	-0.003 (0.73)	-0.011 (0.35)	-0.002 (0.90)	-0.003 (0.76)
Market-to-book	0.022 (0.02)**	0.026 (0.01)***	0.008 (0.32)	0.015 (0.01)**	0.022 (0.00)***	0.011 (0.08)*
ROA	-0.202 (0.05)**	-0.099 (0.41)	-0.054 (0.28)	-0.187 (0.05)*	-0.219 (0.04)**	-0.034 (0.58)

Table 10 (continued)

Dependent variable Estimated relationship	Ln (CEO cash emoluments)			Ln (Chairman cash emoluments)		
	CEO cash emoluments = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)			Chairman cash emoluments = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, market-to-book, ROA, year dummy variables)		
Estimation method	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
No of observations	1629	1629	1629	1627	1627	1627
Adjusted R ²	0.20	0.35	0.82	0.16	0.33	0.83

The table reports results of regressions of CEO and Chairman cash emoluments on CEO and Chairman ownership, after controlling for firm performance and corporate governance variables. Variable definitions appear in Table 1. The table reports three different types of regressions: using all firm-year observations pooled (*pooled sample*), estimating fixed effects at the industry level (*industry fixed effects*), and estimating fixed effects at the firm level (*firm fixed effects*). All regressions include an intercept and year dummy variables. Intercepts, year dummy and fixed effects coefficients are not reported. *Adjusted R²* reflects the inclusion of fixed effects. Reported *p*-values in parentheses are based on White (1980) heteroskedasticity consistent standard errors.

Table 11. Regressions of firm market-to-book ratio on managerial ownership

Main explanatory variable	Explanatory variable: CEO ownership			Explanatory variable: Chairman ownership		
	Market-to-book = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, year dummy variables)	Market-to-book = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, year dummy variables)	Pooled sample	Market-to-book = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, year dummy variables)	Market-to-book = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, year dummy variables)	Pooled sample
CEO (or Chairman) Ownership (0.00, 0.05)	-26.568 (0.00)***	-26.147 (0.00)***	-25.564 (0.13)	-24.407 (0.01)**	-18.430 (0.02)**	-4.650 (0.84)
CEO (or Chairman) Ownership (0.05, 0.25)	2.454 (0.10)*	1.771 (0.17)	1.558 (0.67)	5.920 (0.03)**	4.303 (0.11)	-1.821 (0.73)
CEO (or Chairman) Ownership (0.25, 1.00)	1.063 (0.00)***	1.421 (0.00)***	0.079 (0.94)	0.575 (0.68)	0.677 (0.62)	2.468 (0.39)
CEO duality	-0.394 (0.02)**	-0.409 (0.03)**	-0.897 (0.10)*	-0.521 (0.01)**	-0.510 (0.01)**	-1.106 (0.07)*
Ln(number of directors)	0.468 (0.07)*	0.484 (0.06)*	-1.336 (0.22)	0.559 (0.02)**	0.551 (0.02)**	-1.287 (0.23)
Percent independent non-executive directors	0.087 (0.90)	-0.108 (0.88)	-4.167 (0.03)**	-0.218 (0.77)	-0.007 (0.99)	-3.851 (0.04)**
Outsider dominated board	-0.053 (0.87)	-0.040 (0.91)	0.740 (0.21)	-0.021 (0.95)	-0.041 (0.90)	0.669 (0.26)
Audit committee	0.021 (0.94)	0.062 (0.79)	0.096 (0.67)	0.109 (0.66)	0.129 (0.65)	0.072 (0.74)

Table 11 (continued)

Main explanatory variable	Explanatory variable: CEO ownership			Explanatory variable: Chairman ownership			
	Market-to-book = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, year dummy variables)	Market-to-book = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, year dummy variables)	Pooled sample	Industry fixed effects	Industry fixed effects	Firm fixed effects	Firm fixed effects
Ln(total assets)	-0.221 (0.02)**	-1.134 (0.07)*	-0.180 (0.06)*	-0.224 (0.05)**	-0.196 (0.08)*	-1.168 (0.05)*	-1.168 (0.05)*
Debt-to-assets	-0.136 (0.83)	1.892 (0.33)	-0.065 (0.92)	-0.193 (0.78)	-0.142 (0.84)	1.708 (0.38)	1.708 (0.38)
Sales growth	0.005 (0.86)	0.051 (0.11)	-0.005 (0.89)	-0.001 (0.97)	-0.013 (0.74)	0.048 (0.18)	0.048 (0.18)
No of observations	1647	1647	1647	1647	1647	1647	1647
Adjusted R ²	0.02	0.36	0.01	0.01	0.01	0.35	0.35

