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5. CEO Compensation as a Reflection of Power or Performance: An Empirical Test for the Netherlands, 2002-2006⁹

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, Hitt, Certo and Dalton, 2008; Tosi, Werner, Katz and Gomez-Mejia, 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, Fried and Walker, 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 incentives by optimal contracting theorists, and as evidence of how managers secure high pay even when performance declines by managerial power theorists (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. Under optimal contracting, the board of directors sets the CEO's pay, in an effort to maximize shareholder returns. Managerial power theory, on the contrary, assumes that the CEO has the ability to manipulate the pay-setting to her own benefit. To gain further insight into executive compensation theories, the core assumptions of both theories may be tested and yield conclusions that allow research to develop the theory further. This study aims

⁹ This chapter grew out of a research project commissioned by the Dutch government to Hans van Ees, Eric Engesaeth, Camiel Selker, and myself (Van Ees, Van der Laan, Engesaeth and Selker, 2008). The chapter not only uses the data, which was collected for this research, but also benefits from the many discussions we had over executive compensation. I am further indebted to Dirk Akkermans and Dennis Veltrop for assistance in data collection for this project, and to Colin Ellis, whose firm ownership database was also used for this study.

to contribute to this theory building by directly estimating a relationship between CEO power and compensation contract design, compensation level, and compensation sensitivity to firm performance, respectively. In terms of Figure 1.1, this chapter is mainly about the relationship between executives and non-executives (relationship 3), although aspects of the relationship between shareholders and (non-)executives are also referred to.

We develop hypotheses on the association between CEO power and the design, level and performance sensitivity of CEO compensation. A pooled time series cross-section dataset comprising most listed firms in The Netherlands for the period 2002-2006 allows us to explore two alternative narratives. First, we assess whether CEO power is related to the choice of compensation contracts. Specifically, we hypothesize 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. Also, due to risk-averse CEOs, the expected value of compensation contracts containing long-term incentives is likely to include a risk premium, and therefore CEO power may lead to higher compensation levels. As this partly reflects the selection of the compensation contract, and not so much CEO power, we proceed by estimating the effect of power on compensation, controlling for the effect of power on the design of the compensation contract. After all, an effect of power on compensation levels may actually reflect the CEO's ability to select such a compensation contract. Finally, we hypothesize 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 of this chapter show that power does not contribute strongly to the explanation of the design of the compensation contract. An effect of power on pay levels is found, yet this effect does not stand the robustness test in which we control for the effect of power on contract design. Moreover, corporate performance is a predictor of the level of equity-based compensation. Finally, there are some relationships among CEO power and PPS, but these are not all in line with the predictions, nor are they consistent across compensation elements. The latter may suggest that several contingencies, not included in this chapter, may affect which compensation element is susceptible to managerial power. The former, however, is discomfiting, as in some instances it is shown that CEO power actually makes the relationship between performance and pay stronger.

The next section proceeds with the two theories, and offers a brief overview of the empirical evidence. Subsequently, we provide a detailed description of our fine-grained compensation and power measures in Section 5.2. Results Section 5.3 discusses the effect of

power on contract design and the effect on compensation levels. Finally, Section 5.4 concludes the chapter, offering reflections on the findings.

5.1 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 maximize shareholder interests. Second, the managerial power approach, is closely related to behavioral 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 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. Subsequently, we discuss empirical evidence regarding both approaches. 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, is necessary to further generate progress in the CEO performance pay literature.

5.1.1 Optimal contracting versus managerial power

The optimal contracting approach can be traced back to Jensen and Meckling's (1976) formalization of the agency problem that may occur when a company is not owned by the managers (Berle and Means, 1932). The starting point is that rational, self-serving behavior may create conflicts of interest exist between shareholders and the CEO. 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 her private needs. After all, with a separation of ownership and control, the marginal benefit to the CEO of her labor does not reflect the marginal contribution of such labor to corporate performance. Consequently, a CEO may decide to shirk her duties by delivering effort which is deemed sub-optimal by the owners. Even with strong incentives to maximize corporate performance, the CEO will not perceive the full costs of perks she may consume, as these costs are borne by all shareholders. Therefore, her 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. Shareholders will never have the inside information which CEOs have, which hampers corrective action. A solution to the agency problem thus asks for measures that counter the motivation to both undersupplied and misdirected effort.

Various mechanisms that mitigate this agency problem have been identified (Dalton et al., 2008), including the design of compensation contracts. A compensation contract which 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). It is recognized, however, that several factors make the enforcement of a compensation contract difficult (Grabke-Rundell and Gomez-Meija, 2002). For example, if the compensation contract is not perfect, monitoring by shareholders is still required because of imperfect interest alignment. If ownership is dispersed, single shareholders will not find it in their best interest to monitor the CEO as the costs of monitoring will not be offset by substantial gains in their wealth due to improved corporate leadership. It has been suggested that the analysis of such moral hazard problems is best analyzed in a bargaining framework where power imbalances cause rent extraction (Grabke-Rundell and Gomez-Meija, 2002).

Managerial power scholars take this message even further, and argue that not only the enforcement of the compensation contract is a bargaining game, subject to power relationships, but that also the design of the contract is affected by CEO, director, and shareholder power (Bebchuk and Fried, 2004; Bebchuk et al., 2002). The 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, 2003). 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, 1996), particularly in cases where she is also the chairperson of the board and/or a member of the nomination committee (see also Demb and Neubauer, 1992; Lorsch and MacIver, 1989). A director who opposes against 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 to 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). Various protection mechanisms also complicate shareholder intervention, to such an extent that some law scholars have argued that shareholders cannot be legally considered the principals of the managers (Blair and Stout, 1999). Therefore, executives and directors alike 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: 786-788) introduced the concept of outrage costs, which serve 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.

To prevent public outrage, CEOs are argued to engage in camouflage, which is the second key concept in the managerial power theory, next to outrage costs. Camouflage involves the practice of reducing pay transparency through the establishment of seemingly complex pay arrangements, which only formally suggest a strong pay-performance relationship (Bebchuk and Fried, 2004). An example is to set a variety of complex targets, which suggest incentive compensation but may function otherwise, as performance measures need not be positively correlated. Sales increases and profit levels may be negatively related if price cuts are necessary to generate additional sales. If compensation is dependent on both sales and profitability, the compensation level may not be affected by the increase in sales. Thus, while such a contract suggests performance sensitive compensation, in practice pay would not be very responsive to changes in performance.

