# CEO pay as a reflection of power or performance: an empirical test for The Netherlands, 2002-2006

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## Abstract

**Purpose** – Previous empirical research interprets results from pay-performance studies in the light of either agency theory or managerial power theory. This paper aims to directly estimate the relationship between CEO power, and compensation structure, level, and performance-sensitivity. In doing so, it seeks to test the crucial assumption in managerial power theory according to which more powerful CEOs are able to enjoy higher and less performance-sensitive compensation.

**Design/methodology/approach** – The hypotheses are tested on a detailed dataset, covering compensation for CEOs in virtually all Dutch stock-listed companies, for the period 2002-2006. The paper tests whether the findings are robust against different lag structures and firm size classes.

**Findings** – In general, most of the multi-dimensional measures of power do not appear to have a strong effect on compensation, with one exception: non-Dutch CEOs receive more variable compensation, and receive higher and less performance-sensitive pay than their Dutch colleagues.

**Originality/value** – This paper contributes to the extant CEO compensation literature, which to date relies on interpretations of findings in pay-for-performance studies to argue for either agency or managerial power theory. The direct test of the relationship between power and compensation emphasises the importance of one dimension of a multidimensional power construct. As strong effects of performance of compensation are not found either, the paper suggests that the bipolar debate be extended to include other explanations of compensation arrangements.

**Keywords** Corporate governance, Chief executives, Compensation, Management power

**Paper type** Research paper

## 1. Introduction

The academic debate over executive compensation in publicly listed corporations has grown substantially over the past few decades. Since Jensen and Meckling (1976), scholars hold that executive compensation is best tied to corporate performance. Many papers have been devoted to documenting such a relationship, yet Yermack (1995) discarded most executive compensation theories, and reviews questioned the importance of corporate performance in establishing CEO pay (Dalton *et al.*, 2008; Tosi *et al.*, 2000). Bebchuk and Fried argued that pay is not related to performance since managers have substantial bargaining power over their boards (Bebchuk and Fried, 2004; Bebchuk *et al.*, 2002). They thereby question the assumption that bargaining with the CEO takes place at arms' length. Instead, they contend that non-executive directors depend on the CEO for a re-appointment. CEOs may thus have the ability to influence the structure, level, and performance-sensitivity of their compensation contracts.

Empirically, the battle of these theories takes place through interpretation of findings in pay-for-performance studies. Consequently, for some phenomena, several explanations exist. For example, option re-pricing is interpreted as re-establishing

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incentives by optimal contracting scholars, and as evidence of how managers secure high pay even when performance declines by managerial power scholars (see volume 69 of the *University of Chicago Law Review* for such a confrontation of the two approaches). The joint existence of multiple explanations for the same phenomenon is unsatisfactory, particularly since the predictions from the two theories are derived from different assumptions with respect to the bargaining process. This study aims to contribute by directly estimating relationships between CEO power and compensation contract design, compensation level, and compensation sensitivity to firm performance, respectively.

A pooled time series cross-section dataset comprising most listed firms in The Netherlands for the period 2002-2006 allows us to explore, first, whether CEO power is related to the choice of compensation contracts. Specifically, we hypothesise that when CEOs have substantial power over their board, the compensation contract is more likely to contain long-term incentive plans (LTIP; either stock options or shares). Second, we test whether CEO power is associated with higher compensation levels. After all, CEOs with substantial power may be able to obtain higher salaries or cash bonuses regardless of company performance. We estimate the effect of power on compensation, controlling for the effect of power on the design of the compensation contract. Finally, we hypothesise that CEO power is likely to lead to a lower pay for performance sensitivity (PPS), as CEOs are risk averse. The measures of CEO power are based on a multidimensional scale developed by Finkelstein (1992), and capture structural, ownership, expertise and status sources of CEO power.

The results show that power does not contribute strongly to the explanation of compensation, with one exception: non-Dutch CEOs are more likely to have share plans as part of their compensation. Also, foreign CEOs receive more compensation, which is less performance-sensitive.

## 2. Theory development

Among law and economics scholars, the following two theories of CEO compensation are most prominent. First, optimal contracting relates to neo-classical economics and holds that CEO pay should be structured such that she is motivated to maximise shareholder interests. Second, the managerial power approach is closely related to behavioural law theory, and contends that solving for the agency problem through designing a compensation contract is not the solution to the problem. The CEO may have bargaining power over the board and is likely to try to influence the contract to his/her own benefit. According to the managerial power thesis, when CEOs have such bargaining power, the efficient compensation contract will not be feasible.

In this section, we first develop the optimal contracting thesis and the managerial power approach. This leads us to conclude that a direct assessment of the assumption in managerial power theory, that CEO power affects the compensation contract design, pay level and performance sensitivity, may generate further progress in the CEO performance pay literature.

