

Agency Theory, Corporate Governance, and Dividend Payout in New Zealand

Abstract

We investigate the effect of internal corporate governance on the likelihood and the level of dividend payout in New Zealand. Preliminary evidence suggests that the interaction between internal governance and dividend policy is such that dividends initially compensate for director oversight. When beneficial director share interests exceed 8% but are less than 40% of firm equity, dividend policy substitutes for director oversight. The relationship becomes entrenched for firms where directors have beneficial interests in 40% or more of firm equity. Chief executive officer (CEO) board membership and influence does not affect dividend policy. External ownership combined with strong board governance may also mitigate agency problems.

JEL classification: G34; G35

Keywords: Corporate governance; Agency theory; Dividend payout

1. Introduction

We examine the interaction between dividend policy and internal governance. We find that dividend policy compensates for director oversight when beneficial director share ownership is less than 10% of firm equity. When directors hold between 10% and 40% of firm equity, dividend policy substitutes for director oversight. Director interests are realigned when equity interests exceed 40%, and an entrenchment effect is observed. External ownership combined with strong board governance may also mitigate agency problems.

The effect of corporate governance on corporate financial policies and subsequent corporate value is an important and popular question for both academics and practitioners. This paper, while preliminary in nature, provides new evidence that dividend policy is affected by beneficial director ownership, the presence of external investors, and the governance structure of the board. However, chief executive officer (CEO) board membership and influence do not affect dividend policy.

The dividend decision serves as a monitoring tool over the managers of the firm. This is particularly true of firms where insiders hold little equity and investor holdings are dispersed. Insiders may be able to gain personally through the use of corporate assets and decisions that destroy firm value. However, firms may better align the interests of insiders to shareholders through equity ownership and board characteristics that promote stronger governance. Moreover, the presence of external investors can also affect a firm's payout policy (Short et al., 2002).

New Zealand (NZ) provides a unique environment in which to examine firm dividend policy. This is because NZ publicly listed firms are only required by law to disclose the equity interest of board members. The compensation and equity ownership details of the CEO and other high-level managers are not disclosed if these

individuals are not directors. Moreover, the majority of beneficial equity interests held by directors are small: directors in 70% of the firms in the sample have total share ownership of less than 5%. Hence, directors' concern for the overall well-being of the firm may be relatively small compared with the personal benefits, such as shirking and perquisite consumption, which reduce firm value. The NZ market is relatively small and less liquid, and this may also affect the agency relationship between directors and shareholders.

This paper documents strong evidence of changes in the relationship between dividend payouts and insider ownership for critical beneficial director share holdings of publicly listed NZ firms. These relationships are in the opposite direction to those reported in earlier studies. Specifically, our findings show that there are two critical insider ownership levels. The coefficient of insider ownership is initially positive and changes from positive to negative when estimated beneficial director shareholdings range between 10% and 40%, before reaching a critical entrenchment level beyond 40%. In addition, the presence of external investors who hold at least a 5% stake in the firm also acts as a monitoring device for the firm; however, this may be offset in firms where the governance characteristics are strong.

This research is relevant to managers, in particular to chief financial officers of NZ firms, investors, and academics—particularly those interested in corporate finance and agency theory. Lawmakers and stock exchanges may also be interested in the results of our study because of the possible regulatory implications.

The remainder of this paper is organized as follows. Section 2 presents a summary of the previous literature and outlines the motivation for this study. Section 3 describes the data and sample selection. The methodology and models are explained in Section 4. Main empirical results and robustness checks are reported in Section 5.

A summary of the paper and its main conclusions together with future research ideas are found in Section 6.

2. Literature review

Agency theory suggests that firms pay dividends to mitigate the costs associated with suboptimal managerial behavior. Dividend policy can achieve this in one of two ways. First, dividends reduce the free cash flow available for spending at the managers' discretion (Jensen, 1986). This should prevent over-investment and restrict investment to wealth-maximizing projects. Second, dividend payout forces managers to raise funds for investment in the external capital markets. This subjects managers to additional monitoring by investors and investment banks.

Corporate governance is another mechanism that may affect the alignment of shareholder-manager interests. Corporate governance refers to a range of policies, laws, and institutions to reduce shareholder-manager agency problems. We focus on the nonlegal aspects of corporate governance. Internal corporate governance refers to the composition of the board of directors and the firm's ownership. The internal corporate governance characteristics used in this study are the role of a CEO on the board and remuneration committee, the size of a firm's board of directors, the proportion of inside and busy directors, beneficial director share ownership, and block and institutional ownership. External corporate governance refers to the dimensions of the market for managerial labor and the market for corporate control (i.e., the takeover market). These are "external" because they are beyond the influence of the firm and are controlled for accordingly.

Rozeff (1982) suggests that, in the presence of other less costly monitoring devices, the importance of dividend payout as a monitoring mechanism diminishes.

The implication is that corporate governance may be a substitute device for the monitoring aspect of dividend policy. If dividend policy is set to maximize shareholder value, dividend payout should decrease with the strength of corporate governance. John and Knyazeva (2006) support this result. Good governance limits the potential for managers to act suboptimally. Strong governance lowers agency costs, and the dividends required to mitigate those agency costs are also lower.

The empirical literature also supports two alternative results. First, managers may become insulated from internal disciplining mechanisms when there is high executive ownership (referred to as “insider ownership”) or weak corporate governance (Farinha, 2003). This is known as the managerial entrenchment hypothesis. Managers attain enough voting power, through holding large enough portions of the firm’s equity, to insulate themselves from external disciplining forces. Deviations in optimal payout policy can occur because entrenched managers fail to act in the best interests of shareholders, preferring to pay lower dividends to avoid raising funds in the external capital markets and outside monitoring. If dividend policy is used to monitor entrenchment-related agency costs, a positive relationship between insider ownership and dividend policy is observed. Second, institutional ownership may force firms to pay higher dividends (Short et al., 2002). This result is consistent from both the agency perspective and the fact that institutional investors may prefer to free ride on other external monitoring activities.

The NZ market provides an interesting, previously untested setting to explore the governance-dividend payout relationship. The market for corporate control in NZ is much less active than in overseas markets and, as a result, may have a weaker disciplining effect on managers. In addition, the market for managerial labor is small and highly transparent. On the one hand, the disciplining mechanism provided by the

managerial labor market may be stronger in such an environment. Conversely, managers may feel more secure in their jobs knowing that the pool for managerial talent is small and restricted in NZ.

The NZ market may also have weaker internal governance. There is a small pool of director talent, and firms often contain complex cross holdings and interlocked directorships. This can mean that directors serve on multiple boards, which may weaken their capacity to act independently in the best interests of respective shareholders. Moreover, investments which are not value maximizing may be endorsed by busy directors who are privy to information from multiple board meetings and affiliations.

On the other hand, several legislative changes may have strengthened NZ's internal governance environment. In 1993, the new Companies Act came into effect, raising the standard of responsibility for directors. Mandatory public disclosure of CEO compensation was introduced in 1997. Furthermore, the amendments brought about by the New Zealand Stock Exchange (NZX) in 2003 improved the quality of corporate governance in NZ publicly listed firms. It is also worth noting that the NZ dividend imputation tax credit system means that, at the intra-market level, the firm's dividend policy is not affected by tax.¹

Three authors have developed important theoretical agency cost explanations for dividend policy. First, Easterbrook (1984) argues that because dividends increase the frequency with which a firm must raise funds for investment in the external capital markets, agency costs of outside ownership are reduced because additional monitoring is imposed on the managers of the firm by investors and investment

¹ Imputation tax credits means that dividend income is taxed effectively at the same rate as the individual investor's marginal tax rate.

bankers. These market participants can monitor managers at a lower cost compared with the firm contracting independent monitors.

Second, Rozeff's (1982) model extends this line of reasoning. He suggests that firms decide upon optimal dividend policy by evaluating the costs and benefits of dividends. Dividends reduce agency costs on the one hand, but the firm must incur the transaction costs of external financing on the other hand. Third, Jensen (1986) proposes that firms with excess free cash flow are likely to experience higher agency costs because of investment in non-value-maximizing projects. He terms this phenomenon the over-investment problem. Given that dividends distribute free cash flow from the firm to the shareholders, dividends therefore reduce the agency costs of free cash flow associated with poor investment decisions.

Several additional papers have important implications for corporate governance and the effectiveness of board and ownership structures in reducing agency costs. Jensen and Meckling (1976) argue that when insider ownership is low and shareholder dispersion is high, managers tend to engage in value-reducing behavior, such as shirking and perquisite consumption. The authors predict that firm value will increase in managerial ownership because, as ownership rises, managers bear a larger fraction of the agency costs caused by their own actions. Hence, their interests become aligned with those of the shareholders.

However, the managerial entrenchment hypothesis offered by Demsetz (1983) and Fama and Jensen (1983) suggests that managers who own a substantial proportion of the firm's equity are likely to become entrenched in their position because they have sufficient voting power to defend against hostile takeovers. In effect, managers secure their jobs and insulate themselves from the disciplining mechanisms of the managerial labor market and the corporate takeover market. Throughout this paper,

“entrenchment” is referred to as the effect where the CEO or the managers of a firm believe themselves to be secure in their positions and safe from monitoring and disciplining mechanisms. Using this definition, entrenchment is induced by weak governance that allows managers to behave suboptimally, namely, to engage in behavior that is not in the best interests of the shareholders.

Empirical support for the managerial entrenchment hypothesis is found in a number of studies (for example, Weston, 1979; McConnell and Servaes, 1990). Morck et al. (1988) find three critical points in the relationship between insider ownership and firm value. At low and at high levels of insider ownership, the incentive-alignment effect dominates the entrenchment effect, which is characterized by a positive relationship between ownership and firm value. However, in the range from 5% to 25%, managers are sufficiently entrenched to avoid disciplining from the external governance mechanisms, resulting in a negative association with firm value.

In this paper, insider ownership is treated as an internal governance tool. The existing empirical literature focusing on the relationship between insider ownership and dividend payout can be summarized by three groups of findings. First, there is evidence of a negative relationship as reported by Rozeff (1982), Hu and Kumar (2004), and Short et al. (2002). These papers support Jensen and Meckling’s (1976) notion that any increase in insider ownership is beneficial. In these studies, ownership and payout are found to be substitute mechanisms to reduce suboptimal managerial behavior.

Conversely, Fenn and Liang (2001) show that dividend payout in the US market increases with stock ownership in firms that possess the greatest potential agency problems, while insider ownership has no incremental effect on payout in other firms. Nam et al. (2004) report a positive relationship not only in the level of payout but also

in the likelihood of payout. It seems that the managers with greater ownership raise dividends to benefit themselves.

Farinha (2003) presents a third set of results by exploring the unique prediction that the entrenchment hypothesis has for the cross-sectional relationship between insider ownership and dividend policy. Using UK data, he discovers a U-shaped association, with a critical level of entrenchment for managerial holdings at approximately 30%. Below that level, managers decrease dividend payout as ownership rises and as their interests align with shareholder interests. However, above that level, additional costs associated with entrenchment mean that dividend policy is used to monitor entrenched managers and payout is positively associated with higher levels of ownership.

