

Is the Pay – Performance Relationship always Positive? Evidence from the Netherlands

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Abstract

This study examines the widespread belief that executive pay should reflect firm performance. We compile a hand-collected data set of compensation paid to executive directors of Dutch listed companies and analyze if executive compensation is indeed determined by firm performance. A variety of accounting-based and capital market-based performance measures are used. The analysis also encompasses both contemporaneous and lagged relationships, and controls for firm, time and industry characteristics. Our robust empirical analysis fails to detect a positive pay-performance relationship. The finding questions the conventional wisdom that executive pay helps to align shareholder interests with those of managers. It is consistent with the view that powerful managers can influence their own pay. The results of the study suggest that other means of resolving agency problems and novel explanations of executive compensation may provide useful insights.

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1. Introduction

Although executive compensation practices in the US and UK have been widely investigated, there is little systematic evidence on the pay packages received by top managers in other industrialized countries. Continuous debates among employees, regulators and the popular press about the level, structure and the role of executive pay in different countries are triggering a lot of academic interest as well. An interesting observation from the voluminous body of empirical research is that there is no conclusive evidence of a large and positive pay-performance relationship. There are a few studies that document even a negative or no relationship.

The disagreements on pay-performance link are fuelled regularly by new events taking place in many Western economies. The recent event in mid 2006, in which a large number of US companies are discovered to use backdating stock options in order to reward top executives, seems to suggest that companies are camouflaging true compensation levels. In September 2006, the German multinational firm Siemens announced a 30% rise in management pay amid negative corporate news like lower profits and job cuts. The defense of the Siemens chairman's decision to increase pay for top managers was that more shares and bonuses should bring remuneration into line with that of competitors.

In the Netherlands, strong criticisms were made on the total compensation of top executives of many well-known firms like Royal Dutch Shell, Heineken, Reed-Elsevier, Unilever and Van der Moolen. These companies paid their top managers huge increases in 2003-04 and/or 2004-05 irrespective of the meager performance in those years. Directors of multinational companies like Ahold and Royal Dutch Shell were given generous remuneration at the time that these firms were performing poorly. Many such practices were regularly reported in national newspapers.¹ In a report published in December 2006, the Monitoring Commission on Corporate Governance in the

¹ See, for example, the news items on Ahold and Royal Dutch Shell reported in daily newspapers like *Het Financieele Dagblad* (July 9, 2005) and *NRC Handelsblad* (May 18, 2006). The daily financial newspaper *Het Financieele Dagblad* (December 9, 2005) also reports the results of a study undertaken by the Association of Securities Holders (VEB) which finds that listed firms insufficiently follow the principles of good management regarding their pay practices.

Netherlands has expressed its concern about the lack of transparency on executive compensation of Dutch listed firms.

The aim of this paper is to add to the existing literature by presenting a quantitative analysis of executive compensation in the Netherlands and, in particular, to examine the extraordinarily popular belief that executive pay should reflect corporate performance. As far as we know, this is the first comprehensive study that investigates the pay-performance relationship of Dutch companies.²

The study contributes to our understanding of the role of managerial remuneration because of some interesting features of listed Dutch firms. It is widely known that the pressure from many corporate governance mechanisms was very limited in the Netherlands (see De Jong and Veld, 2001 and De Jong et al., 2005 for a detailed description of Dutch corporate governance features). Dutch listed firms are famous for their ingenious use of several anti-takeover defenses that resulted in a bad international reputation with respect to corporate governance quality. Managers frequently proclaim working towards many goals other than shareholder value maximization. Another remarkable feature is that ordinary shareholders have no authority in deciding the remuneration of executive directors. This power rests with the board of non-executive directors (popularly known as the Supervisory Board). Ownership of Dutch listed firms is also relatively concentrated. There are instances in which dominant shareholders of a firm are alleged to collude with the management and influence decisions for their own benefits.³ In an empirical study, De Jong et al. (2005) analyze several years of data from a sample of 140 Dutch firms and find that major outside shareholders, industrial blockholders and financial institutions negatively influence firm value. Different corporate governance rankings have consistently placed the Netherlands near the bottom of the league of Western European countries.

We collect data to analyze the pay-performance relationship of a large sample of Dutch firms during the period 1998-2001. We adopt the standard regression model commonly used in the

² In an earlier study, Duffhues et al. (2002) analyze the relationship between employee stock option grants and firm performance.

³ Events published in the media suggest that the influence of shareholders and non-executive directors on the policies of the firm is in general very limited. The condition is improving as time progresses.

literature. A robust econometric analysis is performed whereby a variety of regression specifications and both accounting and capital market-based firm performance measures are used. This is done primarily because firm performance is the key variable of interest and few of the prior studies report findings from these vital sensitivity checks.