### *2.1 Optimal contracting versus managerial power*

The starting point of the optimal contracting approach is that rational, self-serving behaviour may create conflicts of interest between shareholders and the CEO (Jensen and Meckling, 1976). Risk-neutral shareholders are assumed to be interested in a return

on their investment, whereas the risk-averse CEO may also value other benefits such as growing a large company, or using company assets to satisfy his/her private needs. After all, with a separation of ownership and control, the marginal benefit to the CEO of her labour does not reflect the marginal contribution of such labour to corporate performance. Therefore, efforts may be misdirected towards generous perks consumption, or strategies that benefit the CEO's utility more than company performance. Such a deviation from shareholder interests is possible due to information asymmetries. A solution to the agency problem thus asks for measures that counter the motivation to both undersupply and misdirect effort. Various mechanisms that mitigate this agency problem have been identified (Dalton *et al.*, 2008), including the design of compensation contracts. A compensation contract that specifies that the CEO receives the highest pay when corporate performance is at its top, makes the CEO strive for corporate objectives instead of private motivations to deviate from these objectives (Jensen and Murphy, 1990).

Managerial power scholars argue that directors, in practice, do not have the bargaining power to reach the equilibrium which optimal contracting prescribes (Bebchuk and Fried, 2004). The argument builds on insights from the board member selection process. When new directors are appointed, the company submits one slate to the shareholder meeting, which is usually approved. The CEO has a substantial influence over who gets onto the company's slate (Westphal and Zajac, 1995). A director who opposes a generous compensation package for the CEO may not be slated (Westphal and Khanna, 2003), and thus such a director may feel that his personal interests are best served when he does not oppose the pay package. In principle, in the US and other countries, shareholders also have the right to submit a slate to the shareholder meeting, yet this rarely happens since selecting and drawing up a list of candidates is costly (Bebchuk and Fried, 2004). Therefore, executives and directors alike may have been insulated from the influence of shareholders, which renders the compensation issue essentially a boardroom topic. Inside the boardroom, exerting the power which formally accrues to the directors is compromised by the CEO's influence over director nomination. Therefore, the arms' length bargaining assumption is not met in practice.

What, besides the CEO's norms as to what is reasonable, then limits executive compensation? Bebchuk *et al.* (2002, pp. 786-8) introduce the concept of outrage costs, which serves as a constraint on CEO pay. If pay is set excessively high, public outrage may cause social and reputational damage to the directors. Both the CEO and the other directors may experience difficulties in securing positions in other companies, when they have been associated with excess managerial rent extraction. Also, investor groups may try to generate profits by placing a tender offer, obtaining control over the firm's assets, removing the CEO, and selling off the company at a higher price. Thus, outrage costs are associated with reputational concerns and career prospects for the CEO, and place a limit on her compensation level.

Both the managerial power and the optimal contracting scholars have argued that empirical studies support their predictions. As extensive reviews are available elsewhere (Bebchuk and Fried, 2004; Core *et al.*, 2003; Devers *et al.*, 2007), we do not aspire to provide full coverage here. In general, pay for performance relationships tend to be weak in (European) countries where equity-based compensation is not dominant (see, e.g. Duffhues and Kabir, 2008). For The Netherlands, the country for which data

have been collected for the present study, research into this topic is only recently possible due to new legislation demanding disclosure of compensation. It is therefore not surprising that there are only a few studies testing Dutch pay-performance sensitivity (Duffhues and Kabir, 2008; Otten *et al.*, 2008). While Otten *et al.* (2008) find a positive relationship between performance and equity-based compensation, Duffhues and Kabir (2008) do not completely cover such variable pay components. Duffhues and Kabir (2008) do find a negative relationship between performance and cash compensation, a finding which is not shown in Otten *et al.*'s (2008) research.

*2.2 Hypotheses*

We test the basic assumption that CEO power affects the structure of the compensation contract, the level of compensation, and pay for performance sensitivity. This is, after all, the central hypothesis in managerial power theory. The key argument is that CEO power not only affects post-contractual moral hazard, but that the CEO is also likely to influence the parameters of the compensation contract. Assuming that the compensation can be paid through salary, bonus and long-term incentives, the first two are arguably less subjected to camouflage and more likely to elicit outrage. Of course, if a CEO has the power to affect the composition of the peer group, this may positively impact on the level of the salary. Also, through the selection of performance targets, the bonus may be subjected to managerial power. Yet the costs of stock option and share plans can both be diluted and camouflaged. Costs are diluted because shareholders also bear part of the cost of stock options and shares – after all, their claim concerns a smaller part of the profit pie. Costs can also more easily be camouflaged, as particularly conditional options – those for which the number that is granted depends on performance targets – can be subjected to various kinds of complex calculations. Shareholders will find it difficult to estimate the value of the option when faced with the decision to approve the compensation package. This does not hold for salary and bonus levels, where the value of the compensation elements is more obvious. Therefore, we argue that long-term incentive plans are more susceptible to camouflage, and hence more appropriate as a vehicle to compensate a relatively powerful CEO in a more generous way for running performance risks. This gives:

*H1*. CEO power is positively associated with the adoption of long-term incentive plans (LTIP).