Dividend payout can provide a means of attaining additional managerial monitoring through the scrutiny of participants in the external capital markets (Easterbrook, 1984). Institutional ownership is also viewed as a monitoring mechanism that should, in theory, minimize suboptimal managerial performance. Overall, evidence for this relationship is mixed. While Zheckhauser and Pound (1990) provide evidence consistent with this argument, Short et al. (2002) uncover a positive association between institutional ownership and firm payout ratio. Similarly, Trojanowski (2004) examines firms listed on the London Stock Exchange and finds that while target payout ratios are significantly related to ownership, the strength of this association is diminished in the presence of large blockholders. In contradiction to these studies, Grinstein and Michaely (2005) fail to observe a statistically significant causal relationship between institutional holdings and payout.

Fama and Jensen (1983) advocate the monitoring role of the board of directors to moderate manager-shareholder agency conflict. They also propose that inside

directors are an important source of internal skills and knowledge and that their presence on the board aids in effective decision making. However, Rosenstein and Wyatt (1990) find that shareholders of US firms benefit from an increase in the number of independent directors on the board. Moreover, Schellenger et al. (1989) discover a positive relationship between the presence of outside directors on the board and firm performance. They find evidence that board composition does affect dividend policy, but that the two are not substitute control mechanisms used to reduce agency costs. In addition, Young (2000) documents that publicly listed firms in the UK increased their use of nonexecutive directors around the time of the Cadbury Report (1992) and that these changes were not associated with any abnormal costs, such as declines in managerial equity ownership or dividend payments.

In a related study, John and Senbet (1998) examine whether internal governance mechanisms, including board size, board independence, committee, and compensation structures, can substitute for the external mechanism, the takeover market. Outside directors and ownership concentration are found to be valuable devices to control managerial behavior. However, because the takeover market performs the role of monitoring the board as well as the management, internal and external governance do not appear to be substitutes.

To summarize, the literature shows that insider ownership can align the interests of managers with those of the shareholders of a corporation up to a certain point. Beyond that critical level of ownership, it has been shown that managers may experience an entrenchment effect whereby their self-interest is once again paramount. Also, although boards act as monitoring agents of managers, certain structures may be more effective than others in achieving this goal. Since 2000, a number of studies have been conducted in offshore markets that examine corporate

governance and dividend policy using a variety of governance measures. To date, there is mixed evidence about how corporations use these two mechanisms together. There are two competing views.

First, firms optimally distribute dividends to shareholders. Since good governance limits potential agency costs, the dividends associated with good governance are lower. Thus, firms use payout to mitigate the agency conflict resulting from poor governance, and firms with strong governance have lower payouts or avoid dividends altogether. Hence, dividend policy acts as a substitute for corporate governance. John and Knyazeva (2006) present US evidence for this proposition, revealed by a negative relationship between payout ratio and governance. Strong internal governance measured by board structure and the existence of an institutional blockholder is associated with a lower probability of dividend distributions. Hu and Kumar (2004) also demonstrate that payout is negatively related to factors that decrease managerial entrenchment, such as internal governance and blockholder monitoring. This is consistent with the optimal use of these mechanisms by firms.

The alternative view is that deviations in optimal dividend policy can occur when CEOs and managers are entrenched and dividends decrease because of the level of entrenchment. Weak corporate governance implies entrenchment, which, in turn, leads to suboptimal financial decisions not made in the shareholders' best interests (Berger et al., 1997). Hence, entrenched managers pay lower dividends to avoid outside monitoring if the firm were to raise funds for investment in the external capital markets. When governance is strong, the managers are not afraid to pay dividends and then have to go to the markets to raise additional funds. Therefore, a positive association is observed between governance and dividend payout.

Evidence for this position is presented by Brown and Caylor (2004). Using the Institutional Shareholder Services' Corporate Governance Quotient, a score based on the board and ownership structures of a firm, its compensation matters, laws, rules, and accounting standards, the authors find a positive relationship between the strength of corporate governance and the firm's dividend yield. Kowalewski et al. (2007) use a Transparency Disclosure Index for Polish firms to explore the relationship between dividends and corporate governance standards that protect minority shareholder rights. A positive relationship indicates that where corporate governance practices are strong, shareholder rights are strong, and therefore the firm tends to pay higher dividends. Even in markets where the national level of investor protection is weak, firms may individually demonstrate a commitment to protecting investors by improving their own corporate governance standards. Interestingly, Farinha (2003) also shows that firms with better internal corporate governance tend to have higher dividend payout. He measures good corporate governance as compliance with the Cadbury Code of Best Practice.²

One final issue to consider is how corporate governance at a national level affects the choices that firms may make about the quality of their own firm-level governance. Shleifer and Vishny (1986) conduct a review of corporate governance literature from an agency theory viewpoint, focusing on investor rights, legal protection, and ownership by blockholders. They argue that a successful corporate governance system synchronizes the legal protection of investors with the role that blockholders play.

There are two competing views derived from agency theory about the nature of the interaction between corporate governance and dividend policy. One view argues that, as a substitute mechanism to reduce agency conflict, an increase in corporate

² This recommends that boards of UK corporations include at least three outside directors and that the

governance quality should result in a decrease in dividend payout. However, as a branch of agency theory, the managerial entrenchment hypothesis offers a different description of firm behavior. Weak corporate governance induces managerial entrenchment. Entrenched managers tend not to act in the best interests of shareholders, and, because dividend payout decreases in a managerial entrenchment scenario, one would expect to observe lower dividends in the absence of strong corporate governance.

3. Data and sample selection

Data for board and ownership structures as well as total assets, market capitalization, book equity, and debt are collected from company reports. Data for dividend policies, earnings, sales, takeover bids, and substantial security holder (SSH) ownership are extracted from the NZX Deep Archive for 2000–2007. Data are gathered based on each firm's fiscal year-end. The sample includes firms listed on the NZX in 2004 and 2005 for which data on corporate governance and dividends are available. Firms in the regulated utilities and financial sectors are excluded. Firms with a negative dividend payout ratio are also excluded because a negative ratio lacks economic significance. The final 2004 sample has 74 firms of which 52 firms pay dividends, while the final 2005 sample has 71 firms of which 52 firms pay dividends. The pooled sample has 145 observations.

4. Methodology

4.1 Hypothesis development

positions of chairman and CEO are held by different individuals.

The market for corporate control and the market for managerial labor are external governance systems assumed to be beyond the control of the firm. Each system is driven by market forces outside the firm. However, firms can choose the structure of their boards and, to some extent, the structure of insider and outsider ownership in order to mitigate agency costs. Firms can adopt policies to affect the levels of insider and outsider ownership. Large shareholders can build up stakes in the firm in order to have a greater say in firm decisions and in order to monitor and discipline management. This choice of board and ownership structures is referred to as “internal corporate governance.” There also exists some cross-sectional variation in the dividend policy of NZ publicly listed firms. Some firms choose to pay dividends, while others choose not to. Of those firms that do pay dividends, some choose to pay out a higher level of earnings than others and vice versa. In light of these points, this paper endeavors to answer the following questions.

Research Question I. Does internal corporate governance affect the dividend decision of NZ publicly listed firms?

Research Question II. Is there a relationship between the strength of internal corporate governance and the level of dividend payout for NZ publicly listed firms?

There are two competing views to consider when formulating hypotheses for these research questions. First, firms optimally decide upon the use of dividends in conjunction with the quality of their corporate governance. Since good internal corporate governance limits the potential for suboptimal managerial behavior, a firm’s agency costs are lower in the presence of strong governance. Second, firms with weaker internal governance experience greater agency costs and are more likely to choose to pay dividends. John and Knyazeva (2006) find that US firms with better

internal and external governance are less likely to pay dividends. One should expect to see a negative relationship between the strength of internal corporate governance and the likelihood of dividend payout.

Hypothesis Ia: Firms with a weaker level of internal governance are more likely to pay dividends than firms with a stronger level of internal governance.

Optimal dividend policy from an agency perspective also suggests that the payout required to mitigate agency costs will be lower in firms with strong internal governance. The two mechanisms act as substitutes whereby dividend payout compensates for a lack of monitoring, disciplining, and interest alignment brought about by weak board and ownership structures. Hence, one should expect to see a negative relationship between the strength of internal corporate governance and the level of dividend payout.

Hypothesis IIa: The level of dividend payout decreases with increasing governance quality.

The second view suggests that when CEOs or managers are entrenched in their positions because of weak governance, the management chooses a lower dividend payout or avoids dividends altogether. This is because they wish to avoid having to raise funds for investment from the external capital markets where they will be subject to outside monitoring and disciplining. With strong governance, CEOs cannot become entrenched in their positions and are therefore not averse to paying dividends and facing any associated capital market monitoring. Hence, dividend payout decreases according to the level of managerial entrenchment. Note that this is suboptimal from the shareholders' point of view because entrenched managers bring about greater agency costs. The optimal dividend policy would have been increased

dividend payout to mitigate those agency costs rather than reduced dividend payout in the managers' interests. This counterargument predicts a positive relationship between internal corporate governance and the likelihood and level of dividend payout, in opposition to the relationships depicted by Hypothesis Ia and Hypothesis IIa, yet consistent with the results of Farinha (2003).

Hypothesis Ib: Firms with a weaker level of internal governance are less likely to pay dividends than firms with a stronger level of internal governance.

Hypothesis IIb: The level of dividend payout increases with increasing governance quality.

After considering the external governance environment in NZ, two points are noteworthy. First, the transparent nature of the managerial labor market may have an additional disciplining effect on managerial behavior. If this is the case, then Hypothesis Ia and Hypothesis IIa may hold. However, because managers in the NZ market have more influence due to weakness in other governance areas, such as the takeover market and insider ownership plans, it is likely that because of the small size of the labor market, managers feel more entrenched. This supports the second view that firms deviate from optimal payout policy because dividends decrease with managerial entrenchment. In other words, entrenched managers do not act in the shareholders' best interests, but rather in their own interests.

The second point to note is that the disciplining mechanism provided by the market for corporate control is weak relative to that of well-developed major markets. As a result, managers could feel more secure in their jobs. Again, this supports the second view of nonoptimal dividend payout in the presence of entrenchment.

4.2 General model specifications

Part I

Part I of the analysis investigates Research Question I. The following logit model examines whether internal corporate governance affects the dividend decision of NZ publicly listed firms. More specifically, the model explores the determinants of the probability that a firm has a positive dividend against the probability that a firm pays no dividend.

$$\ln\left(\frac{P(DIV_i)}{1-P(DIV_i)}\right) = \gamma_0 + \gamma_1 CEO_IND_i + \gamma_2 BD_IND_i + \gamma_3 BLOCKINST_i + \gamma_4 BODOWN + \sum_{j=1}^J \lambda_j PC_{j,i} + \omega_i \quad (1)$$

Maximum likelihood is used to estimate the parameters of equation (1). DIV is a dummy variable that takes the value 1 if a firm pays dividends and zero otherwise. CEO_IND and BD_IND are proxies for internal corporate governance. CEO_IND is an index based on the CEO's influence as chairman, director, and remuneration committee member. BD_IND is an index based on board size and inside and busy directors. BLOCKINST and BODOWN measure the proportional ownership of block and institutional owners who control at least 5% of the voting rights and beneficial director shareholdings, respectively. The squared and cubed terms of these variables are also included in the model to allow for the fact that the relationship may be nonlinear. PC denotes principal component. Several principal components are extracted from a principal components analysis (PCA) of the control variables and are used as regressors in equation (1). All variables are defined in Sections 4.3 to 4.7. Variable definitions are provided in Appendix A.

