BOARD CHARACTERISTICS AND CORPORATE PERFORMANCE IN THE NETHERLANDS

Hans van Ees
University of Groningen

Theo J.B.M. Postma
University of Groningen

and

Elmer Sterken
University of Groningen

INTRODUCTION

Starting from the seminal work of Berle and Means [1932], the conflict between remote shareholders and knowledgeable managers of firms is prominent in modern organization theory. In this context, a growing body of research has in recent years dealt with the efficiency of alternative corporate governance systems such as the Anglo-Saxon market based system and the Continental-European bank based system, when it comes to monitoring corporate management. The empirical evidence on this issue is rather mixed.[1]

In general, corporate governance systems are characterized by the following four features that, along with executive compensation, affect the top managers' decisions. First, legal protection of shareholders enhances the possibility that investors are able to use their voting rights and get their share of the cash flow [Shleifer and Vishny, 1997]. Investor protection is particularly strong in the Anglo-Saxon regime but the Continental-European system is characterized by a wide range of institutions that restrict the control rights of shareholders. In some countries (such as the Netherlands) one can actually observe anti-investor protection instead of legal protection of shareholders. Second, concentrated ownership (or concentrated debtholdership, for that matter) increases the incentive for the (large) shareholders (debtholders) to monitor management effectively. La Porta et al., [1998] show that concentrated ownership seems to be the norm around the world. Apart from the Anglo-Saxon regime in the United States and the UK, where legal protection of shareholder rights is strong, most other countries have rather concentrated ownership. Third, the market (for corporate control) may discipline managers. Here the evidence is that outside the United States and the UK (the Anglo-Saxon regime) hostile takeovers do not take place at a large scale. In almost one hundred percent of all cases,

Hans van Ees: Faculty of Economics, University of Groningen, PO Box 800, 9700 AV Groningen, The Netherlands. Email: H.van.Ees@eco.rug.nl

takeovers in Europe are grounded on strategic arguments rather than the poor performance of management. Fourth, managers may be disciplined by the governance structure of their firms, in particular the structure and characteristics of the board(s). Particularly, in regimes such as the Continental-European system where investors are not well protected, the company boards represent one of the few remaining options to control management.

To conclude, the aforementioned observations suggest that in the Anglo-Saxon regime shareholders may control management decision making through the board and through the market for corporate control. In the Continental-European system, alternately, shareholder control, in the absence of the market for corporate control and legal investor protection, can only take place through company boards [Boot and Macy, 1999]. Hence, we expect shareholders in both corporate governance regimes to be seriously interested in board characteristics when it comes to the accountability of management for corporate performance. But also from an academic point of view the nexus between board characteristics and corporate performance is relevant. Following the seminal paper of Fama and Jensen [1983], boards can be effective mechanisms to monitor top management on behalf of dispersed shareholders. Boards effectuate management appointment, dismissal, suspension, and reward. Therefore, the characteristics of boards are relevant to corporate performance.

In this paper we address the nexus between board characteristics and corporate performance for the Netherlands. The Dutch system of corporate governance represents a unique combination of characteristics of the market-based Anglo-Saxon regime and the bank-based Continental-European regime. Moreover, it is particularly suited to analyze the nexus of board characteristics, management decisions and corporate performance since the distinguishing feature of the Dutch system is the two-tier board structure consisting of a management board (*Raad van Bestuur*) and a supervisory board (*Raad van Commissarissen*). Decision management is assigned to the Dutch management board. Decision control is largely taken over by the supervisory board, whose members are generally appointed through co-option.

BOARD ROLES AND CHARACTERISTICS AND CORPORATE PERFORMANCE

Corporate boards fulfill three roles [Goodstein, Gautam, and Boeker, 1994]. First, there's an institutional role. Boards provide a link between the organization and its environment and secure critical resources [Williamson, 1996]. Second, boards have an internal governance and monitoring role and discipline or remove ineffective management teams [Barnhart et al., 1994]. The third role of boards is in strategic decision making [Fama and Jensen, 1983]. In this paper we focus on the second role. Monks and Minow [1995] survey the literature on this topic and indicate that board monitoring can indeed improve the quality of managers' decisions.

Various aspects play a role in increasing the monitoring role of boards. One concerns the size of the boards. Haleblian and Finkelstein [1993] argue that the main advantage of a large board is that a large group has more problem-solving capabilities. It is likely, however, that very large boards are ineffective. Jensen notes that "[K]eeping boards small can help improve their performance" [1993, 865]. Lipton and

Lorsch [1992] even argue that norms of behavior in the boardroom can become dysfunctional. Zahra and Pearce [1989] argue that there might be a threshold where board size may negatively affect company performance. Empirical evidence on this issue is rather scarce, however. A notable exception is Yermack [1996] who finds strong support for a negative relationship between firm performance and board size of U.S. firms.