The most important result of our study is that the pay-performance relationship is not positive for Dutch firms.⁴ Several empirical tests even indicate a significantly negative pay-performance relationship. The finding is robust to alternative model specifications. It also holds after making important controls for several factors like firm size, leverage, industry and time. The result lends support to those papers which argue that the rationale of paying managerial compensation goes beyond the notion put forward by the principal-agent theory. Firms also offer compensation for reasons unrelated to corporate performance; for example, to attract, retain and motivate executives, and to establish a long-term binding relationship with the rest of the organization. The result is also consistent with the managerial entrenchment view which postulates that managers use compensation to extract additional rents from the firm. Managers seem to influence their own compensation: higher pay is awarded even when firm performance is not increased.

The rest of the paper proceeds as follows. In Section 2, we provide a discussion of competing views on executive compensation and some empirical studies. Section 3 presents the methodology we use while Section 4 describes the sample selection procedures. The results of the study are presented in Section 5. In the final section, we present the summary and conclusions, and discuss some extensions for future research.

⁴ Although in an ideal setting the most reliable measure of executive compensation would include all major components of cash compensation (e.g. salary, cash bonuses and cash pensions) as well as non-cash compensation (e.g. value of stock options and shares granted in the year, and the change in value on holdings of shares and stock options during the year), data limitations compel us to limit our analysis primarily to cash compensation.

2. Executive compensation

2.1. Theoretical considerations

Stock exchange listed companies are characterized by the special feature where ownership lies in the hands of diverse shareholders and control in the hands of a few professional managers. In the Anglo-Saxon model of corporate governance, the widely acclaimed principal-agent theory asserts that these (self-interested) managers may not always perform their tasks solely in the interest of shareholders. Several mechanisms, therefore, prevail to compel/motivate them to perform their tasks accordingly. One such governance mechanism is designing an appropriate incentive scheme that aligns the interests of managers with those of the shareholders. These incentives include provision of a performance-based pay like cash bonus, stock option grants and common stock grants. Once executives receive adequate compensation, they are assumed to work harder and contribute more to the increase in corporate performance. The pay-performance relationship is, therefore, expected to be positive.

An important question is whether linking pay to company performance is indeed an effective tool in the sense of an 'optimal contracting' device to realize the stated goals of corporations. Huge controversy exists on the functioning of each incentive. It is not clear whether firm value increases significantly by virtue of incentive compensation provided to managers. In case a specific incentive mechanism does not work properly, supporters of the agency theory believe that there are other disciplinary mechanisms (e.g. external board members, major shareholders, debt providers, the capital market, the takeover market) in place to make sure that shareholder interests are properly served.

An alternative perspective on executive compensation comes from the managerial power theory (Bebchuk and Fried, 2004). It postulates that many corporate governance mechanisms are practically ineffective, and therefore, the target goals of firms are formulated by the management itself thereby resulting in sub-optimal incentives and rent extraction. They argue that managerial

remuneration schemes are in fact designed to secure rents at the expense of other stakeholders in the firm. The amount of compensation paid to managers is also 'camouflaged' from the eyes of shareholders so that it is no more related to corporate performance.

2.2. Empirical literature

The available research on pay-performance relationship is documented in two widely cited survey papers of Murphy (1999) and Core et al. (2003). These surveys, mainly based on US studies and covering a variety of issues on compensation, deal with the relationship between chief executive officer (CEO) and shareholder wealth. The most accepted evidence is that the relationship is positive, and the major driving force behind it is equity-based incentives received by the CEO (Hall and Liebman, 1998). The positive pay-performance association confirms the role played by compensation in aligning managerial interests with those of the shareholders.⁵ On the other hand, there are a few studies that do not find a positive relationship. Core et al. (1999) document that *excess* CEO compensation has a significant negative association with subsequent stock return as well as operating performance. Brick et al. (2006) also find that there is a negative relationship between *excess* director compensation and firm performance.

Empirical studies from some other countries consistently document that pay-performance sensitivity is very low (see Conyon and Murphy (2000) and Buck et al. (2003) for UK, and Haid and Yurtoglu (2006) for Germany). A study performed by Zhou (2000) finds a very weak relationship for Canadian firms. Firth et al. (2006) also find positive but very low pay-performance sensitivity for Chinese listed firms owned by private blockholders. Kato and Kubo (2006) analyze CEO compensation of a sample of listed and non-listed Japanese firms. They confirm the positive pay-performance relationship. On the other hand, analyzing a sample of Portuguese listed companies, Fernandes (2006) does not find any link between pay and performance.

⁵ There is also indication that high pay-performance sensitivity leads managers to engage in higher levels of earnings management (Bergstresser and Philippon, 2006).

The limited and inconclusive evidence of a significant positive pay-performance relationship has led many to question the role of compensation as a remedy to the problem of alignment between managers and shareholders objectives. Rather, it has been argued by Bebchuk and Fried (2003) that compensation is an ingredient of the agency problem itself. They contend that the payment of high compensation is an outcome of managerial power and the associated act of rent extraction.