Part II

Part II of the analysis investigates Research Question II. The following ordinary least squares (OLS) multivariate regression is run to investigate the

relationship between the strength of internal corporate governance and the level of dividend payout for NZ publicly listed firms.

$$\begin{aligned}
 DIVPAY_i = & \beta_0 + \beta_1 CEO_IND_i + \beta_2 BD_IND_i + \beta_3 BLOCKINST_i \\
 & + \beta_4 BODOWN_i + \sum_{j=1}^J \phi_j PC_{j,i} + \varepsilon_i
 \end{aligned} \tag{2}$$

DIVPAY is the mean ratio of total annual ordinary cash dividends paid to normalized earnings. CEO_IND, BD_IND, BLOCKINST, BODOWN and PC are identical to the definitions for equation (1) above. The squared and cubed terms for the ownership variables, BLOCKINST and BODOWN, are also included in the estimation of model (2) to check for a possible nonlinear relationship.

Method for Part I and Part II

Equation (1) and equation (2) are modeled using the pooled sample of observations for 2004 and 2005.

4.3 Dependent variables

Part I

DIV is a dummy variable that takes the value one if a firm pays a dividend in the observation year and zero otherwise.

Part II

DIVPAY is a mean ratio of the total annual ordinary cash dividends paid to normalized after-tax earnings. It equals zero in the case that no dividends are paid and one in the case that all after-tax earnings are paid out as dividends. This variable is truncated below zero to exclude the possibility of a negative dividend payout.

Ordinary cash dividends exclude special dividends and imputation credits.

Normalized earnings remove one-off income statement items. Therefore, a payout ratio based on these two figures is the best proxy for a firm's target dividend payout ratio. A mean measure of dividend payout is considered rather than an annual measure

so as to reduce the effects of noise components in short-term earnings because it is well documented that firms smooth dividends around a target payout level in the long term (Lintner, 1956). Three- and five-year periods are chosen and compared, as they most appropriately balance the trade-off between a more accurate measure of long-term payout and an increased risk of survivorship bias.

4.4 Explanatory variables of interest

The following explanatory variables are based on corporate governance variables in Farinha (2003) and in John and Knyazeva (2006) and were chosen based on data availability. These variables enter equation (1) and equation (2) in index form. The construction of each index is described in Appendix B.

Board structure variables

The following three board and committee structures measure a CEO's role in the firm. CEOCHAIR is a dummy variable that takes the value one if the CEO is the chairman of the board and zero otherwise. If the CEO is chairman, he or she is likely to have more influence over the board and hence be more entrenched in his or her position. CEOBOD is a dummy variable that takes the value one if the CEO is a member of the board and zero otherwise. As a member of the board other than the chairman, the CEO still has a considerable position of influence over his or her monitors. CEOREMUN is a dummy variable that takes the value one if the CEO is a member of the remuneration committee and zero otherwise. As a member of the remuneration committee, the CEO is in a stronger position of influence and may be able to manipulate his or her own remuneration and that of his or her colleagues.

The following board structures characterize weak internal board governance. BDSIZE measures the total number of directors on the board. In theory, larger boards are less effective monitors of the management team because individual directors can

be swayed by the will of the majority. **INSIDE** is the percentage of inside directors on the board. Inside directors are defined as executive directors currently employed by the company. Insiders are expected to be less effective monitors because they have ties to the management team. **BUSY** is the percentage of directors with three or more directorships. Busy directors are likely to be less effective in monitoring management because their time and attention are dispersed over several other director roles.

Ownership structure variables

The three ownership structures outlined next are associated with strong internal corporate governance. **BODOWN** is the proportion of shares held beneficially by directors relative to the number of shares outstanding. The role of dividend policy as a mechanism to reduce agency costs becomes less important if board members are effectively overseeing management. Increased board ownership to some critical level (Fama and Jensen, 1983) should encourage the board in this role.

The other ownership governance measures refer to shares held by entities or persons outside the firm. These are referred to as “external” owners. **INST** is the common stock ownership of the largest institutional blockholder. An institution is defined as any investment bank, investment fund, insurance group, or mutual fund likely to actively trade its position with ownership of at least 5%. Institutional blockholders should be active monitors of management because of their substantial interests in the company and because they frequently trade the stock of the company.

BLOCK refers to the common stock ownership of the largest noninstitutional blockholder. A blockholder is defined as any noninstitutional person(s), company, parent company, or other entity (such as a city council or government department) with ownership of at least 5%. Blockholders should be effective monitors of management because they have a larger stake in the company. Each of these external

ownership measures is set to zero when there is no institution or blockholder with ownership of at least 5%.

4.5 Internal governance indices

Original indices

As discussed in Kowalewski et al. (2007), when focusing on several corporate governance variables, it is common practice to construct a governance index in order to prevent variable interaction from producing distorted results.³ Two indices are constructed based on the INT_GOV index used in John and Knyazeva (2006). Full details of each index's construction are outlined in panel A of Appendix B.

CEO_IND is based on the three explanatory variables of interest in Section 4.4 that concern a CEO's influence over the board and remuneration committee. It is based on the original dummy variable values that measure CEO involvement with the board. BD_IND incorporates the three variables that characterize board structure. It is formed by ranking the observations into quartiles. This process standardizes the scores assigned to each variable and allows for equally weighted variable aggregation which would otherwise not be possible. CEO_IND and BD_IND become the proxies for the strength of internal corporate governance in equation (1) and equation (2).

Alternative indices

As a robustness check on the relationship between the governance variables and the likelihood and level of dividend payout, two simpler indices were created to replace CEO_IND and BD_IND. These alternative indices are based on the same variables as the original index after relegating the least important variable under each category. Full details can be found in panel B of Appendix B.

4.6 Control variables

³ Examples of indices include the G-Index of Gompers et al. (2003) and the Gov-Score of Brown and Caylor (2004).

The remaining explanatory variables act as controls for dividend policy and enter equation (1) and equation (2) as principal components, a discussion of which follows in Section 4.7. These control variables have either been observed to influence dividend payout in the literature, or they are viewed as mechanisms to reduce or proxy for agency costs. Almost all of the variables appear in Farinha (2003) and in John and Knyazeva (2006).

PGROWTH is the five-year geometric mean of past growth in total sales. This variable is a proxy for a company's historical growth. The monitoring aspect of dividend policy may be reduced if a corporation has had high growth in the past. Firms that frequently raise funds in external capital markets may have lower agency costs and dividend policy is not relevant in this case. Another argument is that the opportunity cost of dividend payout is greater for high-growth firms (Rozeff, 1982). MB is the ratio of the market-to-book value of equity and is a proxy for growth opportunities. Again, a firm with high future-growth prospects will frequently raise capital in the markets, exposing itself to external monitoring.

LEVERAGE is the ratio of the book value of total debt to the book value of total assets. Jensen and Meckling (1976) argue that debt reduces agency costs by disciplining management. This is known as the control hypothesis. Dividend payments may substitute for the control mechanism of the fixed payments associated with debt. Hence, dividends may be a replacement for leverage, so one would expect a negative relationship between the two variables. SIZE is defined as the natural logarithm of market capitalization. Larger firms tend to have higher agency costs and also tend to experience economies of scale with respect to issuance costs. Therefore, size should be positively associated with dividend payout.

ROA is the three-year mean ratio of after-tax earnings to total assets. Dividend payouts are likely to be positively related to profitability. This variable should also account for the positive relationship between cash flow and dividend payout according to Jensen's (1986) free cash flow hypothesis.

DISPERS is defined as 100% minus the sum of the top five noncustodial holdings. The more dispersed a firm's ownership, the greater its agency costs tend to be because small shareholders have very little control over the management team (Jensen and Meckling, 1976). Therefore, dividend payout should be higher for greater ownership dispersion to alleviate those agency costs.

An external governance proxy is included to control for any potential cross-sectional variation that may exist in the external disciplining mechanisms and any potential effects that this variation may have on dividend policy. CORP is the number of takeover bids on a company in the previous five years. Firms with more pressure from the market for corporate control may pay out lower dividends, as the disciplining effect from external governance quality is already high.

4.7 Principal components analysis

An orthogonal PCA is conducted to condense the seven control variables in Section 4.6 into a smaller number of control variables. It also reduces problems associated with multicollinearity. The number of principal components used in each model is dependent upon the amount of variation captured by the first few eigenvectors. The first three (four) principal components are used to balance the trade-off between a reduction in the number of control variables and a loss of variation in the control variables.⁴ These three (four) principal components take the

⁴ The inclusion of a fourth principal component makes no difference to the final results.

place of the control variables defined in Section 4.6 and enter equation (1) and equation (2) denoted as PC.

5. Empirical results

5.1 Descriptive statistics

Panels A, B, and C of Table 1 present the descriptive statistics for the 2004, 2005, and pooled samples.⁵ An average of 72% of firms in the sample pays dividends. The dividend payout ratio averages 42%, with a median of 49%. The median three-year average payout ratio is 49.5% for 2004 and 43% for 2005. The median five-year average payout ratio is 47% for 2004 and 46% for 2005. Very few observations have a CEO who is also board chairman. Approximately three-quarters of the sample have a CEO who is also a director; 24% and 13% of CEOs were members of their remuneration committee in 2004 and 2005, respectively.

[Insert Table 1 here]

The mean board size is six directors, and executive directors make up 20% of the board, on average. Almost one-quarter of the sample contains observations for firms where the directors are classified as busy. The ownership statistics show that beneficial director shareholdings are relatively small, with a mean of 7% and a median of 0.9% for the pooled sample. The maximum beneficial director shareholding is 52% for the sample. Overall beneficial director share interest is low. The pooled sample mean and median director ownership are 6.8% and 0.9%, respectively. Block and institutional ownership has a mean of 23.2% and 9.4%, respectively. The median total external ownership for the sample is 27%.

⁵ The sample size for the DIVPAY5 variable is 69 in 2005 and 143 for the pooled sample.

The internal governance indices, CEO_IND and BD_IND have means of 0.669 and 0.437, respectively. These suggest that, on average, CEOs are less influential and board governance tends to be weaker. The control variable descriptive statistics confirm that the majority of owners are smaller, potentially less influential dispersed share holders, as indicated by the 65% mean level of the DISPERS variable. This makes the study more interesting, as the collective majority of owners have very little control over the actions of the dividend decision. The mean and median five-year geometric average of past growth in total sales, PGROWTH, is 16.1% and 8.1%, respectively. Firms with stronger overall growth will have a greater need for financing, and this will provide a natural monitor on manager behavior. There is also evidence that firms do rely on external financing to support future growth opportunities. The mean and median levels of debt for the sample are 42% and 41%, respectively. Takeover activity in the New Zealand market during the period of the study is relatively quiet. The mean number of takeover bids per firm year is 0.145, with a median of zero. The threat of takeover poses a minor risk to the majority of managers and their actions during the period of the study.

Table 2 reports a breakdown of the blockholder and institutional ownership variables in the sample. The majority of firms (41.4% of the sample) have investors categorized as both BLOCK and INST. Only nine firms have no BLOCK or INST investors; 20% and 32% of the sample, respectively, have either BLOCK or INST investor share interest. The proportion of firms paying dividends ranges from 67% for firms with block and institutional investors to 89% for those firms where there is no block or institutional shareholder interest. The mean dividend payout ratio using the five-year window ranges from 34.5% to 48.2% of earnings, and beneficial director share interest is highest for those firms with no BLOCK or INST shareholders. The

CEO influence index, CEO_IND, and board governance index, BD_IND, are both similar across the different classes of external ownership. The proportion of shares held by institutional investors is higher when there are no blockholders present. The proportion of shares held by blockholders is significantly higher when there are no institutional investors present. There is no statistically significant difference between the external shareholding groups for any of the other values reported in Table 2.