Overall, the two approaches mentioned above result in fundamentally different perspectives on the compensation contract. Under optimal contracting, directors maximize shareholder return by designing a contract that motivates the CEO to work in line with what is best for the shareholders, while satisfying the managerial participation constraint. Thus incentive contracts are considered a solution to the agency problem, although it is likely that the problem will never be solved completely due to the costs of incentive contracts. This contract is a feasible solution, because bilateral bargaining takes place at arms' length, which implies that directors are independent from the CEO and negotiate a contract with only the shareholders' interest in mind. Under managerial power theory, the assumption of arms' length bargaining is not met in practice. As the negotiations over the compensation contract do not take place in a relational vacuum but rather in a bargaining framework, directors are likely to value the preservation of the relationship with the CEO. Next to the direct utility derived from this, directors may also experience indirect utility as CEOs are more likely to

support directors in securing re-appointment on the board. Thus, the compensation contract, instead of being a partial solution to the agency problem, is a reflection of the agency problem under this approach.

5.1.2 Empirical evidence and challenges

Both the managerial power and the optimal contracting theorists have argued that empirical studies support their predictions. As extensive reviews are available elsewhere (Bebchuk and Fried, 2004; Core, Guay and Larcker, 2003; Devers, Cannella, Reilly and Yoder, 2007), we do not aspire to provide broad coverage here.

Several authors have documented a statistically and substantively significant pay-performance relationship for US samples (e.g., Aggarwal and Samwick, 1999; Baber, Kang and Kumar, 1998; Conyon and Peck, 1998; Hall and Liebman, 1998). Where others found no strong pay for performance sensitivity (Jensen and Murphy, 1990; Yermack, 1995), it was argued that these findings may have been due to, either, a lack of understanding on the workings of incentive contracts by (non-)executive directors (Murphy, 2002), or by the claim that society would place restrictions on optimal incentives and would disprove of contracts that allow for large sums to be distributed to CEOs (Jensen and Murphy, 1990), even if such payments would be optimal. Thus, in terms of Bebchuk and Fried, it might be optimal for shareholders to cause outrage. It has also been shown that trends in performance are related to performance levels, thus suggesting that firms with higher performance pay more (Kaplan, 2008), although these results have also been questioned (Bogle, 2008).

For The Netherlands, the country for which data has 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 is only one study testing Dutch pay-performance sensitivity (Duffhues and Kabir, 2008). In this study, long-term incentive plans cannot completely be covered (due to the study being conducted before the above-mentioned legislation became effective). Duffhues and Kabir (2008) find a negative relationship between performance and cash compensation. Their review of the compensation literature outside the United States and the United Kingdom further indicates that pay-performance relations have been substantively and/or statistically insignificant there.

Managerial power scholars have built on these inconclusive findings, and focused on elements of compensation practices which are not in line with optimal contracting predictions. They argued that these elements – together with the inconclusiveness of the pay-performance literature – are more in line with managerial power theory than with arms' length bargaining. Exemplary practices are the re-pricing of stock options and generous severance payments.

Although Weisbach states that the interpretations offered by managerial power theorists are persuasive (Weisbach, 2007), it is nevertheless problematic that there is usually an optimal contracting explanation to these practices alongside the managerial power interpretation. For example, option re-pricing takes place when the likelihood that the share price will exceed the exercise price approaches zero. The exercise price is sometimes adjusted in such a situation. Since the downward adjustment of the exercise price is seen as an *ex post* relaxation of the performance targets, managerial power theorists interpret option re-pricing as adjusting the parameters of the contract such that the CEO's wage is substantial also when corporate performance declines (Bebchuk and Fried, 2004). Optimal contracting scholars, on the contrary, argue that when the exercise price is likely not to be exceeded by the share price, re-pricing allows the principals to restore the CEO's incentives. Regarding severance payments, managerial power theorists hold that directors pay outrageously high goodbye fees to CEOs to compensate for the perceived disutility of firing the CEO. Others, however, argue that the discussion over severance payments is influenced by outliers, which are broadly covered in the media, whereas median severance pay is rather unsubstantial (Kaplan, 2008). In order to be able to discriminate market forces from power arguments, a direct test of the relationship between CEO power and CEO compensation may clear up some of the confusion.

One interesting test of this relationship is offered in Dorff's (2005) experimental setup. Through experiments, two challenges, common in the empirical literature, are less salient. First, optimal contracting holds the promise that one can determine to what extent a specific remuneration package differs from one with optimal incentives, yet it is at least tedious to find the empirical counterpart of this optimal contract (Dorff, 2005). Second, even when managerial power theory holds, a moderate pay-performance relationship is expected due to the outrage constraint: selecting a performance-insensitive compensation contract would cause public concern (Grabke-Rundell and Gomez-Meija, 2002). Moreover, the laboratory conditions in experiments are much more under control than those situations observed in business practice. Dorff assigned students one out of three roles in a game in which, first, directors were supposed to select a CEO and reach an agreement over the CEO's pay. In subsequent rounds, directors could either keep the CEO – possibly renegotiating the wage – or fire the CEO and hire another one. Directors also set their own fee. In a second phase, CEOs were given power over the board. Specifically, after the CEO had been contracted, she was allowed to both set the director's fee and fire directors. Obviously, these powers do not formally accrue to the CEO in practice. The findings show that when CEOs are given these instruments, CEO pay increases dramatically and CEO turnover decreases. Of course, the characteristics of the actors (law students) and the fact that there was no uncertainty with respect to firm performance may, among other reasons, limit the external validity of the experiment, yet it is informative to see that managerial power theory is strongly

supported in this study (Dorff, 2005). Other supportive evidence is found in the study of director selection processes. Studies by Westphal and colleagues have shown that interpersonal influencing tactics are applied in the context of CEO-board relations (Westphal and Stern, 2007), that individuals stand a larger chance of being appointed to the board when they are demographically similar to the CEO (Westphal and Zajac, 1996), and that directors who are associated with the implementation of anti-CEO provisions loose influence over future decision-making (Westphal and Khanna, 2003).

5.1.3 Hypotheses

We adopt a different methodology to test whether CEO power is related to compensation. 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 from managerial power theory. In doing so, we allow for a double agency problem in line with managerial power assumptions. It might be argued that optimal contracting theory also predicts a positive relationship between power and compensation, as more powerful CEOs would have to be incentivized more to keep them in line. We discuss the consequences of this notion below, but mention here that a relationship between power and compensation need not be against contracting prescriptions.

The key argument of the managerial power approach 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 immediately 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

Hypothesis 5.1: CEO power is positively associated with the adoption of long-term incentive plans.

If a relationship between CEO power and the use of long-term incentive plans (LTIPs) is found, this needs not necessarily invalidate optimal contracting theory. Indeed, even if the compensation contract is negotiated at arms' length, but the CEO has superior abilities to behave opportunistically, it may be optimal for the shareholders to provide the CEO with more incentives. Following this logic, a positive relationship between LTIP adoption and power would also be expected.

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 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, under optimal contracting theory, a CEO who has substantial powers to behave opportunistically, may be offered a premium to make the downside of opportunistic behavior (i.e., the income loss resulting from being fired) larger. This logic suggests

Hypothesis 5.2: CEO power is positively associated with the level of CEO salary and bonus.