3. Methodology

We adopt the standard empirical literature on executive compensation and use the following regression model to test the relationship between pay and firm performance:

$$\text{Pay}_{it} = \alpha_0 + \alpha_1 \text{Perf}_{it} + \alpha_2 \text{Size}_{it} + \alpha_3 \text{Lev}_{it} + \lambda_j + \delta_t + \varepsilon_{it}. \quad (1)$$

The dependent variable (Pay_{it}) is the amount of compensation paid to executive directors of firm i in period t . It is expressed in natural logarithm (to adjust for the non-normality of compensation distribution). We construct two proxy measures for executive compensation: cash compensation (CASH - consisting of salary, bonus and other cash payments) and total compensation (COMP - consisting of the sum of cash compensation and estimated market value of stock options).

The explanatory variable, firm performance (Perf), is measured in a number of ways. We consider both accounting-based and capital market-based performance measures. The first measure is return on assets (ROA) defined as the operating earnings over the book value of total assets. The second measure is return on sales (ROS) defined as the operating earnings over total sales. Several prior studies use ROA or ROS as direct estimates of profitability. The third performance measure, annual stock return (RET), is a pure capital market-based metric. Our final proxy for firm performance is Q. It is a hybrid of accounting and capital market-based measure defined as the ratio of the sum of market value of common shares and book value of debt to book value of total assets. These four variables proxy financial performance of firms and have widely been used in investigating corporate

performance.⁶ If executive compensation is predicted to be higher in companies with higher performance, then the estimated regression coefficient α_i should be positive.

In our examination of the pay-performance relationship, we employ variables to control for confounding effects. Firm size, defined as the natural logarithm of market value of equity (Size), is used as the first control variable.⁷ It is usually believed that executives of larger firms receive relatively higher compensation. Leverage is used as another key control variable. It is defined as the ratio of total debt to total assets (Lev). Debt holders may closely monitor managerial activities thereby reducing the payment of excess compensation. On the other hand, higher debts can also lead to an increase in firm risk, which in turn necessitates the payment of higher compensation. We use industry (λ) and time (δ) dummies as additional control variables. These dummies pick up common factors that are driven by industry- and economy-wide effects. Finally, ε_{it} is an idiosyncratic error term.

Several robustness checks are undertaken to estimate the sensitivity of results. The regression specification described earlier assumes contemporaneous relationship between executive pay and firm performance. In a separate specification, we use lagged performance measures to account for the premise that executive compensation paid in one year is usually determined by previous year's firm performance. We carry out another robustness check in which both contemporaneous and lagged performance variables are used as explanatory variables in the same regression. Finally, the pay-performance relationship is also investigated running cross-sectional regressions of average pay on average performance.⁸ Since there is no systematic evidence of a contradictory result from all these robustness checks, we do not present the full set of regression results in the paper.

⁶ Q is used as a proxy for firm value in several studies (e.g. Cheung et al., 2006, De Jong et al., 2005). A large number of studies in the management literature also use Q as a proxy of firm performance.

⁷ We also use (in non-reported regressions) logarithm of total assets and total sales as alternative firm size measures and find qualitatively similar results.

⁸ We thank Beni Lauterbach for suggesting these alternative regression specifications.

4. Data

Until April 2002, Dutch firms were not *legally* obliged to make public the amount of compensation paid to CEO and other directors. Company annual reports are the only medium in which compensation information is voluntarily disclosed in the Netherlands. There exists no database that systematically collects compensation information for Dutch listed firms. Therefore, the only possibility is to hand-collect the data.

The data collection process involving all firms listed on the Euronext Amsterdam started in early-2003. Almost 750 annual reports are manually collected for the years 1998-2001. In each annual report, we search for information on executive pay. About two-third of listed firms are found to reveal the amount of compensation paid to executive directors. Our empirical analysis is thus based on almost all listed firms for which managerial remuneration data are disclosed (annual average number of firms = 135).

In the United States, listed firms are required to disclose compensation data of the *five* highest-paid executives. Most US empirical studies analyze data on CEO compensation only. In contrast, it was common for Dutch companies to report the aggregate compensation of the entire top management team, i.e. all executive directors (members of the Management board). Thus, it was impossible to get information on the compensation received by each director. While a few large firms voluntarily reported compensation of CEO or each executive director separately during our study period, most firms simply reported the aggregate compensation. Smaller companies with only one executive director did not disclose any information at all due to privacy right. Moreover, while a few large firms reported annual salary and bonus separately, most firms report cash compensation as the sum of these two components. For the majority of firms, annual salary and bonuses of all executive directors are considered as cash compensation. For several firms, the amount of cash compensation also includes pension payments and compensation paid to retiring directors.

As for executive stock options, we observe that less than two-thirds of firms disclose the number of total outstanding stock options whereas nearly 50% of firms report information on stock option grants. Among the firms that report the number of stock options granted during the year, a majority of them do not disclose their estimated market value. The number of firms used in our analysis therefore varies across different components of compensation because of limitations on data availability. For a small sub-set of firms (ranging between 14 firms in 1998 and 30 firms in 2001), we are able to calculate the amount of total compensation by adding the value of stock options with cash compensation.⁹

In addition to the information on executive pay, we collect annual data on various firm performance measures and key control variables like firm size and leverage. This required collection of balance sheet and income statement data. We compile these from annual reports of firms and the annual publication Handbook of Dutch Companies. Stock price data are first collected from Datastream, and whenever necessary, complemented with that from the financial newspaper. We also classify sample firms into different industry groups based on the SIC classification of Compustat Global.