[Insert Table 2 here]

Table 3 reports the two-sample tests of differences in the median, mean, and variance of the sample using the Wilcoxon-Mann-Whitney test, the t-test, and the F-test. The results indicate that there is very little statistical difference between variables across the two years of data. A smaller proportion of CEOs are also members of their own remuneration committees in 2005 compared with 2004.

[Insert Table 3 here]

There is some difference in the variability of the CEO chairman, CEO remuneration, institutional ownership, the geometric mean of growth in sales, the market-to-book value, and return on assets measures. Outliers in the dividend payout ratio were identified as those firms with payout ratios greater than 1.2.

5.2 Univariate analysis

Table 4 reports the correlation coefficients for the variables used in the study. The significance of the board governance indices, BD_IND and BD_IND1, for each of the dependent variables indicates an association between the decision to pay dividends and the amount paid measured relative to normalized earnings and the strength of the governance characteristics the board. The association is strongest for the pooled sample tests. The BD_IND variable has a negative coefficient for each of the

correlations. This is consistent with the definition of the index, which takes higher values as the governance characteristics strengthen. This means that firms with stronger board governance are less likely to pay a dividend and their payout ratio is lower. The significant, positive correlation between BD_IND1 and the likelihood of paying a dividend is also consistent, as lower values of BD_IND1 indicate better governance. Hence, the likelihood of paying a dividend increases with weaker board governance. This is consistent with John and Knyazeva (2006). Dividend payout is also positively associated with firms where the CEO is less influential. Payout is negatively associated with the beneficial director share ownership measure. The negative sign is consistent with a substitution argument between the governance role of dividend policy and beneficial director shareholdings at a pre-entrenchment level of ownership (Farinha, 2003). Firms optimally choose to pay lower dividends as the need to compensate for higher agency costs is diminished.

[Insert Table 4 here]

The correlation coefficient analysis does not account for the effects of other important drivers of the firm's dividend decision. While providing some evidence about the relationships between internal corporate governance standards and the likelihood and level of dividend payout, a multivariate analysis will provide a more detailed summary of these relationships.

5.3 Part I: Logit model analysis

Panel A of Table 5 reports the results of the PCA on the 2004, 2005, and pooled samples. The first three components account for 58% of the variance of the control variables in the 2004 and 2005 samples and 55% of the variance in the pooled sample. Adding a fourth component raises the proportion of variance accounted for to approximately 73% in the 2004 and 2005 samples and 70% in the pooled sample.

Each of the first three principal components has an eigenvalue in excess of one, signifying that each component contributes more variability than that contributed by a single control variable. The fourth component of the 2004 sample is also greater than one, while the fourth component of the 2005 and pooled sample is close to one. The factor loadings for the components are reported in panel B of Table 5. While these vary across each sample, in general factor one consistently loads on LEVERAGE, SIZE, and ROA. Factor two loads on growth opportunities.

[Insert Table 5 here]

The logit regressions are reported in Table 6. Columns 1 to 5 depict models with three principal components, and these are refitted in columns 6 to 9 using four components. Every model is significant overall at the 1% level based on the likelihood ratio. The first two principal components in each model are highly significant and indicate that size, leverage, ROA, and growth are important factors in the firm's decision to pay a dividend.

[Insert Table 6 here]

All the models confirm that the relationship between the likelihood of paying a dividend and the proportion of shares held beneficially by directors is nonlinear due to the significance of the BODOWN, BODOWN², and BODOWN³. We initially observe a positive relationship for ownership levels below 11% to 12%. This is consistent with dividend policy compensating for director oversight. The negative coefficient on the BODOWN² variable is significant for director ownership between 12% and 33%. In this range of director interest, dividend policy acts as a substitute for director oversight. The positive, significant coefficient on the cubed director ownership variable, BODOWN³, supports an entrenchment effect beyond the critical 33%

ownership level. These results are consistent with Hypothesis Ia. At low levels of director ownership, dividend policy compensates for director oversight.

The effect of external ownership on the decision to pay a dividend is measured by the inclusion of the BLOCKINST, BLOCKINST², and BLOCKINST³ variables. The higher-order terms are included to test for changes in the relationship between external ownership and dividend policy. Initially, these investors reduce expected agency costs; however, this relationship is reversed once external interests exceed 29%. At this point, external investors either believe that their own direct monitoring efforts are insufficient or too costly, and the likelihood of paying a dividend increases as a way of enhancing managerial monitoring by external markets. The sign on external ownership changes again once external ownership exceeds 68%. The higher level of external ownership serves as a substitute monitoring mechanism for management behavior; however, the effect on the decision to pay a dividend is economically insignificant. The internal governance of director ownership economically dominates the external governance effect of external investors. The final point of interest is the significant interaction term in models 5 and 9 (BLOCKINST*BD_IND). Firms with strong board governance and external ownership of 10% to 30% of firm equity are more likely to pay a dividend.

The models are fitted using the internal governance indices, CEO_IND and BD_IND, and the alternative indices, CEO_IND1 and BD_IND1. CEO_IND and BD_IND are constructed so that a higher value indicates a less influential CEO and a board with stronger governance characteristics, respectively. Both CEO_IND and BD_IND are expected to be positively related to the decision to pay a dividend. CEO_IND1 takes the value 1 if the CEO is not on the board. BD_IND1 is constructed so that lower values indicate boards with stronger governance characteristics. Both

CEO_IND1 and BD_IND1 are expected to be negatively related to the decision to pay a dividend. The different indices do not change the overall results and, while none are significant, all carry their expected signs.

Overall the results indicate that, in the presence of beneficial director ownership and large external owners, a firm's decision to pay a dividend is affected by both parties. The effect of beneficial ownership dominates in this sample. Dividend policy compensates for director oversight for shareholdings below 10%. The relationship is reversed when directors have a 10% to 32% equity stake, and dividends act as a substitute monitoring device for director oversight. Finally, for firms where ownership exceeds 32%, due to additional entrenchment-related agency costs, dividend policy serves as a compensating monitoring force.

Table 7 provides a breakdown of each model's predictive accuracy. As reported in Table 6, the first and second principal components of each model are highly significant at the 1% level. The third and fourth components are not statistically significant. Based on the percentage of correct predictions reported, the overall predictive ability of the model remains fairly constant with or without a fourth component. The models all demonstrate a high accuracy in correctly identifying those firms that do pay a dividend.

[Insert Table 7 here]

5.4 Part II: OLS analysis

Table 8 reports the results of the OLS regressions of dividend payouts on the internal governance, external and internal ownership, and principal component variables.⁶ The models reported in panels A and B of Table 8 are estimated using DIVPAY3 and DIVPAY5, respectively, as the dependent variable. All the models are

⁶ The overall results do not change if the internal governance indices CEO_IND1 and BD_IND1 replace CEO_IND and BD_IND.

highly significant according to the reported F-statistics. The results are robust to estimations using three and four principal components. In each model specification, the squared and cubed beneficial director ownership terms, $BODOWN^2$ and $BODOWN^3$, are significant. The $BODOWN$ variable is also significant for the models estimated using $DIVPAY3$ as the dependent variable. The significance of the $BODOWN$, $BODOWN^2$, and $BODOWN^3$ terms confirms the nonlinear nature of the relationship between dividend policy and beneficial director ownership. The estimated turning points based on $BODOWN$ for all the models are between 8% and 10% and 37% and 39%. There are 107 firms (74% of the sample) where beneficial director ownership lies between 0 and 10%. There are 34 firms (23% of the sample) where beneficial director ownership lies between 10 and 39%. Only four firms in the sample exceed the critical 39% ownership point. These results are consistent with Hypothesis IIb.

[Insert Table 8 here]

The turning points suggest that, if the proportion of shares held beneficially by directors is relatively small, then the benefits from taking action that destroys shareholder wealth, including perquisite consumption and shirking, may exceed the agency costs of such action. In this case, dividend payout is positively associated with ownership, as dividends are used as a monitoring tool on director behavior. However, once director interest lies between 10% and 39% of firm equity, payout decreases with beneficial ownership, consistent with dividends being a substitute monitoring device for director oversight. Agency costs are now lower, as higher beneficial director ownership means that directors bear a larger portion of the cost of value-destroying behavior. Finally, consistent with the entrenchment hypothesis, dividend payout is positively related to $BODOWN^3$. Firms where directors beneficially hold

more than 39% of the firm's equity become protected from the discipline of external market forces, and dividends become a compensating monitoring force.

The other effect measured in these models is the impact of external shareholders (BLOCKINST) on the dividend payout relationship. The negative relationship between dividend payout and external ownership implies that these investors also serve as monitors of firm behavior, reducing the need to pay high dividends, as argued by Demsetz and Lehn (1985) and Schneider and Vishny (1986). This result is in contrast to the findings of Short et al. (2002), who report that a positive relationship between dividend payout policy and institutional ownership based on a study using a UK panel data set. However, the significant, positive interaction between outside ownership and board governance (BLOCKINST*BD_IND) reported in all of the models means that firms which have larger proportions of shares held externally and strong board governance will pay higher dividends. While not significant, the positive coefficient on the CEO_IND variable is in accordance with firms where the CEO has less influence paying a higher dividend. Models 2, 4, 6, and 8 in both panels of Table 8 also report a negative BD_IND coefficient in accordance with stronger board governance leading to a lower dividend payout ratio.

These results are interesting because they suggest that there is an additional dimension to the agency relationship when beneficial director share interest is less than 10% of outstanding equity. Farinha (2003) reports a significant, negative relationship between dividend payout and beneficial insider ownership. This study likewise supports this result, but only after beneficial director ownership is greater than 8% of firm equity. It seems that, in firms where average director ownership is small (median beneficial director ownership is 0.9%), dividend policy initially compensates for director oversight. When director ownership ranges between 8% and

39%, expected agency costs are reduced and dividend policy then becomes less important as a monitoring tool.

5.5 Robustness checks

In addition to using alternative external governance indices in the estimation of the models already fitted, we also check our results by reestimating the regression models using a Tobit analysis. This is to ensure that the results obtained using the OLS estimation are not biased or inconsistent due to the fact that the dividend payout is a censored variable (39 firms have a dividend payout of zero) that takes neither negative values nor values above 1.2.

[Insert Table 9 here]

Table 9 reports the results of the Tobit estimations. The Tobit estimations for the models reported in columns 1 to 8 of panels A and B show that, after allowing for the censored nature of the data, the results are still robust to our earlier findings. The nonlinear relationship between dividend payout and beneficial director shareholdings has critical turning points at 11% to 12% and 38% to 40%. The BODOWN variable is now significant in all the specifications, and the positive sign confirms that, up to internal ownership levels of 11%, dividends serve as a compensatory monitoring tool to restrict value-destroying behavior by directors. Director ownership levels between 12% and 40% of firm equity bring alignment of director and shareholder interest, and a substitution relationship between payout and ownership is observed. The impact of the agency cost of personal consumption over increasing firm value decisions on the director share interest results in a reduced level of monitoring activity and consequently a lower level of dividends paid out from earnings. Finally, directors with share interests in excess of 40% use their higher ownership level to protect against

external monitoring forces, and dividend payout becomes positively related to BODOWN³.