A second variable of interest is board composition. From the perspective of solving the Berle-Means agency problem between management and shareholders appointing outsiders seems to be the natural solution. Byrd and Hickman [1992] argue that high-caliber CEOs may appoint independent directors to please shareholders with an illusion of active monitoring. The empirical evidence on the relation between firm performance and board composition is again mixed. Rosenstein and Wyatt [1990] find evidence for a positive impact of the number of outsiders; Bayesinger and Butler [1985] come to a similar conclusion. Hermalin and Weisbach [1991], Bhagat and Black [1997; 1998], and Dalton et al. [1998] do not find a robust relationship. Note again that all the studies concern U.S. firms.[2]

A third variable affecting monitoring performance is board remuneration. If boards own stock, their interest in monitoring management is aligned with the interest of external shareholders. Morck, Shleifer, and Vishny [1988] for U.S. firms indeed find significant, but non-monotonic associations between different levels of director stock ownership and Tobin's Q [McConnel and Servaes, 1990].

Apart from these three characteristics some commentators argue that the monitoring role could benefit from strong procedures for reviewing management, a reduction of the power of the CEO to appoint new members, and so on. These are to a large extent derivatives of the first three issues.

In our study of Dutch boards, our main hypothesis is that corporate performance depends on the quality of monitoring as proxied by size of the board, the number of outsiders in the board, and remuneration of board members. In this respect, we concentrate primarily on the size of the board (both manager and supervisory board) and the composition of the supervisory board. We also report our findings on stock ownership by board members, although ownership of stock by board members is limited in the Netherlands (about 3.5 percent for management board members and only 1.3 percent for supervisory board members on average in our sample, which is comparable to the figures van Oijen [2000] reports). Finally, we report our findings on the remuneration per member of both the management and the supervisory board.

DUTCH CORPORATE GOVERNANCE AND BOARD COMPOSITION

Contrary to the U.S. regime, the focal point of the Dutch regime of corporate governance is the two-tier board structure consisting of a management board (*Raad van Bestuur*) in charge of the day-to-day operations of the firm and a supervisory board (*Raad van Commissarissen*). The scope of influence of the supervisory board depends on the legal regime the firm adopts. The firm has three options . First, Dutch firms are forced by law to adopt the so-called structural regime (*Structuurregeling*), when they satisfy the following conditions: (1) the firm is a limited liability company (*Naamloze Vennootschap*), (2) subscribed capital exceeds 25 million guilders (approxi-

mately US\$12 million), (3) employment in the Netherlands exceeds 100, and employees are represented by a works council. The supervisory board (which is obligatory in this case) has three primary tasks: (1) to appoint, monitor, suspend, and dismiss members of the management board, (2) to draft the annual financial statement for presentation at the annual shareholders meeting, and (3) to monitor and ratify major business decisions proposed by the management board concerning, for example, expansions, acquisitions, restructuring, or financing. That is, the incumbent members of the supervisory board appoint members of the supervisory board for four-year terms by co-option. An individual cannot serve on both the supervisory and management board of the same company. The two-tier board structure in the Netherlands differs substantially from that in Germany, where the supervisory board is appointed by both the workers and the shareholders and exerts substantial independent influence on management. The close ties between management and supervisory boards make the Dutch two-tier system somewhat similar to the U.S. system, where executive managers sit on the board of directors and the CEO often chairs the board of directors (CEO-duality).

The second legal option is used by firms that meet the criteria for the structural regime, but are majority foreign owned. They adopt the mitigated structural regime (*Gewijzigde Structuurregeling*). Under the legal regime, the (obligatory and co-opted) supervisory board's responsibilities for appointing, suspending, and dismissing members of the management board and drafting the annual financial statement are transferred to the annual shareholders meeting, enhancing investor protection. Their main task is to ratify major business decisions. Public limited liability companies that do not meet the above criteria adopt the third option, the common legal regime, where a supervisory board is optional. If a supervisory board is in place, its members are appointed at the annual shareholders meeting, and its main responsibility is to ratify major management decisions. All other important decisions, especially the appointment of the management board, are made at the annual meeting of the shareholders.

Paradoxically the structural regime and the co-option principle in particular allows managers to entrench more than in the other two regimes. In reality, the management board has a very large influence on appointments to the supervisory board [van der Goot and van het Kaar, 1997]. Moreover, the supervisory board takes decisions otherwise made at the annual shareholder meeting. The opportunity to adopt the structural regime voluntarily can be seen as a major device to protect management from investor pressure (defense instrument). About 25 percent of the firms in our sample have voluntarily adopted the structural regime. So, board structure is important in the system of Dutch corporate governance and instrumental in anti-investor protection (especially through the co-option principle).

For our analysis this implies that the issues of board size and composition are intertwined with the other elements in the game between management and shareholders. We therefore briefly describe alternative instruments of legal protection of shareholders and their use. First, we list other legal instruments that limit shareholder influence. Second, we discuss ownership concentration and the role of financial intermediaries.