5. Results

5.1. Descriptive analysis

Table 1 presents yearly summary statistics of executive compensation for the sample of Dutch listed firms. To allow a meaningful comparison over time, we express all monetary amounts in constant prices of 2000. We observe that in 1998, the firms in our sample paid its top management team an average cash compensation of €1.527 million (median = €0.968 million). In general, the amount of cash compensation paid in 1999 and 2000 remained somewhat stable. But, there was a

⁹ Due to data limitation, we are unable to estimate for all sample firms the Black-Scholes approximated market value of executive stock options.

major increase in average cash compensation in 2001: the mean annual cash compensation paid to executive directors is €2.177 million (median = €1.195 million). Using data of 540 firm-years during the four year time-period, we find that the amount of cash compensation paid to executive directors of an average Dutch firm is €1.741 million. The low value of the median reflects the fact that the sample consists of a few firms paying relatively high amount of executive compensation.

[Insert Table 1 about here]

For a smaller sample (95 firm-years), it was possible to collect data on the value of stock options granted to the executive directors. When this value is added to cash compensation received by them, the mean (median) total compensation is €6.492 million (€4.669 million). This higher amount reflects the significant role played by stock options in executive compensation. It is also an outcome of increased valuation of share prices that prevailed during early 2000s.

Descriptive statistics of other variables of interest are presented in Table 2. Panel A provides information on firm performance measures while Panel B on key firm characteristics. Similar to the previous table, the statistics reported in Table 2 are based on about 500 firm-years. The accounting measures of firm performance are positive for a typical firm: the ROA of an average firm is 8.1% while the ROS is 6.2%. But, the average annual stock return is -0.7% (median = 4.8%). The hybrid performance measure Q is positive over the sample period.

[Insert Table 2 about here]

As for the firm characteristics, we use three different measures (total assets, total sales and stock market capitalization) as a proxy for firm size. We observe that the median firm in our sample has total assets of €365 millions, total sales of €458 millions and equity capitalization of €220 millions. A few large multinational firms are responsible for higher values of means. The average debt ratio of sample firms is 62%.

Analyzing information on the distribution of sample firms across industries, we observe that a little less than one-third of firms (168 firm-year observations) come from the manufacturing sector.

Transportation, trade and services sector represents 48% of firms (258 observations). There are only 8% of firms (45 observations) in the financial institutions sector, whereas the information and communication technology industry comprises of 13% of firms (68 firm-year observations). In the analysis that follows, we control for these differences in industry composition by using industry dummies in regressions. In a subsequent robustness analysis, we also report separate results for each industry.

5.2. Regression analysis

Table 3 presents multivariate regression results for cash compensation. In Panel A, we show results assuming that the pay-performance relationship is contemporaneous. In Columns (1) to (4), the results are presented for the four different performance metrics used in the study. The regression specifications are similar except that we replace one performance measure with another. The number of firm-year observations used in these regressions varies from 500 to 532. Besides firm-specific factors like firm size and leverage, we include time and industry dummies as additional control variables (regression estimates on time and industry dummies are not reported in the table for the sake of brevity). The results of regressions show that executive pay is significantly negatively related to return on assets, returns on sales, stock return and Q. It is quite remarkable to observe that all four performance variables consistently indicate a statistically significant negative relationship. The high values of explanatory power (adjusted R^2) and F-statistic are also indicative of the reliability of regression models.

The coefficients of control variables have the same sign and roughly similar magnitude across all model specifications. The logarithm of market value of equity (a proxy for firm size) is found to be a positive and statistically significant determinant of compensation. This positive link is a well-established finding in executive compensation studies. Leverage has a significant positive influence on executive pay. It is not consistent with the usual agency explanation asserting that a high amount of

debt is associated with an increased monitoring of managers by the suppliers of debt, and therefore, a lower level of managerial remuneration. Rather it indicates that higher leverage increases firm risk thereby requiring the payment of a higher amount of compensation to executives.

[Insert Table 3 about here]

One can argue that a non-contemporaneous pay-performance relationship, i.e. directors' remuneration of current year is influenced by previous year's firm performance, can be a more appropriate representation of the reality. In order to test this hypothesis, we perform additional cross-sectional regressions by assuming the existence of a lagged relationship. Panel B reports the results of these tests. Similar to Panel A, we present results for all four performance measures in Columns (5) to (8). The most notable finding is, once again, the negative pay-performance relationship. The estimated coefficients of performance variables are roughly of the same magnitude in both contemporaneous (Panel A) and lagged regressions (Panel B). Only the coefficient of stock return is statistically insignificant. As before, the control variables have similar signs and are statistically significant. The explanatory power of each regression is still high (more than 60%), and the values of F-statistics indicate that all independent variables are jointly significant.