The other point of interest is the significant negative relationship for the interaction term between external ownership and board governance. Firms with an above-average level of board governance and a fixed level of external ownership will pay more in dividends, *ceteris paribus*. One explanation of this result might be that firms where boards have strong governance characteristics will be encouraged by external shareholders to pay higher dividends. This enhances external market monitoring of managerial actions and could be the result of external shareholders' inability to monitor or their preference to avoid monitoring costs.

6. Conclusions

Consistent with John and Knyazeva (2006), this study finds evidence of a relationship between internal corporate governance and the likelihood of an NZ publicly listed firm paying a dividend. The results also confirm a relationship between the level of dividend payout and beneficial director share ownership and between the governance of the board and external ownership. Both results support a nonlinear relationship in beneficial director ownership. This suggests that, for firms where directors hold less than 10% of firm equity, the decision to pay and the amount of dividend paid is positively related to internal ownership. Dividend policy compensates for director oversight at low levels of director ownership. The sign of the relationship becomes negative when directors hold between 10% and 40% of firm equity. Dividend policy substitutes for director oversight. At this level of ownership, the interests of directors and shareholders are more closely aligned, reducing the need to use dividends as a monitoring tool for director behavior. When ownership exceeds

40%, evidence of an entrenchment effect is observed. The decision to pay and the amount paid in dividends increases with director ownership.

The presence of external ownership with a 5% or greater interest in firm equity is also important in explaining the decision to pay a dividend. Our results suggest that firms with external ownership levels below 30% are less likely to pay a dividend. However, the internal governance offered by beneficial director shareholdings economically dominates the impact of external ownership on both the decision and the amount of dividend to be paid. We also find that firms whose boards have stronger governance characteristics and less than 20% of firm equity held externally have higher dividend payout ratios. It seems that external shareholders can force up dividend payout in the presence of strong board governance. This may be to overcome insufficient or costly direct monitoring efforts by block and institutional investors. This effect is only economically significant if the firm has an above-average board governance.

In summary, NZ firms use dividend policy to compensate for director oversight when directors own less than 10% of firm equity. When director ownership ranges from 10% to 40% of firm equity, dividend policy becomes a substitute for director oversight. Director ownership in excess of 40% gives rise to an entrenchment effect. External ownership may also influence dividend policy; however, its impact is overshadowed by the control exerted by beneficial director shareholdings. Firms with above-average board governance pay higher dividends to enhance the monitoring function by external owners.

The director pool is small, resulting in directors sitting on a large number of boards. This may weaken the corporate board governance of New Zealand firms, since directors may become less effective at monitoring and disciplining management.

Hence, there is not the prerequisite for substantial insider ownership considered by the traditional managerial entrenchment theory. Moreover, director stock ownership plans are uncommon in NZ and CEO ownership is low. Hence, managerial incentives are not aligned with those of the shareholders.

Future research

This study has shown that internal corporate governance does appear to affect dividend policy in NZ, especially in the area of internal ownership. The observed relationship between dividend policy and director ownership is opposite to that found in earlier studies. These findings are preliminary and based on a small sample. They suggest that the interaction between internal governance and dividend policy may differ for smaller, less liquid markets where director ownership is not mandatory. Further investigation is needed to explain this relationship and to examine in more detail the impact of a small director pool, low levels of director ownership, and corporate board governance on director incentives and dividend policy. It is also possible that NZ dividend policy may be explained by other than an agency cost argument. A survey of payout decisions for NZ firms could be very insightful.

It may also be interesting to test the hypothesis that NZ managers are naturally entrenched. Detailed comparisons between NZ governance systems and overseas governance systems may uncover evidence for this theory. It is possible that a model involving simultaneous determination may yield different results from those uncovered in this study. Agrawal and Knoeber (1996) employ such a framework in the corporate governance context in relation to firm performance. A similar model may be useful for the relationship between corporate governance and dividend payout.

While these results are preliminary and based on a small sample, they are interesting and bring new insight to the role of dividends as a monitoring mechanism

in the presence of different governance strengths and a smaller less liquid market.

Future research may reexamine these relationships with a larger data set.

Appendix A. Variable definitions

Explanatory variables of interest

CEOCHAIR	Dummy variable that takes the value one if the CEO is chairman of the board and zero otherwise.
CEOBOD	Dummy variable that takes the value one if the CEO is a member of the board and zero otherwise.
CEOREMUN	Dummy variable that takes the value one if the CEO is a member of the remuneration committee and zero otherwise.
CORP	The number of takeover bids on a company in the previous five years.
BDSIZE	The total number of directors on the board.
INSIDE	The percentage of inside directors on the board. Inside directors are defined as executive directors.
BUSY	The percentage of directors with three or more directorships.
BODOWN	The total beneficial stock ownership held by the directors and associated persons as a proportion of the total value of common equity.
INST	The common stock ownership of the largest institutional blockholder. An institution is defined as any investment bank, investment fund, insurance group, or mutual fund likely to actively trade their position with ownership of at least 5%.
BLOCK	The common stock ownership of the largest noninstitutional blockholder. A noninstitutional blockholder is defined as any person(s), company, parent company, or other entity (such as a city council or government department) with ownership of at least 5% who does not fit the institutional definition above.

New Variables for BD_IND

INVBDSIZE	The maximum number of board directors in the sample minus the actual number of directors for the firm all divided by the maximum number of board directors in the sample.
NONINSIDE	One minus the proportion of inside directors on the board.
NONBUSY	One minus the proportion of busy directors on the board.

Appendix B. Creation of indices

Panel A: Original indices

CEO_IND	$(3-C)/3$, where C is the sum of the values for each of the following dummy variables: CEOBOD, CEOCHAIR and CEOREMUN. CEO_IND is a value between 0 and 1. Higher values indicate a potentially less influential CEO.
BD_IND	$(12-BD)/12$, where BD is the board governance index constructed as follows. Observations are sorted into quartiles for each of the following new variables: INVBDSize, NONINSIDE, and NONBUSY. Each firm-year observation is assigned a value 1, 2, 3, or 4, depending on which quartile it ranks in for each variable (1 for the top quartile and 4 for the lowest quartile). For each firm, the assigned values of each new board structure variable are summed to give the score BD. ⁷ Higher values of BD_IND indicate better governance. ⁸

Panel B: Alternative indices

CEO_IND1	This variable takes the value one if the CEO is not a director (CEOBOD=0) and zero otherwise. A value of one for this index indicates potentially stronger governance and a value of zero indicates weaker governance. This is based on the rationale that a CEO who is a member of the board may have considerable influence over the board and its decisions. CEOREMUN is not included in this definition of governance.
BD_IND1	$(300-BD)/300$, where BD is the board governance index constructed as follows. Each of the variables, INVBDSize, NONINSIDE, and NONBUSY are multiplied by 100. For each firm, BD is assigned the sum of these values. Lower values of BD_IND2 indicate potentially better governance. ⁹

⁷ Note that if, for example, for one particular variable, firms only fall into three quartiles, observations in quartiles one and two are merged.

⁸ The value 12 results because the index is constructed from three variables and each variable is ranked into quartiles.

⁹ The division by 300 is because the index is constructed from three variables and each variable is scaled by 100.

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Table 1. Summary descriptive statistics for the logit and OLS samples

This table reports the mean, median, maximum, and minimum values for each of the variables used in the logit and OLS regression models. DIV is a dummy variable that takes the value one if a firm pays a dividend and zero otherwise. The OLS models are fitted using the DIVPAY3 and DIVPAY5 dependent variables. DIVPAY3 and DIVPAY5 are the mean ratio of total annual ordinary cash dividends paid to normalized earnings during the previous three and five years. CEOCHAIR is a dummy variable that takes the value one if the CEO is chairman of the board and zero otherwise. CEOBOD is a dummy variable that takes the value one if the CEO is a member of the board of directors and zero otherwise. CEOREMUN is a dummy variable that takes the value one if the CEO is a member of the remuneration committee and zero otherwise. BDSIZE is the number of directors on the board. INSIDE is the percentage of executive directors on the board. BUSY is the percentage of directors with three or more directorships. BODOWN is the total beneficial stock ownership held by the directors as a proportion of the total shares on issue. BLOCK is the proportion of common stock held by the largest noninstitutional blockholder. A noninstitutional blockholder is defined as any person(s), company, parent company or other entity (e.g. city council, government department) with ownership of at least 5%. INST is the proportional common stock ownership of the largest institutional blockholder. An institution is defined as any investment bank, investment fund, insurance group, or mutual fund likely to actively trade their position of at least 5% of all shares outstanding. CEO_IND is an indicator variable taking values between 1 and 0. $CEO_IND = (3-C)/3$ where C is the sum of the dummy variables CEOBOD, CEOCHAIR, CEOREMUN. Higher values of CEO_IND indicate a potentially less influential CEO, and better governance. BD_IND is the governance board index. It is calculated using INVBDSIZE, NONINSIDE and NONBUSY. Higher values indicate better governance. PGROWTH is the five-year geometric mean of past growth in total sales. MB is the ratio of market-to-book value of equity and is a proxy for growth opportunities. LEVERAGE is the ratio of book value of total debt to book value of total assets. SIZE is the natural logarithm of market capitalization. ROA is the three-year mean ratio of after-tax earnings to total assets. DISPERS is defined as 100% minus the top five noncustodial holdings. CORP is the number of takeover bids on a company in the last five years. Note that in the OLS sample for 2005 has 71 observations using the DIVPAY3 dependent variable and 69 observations using the DIVPAY5 measure as the dependent variable.

	Panel A: 2004 Sample (n=74)				Panel B: 2005 Sample (n=71, n=69)				Panel C: Pooled Sample (n=145, n=143)			
	Mean	Med.	Max.	Min.	Mean	Med.	Max.	Min.	Mean	Med.	Max.	Min.
Dependent Variables												
DIV	0.703	1.000	1.000	0.000	0.732	1.000	1.000	0.000	0.717	1.000	1.000	0.000
DIVPAY3	0.420	0.495	0.966	0.000	0.416	0.430	1.171	0.000	0.418	0.489	1.171	0.000
DIVPAY5	0.423	0.466	1.045	0.000	0.390	0.456	0.093	0.000	0.407	0.459	1.045	0.000
Main Explanatory Variables												
CEOCHAIR	0.068	0.000	1.000	0.000	0.042	0.000	1.000	0.000	0.055	0.000	1.000	0.000
CEOBOD	0.743	1.000	1.000	0.000	0.761	1.000	1.000	0.000	0.752	1.000	1.000	0.000
CEOREMUN	0.243	0.000	1.000	0.000	0.127	0.000	1.000	0.000	0.186	0.000	1.000	0.000
BDSIZE	6.081	6.000	10.000	3.000	6.155	6.000	11.000	3.000	6.117	6.000	11.000	3.000
INSIDE	0.185	0.167	0.500	0.000	0.201	0.167	0.600	0.000	0.193	0.167	0.600	0.000
BUSY	0.260	0.000	1.000	0.000	0.211	0.000	0.857	0.000	0.236	0.000	1.000	0.000
BODOWN	0.068	0.010	0.521	0.000	0.067	0.009	0.521	0.000	0.068	0.009	0.521	0.000
BLOCK	0.226	0.128	0.800	0.000	0.239	0.160	0.970	0.000	0.232	0.149	0.970	0.000
INST	0.110	0.059	0.805	0.000	0.078	0.056	0.365	0.000	0.094	0.058	0.804	0.000
BLOCKINST	0.336	0.279	0.805	0.000	0.317	0.256	0.970	0.000	0.326	0.270	0.970	0.000
Internal Governance Indices												
CEO_IND	0.649	0.667	1.000	0.000	0.690	0.667	1.000	0.333	0.669	0.667	1.000	0.000
BD_IND	0.439	0.500	0.750	0.083	0.435	0.417	0.750	0.083	0.437	0.417	0.750	0.083
CEO_IND1	0.257	0.000	1.000	0.000	0.024	0.000	1.000	0.000	0.248	0.000	1.000	0.000
BD_IND1	0.352	0.322	0.667	0.100	0.324	0.297	0.573	0.090	0.338	0.310	0.667	0.090
Control Variables												
PGROWTH	0.123	0.073	1.324	-0.498	0.201	0.087	4.136	-0.650	0.161	0.081	4.136	-0.650
MB	2.917	1.882	21.559	0.357	2.874	2.149	10.433	0.452	2.896	2.018	21.559	0.357
LEVERAGE	0.400	0.402	0.825	0.020	0.433	0.405	0.957	0.000	0.416	0.405	0.957	0.000
SIZE	11.720	11.748	16.248	7.332	11.804	11.751	16.281	8.701	11.751	11.751	16.281	7.332
ROA	0.008	0.060	0.200	-0.766	-0.061	0.064	0.256	-3.265	-0.026	0.060	0.256	-3.265
DISPERS	0.635	0.678	0.987	0.131	0.658	0.711	0.975	0.053	0.646	0.699	0.987	0.053
CORP	0.169	0.000	2.000	0.000	0.120	0.000	2.000	0.000	0.145	0.000	2.000	0.000