Finally, the 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. Absent 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

Hypothesis 5.3: CEO power is negatively moderates the relationship between performance and compensation

Extending the contracting argument to performance sensitivity, a CEO who has substantial power may be able to serve her private interests better. She would thus (Hypothesis 5.1) be offered a compensation contract containing more incentives than would otherwise be the case. Consequently, for this CEO, it would actually be expected that the relationship between power and pay sensitivity is positive. We note, finally, that our operationalization of power reflect a broader notion than is found in managerial power theory. We do not explicitly capture the power of a CEO to influence the re-appointment process of non-executive directors, yet we use a multidimensional conceptualization of power based on Finkelstein's (1992) framework. We now turn to such issues of sampling and measurement.

5.2 Data and Method

5.2.1 Sample

A dataset of all CEOs in 107 stock-listed Dutch companies in 2002-2006 was hand-collected. Information on fixed pay, cash bonuses, stock options share grants and portfolios, and other compensation types 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 websites. 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.

The Dutch stock market is characterized by relatively few listings and a large variety in firm size and industry membership. We therefore aimed to include all listed firms in our sample. An initial count of all listed companies resulted in 177 listings. Several companies were not included in the sample because their primary listing was elsewhere, and there was no material business activity in The Netherlands. Executives in these corporations would probably not conform to Dutch pay practices. Also, it was required that corporations were listed for at least three years in the sampling period, because of information availability, of which at least two of these listings should be in or after 2004. Thus, companies that delisted in 2004 but were listed throughout 2002-2004, as well as companies that were listed as of 2005 or later, would not be included in the sample. For the former, information would be difficult to obtain, whereas the observation window for the latter is too short to draw meaningful conclusions. Finally, 117 corporations remained in the sample. Annual reports for all these companies were analyzed. Whenever annual reports were not found, the company was contacted and the reports were requested. The final sample consists of 107 corporations.

The deletion of 30 non-Dutch companies furthers a clear definition of the sampling frame, and is likely to make our results more generalizable for the Dutch context. For informational purposes, however, 40 additional companies were removed, which may imply a sampling bias. The main reasons for a delisting may after all be either bankruptcy or merger. Both exit modes are likely to emerge in situations of performance extremity. Therefore, this potential bias has to be taken into account when interpreting the results. Before removal of cases due to missing information for the independent variables, 576 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 medium number of CEOs per firm is 2 (the maximum is 3). In sum, the observed units are relatively stable throughout the years, as 93 per cent of the firms have a listing in all years, and 92 per cent of the firms experienced no more than one CEO change.

5.2.2 Compensation Variables

Compensation is defined as the change in the wealth of the executive caused by grants of the company to the executive or changes in the value of grants made to the executive in the past. We thus include fixed salary, cash bonuses, 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.

Salary. Executives in virtually all corporations obtain fixed grants in cash. If such grants were made in foreign currencies – mainly US dollars or pound sterling – the amount was converted into euros using the European Central Bank's conversion rates per July 1st. To properly account for appointments or leaves during a year, the number of months the executive worked in the focal position has been recorded, and the salary is annualized accordingly.

Bonus. Supervisory directors in European countries tend to use cash bonuses to reward executives for good performance more than their American counterparts. Also, cash bonuses may be used to reward executives for individual performance, which is not (directly) observable from corporate outcome measures. Where necessary, conversions to euros were made.

Options and shares. This variable contains 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 option grants. A stock option is the right to buy shares in the company at a pre-specified exercise price. In our sample, 68 companies have granted stock options in at least one year (64 per cent). Such options typically cannot be exercised for three years (the so-called vesting period), but can be exercised in the two years thereafter. Options have been valued through the binomial model and the Black Scholes formula. The resulting values correlated with a coefficient of 0.99. We therefore – arbitrarily – decided to use the binomial model valuations in the analyses. For this valuation, six inputs are required. First, the *exercise price* is taken at face value. In case options were granted on shares issued by the focal company but listed on a foreign stock exchange, the value was computed with the information for this foreign listing and the resulting valuation was converted into euros. Second, the *number of options granted* was taken at face value for unconditional options. In The Netherlands, conditional option grants are also frequently observed. These conditional grants imply that there is not only a restriction on exercising stock options, but also that certain performance targets determine the amount of options that is granted at the end of the vesting period. Thus, instead of being granted 10,000 options, which may be exercised after three years (unconditional options), a CEO knows that she will receive 7,000 options when performance is low, 10,000 when performance is at target, and 13,000 options in cases of outstanding performance, for example. We corrected for this conditionality of grants by computing the expected number of options to be granted at the end of the vesting period using the equal probabilities method. This method involves the computation of the number of options to be granted at each performance level (mentioned in the annual report), and, subsequently, the computation of the expected amount assuming that all performance levels are equally likely.

Third, the *expected life* of the option is determined. Most options are exercised somewhere after the end of the vesting period, but before the options lapse. Computing the value of the options at the time they expire, would thus result in a biased estimate. We used two rules of thumb to determine the value of the options. The first rule implied that a CEO exercises the options halfway the period where she is allowed to do so. The second rule involves exercising the option when the stock price reaches a certain threshold, which was set at twice the price of the option. The valuations that resulted with each of these rules correlated with a coefficient of 0.96, and we therefore – arbitrarily – choose the first decision rule. Fourth, the *volatility* of the share price was determined using closing prices in the three preceding years. Fifth, the *stock price at valuation date* was taken as the average stock price in a one-month window around the end of the year of valuation. Thus, the year-end closing price was taken, which was averaged out over the period of December 15th – January 15th to

filter out possible outliers. Sixth, and finally, the *dividend yield* was computed by dividing the dividend amount in the previous year by the half-year stock price in the previous year, where this price was again the average of 30 closing prices around July 1st.

Stock option portfolio. 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 mentioned above are updated every year the options have not been exercised or lapsed. Among others, this implies that when conditional grants become unconditional, the number of granted stock options is recorded instead of the expected amount. Also, when options are exercised, the associated profits and the reduced value of the stock option portfolio has been noted. Stock options may or may not lapse when an executive leaves the company, and this has been taken into account. The profit obtained by exercising options is also included.

Share grants. A large minority of 42 companies (39 per cent) have granted shares in at least one year. Since shares are usually granted at no cost to the executive, the valuation is straightforward: the amount granted is multiplied by the share price at the end of the year, averaged out over thirty closing prices. In case share grants are conditional, the equal probability method, which was also applied to stock options, has been used.

Share portfolio. 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. Shares that can be traded on the stock market, including voluntarily bought shares, are not taken into account, because these have not been granted by the company. If unvested shares lapse because of termination of the executive's contract, this is taken into account.

Total compensation includes all the above-mentioned variables and also irregular cash payments (such as the value of perks).