The results from Table 3 clearly suggest that cash compensation paid to executives of Dutch firms is significantly negatively related to firm performance. The finding lends insufficient support to the argument that managerial remuneration acts as an incentive to superior firm performance. Rather, it is consistent with the propositions that managers can influence their own compensation and powerful managers can use pay to extract rents out of the firm for their private benefits. The evidence can also indicate the inability of Supervisory Board members in designing properly the pay structure of executive directors. Considering the fact that during the time-period of our study not a great deal of corporate governance pressure existed for the executives of Dutch firms, the absence of a positive pay-performance relationship is not a surprising result. Brick et al. (2006) argue that in an environment where managers put their self-interests above those of shareholders – a phenomenon popularly known

as cronyism – it is quite possible to find a negative pay-performance relationship. In another study, Collins et al. (2006) find that US firms with weaker corporate governance features are more engaged in adopting the practice of executive stock option backdating. Our findings are fairly consistent with those from a few international studies indicating that the pay-performance relationship is either very weak or absent (Buck et al., 2003; Haid and Yurtoglu, 2006; Fernandes, 2006).

The results of the study can also indicate that the purpose of awarding higher remuneration to managers goes beyond that of influencing corporate performance alone. There are other important justifications like that of attracting and retaining talented executives, and establishing a long-term binding relationship of managers with the firm. The evidence should not be interpreted as an approval of paying exorbitant amount of compensation to executives. Nor, should it be used against the requirement of benchmarking compensation to firm performance. It indicates that the 'ex post' discovery of the lack of a positive pay-performance link can be attributable to a number of legitimate reasons.

5.3. Robustness checks

The regressions reported in Table 3 include annual firm-level observations from each sample year (from 1998 to 2001). We replicate the analysis by using all four years of data available for every firm and running new cross-sectional regressions with four-year average values. Table 4 shows these results. The regression estimates for two firm performance proxies represented by RET and Q are negative and statistically significant. The coefficients of two other performance variables (ROA and ROS) are also negative but insignificant. These results are consistent with the earlier finding of a negative pay-performance relationship.

[Insert Table 4 about here]

To further investigate the pay-performance relationship in detail, we repeat the analysis for each industry and each year separately. We report in Table 5 the results of four industry groups used in

this study. As before, four different performance measures are used. With the largest number of observations for the manufacturing sector, we observe that the regression coefficients for all performance variables are negative and statistically significant. This is consistent with the results obtained earlier. The results from the transportation, trade and services sector are similar, but the coefficients of ROA and ROS are not significantly different from zero. For regressions involving firms in the information and communication technology sector, the return on assets variable has a significant negative coefficient. The only contradictory result is observed for regressions involving financial institutions. Here we find that the pay-performance relationship is positive. With 10-11 firms present in this industry (about 42 firm-year observations), the positive coefficients associated with the performance measures can be interpreted as anomalous.¹⁰ Turning to the yearly analysis, the results (not reported here) show that several coefficients of performance variables are negative and statistically significant. There is no coefficient of pay with a significant positive sign.

[Insert Table 5 about here]

We perform a few more robustness analyses. To check whether the prior obtained results are influenced by the use of market value of equity as a proxy for firm size, we re-estimate all regressions using the logarithm of book value of total assets. We find no systematic evidence of a positive pay-performance relationship. In another analysis, we include both contemporaneous and lagged performance measures as explanatory variables in the same regression specification. Once again, no contradictory finding is observed. Overall, the results of all robustness checks are consistent: there is no systematic evidence that an increase in firm performance is associated with higher cash compensation of executive directors.

¹⁰ Since accounting-based performance measures of financial firms are less reliable, studies usually exclude financial firms from the analysis. Although the reported regression results use industry dummies as additional control variables, the sub-sample results presented here indicate that excluding financial firms from the full sample will lead to a more negative pay-performance relationship.

5.4. Total compensation

Although the results presented above and the robustness checks do not exhibit conflicting findings, one can criticize our results by saying that the measure of compensation used so far is not adequate because it ignores the most important component of incentive compensation, namely the value of executive stock options. As mentioned earlier, an estimate of the market value of stock options is not disclosed by most firms, nor was it possible for us to estimate it. We deal with this concern by making a separate analysis of firms for which the required data are publicly available (the sample ranges between 14 firms in 1998 and 30 firms in 2001). A new variable – total compensation – is constructed which is the sum of salary, bonus and all other cash payments plus the (reported) value of stock options. We repeat the previous regressions but now use total compensation as the dependent variable. The explanatory variables remain unchanged.