Because LTIPs introduce uncertainty into the expected compensation of the risk-averse CEO, a risk premium may be added to the compensation contract as CEOs may otherwise not accept the contract. However, following this logic, higher compensation would be due to the risk-aversion of the CEO, not to his/her power. Managerial power theory has not placed a strong emphasis on pay levels, although it seems that public outrage over compensation is more about the level of compensation than about its structure, and maybe even about performance sensitivity. The rationale which is applied to the sensitivity of pay to performance and the structure of compensation contracts, however, directly extends to the level of compensation: CEOs having substantial bargaining power may succeed to obtain larger (performance-insensitive) sums as compensation for their efforts. Furthermore, powerful CEOs may be able to mitigate outrage for a given level of compensation. This logic suggests:

*H2*. CEO power is positively associated with the level of CEO salary and bonus.

Finally, the risk averse CEOs' utility function is not only increasing in the level of pay, but also in the performance invariability thereof. It holds by definition for risk-averse agents that a certain grant of one dollar is preferred over a grant with an expected value of one dollar. It has been argued that CEO power is likely to lead to the adoption of long-term incentive plans. This is because these plans are more susceptible to camouflage and less likely to cause outrage than cash compensation. In the absence of outrage costs, CEOs would prefer to receive pay increases in cash, yet as this is much more likely to cause outrage than pay through LTIPs, CEOs are argued to strive for the adoption of LTIPs and subsequently strive for a low sensitivity of pay to performance for these plans. In this way, the uncertainty over expected earnings is reduced. Therefore, we have:

*H3.* CEO power negatively moderates the relationship between performance and compensation.

## 3. Data and method

### *3.1 Empirical context and sample*

The Dutch corporate governance system is characterised by a two-tier structure, consisting of an executive management board and a supervisory board. An individual cannot be a member of both boards simultaneously. On average, board size in listed companies is five and three members for the supervisory and management board, respectively (Spencer Stuart, 2005). The CEO is considered to have a large influence on appointments to the supervisory board (Van der Goot and Van het Kaar, 1997), although the rights of shareholders and employees to appoint non-executive directors have increased. This is particularly due to legislation that grants the workers' council the right to a binding nomination of (no more than) a third of the non-executive directors. The corporate governance code of 2004 – the Tabaksblat code – also increased the rights of shareholders *vis-à-vis* management. In depth reviews of corporate governance in The Netherlands are Akkermans *et al.* (2009), Poutsma and Braam (2005), and Van Ees and Postma (2005).

We aimed to include all firms listed on the Amsterdam Euronext stock exchange in our sample. An initial count of 177 listings was reduced to a final dataset of 107 companies, by removing:

- all companies with no material business activity in The Netherlands;
- all companies which were not listed for at least three years in the sampling period; and
- firms for which annual reports could not be found after consulting public sources and contacting the companies directly.

A dataset of all CEOs in 107 stock-listed Dutch companies in 2002-2006 was, finally, hand-collected. Information on compensation was derived from the annual reports of these companies. Firm performance data was taken from Thompson Financial's Datastream database. CEO power was derived from annual reports and company web sites. We recorded compensation information from 2002, when the reporting of individual executive compensation levels for all statutory members of the management board was required for the first time.

Before removal of cases due to missing information for the independent variables, 576 CEO observations remained. Some companies are entered twice in one year, due to a CEO change, and 100 firms are included for all years. For 43 companies, there is only one CEO during the observation window, while the median number of CEOs per firm is two (the maximum is three). In sum, the observed units are relatively stable throughout the years, as 93 percent of the firms have a listing in all years, and 92 percent of the firms experienced no more than one CEO change.

*3.2 Compensation variables*

We include fixed salary, cash bonus, stock option grants, share grants and the change in the value of the option and share portfolio in our study. Such an all-inclusive study goes unprecedented in The Netherlands, and is rarely seen in the international academic literature at large[1]. The salary – but not the bonus – was annualised in case the CEO joined or left the company during the year. Where necessary, conversions to euros were made.

Options and shares contain a variety of underlying concepts. Option and share grants have been included, as well as the appreciation of the value of portfolios of options and shares previously granted to the CEO by the company. Obviously, LTIPs may contain other forms of compensation as well, such as deferred cash payments, and the value of a requirement to hold a number of shares in the company, but these forms are rare in The Netherlands. Stock options were valued through the binomial model, although the resulting values correlated with a coefficient of 0.99 with the Black Scholes valuation of the same option series. Stock options may be granted conditionally or unconditionally. In the former case, the number of options effectively granted at the end of the vesting period depends on some performance criteria. If options are conditionally granted their expected number is used in the calculations, applying the equal probabilities method. Once options have been granted, the wealth of the CEO varies with the changes in the values of these options. Such changes, although of material importance, have rarely been taken into account in empirical work (Hall and Liebman, 1998). Therefore, the six input parameters to the binomial model are updated every year the options have not been exercised or lapsed. Stock options may or may not lapse when a CEO leaves the company, and this has been taken into account. The profit obtained by exercising options is also included.