Table 2. Beneficial director, institutional and blockholder shareholder statistics

This table reports the statistics for the breakdown of firms where there are only blockholders (BLOCK>0, INST=0), only institutional shareholders (INST>0, BLOCK=0,) both blockholders and institutional shareholders (BLOCKINST>0) or neither (Block=0, INST=0). The statistics reported are for firm size (SIZE) measured as the natural logarithm of market capitalization, the proportion of firms paying a dividend (DIV=1), the mean payout measures for DIVPAY3 and DIVPAY5, the proportion of shares held beneficially by directors (BODOWN), the level of CEO influence (CEO_IND), board governance (BD_IND) and the proportion of shares held by institutional investors (INST), and blockholders (BLOCK).

*** Significant at 1%, ** Significant at 5%; * Significant at 10%.

	BLOCK=0 INST>0 (n=29)	INST =0 BLOCK>0 (n=47)	BLOCK=0 INST=0 (n=9)	BLOCK>0 INST>0 (n=60)
SIZE	12.31	11.24	11.38	11.96
DIV = 1 (%)	79.3	70.2	89.0	67.0
Mean DIVPAY3	0.51	0.394	0.437	0.389
Mean DIVPAY5	0.482	0.375	0.419	0.345
BODOWN (%)	4.70	5.79	9.13	8.16
CEO_IND	0.69	0.65	0.63	0.68
BD_IND	0.40	0.48	0.44	0.42
INST (%)	21.86 ^{***}			12.22
BLOCK (%)		40.14 ^{***}		24.67
BLOCKINST (%)	21.86 ^{***}	40.14		36.89

Table 3. Two sample tests of differences for the logit and OLS samples

This table examines the differences in the means, medians, and standard deviations of the variables used in the logit and OLS regression models. DIV is a dummy variable that takes the value one if a firm pays a dividend in the observation year and zero otherwise. DIVPAY3 and DIVPAY5 are the mean ratio of total annual ordinary cash dividends paid to normalized earnings during the previous three and five years. CEOCHAIR is a dummy variable that takes the value one if the CEO is the chairman of the board and zero otherwise. CEOBOD is a dummy variable that takes the value one if the CEO is a member of the board and zero otherwise. CEOREMUN is a dummy variable that takes the value one if the CEO is a member of the remuneration committee and zero otherwise. BFSIZE is simply the total number of directors on the board. INSIDE is the percentage of inside directors on the board. BUSY is the percentage of directors with three or more directorships. BODOWN accounts for those company shares owned by directors as well as those company shares indirectly owned through family members or through a trust. BLOCK refers to the common stock ownership of the largest noninstitutional blockholder. INST is the common stock ownership of the largest institutional blockholder. CEO_IND is an indicator variable taking values between 1 and 0. $CEO_IND = (3-C)/3$ where C is the sum of the dummy variables CEOBOD, CEOCHAIR, CEOREMUN. Higher values of CEO_IND indicate a potentially less influential CEO, and better governance. BD_IND is the governance board index. It is calculated using INVBFSIZE, NONINSIDE, and NONBUSY. Higher values indicate better governance. PGROWTH is the five-year geometric mean of past growth in total sales. MB is the ratio of market-to-book value of equity and is a proxy for growth opportunities. LEVERAGE is the ratio of book value of total debt to book value of total assets. SIZE is the natural logarithm of market capitalization. ROA is the three-year mean ratio of after-tax earnings to total assets. DISPERS is defined as 100% minus the top five noncustodial holdings. CORP is the number of takeover bids on a company in the last five years. Note the tests were also run over the reduced sample for the DIVPAY5 variable and the results are very similar but not reported in Table 2.

*** Significant at 1%, ** Significant at 5%; * Significant at 10%.

	Difference in Medians	Difference in Means	Difference in Variances
	z-statistic	t-statistic	F-statistic
Dependent Variables			
DIV	0.307	0.394	1.065
DIVPAY3	0.014	0.060	1.013
DIVPAY5	0.495	0.599	1.220
Main Explanatory Variables			
CEOCHAIR	0.261	0.664	1.556*
CEOBOD	0.178	0.240	1.047
CEOREMUN	1.208	1.809*	1.662**
BFSIZE	0.172	0.263	1.134
INSIDE	0.700	0.616	1.064
BUSY	0.710	0.921	1.214
BODOWN	0.223	0.092	1.094
BLOCK	0.265	0.329	1.141
INST	1.157	1.556	2.534***
BLOCKINST	0.472	0.819	1.153
Internal Governance Indices			
CEO_IND	0.769	1.099	1.265
BD_IND	0.225	0.124	1.093
CEO_IND1	0.178	0.240	1.047
BD_IND1	0.902	1.199	1.430
Control Variables			
PGROWTH	0.140	0.914	5.289***
MB	0.378	0.092	1.836**
LEVERAGE	0.722	0.859	1.107
SIZE	0.334	0.292	1.239
ROA	0.247	1.132	7.517***
DISPERS	0.668	0.543	1.069
CORP	0.498	0.741	1.417

Table 4. Correlation coefficients for variables in the logit and OLS analysis

The correlation coefficients for each of the dependent and independent variables in the logit and OLS regression models are given in this table. DIV is a dummy variable that takes the value one if a firm pays a dividend in the observation year and zero otherwise. DIVPAY3 and DIVPAY5 are the mean ratio of total annual ordinary cash dividends paid to normalized earnings during the previous three and five years. $CEO_IND = (3-C)/3$ where C is the sum of the dummy variables CEOBOD, CEOCHAIR, CEOREMUN. Higher values of CEO_IND indicate a potentially less influential CEO, and better governance. BD_IND is the board governance board index. It is calculated using INVBDSIZE, NONINSIDE and NONBUSY. Higher values indicate better governance. CEO_IND1 and BD_IND1 are simpler indices which are based on the original index with the least important variable relegated. CEO_IND1 takes the value one if the CEO is not a director. BD_IND1 takes the value one if an above-median standard of internal corporate governance is present in a firm and zero otherwise. BD_IND2 is an alternative board governance index based on board size, inside and busy directors. *** Significant at 1%, ** Significant at 5%; * Significant at 10%.

Panel A: 2004			
	DIV	DIVPAY3	DIVPAY5
Sample Size	74	74	74
CEO_IND	0.158	0.222*	0.207*
CEO_IND1	-0.024	0.048	0.069
BD_IND	-0.202*	-0.173	-0.177
BD_IND1	0.176	0.151	0.150
BLOCKINST	0.123	0.136	0.163
BODOWN	-0.130	-0.205*	-0.216*
Panel B: 2005			
	DIV	DIVPAY3	DIVPAY5
Sample Size	71	71	69
CEO_IND	0.017	0.067	0.043
CEO_IND1	-0.034	0.025	0.001
BD_IND	-0.297**	-0.119	-0.120
BD_IND1	0.285**	0.100	0.110
BLOCKINST	0.018	0.046	0.036
BODOWN	0.115	-0.013	-0.070
Panel C: Pooled			
	DIV	DIVPAY3	DIVPAY5
Sample Size	145	145	143
CEO_IND	0.096	0.150*	0.132
CEO_IND1	-0.029	0.037	0.040
BD_IND	-0.247***	-0.147*	-0.151*
BD_IND1	0.219***	0.128	0.138
BLOCKINST	0.069	0.091	0.104
BODOWN	-0.015	-0.114	-0.150*

Table 5. Principal components analysis

Table 4 reports the cumulative proportion of variance explained by three and four principal components, the eigenvalues and eigenvectors for the logit and OLS models fitted to the data for 2004, 2005, and the pooled data samples. The principal components are estimated over the seven control variables: PGROWTH is the five-year geometric mean of past growth in total sales. This variable is a proxy for the company's historical growth. MB is the ratio of the market-to-book value of equity and is a proxy for growth opportunities. LEVERAGE is the ratio of the book value of total debt to the book value of total assets. SIZE is defined as the natural logarithm of market capitalization. ROA is the three-year mean ratio of after-tax earnings to total assets. DISPERS is calculated as 100% minus the sum of the top five noncustodial holdings. CORP is the number of takeover bids on a company in the last five years.

Panel A: Summary Statistics

	2004	2005	2005	Pooled	Pooled
Number of observations	74	71	69	145	143
Cum. Proportion of Variance Explained by 3 components	0.584	0.585	0.589	0.554	0.554
Cum. Proportion of Variance Explained by 4 components	0.730	0.718	0.729	0.697	0.699
<i>EIGENVALUES</i>					
Factor1	1.624	1.570	1.602	1.507	1.519
Factor2	1.380	1.350	1.328	1.280	1.260
Factor3	1.086	1.172	1.190	1.091	1.099
Factor4	1.023	0.931	0.984	0.998	1.016

Panel B: Eigenvectors

Control Variable	2004 (n=74)				2005 (n=71)				Pooled (n=145)			
	Factor1	Factor2	Factor3	Factor4	Factor1	Factor2	Factor3	Factor4	Factor1	Factor2	Factor3	Factor4
PGROWTH	-0.216	-0.530	-0.269	-0.099	-0.009	0.221	0.719	0.174	0.017	0.427	-0.559	-0.081
MB	0.003	-0.591	0.511	-0.320	0.053	0.708	-0.043	-0.283	0.162	0.627	0.355	-0.414
LEVERAGE	0.400	-0.468	-0.113	0.179	0.624	-0.020	0.052	0.335	0.610	0.111	-0.106	0.241
SIZE	0.628	-0.030	0.157	-0.319	0.470	-0.034	-0.381	-0.513	0.525	-0.195	0.441	-0.348
ROA	0.626	0.102	-0.201	0.262	0.539	-0.342	0.305	-0.026	0.537	-0.322	-0.416	0.009
DISPERS	-0.068	-0.356	-0.549	0.286	0.247	0.482	-0.318	0.575	0.166	0.389	0.255	0.756
CORP	0.046	0.118	-0.536	-0.777	-0.186	-0.316	-0.373	0.427	-0.098	-0.346	0.343	0.267

Table 6. Logit model results

This table reports the regression output for the logit models fitted over the data for the pooled data sample. The coefficients are reported first with the corresponding standard error in brackets beneath each estimate. The models are estimated using the principal components estimated for the control variables as reported in Table 4. The models are fitted using three and four principal components respectively. The control variables are PGROWTH = the five-year geometric mean of past growth in total sales, MB = the ratio of the market-to-book value of equity and is a proxy for growth, LEVERAGE = the ratio of the book value of total debt to the book value of total assets, SIZE = the natural logarithm of market capitalization, ROA = the three-year mean ratio of after-tax earnings to total assets, DISPERS = 100% minus the sum of the top five noncustodial holdings, and CORP = the number of takeover bids on a company during the previous five years. CEO_IND measures the influence of the CEO. Higher values of CEO_IND indicate a potentially less influential CEO, and better governance. BD_IND is the board governance index. Higher values indicate better governance. BODOWN measure the percentage of shares held beneficially by the board of directors. BLOCKINST measures the percentage of shares held by BLOCK and INST owners, these investors represent the external shareholders of the firm. CEO_IND1 measures CEO influence. CEO_IND1 takes the value one if the CEO is not a director and zero otherwise. A value of one for CEO_IND indicates a potentially less influential CEO. BD_IND1 is an alternative board governance index. Higher values of BD_IND1 indicate better governance. *** Significant at 1%, ** Significant at 5%; * Significant at 10%.