5.2.3 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. The criteria were subdivided, as Table 5.1 shows, according to – first – the type of compensation to which they applied and – second – whether the criterion was related to financial targets or not.

TABLE 5.1
Performance Criteria

	2005	2006
Total number of criteria	154	244
Short-term criteria (bonus)	90 (58 per cent)	151 (62 per cent)
Financial	85 (94 per cent)	122 (81 per cent)
Non-financial	5 (6 per cent)	29 (19 per cent)
Long-term criteria (options, shares)	64 (42 per cent)	93 (38 per cent)
Financial	62 (97 per cent)	82 (88 per cent)
Non-financial	2 (3 per cent)	11 (12 per cent)

Note: The sample consists of 54 firms in 2005 and 63 firms in 2006. All AEX and most AMX funds are included. Percentages are included in brackets.

The findings in Table 5.1 show that the majority of the performance criteria is financial, although non-financial criteria have become more popular. In 2005, 6 per cent of the short-term criteria was non-financial, and 3 per cent of the long-term criteria. These percentages increased to 19 and 12, respectively, in 2006. Also, the findings indicate that a firm uses, on average, three to four performance criteria. 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 75 per cent (2006: 82 per cent) of the short-term financial performance measures in 2005. The financial 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 the long-term criteria,

the four performance measures cover 89 per cent (2006: 87 per cent) of the financial performance criteria. Consequently, for this study, four performance measures were used: revenues, profit, relative total shareholder return, and earnings per share (EPS).

Revenues are recorded in millions of euros. Profit is measured as operating income divided by total assets. Total shareholder return includes share price appreciation and dividends relative to a peer group. Total shareholder returns are measured relative to a peer group. Companies usually make use of such groups, including the performance of competitors and other similar companies (in terms of industry and size, for example) to establish the relative share performance. Peer groups were determined based on cluster analysis. Firm size, proxied for by total assets, revenue, market value, and the number of employees, and the number of years (in 2002-2006) the firm was listed in either the index of large caps (AEX 25) or midcaps (AMX 20) were used as clustering variables. Four clusters resulted, and the firms in each cluster were considered each others peers for the purpose of this study. Because of this procedure, the relative TSR measure only relates to firm size, and is not informative with respect to performance relative to, for example, industry. Total shareholder return (TSR) was computed for each company in the sample, and relative TSR was defined as the deviation of company TSR from the peer group (i.e., cluster) mean. The data were obtained from Thomsen Financial's database Datastream. Each of the firm performance variables measures a different aspect of firm performance, as the highest correlation coefficient among the performance indicators is only 0.18.

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 (CEO ownership). We made use of a database of ownership, constructed from filings with The Netherlands Authority for the Financial Markets and a Dutch financial newspaper. Under Dutch law, owners of at least 5 per cent of company shares are obliged to report their shareholdings, and filings made under this law have been used. Furthermore, the database REACH, based on Chambers of Commerce information, has data on shareholdings for some owners holding less than 5 per cent of company shares. Also, companies are required to report executive shareholdings in their annual report. Information from these various sources was combined to generate an overview of shareholders and their stake in the company. Shareholdings by the CEO, or investment vehicles owned by the CEO, were elicited for the CEO ownership variable. Second, structural power was measured through the CEOs tenure on the board. CEOs who have held the position longer have likely developed relationships with directors. Third, nationality and education level proxy for expertise power. Nationality is recorded as a binary variable indicating whether the CEO is Dutch (coded 0) or not (coded 1). As the Dutch economy is relatively small and open to foreign investors, a relatively large

share of (non-)executives are of foreign birth (Van Veen and Marsman, Forthcoming). In terms of education, most CEOs have a degree in either law, economics, or business, whereas a large minority holds engineering degrees. The distinguishing characteristic may be the level of the degree, rather than the degree program, and we thus included a variable education level, running from no higher education (coded 0), to lower professional education (coded 1), higher professional education (coded 2), university masters (coded 3), and PhD level education (coded 4). The data for both structural and expertise power sources were drawn from annual reports, company websites, and directories of executives. 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 per cent 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, from the ownership database mentioned above, we also constructed a Herfindahl index in which the sum of the squared ownership percentages was calculated to indicate ownership concentration. When computing this variable, it was assumed that those shares which were not accounted for in the database, were held by a large number of dispersed owners. This assumption, which may cause a slight downward bias in the concentration index, appears not to be of material interest, as block holders are required to report their stake. Third, as compensation practices tend to spread through networks of interlocking directorates (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. By means of a check of current listings, it was found that a listing on another stock exchange that may exhibit similar network effects, such as the London Stock Exchange, was not of material importance to the current sample.

5.2.4 Method

All hypotheses are tested through panel OLS regression. As the dependent variable in the models of contract choice is binary, probit models were estimated to test the associated

hypothesis. In all models, a correction for heteroskedasticity was introduced, and in the models for compensation levels and pay performance sensitivity it was tested whether period fixed effects added to the explanatory power of the models. This turned out not to be the case. Instead, autoregressive schemes were generally required as the Durbin-Watson statistics deviated from the bounds developed by Bhargava, Franzini and Narendranathan (1982).

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 developed an alternative method, and control for this through interaction effects (see also Parker and Van Witteloostuijn, 2008). Let compensation variables be included in the set Y , and performance variables in the set X . The set Z includes those variables which were also expected to explain the adoption of variable pay (indicated by the binary variable D). We demean the variables contained in Z , and estimate $Y = f(X, D, Z, D*Z)$. If there is no other effect of CEO power on pay than through the choice of compensation contract, we would expect to find insignificant coefficients for Z and significant coefficients for the interaction terms in $D*Z$. Note that another explanation for finding insignificant Z -coefficients and significant $D*Z$ -coefficients may be that the adoption of variable pay is exogenous, and that pay levels are higher because variable pay grants power to the CEO. For most power variables, however, this reverse causality is logically improbable.

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. As this consumes many degrees of freedom, an alternative approach is, again, applied. We started with a model (for each dependent variable) with all four sets of interaction terms included: the interactions among the variable pay dummy (D), on the one hand, and the control and power variables (set Z), on the other hand, were included ($D*Z$), similar to the method presented above. Additionally, interaction terms among CEO power and performance ($X*Z$), and interactions among variable pay, CEO power and performance ($D*X*Z$) were added. After all, the effect of performance on compensation contracts may go through power, or through power and the design of compensation contracts. If this argument holds, it would be expected that only interaction terms containing D will turn out statistically significant. Thus, powerful CEOs may be able to reduce the pay-for-performance sensitivity ($X*Z$), for example through repricing of options, and be able to select compensation contracts that are associated with a pay-for-performance sensitivity ($D*X*Z$), for example contracts containing targets which are easily met. These models, with 63 parameters, were subjected to a stepwise, backward,

regression analysis. In five subsequent rounds, interaction terms were dropped when the p -value was above some threshold value, which was reduced to 0.50 in subsequent rounds.