A large minority of 42 companies (39 per cent) have granted (un)conditional shares in at least one year. The valuation of these grants is straightforward: the amount granted is multiplied by the share price at the end of the year, averaged out over thirty closing prices. Comparable to option portfolios, share grants also constitute a portfolio if the grants cannot be sold for a number of years, as is usually the case. The change in the value of shares has been administered accordingly. If unvested shares lapse because of termination of the executive's contract, this is taken into account.

*3.3 Firm performance, power, and control variables*

*Firm performance*. According to Devers *et al.* (2007), company performance has been measured in a variety of ways, including both market-based measures, such as share price increase or total shareholder return, and accounting-based measures, such as return on equity or return on assets. Since accounting-based measures of corporate performance reflect past performance, whereas investors also factor in expected future

performance in determining the stock price, the choice of performance measure is not conceptually unimportant (Devers *et al.*, 2007). Empirically, however, there is not much guidance as to which measures are frequently used.

To measure company performance, we first made an inventory of the performance criteria used by the 54 largest companies in 2005, and the 63 largest companies in 2006, both for short-term variable compensation (i.e. cash bonus) and long-term (i.e. options and share) plans. The plethora of criteria that was found indicates that a single measure of corporate performance is likely not to capture all aspects of corporate performance on which compensation contracts steer. Although a large variety of targets was set, it was possible to create groups of performance criteria at a higher level of abstraction. The conceptual difference between, for example, relative share price and relative total shareholder return will be small. Thus, four performance measures were defined and applied throughout the study. These performance measures cover more than 75 percent of the observed performance measures. The performance criteria not covered by our selection refer mostly to cash flow variables or ambiguously defined criteria such as "growth" or "the value of new businesses". For this study four performance measures were used: revenues, profit, relative total shareholder return, and earnings per share (EPS). The data were obtained from Thomsen Financial's database Datastream.

*Power*. In line with Finkelstein (1992) and Grabke-Rundell and Gomez-Meija (2002), we distinguish among four sources of CEO power: structural, expertise, status, and ownership power. First, ownership power is measured through the percentage of shares held by the CEO (Westphal and Zajac, 1995). Second, structural power was measured through the CEOs tenure on the board (Hill and Phan, 1991). CEOs who have held the position longer have likely developed relationships with directors. Third, nationality (Carpenter *et al.*, 2001) and education level (Daily and Johnson, 1997) proxy for expertise power. Nationality is recorded as a binary variable indicating whether the CEO is Dutch (coded 0) or not (coded 1). Finally, status power is measured by the number of non-executive positions held by CEOs in other firms. Although CEOs are not allowed to sit on the supervisory board of their own firm, 17 percent held a seat on the board of another company.

*Control variables*. Three control variables were included in this study. As Tosi *et al.* (2000) demonstrate, the lion's share of compensation is explained by firm size. Thus it is imperative to include this variable, measured as the log of total assets. Ownership concentration may well impact the extent to which the agency problem is salient, as dispersed ownership is a condition for free-riding problems among shareholders with respect to their monitoring efforts. Thus, we constructed a Herfindahl index in which the sum of the squared ownership percentages was calculated to indicate ownership concentration. We made use of a database of ownership, constructed from filings with The Netherlands Authority for the Financial Markets and a Dutch financial newspaper. Third, as compensation practices tend to spread through inter-corporate networks (Davis and Greve, 1997), and since US firms tend to pay a larger share of executive pay through stock and stock option plans, it was expected that a listing on a US stock exchange may make it more likely for a CEO of a Dutch firm to be paid through such means. We thus included a binary variable indicating whether (coded 1) or not (coded 0) a firm was also listed on the New York Stock Exchange or NASDAQ.

*3.4 Method*

All hypotheses are tested through panel OLS regression. As the dependent variable in the models of compensation structure is binary, probit models were estimated to test the associated hypothesis. Straightforward regressions of the level of compensation on power and performance variables would fail to acknowledge that some of the factors assumed to explain pay levels may also have an effect on the adoption of pay practices. For example, if CEO power causes the adoption of variable pay, then such analyses may well suggest that power is related to the level of pay just because variable pay components are likely to generate higher payments. We control for this issue through interaction effects (Jaccard and Turisi, 2003). We demean all explanatory variables, and estimate compensation level as a function of control variables, power variables, and the interaction among power and a dummy indicating whether variable pay is present.

Testing the hypothesis that power affects the performance sensitivity of compensation, while controlling for the effect of power on contract choice, involves introducing interaction terms among the four performance criteria and the five power measures. Implementing this consideration, however, consumes many degrees of freedom, which is deemed inappropriate relative to the number of observations. Therefore, the notion that contract choice may affect the performance sensitivity of pay is left to future research, and we only assess the plain PPS effect, regardless of whether this is due to contract choice or other sources. Also, as it was found that revenues did not contribute anywhere in these models, this variable was omitted from the models.