In Table 6, we present the results. The first four columns provide the results under the assumption of contemporaneous pay-performance relationship, and the last four columns present those for lagged relationship. The only statistically significant relationship that we observe from the Table is that of a negative association between total compensation and firm performance as measured by Q.¹¹ The contemporaneous regression specification (Column 4) generates a coefficient of -0.13 (t-statistic = 1.84) whereas the lagged specification (Column 8) provides a regression coefficient of -0.06 (t-statistic = 2.60). Thus, the statistical analysis with total compensation that includes the market value of executive stock options does not lead to a different result.¹²

[Insert Table 6 about here]

¹¹ Since a large decline has taken place in the number of observations used in these regressions, it is not unexpected to observe a lower level of statistical significance.

¹² Hall and Liebman (1998) therefore argued to use a more comprehensive definition of executive compensation by including the change in wealth from stock options and stock price increased/decreases.

6. Conclusions

This study contributes to the growing literature on executive pay by analyzing data from the Netherlands. Our primary purpose is to examine whether the amount of remuneration paid to executives of Dutch listed firms is related to corporate performance. The analysis is of importance because Dutch firms provide an interesting scenario: there is relatively limited functioning of many corporate governance mechanisms. For example, the market for corporate control is almost non-existent due to the presence of a large number of anti-takeover devices and high ownership concentration. The independent role of non-executive directors has also been questioned by many.

We observe that the available theoretical framework and empirical studies do not provide a clear-cut picture on the pay-performance relationship. The most widely acknowledged principal-agent theory postulates that compensation being a major incentive mechanism would help in aligning managerial interests with those of the shareholders. Therefore, the reward company executives usually obtain would truly reflect corporate performance. On the other hand, the managerial power theory proposes that executive pay, being a kind of rent-seeking activity on the part of powerful managers, may not necessarily demonstrate a pay-performance relationship.

We analyze the remuneration data of entire top management team of a large sample of Dutch listed firms during the period 1998-2001. The analysis is mostly based on cash compensation because the vast majority of Dutch firms did not disclose sufficient information to allow estimation of the non-cash component. We find no systematic evidence that executive pay of Dutch firms is positively related to corporate performance. Of particular interest are our results from a large number of regressions that show a statistically significant negative pay-performance relationship. Since a concern exists on how to measure corporate performance properly, we construct four different proxies reflecting both accounting-based and capital market-based definitions. In order to make appropriately controls for the potential impact of other factors, we use firm size, capital structure, industry affiliation and time period as key variables. A variety of robustness checks are also performed. None leads us to

believe that the pay-performance relationship is positive. The finding is consistent with the propositions that managers are able to influence their own compensation, and managerial entrenchment is more likely to take place when there is less corporate governance pressure. It is also consistent with the premise that many directors receive pay for non-performance related reasons.

One can argue why, in the corporate governance system prevailing in the Netherlands, shareholders with large ownership stakes will accept a policy of “pay-for-no-performance”. We believe that there is some degree of collusion between blockholders and management. Many blockholders are more concerned with the existing business interests (e.g. receive a high dividend pay out, remain a supplier or a client of the firm), so that there is an increased risk of losing more by being critical against management’s compensation policy.¹³ Prior empirical research from the Netherlands also demonstrates that major outside shareholders, industrial blockholders and financial institutions negatively influence firm value (De Jong et al., 2005).

Although it appears to be an intriguing finding, our study is broadly in line with the vast amount of work in the finance and management literature that fails to find a positive relationship between executive compensation and firm performance. In a meta-analysis of about 50 compensation studies, Tosi et al. (2000) find that less than five percent explained variance of CEO pay is attributed to firm performance measures.

Some limitations of our study deserve to be mentioned so that these issues can be addressed in future research. For example, the period of analysis can be extended to recent years and total compensation can be estimated for a large number of firms. Although we are fully aware of the difficulties involved in assembling a similar panel data set for Dutch firms, corporate governance recommendations of recent years for a full disclosure of executive pay practices will undoubtedly alleviate some of the burden. The definition of total compensation used in this study can also be

¹³ The CEO of Essent (a large Dutch public utility firm) was highly criticized in 2005 for receiving exorbitant pay, but large shareholders were not very eager in demanding a change in the compensation package. Only after high pressure from the public these shareholders, many of them were dependent for their municipal budgets in receiving a high dividend from the firm, gave some support to the public's outrage about high CEO pay.

extended by including other important items, especially value of stocks granted, capital gains/losses on holdings of stocks and options during the year, and pension benefits. The findings of our study can solely be attributed to these missing items. Another issue is the inclusion of corporate governance variables and executives' personal characteristics as additional control variables. Several studies from the US find strong effects of these factors on CEO pay. It would be interesting to see if the addition of these new variables, in conceivably less-effective institutional environment, can still change our results. Limitations on data availability precluded us from doing these analyses. Finally, there can be methodological extensions of the study. We have followed the extant literature in measuring the pay-performance relationship over a short time interval. This may not be an adequate representation of the reality. Since executive directors claim to be more concerned with the long-run interests of a company, a model depicting contemporaneous or one-year lag relationship may fail to capture the total performance effect. A simultaneous equation framework to control for endogeneity, a non-linear pay-performance relationship and even non-financial performance measures may be better representations.