	Pooled								
	1	2	3	4	5	6	7	8	9
INTERCEPT	-0.956 (1.417)	1.282 (1.308)	1.294 (1.878)	3.187* (1.853)	4.523 (3.055)	-0.366 (1.548)	1.755 (1.384)	1.701 (1.965)	4.499 (3.053)
CEO_IND	0.799 (1.382)		0.956 (1.405)		0.123 (1.519)	0.674 (1.401)		0.816 (1.431)	0.092 (1.536)
BD_IND	1.060 (1.983)		0.489 (2.033)		-4.942 (5.006)	0.889 (2.017)		0.444 (2.039)	-4.688 (5.186)
CEO_IND1		-0.138 (0.785)		-0.139 (0.799)			-0.283 (0.823)		
BD_IND1		-3.324 (2.552)		-2.999 (2.644)			-3.321 (2.605)		
BODOWN	75.443*** (29.364)	71.349** (28.845)	78.290** (30.383)	75.508** (30.516)	120.452** (48.924)	72.893** (28.741)	69.125** (28.222)	75.685** (29.987)	119.469** (48.957)
BODOWN ²	-451.111** (197.421)	-420.516** (192.645)	-488.545** (205.391)	-467.955** (206.153)	-668.316** (267.946)	-435.513** (194.074)	-407.256** (189.402)	-472.681** (203.048)	-660.895** (269.593)
BODOWN ³	679.828* (340.098)	630.902* (330.447)	759.904** (356.934)	728.911** (357.271)	979.625** (437.649)	657.746** (336.043)	614.069* (326.767)	736.798** (353.702)	968.463** (440.069)
BLOCKINST	0.120 (1.536)	-0.044 (1.553)	-21.259* (11.970)	-20.545* (11.790)	-35.199** (14.978)	-0.958 (1.843)	-1.186 (1.850)	-21.296* (11.996)	-34.802** (15.110)
BLOCKINST ²			52.562* (29.855)	50.191* (29.449)	65.481* (32.266)			50.290* (29.936)	64.588** (32.614)
BLOCKINST ³			-36.199* (22.065)	-34.555 (21.822)	-45.366 (22.855)			-34.608 (22.144)	-44.700* (23.131)
BODOWN*BD_IND					-32.756 (36.386)				-33.367 (36.500)
BLOCKINST*BD_IND					18.659* (10.435)				18.027* (10.977)
FACTOR1	2.800*** (0.546)	2.956*** (0.571)	2.749*** (0.546)	2.942*** (0.574)	2.896*** (0.590)	2.779*** (0.548)	2.950*** (0.576)	2.725*** (0.550)	2.874*** (0.600)
FACTOR2	-2.079*** (0.465)	-2.264*** (0.504)	-2.078*** (0.467)	-2.276*** (0.507)	-2.360*** (0.520)	-2.186*** (0.488)	-2.410*** (0.541)	-2.156*** (0.486)	-2.360*** (0.520)
FACTOR3	-0.481 (0.360)	-0.450 (0.372)	-0.420 (0.354)	-0.395 (0.367)	-0.272 (0.377)	-0.542 (0.362)	-0.515 (0.372)	-0.473 (0.358)	-0.287 (0.385)
FACTOR4						-0.355 (0.350)	-0.385 (0.356)	-0.290 (0.349)	-0.066 (0.376)
Number of obs.	145	145	145	145	145	145	145	145	145
McFadden R ²	0.524	0.530	0.544	0.548	0.586	0.530	0.536	0.548	0.586
Likelihood Ratio	90.5***	91.5***	94.0***	94.7***	101.2***	91.5***	92.6***	94.7***	101.2***

Table 7. Predictive ability of the logit model

The results reported here show the proportion of firms correctly predicted as paying a dividend using the estimated logit model for each respective sample. The models are fitted with the two independent variables BLOCKINST and BODOWN in addition to the appropriate number of principal components and the CEO and board governance indices, CEO_IND and BD_IND, respectively. The effect of ownership on the predictive ability of each model is measured using the ownership variables BLOCKINST, which captures external ownership for both block and institutional shareholders, and BODOWN, which measures the proportion of shares held by directors. A firm that pays a dividend is correctly identified when the predicted probability of paying a dividend is greater than 0.5. A firm that does not pay a dividend is correctly identified when the predicted probability is 0.5 or less.

Panel A: Three Principal Components			
	Firms Correctly Predicted		
	2004	2005	Pooled
Dividend-Paying Firms			
BLOCKINST, BODOWN, BODOWN ² , BODOWN ³	92%	98%	96%
BLOCKINST, BLOCKINST ² , BLOCKINST ³ , BODOWN, BODOWN ² , BODOWN ³	94%	96%	95%
Non-Dividend-Paying Firms			
BLOCKINST, BODOWN, BODOWN ² , BODOWN ³	77%	74%	73%
BLOCKINST, BLOCKINST ² , BLOCKINST ³ , BODOWN, BODOWN ² , BODOWN ³	77%	84%	76%
All Firms			
BLOCKINST, BODOWN, BODOWN ² , BODOWN ³	88%	92%	90%
BLOCKINST, BLOCKINST ² , BLOCKINST ³ , BODOWN, BODOWN ² , BODOWN ³	89%	93%	90%
Panel B: Four Principal Components			
	Firms Correctly Predicted		
	2004	2005	Pooled
Dividend-Paying Firms			
BLOCKINST, BODOWN, BODOWN ² , BODOWN ³	92%	98%	97%
BLOCKINST, BLOCKINST ² , BLOCKINST ³ , BODOWN, BODOWN ² , BODOWN ³	90%	94%	96%
Non-Dividend-Paying Firms			
BLOCKINST, BODOWN, BODOWN ² , BODOWN ³	81%	74%	73%
BLOCKINST, BLOCKINST ² , BLOCKINST ³ , BODOWN, BODOWN ² , BODOWN ³	77%	84%	76%
All Firms			
BLOCKINST, BODOWN, BODOWN ² , BODOWN ³	89%	92%	90%
BLOCKINST, BLOCKINST ² , BLOCKINST ³ , BODOWN, BODOWN ² , BODOWN ³	87%	92%	90%

Table 8. OLS regression results

This table reports the regression output for the OLS models fitted over the pooled data sample. The coefficients are reported first with the corresponding standard error in brackets beneath each estimate. The models are estimated using the principal components estimated for the control variables as reported in Table 4. The control variables are PGROWTH = the five-year geometric mean of past growth in total sales, MB = the ratio of the market-to-book value of equity and is a proxy for growth, LEVERAGE = the ratio of the book value of total debt to the book value of total assets, SIZE = the natural logarithm of market capitalization, ROA = the three-year mean ratio of after-tax earnings to total assets, DISPERS = 100% minus the sum of the top five noncustodial holdings, CORP = the number of takeover bids on a company during the previous five years. CEO_IND measures the influence of the CEO. Higher values of CEO_IND indicate a potentially less influential CEO, and better governance. BD_IND is the board governance index. Higher values indicate better governance. BODOWN measure the percentage of shares held beneficially by the board of directors. BLOCKINST measures the percentage of shares held by BLOCK and INST owners, these investors represent the external shareholders of the firm. *** Significant at 1%, ** Significant at 5%, * Significant at 10%.

Panel A: DIVPAY3								
	1	2	3	4	5	6	7	8
INTERCEPT	0.249** (0.105)	0.534** (0.159)	0.310** (0.126)	0.586*** (0.173)	0.320*** (0.113)	0.597*** (0.163)	0.388*** (0.134)	0.652*** (0.177)
CEO_IND	0.144 (0.106)	0.098 (0.105)	0.149 (0.107)	0.103 (0.105)	0.117 (0.107)	0.073 (0.105)	0.122 (0.107)	0.078 (0.106)
BD_IND	0.089 (0.160)	-0.472 (0.298)	0.063 (0.163)	-0.504* (0.303)	0.073 (0.159)	-0.473 (0.296)	0.045 (0.162)	-0.502* (0.301)
BODOWN	2.712* (1.410)	2.888* (1.627)	2.648* (1.418)	2.792* (1.639)	2.770* (1.401)	2.995* (1.618)	2.700* (1.409)	2.898* (1.630)
BODOWN ²	-16.791** (7.979)	-18.322** (8.247)	-16.587** (8.018)	-17.981** (8.300)	-16.953** (7.931)	-18.634** (8.198)	-16.739** (7.966)	-18.296** (8.250)
BODOWN ³	22.595** (11.116)	25.270** (11.605)	22.606** (11.167)	24.964** (11.674)	22.713** (11.049)	25.613** (11.534)	22.746** (11.094)	25.351** (11.602)
BLOCKINST	0.035 (0.128)	-0.819** (0.324)	-0.588 (0.730)	-1.386* (0.774)	-0.112 (0.156)	-0.951*** (0.332)	-0.759 (0.732)	-1.530* (0.774)
BLOCKINST ²			1.563 (2.055)	1.610 (2.011)			1.532 (2.042)	1.568 (1.998)
BLOCKINST ³			-1.051 (1.628)	-1.206 (1.595)			-0.980 (1.618)	-1.126 (1.586)
BODOWN*BD_IND		-0.189 (1.329)		-0.104 (1.342)		-0.268 (1.322)		-0.194 (1.335)
BLOCKINST*BD_IND		1.785*** (0.640)		1.795*** (0.649)		1.757*** (0.636)		1.755*** (0.645)
FACTOR1	0.138*** (0.022)	0.128*** (0.021)	0.136*** (0.022)	0.127*** (0.022)	0.136*** (0.021)	0.126*** (0.021)	0.133*** (0.022)	0.124*** (0.021)
FACTOR2	-0.081*** (0.023)	-0.085*** (0.024)	-0.079*** (0.024)	-0.082*** (0.023)	-0.096*** (0.025)	-0.099*** (0.024)	-0.094*** (0.025)	-0.096*** (0.025)
FACTOR3	0.050** (0.024)	0.064*** (0.024)	0.050** (0.024)	0.065*** (0.024)	0.044* (0.024)	0.058** (0.024)	0.044* (0.024)	0.058** (0.024)
FACTOR4					-0.050* (0.031)	-0.049 (0.030)	-0.052* (0.031)	-0.050 (0.030)
Number of obs.	145	145	145	145	145	145	145	145
Adjusted R ²	0.316	0.350	0.309	0.344	0.324	0.359	0.318	0.352
F	8.38***	8.06***	6.87***	6.80***	7.90***	7.71***	6.61***	6.59***