In all models, a (Huber-)White correction for heteroskedasticity was introduced, and in the models for compensation levels and PPS it was tested whether period fixed effects added to the explanatory power of the models (this was not the case). Autocorrelation is generally difficult to assess in datasets with a small number of years. First order autoregressive schemes have been implemented, but these did not significantly affect the autocorrelation diagnostic statistics and were therefore left out. Robustness checks against a different lag structure, and different classes of firm size were implemented.

## 4. Results

Table I contains the descriptive statistics and the correlation coefficients. High correlation coefficients are found among firm size, and salary and revenues. The correlation between revenues and size may be due to revenues not being scaled to size. The correlation between firm size and salary corroborates previous research, which has found that the lion's share of compensation is explained by firm size. The correlation coefficients are low to moderate among the compensation forms, and low among power measures and among performance measures. Also, there is no strong bivariate relationship between power measures, performance measures, and compensation types. Therefore, there is no need to worry about multicollinearity.

The probit analyses explaining contract choice are shown in Table II. All models reach statistical significance, with the exception of the unconditional stock options models. The control models confirm the expectations: CEOs in larger firms and held by many small owners, are presumably more difficult to monitor and variable pay structures are more readily observed here. Also, a listing on a US stock exchange contributes to the installation of such pay components. In terms of CEO power, there

| | | Mean | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Variable pay* | 0.52 | – | | | | | | | | | | | | | | | | |
| 2 | Size | 13.25 | 2.57 | 32 | | | | | | | | | | | | | | | |
| 3 | Owner concentration | 0.11 | 0.15 | −18 | −16 | | | | | | | | | | | | | | |
| 4 | Foreign listing* | 0.17 | – | 26 | 44 | −10 | | | | | | | | | | | | | |
| 5 | CEO ownership | 0.03 | 0.13 | −1 | −7 | 47 | 10 | | | | | | | | | | | | |
| 6 | Education level | 2.85 | 0.58 | 9 | 6 | −11 | 1 | −14 | | | | | | | | | | | |
| 7 | Nationality* | 0.15 | – | 19 | 22 | 4 | 16 | 13 | 0 | | | | | | | | | | |
| 8 | Tenure | 7.21 | 6.37 | −3 | 17 | −5 | 3 | 3 | −11 | −17 | | | | | | | | | |
| 9 | Other positions | 0.15 | 0.49 | 3 | 17 | −6 | 1 | 4 | −2 | −11 | 28 | | | | | | | | |
| 10 | Salary | 450 | 347 | 26 | 61 | 3 | 40 | 13 | 1 | 30 | 0 | 6 | | | | | | | |
| 11 | Cash bonus | 237 | 428 | 21 | 55 | 4 | 39 | 13 | −7 | 38 | 4 | −2 | 46 | | | | | | |
| 12 | Options and shares | 268 | 1,431 | 19 | 10 | 2 | 6 | 9 | 4 | 6 | −2 | −2 | 14 | 26 | | | | | |
| 13 | Total compensation | 1,121 | 1,763 | 22 | 37 | 3 | 20 | 11 | 3 | 26 | −2 | 0 | 44 | 60 | 77 | | | | |
| 14 | Revenues | 5,373 | 14,780 | 20 | 68 | −14 | 37 | −8 | 7 | 26 | 5 | 5 | 40 | 51 | 4 | 26 | | | |
| 15 | Earnings per share | 1.27 | 1.56 | −10 | 26 | −8 | −8 | 0 | 12 | −11 | 7 | 0 | 3 | 2 | −2 | 0 | 15 | | |
| 16 | Profit | 0.04 | 0.27 | 1 | 5 | −8 | −7 | −37 | −14 | −2 | 5 | 6 | 1 | 2 | 5 | 6 | −5 | 8 | |
| 17 | Relative TSR | −0.01 | 0.41 | −2 | 1 | 1 | −5 | −4 | −2 | 6 | 5 | 10 | −6 | 6 | 13 | 11 | 0 | −4 | 19 |

**Notes:** For variables 10-13, means and standard deviations are × €1,000; Correlation coefficients (× 0.01): for coefficients > 0.11, $p < 0.01$; for coefficients > 0.08, $p < 0.05$