5.3 Results

The managerial power approach may be summarized in three hypotheses. First, CEOs having power over the board are able to secure compensation contracts which allow for high payments. As bonuses and salaries are less susceptible to camouflage, we thus proceed with testing whether CEO power is related to the adoption of long-term incentive plans (Hypothesis 5.1). Second, CEOs having power over the board are proposed to be paid more. We analyze the effect of CEO power on pay levels below (Hypothesis 5.2). We test this effect in two ways. First, we enter all independent and control variables simultaneously. Subsequently, we acknowledge that part of a supposedly higher pay may be due to CEOs being able to convince their boards to pay through compensation types which are more likely to generate higher pay levels. The logic is that CEO power results in higher pay both because of a direct bargaining effect, and because such CEOs have contracts that allow for higher compensation levels. Powerful CEOs will minimize downside risk, and create as much upside potential as possible. The alternative methodology, outlined in Section 5.2.4, is applied here. Third, the managerial power approach argues that CEO power allows CEOs to reduce the pay-performance sensitivity, as the expected value of a variable compensation component is valued less than the same guaranteed dollar amount in cash (Hypothesis 5.3). We test this notion in Section 5.3.3.

5.3.1 CEO power and the structure of compensation contracts

The key argument of the managerial power approach 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 such that the potential for rent extraction is maximized. Table 5.2 presents descriptive statistics and correlation coefficients for the independent variables and a dummy ‘variable pay’. This dummy is coded 1 if a CEO received compensation in the form of stock options or shares in the year under study. The upper panel of Table 5.2 presents means and standard deviations. It appears that 58 per cent of the observations involve some kind of compensation through long-term incentive plan (i.e., stock options and/or shares). Firms granting these pay components tend to be larger, although unconditional options are also granted by smaller firms. Ownership concentration is smaller in firms granting variable pay, which may reflect that for these firms incentive alignment may substitute for shareholder

monitoring as a means of guaranteeing appropriate CEO effort. The argument that boards of firms with a listing on NYSE or NASDAQ see variable pay being used in their peer group and thus also apply it to their own firm, appears to find support in our data. As can be seen from Table 5.2, 25 to 41 per cent of the firms with such pay components have a listing on these exchanges, whereas this is only 19 per cent for all firms. CEOs who own few shares in the company appear to be compensated more through share plans than those owning substantial amounts. This also makes intuitive sense, as CEO ownership already provides incentives to the CEO. Foreign CEOs also appear to be paid more through variable pay mechanisms, whereas the other power variables (tenure, and positions on supervisory boards of other firms) do not discriminate among pay components. One should bear in mind that some of these findings may be jointly caused, as – see panel B of Table 5.2 – larger firms are more likely to have a foreign listing and CEOs tend to have a higher stake in the company when there are only a few shareholders. None of these correlation coefficients is sufficiently high to cause concern over multicollinearity, though.

TABLE 5.2
Descriptive statistics and correlations for non-compensation variables

Panel A: means and standard deviations									
Sample:	All	Firms with conditional stock options		Firms with unconditional stock options		Firms with share plans			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
1 Variable pay*	0.58	0.49							
2 Size	13.52	2.55	15.13	2.33	13.77	2.75	15.42	2.72	
3 Ownership concentration	0.10	0.14	0.07	0.09	0.09	0.13	0.06	0.07	
4 Foreign listing*	0.19	0.39	0.38	0.49	0.25	0.44	0.41	0.49	
5 CEO ownership	0.03	0.11	0.01	0.06	0.04	0.14	0.00	0.01	
6 Education level	2.85	0.59	2.85	0.55	2.87	0.61	3.00	0.59	
7 Nationality*	0.14	0.35	0.21	0.41	0.19	0.40	0.31	0.47	
8 Tenure	6.84	5.71	6.10	4.47	7.03	5.76	6.95	4.75	
9 Other positions	0.17	0.53	0.24	0.56	0.15	0.38	0.17	0.49	
Number of observations	447		94		142		103		

Panel B: correlations (x 0.01)									
	1	2	3	4	5	6	7	8	9
1 Variable pay*									
2 Size	33								
3 Ownership concentration	-19	-18							
4 Foreign listing*	27	43	-11						
5 CEO ownership	-4	-14	49	8					
6 Education level	9	6	-10	1	-11				
7 Nationality*	19	22	3	17	11	1			
8 Tenure	-1	19	-6	4	0	-10	-17		
9 Other positions	2	17	-5	1	2	-2	-11	27	

Variables denoted with * are dummies. Correlation coefficients r (x0.01), with $p < 0.01$ for $r > 0.12$, $p < 0.05$ for $r > 0.09$, and $p < 0.10$ for $r > 0.08$.

Table 5.3 estimates – through probit models with Huber/White robust standard errors – the effect of the above-mentioned variables on the likelihood of having variable pay components.

TABLE 5.3
Probit models of compensation structure

	Variable pay		Conditional stock options		Unconditional stock options		Share plans	
Constant	-2.31**	-2.01**	-3.43**	-2.62**	-0.96**	-0.77	-4.01**	-4.49**
Size	0.19**	0.14**	0.18**	0.17**	0.04	0.00	0.23**	0.20**
Ownership	-1.34**	-1.60**	-0.86 ⁺	-0.72	-0.78 ⁺	-1.15*	-1.68**	-0.86
Foreign listing	0.60**	0.59**	0.35*	0.45*	0.31 ⁺	0.27	0.37*	0.51**
CEO ownership		0.60		-0.83		1.23 ⁺		-4.19*
Education level		0.13		-0.11		0.07		0.28 ⁺
Nationality		0.53*		0.01		0.25		0.76**
Tenure		-0.01		-0.05**		0.01		0.00
Other positions		-0.04		0.20		-0.09		-0.12
N	548	447	548	447	548	447	548	447
LR-statistic	118.78**	84.74**	74.47**	69.72**	16.65**	14.34 ⁺	116.71**	118.40**
McFadden R ²	0.16	0.14	0.38	0.15	0.02	0.03	0.21	0.25
Hit rate	0.68	0.68	0.83	0.80	0.70	0.69	0.83	0.83

Huber/White robust standard errors and covariance.