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Table 1.
Executive compensation in the Netherlands

The table shows summary statistics of compensation paid to the entire top management team (all executive directors) of Dutch firms. Panel A presents statistics for cash compensation (salary, bonus and other cash payments) while Panel B reports those for total compensation (cash compensation plus value of stock options). Compensation is expressed in thousands of Euros and in constant 2000 price.

	Mean	Median	St. dev.	No. of obs.
Panel A: Cash compensation				
1998	1527	968	1576	133
1999	1524	865	1722	143
2000	1774	861	2172	138
2001	2177	1195	2742	126
1998-2001	1741	900	2098	540
Panel B: Total compensation				
1998	6304	4703	5075	14
1999	5346	4464	2993	22
2000	6868	4779	4578	29
2001	7058	4638	5531	30
1998-2001	6492	4669	4658	95

Table 2.
Summary statistics

The table shows descriptive statistics of firm performance and firm characteristics for a sample of Dutch firms. Panel A shows the four performance metrics: return on assets (ROA), return on sales (ROS), annual stock return (RET) and Q. Panel B shows several major firm characteristics: total assets (TA), total sales (TS), market value of equity (MVE) and leverage (LEV).

	Mean	Median	St. dev.	No. of obs.
Panel A: Firm performance metrics				
ROA	0.081	0.092	0.206	536
ROS	0.062	0.068	0.257	532
RET	-0.007	-0.048	0.415	505
Q	2.065	1.276	2.202	540
Panel B: Firm characteristics				
TA (mln €)	14,100	365	76,500	540
TS (mln €)	2,751	458	7,908	540
MVE (mln €)	2,880	220	9,173	540
LEV	0.616	0.637	0.199	533

Table 3.
Regression results for cash compensation

The table presents the regression results where the estimation method is the ordinary least squares. The dependent variable is the natural logarithm of cash compensation (salary, bonus and other cash payments) paid to all executive directors. Firm performance is measured by ROA, ROS, RET and Q. Firm size and leverage are measured by MVE and LEV, respectively. Each regression uses industry and time dummies as additional controls (these coefficients are not reported for the sake of brevity). The absolute t-statistics are reported in parentheses. ***, **, * indicate significance at the 1%, 5% and 10% level, respectively.

Panel A: Contemporaneous relationship

	(1)	(2)	(3)	(4)
Constant	8.643 *** (41.66)	8.746*** (41.02)	8.551*** (39.60)	8.951*** (42.27)
ROA	-0.484*** (3.21)			
ROS		-0.296** (2.28)		
RET			-0.249*** (3.20)	
Q				-0.078*** (4.74)
Ln(MVE)	0.384*** (28.21)	0.376*** (27.02)	0.382*** (27.59)	0.388*** (28.62)
LEV	0.428*** (2.62)	0.394** (2.45)	0.512*** (3.26)	0.406** (2.51)
Adj. R ²	0.62	0.62	0.63	0.63
F-statistic	116.83	108.06	113.58	123.31
No. of obs.	528	524	500	532

Panel B: Lagged relationship

	(5)	(6)	(7)	(8)
Constant	8.760*** (37.18)	8.724*** (35.89)	8.690*** (34.15)	9.048*** (34.35)
ROA (-1)	-0.391** (2.09)			
ROS (-1)		-0.248* (1.85)		
RET (-1)			-0.158 (1.49)	
Q (-1)				-0.060*** (3.33)
Ln(MVE)	0.381*** (24.47)	0.379*** (23.45)	0.380*** (21.48)	0.388*** (28.95)
LEV	0.462** (2.51)	0.475** (2.46)	0.510*** (2.58)	0.366** (1.99)
Adj. R ²	0.62	0.62	0.61	0.63
F-statistic	104.97	94.14	86.35	100.75
No. of obs.	382	381	360	384

Table 4.
Results of contemporaneous regressions using annual averages

The table presents the regression results where the estimation method is the ordinary least squares and all variables are calculated as four-year averages. The dependent variable in each specification is cash compensation (salary, bonus and other cash payments) paid to all executive directors. Firm performance is measured by ROA, ROS, RET and Q. Firm size and leverage are measured by MVE and LEV, respectively. Each regression uses industry dummies as additional controls (these coefficients are not reported for the sake of brevity). The absolute t-statistics are reported in parentheses. ***, **, * indicate significance at the 1%, 5% and 10% level, respectively.