**Table I.**
Descriptive statistics and correlations (× 100)

| | Variable pay | | Conditional stock options | | Unconditional stock options | | Share plans | |
|---|---|---|---|---|---|---|---|---|
| Constant | 0.14* | 0.21** | −0.99** | −1.02** | −0.61** | −0.59** | −0.94** | −0.97** |
| Size | 0.19** | 0.16** | 0.21** | 0.21** | 0.01 | −0.01 | 0.26** | 0.24** |
| Ownership | −1.11* | −1.48* | −1.37* | −1.07 | −0.17 | −0.49 | −2.62** | −2.28 |
| Foreign listing | 0.65** | 0.59* | 0.23 | 0.46* | 0.42* | 0.33 | 0.37 | 0.46* |
| CEO ownership | | 0.97 | | −1.07 | | 1.26 | | −3.44 |
| Education level | | 0.12 | | −0.22 | | 0.09 | | 0.32 |
| Nationality | | 0.63* | | 0.03 | | 0.31 | | 0.78** |
| Tenure | | −0.02 | | −0.09** | | 0.01 | | 0.00 |
| Other positions | | −0.03 | | 0.43* | | −0.01 | | −0.38 |
| *n* | 379 | 313 | 379 | 313 | 379 | 313 | 379 | 313 |
| LR-statistic | 83.74** | 66.50** | 65.76** | 73.10** | 7.54 | 10.42 | 102.56** | 105.98** |
| McFadden $R^2$ | 0.16 | 0.16 | 0.17 | 0.21 | 0.02 | 0.03 | 0.25 | 0.29 |
| Hit rate | 0.67 | 0.67 | 0.81 | 0.79 | 0.73 | 0.72 | 0.81 | 0.84 |

**Notes:** Huber/White robust standard errors and covariance; *$p < 0.05$; **$p < 0.01$

**Table II.**
Probit models of compensation structure

are not many significant findings. An effect of nationality on the adoption of share plans is found, which is strong enough to carry over to the explanation of variable pay structures in the aggregate. Foreign CEOs apparently push for – or are offered – compensation through shares in the company. It is also found that tenure contributes negatively to the adoption of conditional stock option plans, and that having positions on other firms' boards actually increases the likelihood of having such plans in place.

In Table II, independent variables were lagged one year, but assuming contemporaneous effects left the results qualitatively unchanged. The effect of having other positions on the adoption of conditional stock option plans no longer appears with contemporaneous effects and the relationship between having a foreign listing and variable pay components grows stronger, yet all other results remain. This is not the case when the models are estimated separately for the firms in the large and midcap indexes on the one hand, and the other listed firms on the other hand. First, several variables have to be dropped because an explanatory variable correlated perfectly with the dependent variable (e.g. all CEOs with conditional stock options in small firms did not have positions on the boards of other firms). The effects of the control variables were mostly weaker, as index is partly an indicator for firm size, ownership concentration, and foreign listing. Firms not included in an index are, on average, smaller, have more block owners, and are not listed on a US exchange, than firms included in these indexes. While the results in Table II are confirmed for firms included in the indexes, replication is often not found for the other firms. Therefore, when interpreting the results in Table II, it should be taken into account that the findings mostly apply to firms included in one of the Euronext indexes. Concluding, we generally find weak support for *H1*, and particularly for the firms included in an index only.

Table III presents the findings explaining the level of compensation. All models reach statistical significance, particularly salary is well-explained by the independent variables. The control variables again show findings in line with expectations: larger firms pay higher fixed salaries and bonuses, when ownership is dispersed bonuses tend to be lower (as variable pay components are used more to reward CEOs), and a foreign listing adds to the salary of the CEO. Firms with variable pay components obviously pay

| | Salary | Bonus | Options/shares |
|---|---|---|---|
| Constant | 12.91** | 9.28** | 16.01** |
| Size | 0.23** | 0.68** | 0.00 |
| Ownership | −0.13 | 3.64* | −0.05 |
| Foreign listing | 0.17** | −0.41 | 0.03 |
| Variable pay | −0.06 | 1.27* | 0.05** |
| Revenues | −13.48** | −22.52 | −0.18 |
| Earning per share | −0.01 | −0.03 | 0.00 |
| Profits | 0.06 | 1.38 | 0.07 |
| Relative TSR | −0.03 | 1.42* | 0.02 |
| *Power variables* | | | |
| CEO ownership | 1.74** | −22.94** | 0.17* |
| Education level | 0.05 | −0.69 | 0.02 |
| Nationality | 0.65* | 2.70** | −0.02 |
| Tenure | 0.01 | −0.03 | 0.00 |
| Other positions | −0.05 | 1.46** | 0.00 |
| *Interactions with variable pay* | | | |
| Variable × CEO ownership | −1.03* | 13.30 | −0.12 |
| Variable × education level | −0.08 | 0.51 | −0.02 |
| Variable × nationality | −0.41 | −1.62 | 0.07* |
| Variable × tenure | −0.01* | 0.04 | 0.00 |
| Variable × other positions | 0.07 | −1.89* | 0.01 |
| *n* | 298 | 300 | 292 |
| *F*-statistic | 49.90** | 6.26** | 3.88** |
| Adjusted $R^2$ | 0.75 | 0.23 | 0.15 |

**Notes:** Variables included in the interaction terms have been demeaned, and dependent variables are log-transformed; White diagonal standard errors and covariance; *$p < 0.05$; **$p < 0.01$

**Table III.**
Regression models of compensation level including interaction terms

more in terms of options and shares, and the significance of the variable pay dummy may explain why there are no firm size, ownership, and listing effects here. Table II has already demonstrated, after all, that these variables explain the adoption of such pay components. Few significant pay-performance relationships are found. We also estimated these models with contemporaneous effects of the independents, and find results which are more in line with expectations: the effect of RTSR on bonuses no longer holds, and an effect of profits on the bonus emerges instead. Also, RTSR is positively related to stock and share compensation. These findings emphasise the importance of lag structure decisions in pay-performance studies.