Panel B: DIVPAY5								
	1	2	3	4	5	6	7	8
INTERCEPT	0.270** (0.110)	0.545*** (0.164)	0.322** (0.131)	0.592*** (0.178)	0.313*** (0.114)	0.602*** (0.166)	0.362*** (0.134)	0.641*** (0.180)
CEO_IND	0.131 (0.108)	0.089 (0.107)	0.136 (0.109)	0.094 (0.108)	0.115 (0.109)	0.070 (0.107)	0.120 (0.109)	0.074 (0.108)
BD_IND	0.060 (0.164)	-0.486 (0.305)	0.037 (0.168)	-0.522* (0.310)	0.052 (0.164)	-0.506 (0.303)	0.032 (0.167)	-0.533* (0.308)
BODOWN	2.125 (1.443)	2.237 (1.668)	2.069 (1.454)	2.148 (1.682)	1.993 (1.441)	2.149 (1.658)	1.937 (1.453)	2.075 (1.673)
BODOWN ²	-15.184* (8.151)	-16.465* (8.440)	-15.007* (8.198)	-16.142* (8.496)	-14.293* (8.149)	-15.675* (8.400)	-14.142* (8.199)	-15.429* (8.461)
BODOWN ³	21.618* (11.355)	23.976** (11.871)	21.628* (11.417)	23.653** (11.945)	20.402* (11.351)	22.951* (11.812)	20.454* (11.416)	22.737* (11.892)
BLOCKINST	0.057 (0.133)	-0.778** (0.333)	-0.503 (0.750)	-1.314* (0.799)	-0.033 (0.148)	-0.911*** (0.341)	-0.053 (0.748)	-1.361* (0.795)
BLOCKINST ²			1.469 (2.108)	1.591 (2.068)			1.231 (2.110)	1.307 (2.065)
BLOCKINST ³			-1.028 (1.671)	-1.245 (1.641)			-0.816 (1.673)	-0.996 (1.640)
BODOWN*BD_IND		-0.147 (1.360)		-0.053 (1.374)		-0.248 (1.353)		-0.171 (1.368)
BLOCKINST*BD_IND		1.756*** (0.658)		1.785*** (0.669)		1.813*** (0.655)		1.828*** (0.665)
FACTOR1	0.132*** (0.022)	0.123*** (0.022)	0.130*** (0.023)	0.122*** (0.022)	0.130*** (0.022)	0.120*** (0.022)	0.128*** (0.023)	0.119*** (0.022)
FACTOR2	-0.081*** (0.024)	-0.084*** (0.024)	-0.079*** (0.024)	-0.082*** (0.024)	-0.089*** (0.024)	-0.094*** (0.024)	-0.088*** (0.025)	-0.092*** (0.025)
FACTOR3	-0.050** (0.025)	-0.064** (0.025)	-0.050** (0.025)	-0.066*** (0.025)	-0.044* (0.025)	-0.058* (0.025)	-0.044* (0.025)	-0.059** (0.025)
FACTOR4					-0.038 (0.027)	-0.044 (0.027)	-0.037 (0.028)	-0.042 (0.027)
Number of obs.	143	143	143	143	143	143	143	143
Adjusted R ²	0.308	0.339	0.300	0.332	0.312	0.348	0.305	0.340
F	8.02***	7.63***	6.54***	6.43***	7.45***	7.31***	6.18***	6.22***

Table 9. Robustness check: Tobit regression results

This table reports the regression output for the Tobit models fitted over the pooled data sample. The coefficients are reported first with the corresponding standard error in brackets beneath each estimate. The models are estimated using the principal components estimated for the control variables as reported in Table 4. The control variables are PGROWTH = the five-year geometric mean of past growth in total sales, MB = the ratio of the market-to-book value of equity and is a proxy for growth, LEVERAGE = the ratio of the book value of total debt to the book value of total assets, SIZE = the natural logarithm of market capitalization, ROA = the three-year mean ratio of after-tax earnings to total assets, DISPERS = 100% minus the sum of the top five noncustodial holdings, CORP = the number of takeover bids on a company during the previous five years. CEO_IND measures the influence of the CEO. Higher values of CEO_IND indicate a potentially less influential CEO, and better governance. BD_IND is the board governance index. Higher values indicate better governance. BODOWN measure the percentage of shares held beneficially by the board of directors. BLOCKINST measures the percentage of shares held by BLOCK and INST owners, these investors represent the external shareholders of the firm. *** Significant at 1%, ** Significant at 5%; * Significant at 10%.

Panel A: DIVPAY3								
	1	2	3	4	5	6	7	8
INTERCEPT	0.056 (0.137)	0.417* (0.213)	0.123 (0.162)	0.474** (0.228)	0.127 (0.148)	0.466** (0.215)	0.198 (0.172)	0.521** (0.230)
CEO_IND	0.114 (0.139)	0.046 (0.136)	0.119 (0.139)	0.046 (0.137)	0.089 (0.139)	0.025 (0.136)	0.094 (0.139)	0.027 (0.136)
BD_IND	0.187 (0.209)	-0.538 (0.398)	0.158 (0.211)	-0.594 (0.403)	0.171 (0.207)	-0.514 (0.395)	0.141 (0.210)	-0.564 (0.401)
BODOWN	5.857*** (1.895)	7.608*** (2.955)	5.746*** (1.904)	7.431** (2.940)	5.829*** (1.876)	7.823*** (2.981)	5.701*** (1.884)	7.626** (2.963)
BODOWN ²	-32.450*** (10.547)	-41.403*** (14.339)	-31.938*** (10.565)	-40.599*** (14.294)	-32.340*** (10.455)	-42.275*** (14.451)	-31.770*** (10.469)	-41.387*** (14.357)
BODOWN ³	41.815*** (14.446)	55.517*** (20.407)	41.409*** (14.438)	54.429*** (20.245)	41.689*** (14.328)	56.851*** (20.588)	41.245*** (14.316)	55.681*** (20.413)
BLOCKINST	0.048 (0.162)	-1.087*** (0.412)	-0.666 (0.896)	-1.710* (0.945)	-0.084 (0.195)	-1.182*** (0.417)	-0.799 (0.896)	-1.784* (0.942)
BLOCKINST ²			1.917 (2.489)	1.947 (2.396)			1.825 (2.469)	1.832 (2.381)
BLOCKINST ³			-1.369 (1.957)	-1.603 (1.885)			-1.251 (1.943)	-1.465 (1.876)
BODOWN*BD_IND		-1.885 (2.744)		-1.680 (2.724)		-2.192 (2.779)		-1.991 (2.759)
BLOCKINST*BD_IND		2.407*** (0.821)		2.478*** (0.834)		2.382*** (0.817)		2.387*** (0.831)
FACTOR1	0.306*** (0.044)	0.297*** (0.043)	0.301*** (0.044)	0.295*** (0.044)	0.299*** (0.043)	0.290*** (0.043)	0.294*** (0.043)	0.287*** (0.043)
FACTOR2	-0.219*** (0.044)	-0.228*** (0.043)	-0.216*** (0.044)	-0.225*** (0.043)	-0.225*** (0.044)	-0.234*** (0.043)	-0.222*** (0.044)	-0.230*** (0.043)
FACTOR3	-0.006 (0.042)	0.012 (0.041)	-0.002 (0.043)	0.017 (0.041)	-0.010 (0.042)	0.009 (0.040)	-0.007 (0.042)	0.013 (0.041)
FACTOR4					-0.046 (0.038)	-0.044 (0.037)	-0.046 (0.038)	-0.042 (0.037)
Number of obs.	145	145	145	145	145	145	145	145
Adjusted R ²	0.307	0.351	0.298	0.344	0.311	0.355	0.302	0.347

Panel B: DIVPAY5								
	1	2	3	4	5	6	7	8
INTERCEPT	0.067 (0.144)	0.419* (0.220)	0.122 (0.169)	0.470** (0.235)	0.118 (0.148)	0.475** (0.219)	0.169 (0.172)	0.516** (0.234)
CEO_IND	0.101 (0.141)	0.037 (0.139)	0.106 (0.142)	0.036 (0.139)	0.076 (0.142)	0.008 (0.138)	0.082 (0.142)	0.009 (0.139)
BD_IND	0.165 (0.216)	-0.560 (0.407)	0.141 (0.219)	-0.627 (0.413)	0.175 (0.214)	-0.530 (0.402)	0.152 (0.217)	-0.587 (0.408)
BODOWN	5.253*** (1.939)	7.475** (3.150)	5.167*** (1.953)	7.317** (3.141)	5.036*** (1.923)	7.446** (3.110)	4.950** (1.938)	7.313** (3.108)
BODOWN ²	-30.696*** (10.775)	-41.844*** (15.277)	-30.287*** (10.804)	-41.105*** (15.218)	-29.253*** (10.700)	-40.971*** (15.093)	-28.879* (10.734)	-40.380*** (15.059)
BODOWN ³	40.662*** (14.758)	57.700*** (21.825)	40.337*** (14.759)	56.582*** (21.692)	38.716*** (14.661)	56.750*** (21.561)	38.451*** (14.668)	55.847*** (21.465)
BLOCKINST	0.064 (0.168)	-1.108*** (0.424)	-0.584 (0.919)	-1.705* (0.973)	-0.043 (0.189)	-1.246*** (0.428)	-0.634 (0.912)	-1.751* (0.962)
BLOCKINST ²			1.856 (2.552)	1.996 (2.452)			1.646 (2.535)	1.701 (2.431)
BLOCKINST ³			-1.393 (2.007)	-1.736 (1.930)			-1.203 (1.996)	-1.471 (1.915)
BODOWN*BD_IND		-2.434 (2.948)		-2.191 (2.931)		-2.823 (2.920)		-2.602 (2.912)
BLOCKINST*BD_IND		2.507*** (0.847)		2.625*** (0.861)		2.512*** (0.836)		2.607*** (0.851)
FACTOR1	0.305*** (0.044)	0.300*** (0.044)	0.301*** (0.045)	0.300*** (0.045)	0.295*** (0.044)	0.286*** (0.043)	0.292*** (0.044)	0.286*** (0.044)
FACTOR2	-0.239*** (0.048)	-0.253*** (0.047)	-0.236*** (0.048)	-0.025*** (0.047)	-0.247*** (0.048)	-0.261*** (0.047)	-0.243*** (0.048)	-0.259*** (0.047)
FACTOR3	-0.006 (0.043)	-0.026 (0.042)	-0.010 (0.044)	-0.033 (0.042)	-0.015 (0.045)	-0.038 (0.043)	-0.019 (0.045)	-0.044 (0.043)
FACTOR4					-0.043 (0.036)	-0.054 (0.034)	-0.042 (0.036)	-0.051 (0.035)
Number of obs.	143	143	143	143	143	143	143	143
Adjusted R ²	0.304	0.354	0.294	0.349	0.312	0.368	0.301	0.361