	(1)	(2)	(3)	(4)
Constant	8.293 *** (30.73)	8.279*** (29.02)	8.058*** (29.67)	8.690*** (30.63)
ROA	-0.334 (1.24)			
ROS		-0.154 (0.89)		
RET			-0.539*** (2.96)	
Q				-0.074*** (3.21)
Ln(MVE)	0.401*** (18.92)	0.399*** (18.47)	0.413*** (20.19)	0.404*** (19.21)
LEV	0.257 (1.08)	0.286 (1.18)	0.258 (1.16)	0.122 (0.52)
R ²	0.67	0.67	0.69	0.69
F-statistic	84.08	79.11	91.61	87.34
No. of obs.	174	174	172	176

Table 5.
Results of regression analysis for each industry

The table presents the contemporaneous regression results where the estimation method is the ordinary least squares. The dependent variable in each specification is the natural logarithm of cash compensation (salary, bonus and other cash payments) paid to all executive directors. Firm performance is measured by ROA, ROS, RET and Q. Firm size and leverage are measured by MVE and LEV, respectively. Each regression uses year dummies as additional controls (these coefficients are not reported for the sake of brevity). The absolute t-statistics are reported in parentheses. ***, **, * indicate significance at the 1%, 5% and 10% level, respectively.

	Manufacturing			Transportation, Trade & Services				Information and Communication Technology				Financial Institutions				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Constant	8.940*** (28.30)	8.943*** (28.48)	8.640*** (27.22)	9.033*** (29.39)	8.861*** (28.16)	8.928*** (27.01)	8.743*** (28.17)	8.865*** (29.88)	8.319*** (11.88)	8.392*** (11.42)	8.557*** (11.04)	8.772*** (13.26)	8.071*** (21.46)	9.097*** (21.32)	9.627*** (16.89)	8.059*** (15.70)
ROA	-0.645** (2.20)				-0.225 (0.84)				-0.511** (2.02)				3.970*** (3.12)			
ROS		-0.830*** (3.16)				-0.081 (0.37)				-0.359 (1.51)				1.411*** (4.17)		
RET			-0.362*** (2.66)				-0.345** (2.46)				-0.127 (0.67)				0.269 (1.10)	
Q				-0.102*** (3.58)				-0.144*** (3.03)				-0.033 (1.15)				0.332*** (3.59)
Ln(MVE)	0.371*** (18.58)	0.378*** (18.38)	0.380*** (18.07)	0.381*** (18.36)	0.430*** (16.68)	0.425*** (16.82)	0.430*** (18.26)	0.440*** (19.21)	0.431*** (8.73)	0.417*** (8.19)	0.409*** (7.76)	0.402*** (8.22)	0.312*** (11.80)	0.330*** (12.72)	0.296*** (10.05)	0.313*** (10.38)
LEV	0.628** (2.41)	0.539** (2.08)	.810*** (3.26)	0.474* (1.86)	-0.068 (0.31)	-0.092 (0.40)	-0.000 (0.00)	0.016 (0.08)	0.248 (0.63)	0.438 (1.23)	0.238 (0.60)	0.289 (0.71)	2.556*** (7.42)	0.779* (2.00)	1.345** (2.08)	2.294*** (6.34)
Adj. R ²	0.51	0.51	0.52	0.53	0.70	0.69	0.71	0.72	0.53	0.51	0.51	0.51	0.83	0.83	0.75	0.80
F-stat.	60.08	58.46	57.38	60.55	54.50	53.40	68.56	83.19	17.39	16.21	14.77	13.86	95.09	44.60	28.67	70.68
Obs.	257	256	246	257	163	161	153	165	66	66	60	66	42	41	41	44

Table 6.
Results of contemporaneous and lagged regressions for total compensation

The table presents the regression results where the estimation method is the ordinary least squares. The dependent variable in each specification is the natural logarithm of total compensation (cash compensation plus value of stock options) made available to all executive directors. Firm performance is measured by ROA, ROS, RET and Q. Firm size and leverage are measured by MVE and LEV, respectively. Each regression uses industry and time dummies as additional controls (these coefficients are not reported for the sake of brevity). The absolute t-statistics are reported in parentheses. ***, **, * indicate significance at the 1%, 5% and 10% level, respectively.

	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)
Constant	10.03*** (16.34)	10.01*** (15.85)	10.01*** (16.58)	10.00*** (15.59)	Constant	10.49*** (13.98)	10.25*** (13.37)	10.43*** (14.57)	10.54*** (14.66)
ROA	0.34 (0.83)				ROA(-1)	-0.22 (0.70)			
ROS		0.10 (0.40)			ROS(-1)		0.32 (1.48)		
RET			-0.03 (0.27)		RET(-1)			-0.11 (0.87)	
Q				-0.13* (1.84)	Q(-1)				-0.06* (2.60)
Ln(MVE)	0.36*** (9.64)	0.36*** (9.49)	0.36*** (9.78)	0.39*** (9.41)	Ln(MVE)	0.34*** (7.85)	0.34*** (7.83)	0.34*** (8.13)	0.36*** (8.19)
LEV	0.50 (1.19)	0.49 (1.18)	0.48 (1.16)	0.45 (0.94)	LEV	0.39 (0.82)	0.46 (0.94)	0.41 (0.87)	0.21 (0.52)
Adj. R ²	0.62	0.62	0.62	0.63	Adj. R ²	0.53	0.54	0.55	0.57
F-statistic	26.41	26.66	26.35	25.72	F-statistic	15.71	15.39	17.12	17.19
No. of obs.	95	95	95	95	No. of obs.	81	81	75	81