We find several effects of CEO power on the compensation level. Particularly, CEO ownership and a non-Dutch nationality contribute positively to salary levels. The first finding is also found when the independent variables are not lagged. A negative effect of CEO ownership on bonuses is found, which is puzzling, and cannot readily be explained. Non-Dutch CEOs experience larger bonuses, and when the CEO has positions on other firms' boards, the bonus tends to be larger as well. These findings are also replicated with contemporaneous effects. This indicates a substantial effect of CEO power on bonuses. CEO ownership, finally, contributes to the level of stock option pay, which is also a robust result.

The interactions of power variables with the variable pay dummies reflect the effect of power on compensation through contract choice. We find negative effects of CEO ownership and tenure on salary, through contract selection, yet the latter does not stand the robustness check. We also find a negative effect for other positions on bonuses and a positive effect of nationality on bonuses. Neither of these effects exists with non-lagged variables. In sum, the results show that there are some effects of power on compensation, yet it is not possible to clearly distinguish whether these effects were produced by the contract choice or exist regardless of the contract. The effect of nationality on all compensation types stands out, however, indicating that foreign CEOs experience higher compensation, which adds to the effect of nationality on share plan adoption that was found before. Overall support for *H2* is, however, weak.

The results of power on performance sensitivity, finally, are presented in Table IV. We find eight significant effects of power on the effect of performance on compensation, therefore on PPS. Six of these are in line with the expectation that power reduces the performance sensitivity of pay, thus providing support for *H3*. It is again striking that four of the eight significant parameters – including one that contradicts *H3* – relate to nationality as a source of power. The unreported models with contemporaneous effects are qualitatively the same, yet different parameters show up significant in a few cases. Nevertheless, *H3* would be supported to the same extent if these models were relied upon.

## 5. Conclusion and discussion

In sum, our results show various effects of power on the structure, level, and performance sensitivity of CEO compensation. While many of the findings are not in line with the hypotheses, or do not stand robustness checks, it is striking that nationality as a source of power appears to be a strong predictor in many models. Foreign CEOs, particularly in firms that are included in a stock index, tend to be paid more through share plans than native Dutch chief executives. Subsequently, these CEOs tend to be paid more, and their pay tends to depend less on performance. Although nationality may be given other interpretations than mere power, this finding warrants further research.

The present study suffers from several limitations, which may result in future research. First, a qualification of the results is that the managerial power theory is not strongly supported for this specific context. It may well be that institutional characteristics of the Dutch corporate governance system make it difficult for powerful CEOs to affect their compensation contracts. This may be because the two-tier board structure that is present, particularly in light of the structural regime, may establish more independent boards than may be found in other countries. Moreover, long-term incentive plans have been used much more extensively in the USA as compared to European countries. Thus, outrage costs may place a stricter constraint on the rents that can possibly be extracted through such plans than is the case in the US. Other institutional differences may, on the contrary, lead to the expectation that managerial power should be more salient in The Netherlands. Particularly, it has been documented that shareholder protection is weak (Chirinko *et al.*, 2004), although companies have abolished defensive mechanisms since this was recommended by the 2004 corporate governance code. In light of this, it is noteworthy to emphasise that the consistent