** $p < 0.01$, * $p < 0.05$, and ⁺ $p < 0.10$.

Although the models in Table 5.3 all reach statistical significance and the hit rates are acceptable, the model for unconditional stock options is somewhat ill-explained by the selected variables. The results show that firm size, ownership concentration and a listing on a US stock exchange consistently predict the adoption of variable pay components, which is in line with expectations. Larger firms with dispersed ownership are less easily monitored than tightly held small firms. Consequently, such firms tend to adopt long-term incentive plans to align the incentives of the CEO with those of the shareholders. A listing on a US exchange also increases the likelihood of having such plans. Adding CEO power to these base models, however, does not add much explanatory power. In no model, a substantial increase in the McFadden R² is observed, and for conditional stock options the statistic even decreases strongly. Only for share plans, does CEO power add to the explanatory power of the model. It appears that share plans are less likely to be adopted when the CEO is a shareholder herself. This is in line with expectations, as the wealth of such a CEO already moves up and down with the stock market. More powerful CEOs in terms of their expertise power, that is their education level and nationality – or, foreign experience –, tend to have more share plans than

CEOs lacking this power source. Besides this effect of expertise power on the adoption of share plans, however, there is not much evidence for Hypothesis 5.1.

5.3.2 CEO power and the level of compensation

The second hypothesis of the managerial power approach is that CEO power leads to higher pay levels. Table 5.4 presents descriptive statistics and correlations for variables not included in Table 5.2.

TABLE 5.4
Descriptive statistics and correlations for compensation variables

Panel A: means and standard deviations (x €1,000)									
Sample:	All	Firms with conditional stock options		Firms with unconditional stock options		Firms with share plans			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
10 Salary	450	347	663	323	522	404	708	436	
11 Cash bonus	239	430	508	656	277	446	558	640	
12 Stock options and shares	268	1431	745	2404	383	1458	1082	2231	
13 Total compensation	1121	1763	2106	2806	1296	1772	2571	2628	
Number of observations	569		97		178		114		

Panel B: correlations (x 0.01)									
	Salary	Bonus	Options/Shares	Total					
11 Bonus	56								
12 Stock options and shares	14	26							
13 Total compensation	36	51	77						
2 Size	70	54	10	35					
3 Ownership concentration	-2	-8	2	13					
4 Foreign listing*	58	47	6	23					
5 CEO ownership	13	-1	9	10					
6 Education level	-19	-33	4	-12					
7 Nationality*	32	25	6	16					
8 Tenure	9	-3	-2	6					
9 Other positions	11	-6	-2	8					

Variables denoted with * are dummies. Correlation coefficients r (x0.01), with $p < 0.01$ for $r > 0.20$, $p < 0.05$ for $r > 0.17$, and $p < 0.10$ for $r > 0.15$.

From panel A in Table 5.4 it is observed that firms with variable pay components pay more compensation. This may partly be caused by the fact that, as Table 5.3 demonstrated, these firms tend to be larger. Also, the introduction of long-term incentive plans increases the risk that the CEO will receive compensation below her reservation wage. Such firms may have to grant even more options and shares, such that expected pay increases further, or add the risk premium to the salary or cash bonus. This may also explain why firms with variable pay components pay higher salaries and bonuses.

In Table 5.5, the hypothesis is tested that CEO power positively affects pay levels. In establishing the model, period fixed effects appeared to be redundant and the Durbin-Watson statistics, although difficult to evaluate in panels with few years, indicated that a first-order autoregressive scheme was necessary. Robust standard errors were included and up to four observations were removed as these were associated with extreme error terms. Further, based on Table 5.4, we note that option/share compensation and total compensation have a relatively strong correlation, and that it therefore may not be surprising when these models generate similar results. Model fit is reasonable to good. The models show a consistent effect of firm size and nationality. Moreover, it is worth mentioning that the existence of variable pay causes both bonuses and total compensation to be higher, and – of course – similarly so variable compensation. Pay appears to be relatively insensitive to performance, with the exception of variable pay, which is driven by market-based performance. It appears, contrary to our expectations, that high performance causes lower salaries. The reason behind this finding is unclear. It may be that CEOs of growth firms prefer to receive compensation through LTIPs, substituting for fixed payments, but this remains to be tested.

TABLE 5.5
Regression models of compensation level

	Salary		Bonus		Options/Shares		Total	
Constant	10.12	**	0.51		15.83	**	15.22	**
AR(1)	0.61	**	0.36	**	0.06		0.02	
Size	0.20	**	0.81	**	0.00		0.03	**
Ownership	0.05		5.18	*	-0.09		-0.04	
Foreign listing	0.08		-1.32		0.00		0.04	
Variable pay	0.02		1.22	+	0.06	**	0.06	*
Revenues	-9.41	**	-14.05		-0.98		-0.27	
Earning per share	-0.03	*	-0.04		0.00		-0.01	
Profits	0.05		4.75		0.05		0.10	
Relative TSR	-0.03		0.55		0.05	**	0.07	**
Power variables								
CEO ownership	0.52		-8.52		0.12		0.22	
Education level	0.02		-0.67		0.01		0.02	
Nationality	0.40	**	1.74	*	0.05		0.14	**
Tenure	0.00		-0.05		0.00		0.00	
Other positions	0.03		0.31		-0.01		-0.02	
N	281		284		281		279	
F-statistic	104.93	**	12.87	**	2.67	**	11.94	**
Adjusted R2	0.84		0.37		0.08		0.36	

Dependent variables are log-transformed. White diagonal standard errors and covariance.

** $p < 0.01$, * $p < 0.05$, and ⁺ $p < 0.10$.

As was discussed in Section 5.2.4, the results in Table 5.5 fail to acknowledge that power may have both a direct effect on compensation levels, and an indirect effect. This indirect effect is caused by the selection of contracts. When powerful CEOs are able to select contracts which are more likely to result in higher compensation levels, this already creates an effect of power on compensation. Additionally, it may be that power has a direct effect on compensation levels, as has been argued for in Hypothesis 5.2. To accommodate for this, an alternative method, described in Section 5.2.4 is applied to the analyses in Table 5.5. The results of these estimations are contained in Table 5.6.

TABLE 5.6
Regression models of compensation level including interaction terms

	Salary		Bonus		Options/Shares		Total	
Constant	13.02	**	9.07	**	15.98	**	15.71	**
AR(1)	0.60	**	0.36	**	0.08	*	0.02	
Size	0.22	**	0.69	*	-0.01		0.02	+
Ownership	0.04		8.33	**	-0.08		-0.05	
Foreign listing	0.10		-2.59		0.07		0.08	
Variable pay (D)	-0.01		1.49	+	0.07	**	0.08	**
Revenues	-8.66	**	-17.29		-1.70	*	-1.02	
Earning per share	-0.03	*	0.03		0.00		-0.01	
Profits	0.05		4.67		0.06		0.12	
Relative TSR	-0.03		0.69		0.06	**	0.07	*
Power variables								
CEO ownership	0.77		-19.67	*	0.05		-0.02	
Education level	0.05		-1.13	*	0.03		0.04	
Nationality	0.49		3.69	*	-0.01		0.05	
Tenure	0.00		-0.09		0.00		0.00	
Other positions	0.04		1.06	*	-0.01		0.00	
Interaction terms (D*Z)								
D * Size	-0.02		0.13		0.03	**	0.03	**
D * ownership	0.03		-8.76	+	-0.04		-0.04	
D * foreign listing	-0.01		1.48		-0.08		-0.05	
D * CEO ownership	-0.32		16.82		0.18		0.40	
D * education level	-0.06		0.83		-0.04		-0.03	
D * nationality	-0.09		-2.09		0.04		0.08	
D * tenure	0.00		0.07		0.00		0.00	
D * other positions	0.00		-1.58	*	0.00		-0.04	
N	281		284		280		279	
F-statistic	65.37	**	8.69	**	2.76	**	7.99	**
Adjusted R2	0.83		0.37		0.12		0.36	

Variables included in the interaction terms have been demeaned, and dependent variables are log-transformed. White diagonal standard errors and covariance.