The table reports results of regressions of company market-to-book ratio on CEO and Chairman ownership, after controlling for firm corporate governance variables. Variable definitions appear in Table 1. The table reports three different types of regressions: using all firm-year observations pooled (*pooled sample*), estimating fixed effects at the industry level (*industry fixed effects*), and estimating fixed effects at the firm level (*firm fixed effects*). All regressions include an intercept and year dummy variables. Intercepts, year dummy and fixed effects coefficients are not reported. *Adjusted R²* reflects the inclusion of fixed effects. Reported *p*-values in parentheses are based on White (1980) heteroskedasticity consistent standard errors.

Table 12. Regressions of firm ROA on managerial ownership

Main explanatory variable	Explanatory variable: CEO ownership			Explanatory variable: Chairman ownership		
	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
Estimated relationship	ROA = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, year dummy variables)			ROA = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, year dummy variables)		
Estimation method						
CEO (or Chairman) Ownership (0.00, 0.05)	1.545 (0.02)**	1.493 (0.03)**	2.624 (0.28)	0.468 (0.60)	0.725 (0.40)	1.257 (0.67)
CEO (or Chairman) Ownership (0.05, 0.25)	-0.322 (0.06)*	-0.281 (0.12)	-0.108 (0.85)	0.084 (0.70)	0.011 (0.96)	0.247 (0.72)
CEO (or Chairman) Ownership (0.25, 1.00)	0.112 (0.01)***	0.097 (0.03)**	-0.076 (0.52)	0.051 (0.19)	0.064 (0.13)	-0.013 (0.92)
CEO duality	-0.011 (0.43)	-0.014 (0.35)	-0.023 (0.63)	-0.004 (0.74)	-0.006 (0.58)	-0.007 (0.87)
Ln(number of directors)	-0.036 (0.16)	-0.034 (0.19)	0.035 (0.70)	-0.031 (0.23)	-0.029 (0.27)	0.041 (0.66)
% Independent non-executive directors	-0.026 (0.72)	-0.029 (0.69)	-0.007 (0.97)	-0.048 (0.51)	-0.043 (0.55)	-0.019 (0.90)
Outsider dominated board	-0.011 (0.68)	-0.001 (0.96)	0.009 (0.83)	-0.007 (0.79)	0.002 (0.95)	0.017 (0.70)
Audit committee	0.024 (0.12)	0.024 (0.12)	0.063 (0.01)***	0.029 (0.07)*	0.030 (0.06)*	0.067 (0.01)**
Ln(total assets)	0.033 (0.00)***	0.040 (0.00)***	0.176 (0.00)***	0.033 (0.00)***	0.040 (0.00)***	0.185 (0.00)***

Table 12 (continued)

Main explanatory variable	Explanatory variable: CEO ownership			Explanatory variable: Chairman ownership		
	ROA = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, year dummy variables)	ROA = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, year dummy variables)		ROA = f (CEO ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, year dummy variables)	ROA = f (Chairman ownership, CEO duality, board of directors composition, firm size, leverage, sales growth, year dummy variables)	
Estimation method	Pooled sample	Industry fixed effects	Firm fixed effects	Pooled sample	Industry fixed effects	Firm fixed effects
Debt-to-assets	-0.171 (0.00)***	-0.233 (0.00)***	-0.145 (0.29)	-0.168 (0.00)***	-0.229 (0.00)***	-0.126 (0.36)
Sales growth	0.004 (0.14)	0.005 (0.07)*	0.001 (0.80)	0.004 (0.11)	0.005 (0.06)*	0.000 (0.93)
No of observations	1647	1647	1647	1647	1647	1647
Adjusted R ²	0.08	0.09	0.17	0.08	0.09	0.17

The table reports results of regressions of firm ROA on CEO and Chairman ownership, after controlling for corporate governance variables. Variable definitions appear in Table 1. The table reports three different types of regressions: using all firm-year observations pooled (pooled sample), estimating fixed effects at the industry level (industry fixed effects), and estimating fixed effects at the firm level (firm fixed effects). All regressions include an intercept and year dummy variables. Intercepts, year dummy and fixed effects coefficients are not reported. Adjusted R² reflects the inclusion of fixed effects. Reported p -values in parentheses are based on White (1980) heteroskedasticity consistent standard errors.