| | Salary | Bonus | Options/shares |
|---|---|---|---|
| Constant | 12.96** | 9.22** | 16.01** |
| Size | 0.19** | 0.62** | 0.00 |
| Ownership | −0.19 | 4.03* | −0.01 |
| Foreign listing | 0.13* | −0.37 | 0.02 |
| Variable pay | −0.13* | 0.75 | 0.05** |
| Earning per share | −0.04* | −0.08 | 0.00 |
| Profits | 0.25 | 10.04** | 0.21 |
| Relative TSR | −0.06 | 0.77 | 0.01 |
| *Power variables* | | | |
| CEO ownership | 1.80** | −18.44* | 0.29* |
| Education level | 0.05 | −0.45 | 0.03* |
| Nationality | 0.86** | 2.94** | −0.03 |
| Tenure | 0.01 | −0.07 | 0.00 |
| Other positions | −0.02 | 2.15** | 0.04 |
| *Interactions of power with variable pay* | | | |
| Variable × CEO ownership | −1.39* | 0.02 | −0.33* |
| Variable × education level | −0.11* | 0.60 | −0.02 |
| Variable × nationality | −0.82** | −1.69 | 0.09* |
| Variable × tenure | −0.02** | 0.05 | −0.01* |
| Variable × other positions | 0.10 | −2.32** | 0.04 |
| *Interactions among power and performance variables* | | | |
| EPS × CEO ownership | 0.17** | −1.47 | 0.00 |
| EPS × education level | −0.10** | 0.00 | −0.02 |
| EPS × nationality | −0.30** | −0.45 | 0.09* |
| EPS × tenure | −0.00 | 0.05 | 0.00 |
| EPS × other positions | −0.02 | −2.32** | 0.00 |
| Profit × CEO ownership | −0.53 | −22.85** | −0.08 |
| Profit × education level | 0.38 | 0.22 | −0.21 |
| Profit × nationality | −1.30 | −4.82 | 0.30 |
| Profit × tenure | 0.10 | 0.40 | 0.00 |
| Profit × other positions | −0.67 | −2.19 | 0.42 |
| RTSR × CEO ownership | −0.24 | −18.80 | −0.19 |
| RTSR × education level | 0.02 | −1.04 | −0.03 |
| RTSR × nationality | −0.05 | −5.22* | −0.15** |
| RTSR × tenure | 0.00 | −0.08 | 0.00 |
| RTSR × other positions | 0.05 | −0.10 | 0.00 |
| *n* | 298 | 300 | 293 |
| *F*-statistic | 24.20** | 5.02** | 3.02** |
| Adjusted $R^2$ | 0.71 | 0.30 | 0.18 |

**Notes:** Variables included in the interaction terms have been demeaned, and dependent variables are log-transformed; White diagonal standard errors and covariance; *$p < 0.05$; **$p < 0.01$

**Table IV.**
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effect of foreign nationality on compensation may be context-specific as well. The Netherlands used to have a fairly closed "old-boys-network", but recently foreign CEOs are increasingly appointed (Van Veen and Marsman, 2008). Future research may examine whether the effect of nationality on compensation is also found in other, small, open economies.

Second, although we use a multidimensional conceptualisation of power, all power measures are essentially based on objective proxies, available in public archives. There is, therefore, an imperfect match with the power concept in managerial power theory, which refers to the influence of the CEO on the reappointment of non-executive directors. Here, social psychological perspectives on power, using interpersonal influencing tactics, are ignored. It may well be that other aspects of power, not included in this study, are better able to capture the social dynamics in the boardroom (see, e.g. Wade *et al.*, 1990). Westphal has extensively used such influencing tactics, such as ingratiation and persuasion (Westphal and Bednar, 2008; Westphal and Khanna, 2003; Westphal and Stern, 2006, 2007). While these tactics have not been applied in the context of executive compensation, fruitful research might be rooted in this approach. Similarly, other concepts may capture executive power, such as charismatic leadership and managerial self-efficacy, and prove to be able to explain executive compensation. In this paper, only CEO power was taken into consideration. This approach may be contested because board power is left out of the equation. While CEO power may have explanatory power in itself, further insights may be generated when board power is taken into account.

Third, future research may also focus on compensation decisions at a higher level of detail and precision. For example, in conditional option plans, the extent to which changes in performance result in changes in expected payments could be a superior measure of pay sensitivity than the realised, *ex post*, share price elasticity of income which is often used in the empirical literature (Jensen and Murphy, 1990). More generally, it has been argued that stock options and share plans have different behavioural consequences as there is no downside risk to stock option plans (Certo *et al.*, 2003). Conditional stock options plans have not been studied often in the literature, particularly since US compensation contracts are rarely adjusted for general market trends (Bertrand and Mullainathan, 2001), yet conditional and unconditional stock option plans may also be argued to have different behavioural effects. After all, in a declining market, conditional options may still have a positive value as the firm performs better than its peers. For the purpose of this study, these types of long-term incentive compensation have been jointly analysed, yet it may be the case that since they are argued to have different behavioural consequences, CEOs may also have different preferences over which form is included in the contract. In line with most prior work, our findings do not show strong pay for performance relationships.

Fourth, and finally, it is suggested that theory should move beyond contracting and power to seek explanations. Particularly since abstract variables such as firm size, ownership concentration and foreign listings – variables over which CEOs only have limited influence – affect the lion's share of compensation, it is suggested that institutional theory has a lot to offer. For example, Conyon and Schwalbach (2000) argue that differences in corporate governance structures between Germany and the UK explain different pay for performance practices. Contextual differences among countries and industries may well impact upon the norms with respect to

compensation in an institutional field. Since CEOs and directors have been argued, throughout many national studies, to be part of a corporate elite, and insulated from the influence of minority shareholders, it may well be that norms as to what is considered a reasonable compensation level have a stronger impact on CEO compensation than the possibility of outrage. Defection from elite norms may, in the end, have a larger bearing on the CEO's (and director's) behaviour than defection from norms of individuals with whom they do not identify, or have a relationship of mutual exchange with (DiMaggio and Powell, 1983). Institutional theory, and social psychological conceptualisations of relationships, will likely bring the literature forward.

## Note

1. An extensive description of the data collection procedure is available from the author.

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