** $p < 0.01$, * $p < 0.05$, and ⁺ $p < 0.10$.

The models presented in Table 5.6 fit the data well. There are few consistent findings across the pay components. Firm size predicts pay levels well, although for variable and total pay, this is mainly through the design of the compensation contract. The control variables and firm performance are similarly related to compensation levels as in Table 5.5, yet the relationships between CEO power and pay levels are somewhat different. Whereas Table 5.5 documents a strong relationship between nationality (expertise power) and CEO pay, this relationship almost completely vanishes in Table 5.6. Combining these results with the findings from the probit analyses (Table 5.3), it is suggested that the direct relationship between nationality and pay is spurious, and rather may reflect an effect of nationality on the selection of variable pay in the compensation contract. In fact, the only effect of CEO power

which is elicited by the improved methodology is the effect on bonuses. Here, a puzzling combination of findings is present: whereas status power (number of positions in supervisory boards) and nationality positively affect the level of the bonus, the other measure of expertise (education level) and ownership power reduce the bonus. Overall, however, Hypothesis 5.2 is not supported.

5.3.3 CEO power and the sensitivity of compensation to performance

The third hypothesis of the managerial power approach is that CEO power leads to lower pay-performance sensitivity. Here, also the alternative method is applied. Because of the relatively high number of interaction terms, stepwise deletion of variables is considered (see section 5.2.4). For most of the models, no interaction terms were dropped after three or four rounds, as all p-values were below 0.50. It turned out, reinforcing the results in Table 5.6, that there was no discernible effect of CEO power and control variables through the selection of the compensation contract ($D*Z$). Also, inside the sets of variables, relative total shareholder return was hardly related to compensation levels either through any power measure ($X*Z$), or through a power measure and contract design ($D*X*Z$). As a measure of power, finally, education level and tenure hardly affected the pay-performance sensitivity directly, or through the selection of performance-sensitive pay contracts. We thus removed these variables altogether, and estimated regression analyses with all control variables, three power measures, three performance criteria, the variable compensation dummy, and 18 interaction terms among power and performance ($X*Z$), and among variable pay, power and performance ($D*X*Z$). The results of these estimations are contained in Table 5.7.

The results confirm the relationships that have been found before: firm size is a strong predictor of CEO compensation, yet CEO power and performance do not contribute much directly. The interaction effects show various significant findings, yet none are consistent over the pay components. Also, some interaction effects go against the hypothesis of managerial power theory, and are intuitively odd, as they show that powerful CEOs are likely to incentivize themselves. This questions the risk-averseness assumption that is common to the optimal contracting and managerial power theories. It may be that a contingency theory can further the insights into the problem, suggesting why some power variables would be related to certain compensation components, but not to others.

TABLE 5.7
Regression models of compensation sensitivity

	Salary		Bonus		Options/Shares		Total	
Constant	12.78	**	9.04	**	15.99	**	15.72	**
AR(1)	0.38	+	0.33	**	0.09		0.03	
Size	0.19	**	1.10	**	0.01		0.04	**
Ownership	-0.05		6.22	**	-0.09		-0.03	
Foreign listing	0.07		-1.69		0.02		0.01	
Variable pay	0.15	*	0.63		0.05	**	0.05	+
Revenues	-2.87		-24.98		-0.52		-0.99	
Earning per share (EPS)	-0.02		-0.35		0.00		-0.01	
Profit	0.41	+	14.37	**	0.13		0.21	
Power variables								
CEO ownership	0.38		-9.81		-0.01		0.00	
Nationality	0.16		1.10		0.09	**	0.16	**
Tenure	0.01		-0.09		-0.01	+	0.00	
X*Z Interaction terms								
Revenue * CEO ownership	77.77		-32.20		6.40		13.35	
Revenue * nationality	0.00		-155.13		15.74	*	9.66	
Revenue * tenure	0.27		8.95		-0.63	+	-0.79	
EPS * CEO ownership	-1.30	*	0.45		0.07		0.03	
EPS * nationality	0.38		-1.10		0.03		-0.01	
EPS * tenure	0.00		0.09	*	0.00		0.00	
Profit * CEO ownership	-5.52	*	-6.85		0.32		0.94	
Profit * nationality	1.27	+	13.79	*	0.00		-0.11	
Profit * tenure	0.04		0.92		-0.01		0.00	
D*X*Z Interaction terms								
D * Rev. * CEO ownership	-72.04		411.23		8.64		1.14	
D * Rev. * nationality	-16.60		182.27		-17.00	*	-7.64	
D * Rev. * tenure	-1.32		-6.13		0.57		0.92	
D * EPS * CEO ownership	1.50	*	-3.35		-0.21		-0.12	
D * EPS * nationality	-0.59	**	0.70		0.02		0.02	
D * EPS * tenure	-0.01		-0.14	*	0.00		0.00	
D * Profit * ownership	4.24		-21.61		-0.44		-1.35	
D * Profit * nationality	2.50	+	-28.72	**	-0.11		-0.13	
D * Profit * tenure	-0.30	*	-1.13		0.03		0.02	
N	323		329		322		324	
F-statistic	73.43	**	9.15	**	2.27	**	5.07	**
Adjusted R2	0.87		0.42		0.10		0.27	

Dependent variables are log-transformed. Power and performance variables have been demeaned. White diagonal standard errors and covariance.

** p < 0.01, * p < 0.05, + p < 0.10.

Overall, the analyses do not show a strong effect of CEO power on executive compensation. It appears that those factors determining the salience of the agency problem (firm size and ownership concentration) are the key drivers of compensation contract structure, next to having a listing on a US stock exchange. Firm size subsequently also seems to affect the level of compensation, next to an effect of market-based performance on CEO pay. This is in line with findings from Tosi et al. (2000), whose meta-analytic review documents that forty per cent of the variance in executive compensation is attributable to firm size. Some effects of CEO power on pay-for-performance sensitivity were found, yet in about half of the cases the effects were contrary to managerial power theory's predictions (Table 5.7), and not consistent across compensation elements. A robust relationship between CEO power and pay-for-performance sensitivity could not be identified, although the various findings do call for additional theorizing in this direction.

5.4 Conclusion and discussion

In this chapter, a key assumption in the managerial power theory of executive compensation is tested. Optimal contracting theory predicts that non-executive directors select a compensation contract in which pay is at its top when expected performance is maximized. According to managerial power theory, this equilibrium will not be reached when the CEO has substantial power over the board. In this situation, the compensation contract will allow for excessive pay levels that are relatively insensitive to performance. This study tests whether CEO power affects the structure, level and performance sensitivity of compensation.

Previous empirical tests have relied on a comparison of results from different pay-performance studies, and have not directly tested the relationship between power and compensation. These comparisons result in conclusions which convince some scholars that managerial power theory has predictive validity (Weisbach, 2007), yet direct tests of whether power is related to compensation may contribute to our understanding of the compensation puzzle. After all, these comparisons often led to competing interpretations of the same phenomenon, which is undesirable as the two models are based on opposing assumptions with respect to the bargaining process. Also in our study, some findings are susceptible to such interpretations. We find that companies use a multitude of performance criteria in their bonuses and long-term incentive plans. Table 5.1 shows that the average firm uses three to four performance criteria, and managerial power theorists may argue that this is an indication of camouflage. Compensation contracts in which many performance criteria are included may complicate the evaluation of such contracts by outsiders. However, optimal contracting theorists may argue that one performance criterion will not adequately cover all dimensions of

CEO performance, and conclude that apparently three to four criteria are sufficient to do so. After all, there is a tension between criteria that capture the CEOs effort, on the one hand, and those that proxy for shareholders interests, on the other hand. CEO effort and company performance need not be perfectly correlated, and this may call for multiple performance criteria.

We set up several regression analyses in which the effect of CEO power is directly estimated. First, we estimate the effect of CEO power on the choice of compensation contracts. For stock option plans, power is found to be unrelated to the adoption of such plans, yet CEO power does predict the adoption of share plans. Here, it is observed that a multidimensional conceptualization of CEO power is useful: we find that one source of CEO power (CEO ownership) reduces the probability of adopting a share plan, whereas other sources (relating to expertise power) increase this likelihood. We thus find a moderate relationship of CEO power on the adoption of variable pay elements.

Subsequently, we estimate the relationship between CEO power and the level of pay. First, not taking the effect of CEO power on the adoption of variable pay plans into account, we find a strong relationship between only one source of power (nationality, as an indicator of expertise power) and the level of mostly the salary and the cash bonus, and total compensation. Introducing a control for the effect of power on the structure of compensation contracts, this effect vanishes when the methodology is improved. Thus, also if it comes to the relationship between CEO power and the level of compensation, no strong support for the hypothesis that power is related to compensation is found.

Third, we estimate the moderating effect of CEO power on the pay-performance nexus. We find some effects of power that make the relationship between firm performance and CEO compensation either weaker or stronger. A strong effect of performance measures on compensation levels could not be identified either. This implies a puzzle, which implies that further research is needed to further deepen our understanding of the determinants of CEO incentive schemes.

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 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. Also, the first two years of the period under study was one of economic downturn for The Netherlands, and executives were under scrutiny from the public to demand only moderate wage increases. Although this appears not to have taken place (Van Ees, Van der Laan, Engesaeth and Selker, 2007), the heightened attention to executive compensation might

have made the outrage constraint more restrictive. In periods of limited share price appreciation, it may be difficult to generate high returns from variable pay components anyway, and stock market trends may thus moderate the relationship between power and performance sensitivity. Moreover, long-term incentive plans have been used much more extensively in the United States as compared to European countries. Thus, outrage costs may also 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, Van Ees, Garretsen and Sterken, 2004), although companies have abolished defense mechanisms since this was recommended by the 2004 corporate governance code. Thus, shareholders would have few options but selling their stock when they disagreed with their representatives (the directors) over the compensation policy.

Second, although we use a multidimensional conceptualization 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. 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), which may also result in a separation of two interpretations of the measures of power which have been used in this study: expertise and status may also add to the human capital of the CEO, and managerial power theory would not contend that such power sources cause excess rent extraction. Tenure, on the other hand, proxies well for the type of power referred to in this theory. The effect of power on compensation in contracting theory, which runs through the increased opportunity of CEOs to behave in their own interest, is partially caused by their risk aversion. Future research may disentangle the effect of power on compensation from the effect of risk aversion on compensation levels and performance sensitivity.

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 realized, *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 behavioral consequences as there is no downside risk to stock option plans (Certo, Daily, Cannella and Dalton, 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 behavioral 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 analyzed, yet it may be the case that since they are argued to have different behavioral consequences, CEOs may also have different preferences over which form is included in the contract. A pecking order of incentive contracts, where the order may depend on CEO personality, may thus be established. A first suggestion may be that powerful CEOs prefer conditional option contracts over other incentive plans, as the formula which determines the number of options actually granted may be susceptible to camouflage, and as these options also have downwards potential in a declining market.

Fourth, a deeper understanding of risk-taking behavior may benefit the development of power-compensation predictions. Studies in the tradition of the behavioral theory of the firm, and particularly prospect theory, have shown that risk-taking need not be consistent (Kahneman and Tversky, 1979; March and Shapira, 1987). This implies that risk-taking is different when CEOs frame decisions in terms of potential gains as opposed to losses (a more detailed discussion of prospect theory is offered in chapter 2 of this thesis). Thus, the aspiration levels of CEOs impact on the extent to which they are risk-seeking for a given incentive structure. The determinants of CEO aspiration levels, such as the past performance of the firm, therefore enter the extent to which shareholders desire the variability of compensation and consequently the extent to which CEO power over this contract would be relevant. Wiseman and Gomez-Meija (1998) further argue that the design of the compensation contract may affect risk-taking, and develop a behavioral agency theory that aims to more accurately represent risk-taking by CEOs. For example, they argue that when CEOs have in-the-money options, they are likely to reduce the riskiness of their strategic choices, such as to avoid compensation losses. Following the arguments developed in Wiseman and Gomez-Meija (1998), CEOs need not prefer fixed salaries over variable compensation, as is assumed in agency theory and this chapter alike, but may have preferences over the competitiveness of targets, the performance measures, and other aspects of the compensation contract. Following behavioral agency theory implies conducting a more fine-grained comparison of powerful CEOs' compensation contracts with contracts of relatively less powerful CEOs.

Fifth, 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. 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) behavior than defection from norms of individuals with whom they do not identify, or have a relationship of mutual exchange with. A behavioral perspective on compensation would thus focus on institutional norms and interpersonal influencing tactics in seeking explanations for compensation. Institutional theory, and social psychological conceptualizations of relationships, will likely bring the literature forward.