There are three main additional instruments. First, firms are allowed (with permission by the shareholders meeting beforehand) to issue preference shares to a friendly trust office with the same voting rights as ordinary shares but with a fixed dividend payout with priority. Preference shares may be sold at nominal value to the trust office with the obligation to pay only 25 percent of the amount up front. In our sample of 94 Dutch listed non-financial firms 66 percent of all firms use this form of anti-investor protection. Second, firms can separate cash flow and control rights using tradable depository receipts. A trust (administrative) office administers tradable depository receipts when issued or initiates a certification process where tradable depository receipts are exchanged for ordinary shares. The tradable depository receipts entitle the holder to cash flow rights (dividends), but control (voting) rights reside within the administrative office. In our sample 32 percent of the firms adopt this type of protection. Third, firms can issue priority shares and curtail voting power (in 24 percent of our sample). Priority shares carry special voting rights on matters such as proposing or preventing the appointment of particular new members of the management and supervisory boards, approving the issue of ordinary shares, merger approval, liquidation of the company or changing the articles of association [Gelauff and den Broeder, 1996]. The structural regime and the issue of priority shares are almost never combined, which underscores the argument that both are alternative instruments of anti-investor protection. In our sample only 13 of 94 firms do not use any of the instruments listed above. This clearly indicates that anti-investor/takeover protection is a rule rather than an exception in the Netherlands.

Two additional control mechanisms are relevant for our analysis. In the first place, we look at ownership concentration. Following Shleifer and Vishny [1997] ownership concentration might be a substitute for legal instruments. Since shareholders are not well protected in the Netherlands one might expect a large degree of shareholder concentration. Indeed, equity ownership is more concentrated than in the United States. De Jong, Kabir, Marra, and Roell [1998] find for the 137 listed Dutch firms in 1995 that the average largest stake is about 28 percent and the second largest stake 9 percent.[3] However, shares are largely held by foreigners (approximately 50 percent) and financial institutions in general do not have large amount of shares (insurance companies and pension funds are somewhat of an exception [Cantrijn, Leunink, and Kabir, 1993]). This implies that in the Dutch case monitoring of managers by large shareholders is rare, which might lead to free-rider problems. Note furthermore that even in spite of (more) concentrated ownership, Dutch anti-investor protection (including the institutional features of the structural regime) generally precludes that management is seriously disciplined by the stock market.

The second instrument is control by financial institutions, banks and other financial institutions. As in Germany (and in contrast with the United States), Dutch banks are allowed to hold equity and firms have bankers on the supervisory board. Moreover, in the Netherlands pension funds and insurance companies are suppliers of financial capital. If a bank is an important provider of debt, it might also want to exert control through equity stakes or a position on the supervisory board. De Jong, Kabir, Marra, and Roell [1998] report that for the 137 listed Dutch firms, banks held 7.2 percent of the shares, pension funds 0.6 percent and other financial institutions

15.5 percent. Apart from their role as shareholder and creditor, financial institutions are also linked with firms through their representation on supervisory boards (and vice versa). About 25 percent of the firms have direct or indirect networking relationships with financial institutions.

Concluding, when it comes to monitoring management in the Netherlands, supervisory boards are important. Moreover, board size and composition cannot be separated from the general setting of corporate governance. Our analysis of the impact of board size and composition on corporate performance therefore takes account of both the legal instruments to shield management from shareholder pressure and the other control instruments, especially the influence of financial institutions. In the next section we discuss the data we use to measure the above-mentioned variables.

DATA DESCRIPTION

We use data for 1996 on 94 Dutch listed non-financial (mainly manufacturing) firms. These firms can be classified into 8 industries: administrative, chemicals, construction, electric equipment, foods, metals, retail, and transport. The sample includes about 60 percent of the firms listed at the Amsterdam Stock Exchange (AEX). From the AMADEUS data set of 200,000 European firms we obtain the balance sheet and income and loss-statement variables (the Dutch version of the data set is called REACH). The Dutch financial newspaper *Het Financieele Dagblad (Handboek Nederlandse Beursfondsen,* 1996/1997) provides data for market values, dividends and short-term bank loans, which are not included in AMADEUS. Although AMADEUS gives data for 165 Dutch firms, we focus on manufacturing and skip services to achieve some homogeneity in the sample. Subsequently, we only include firms that register their activity within the Netherlands only, which, for instance, excludes Royal Dutch Shell. This gives us a final sample of 94 firms. The descriptive statistics are based on this sample of 94 firms. For the regression analyses we excluded two more firms because of outliers in the bank-debt variable.

One of the issues in analyzing firm performance is the choice of the performance measure. There are mainly two categories of indicators. First, we have the accounting measures, the traditional ones like return on assets, equity, investment, and sales, and the more modern concepts like cash flow return on investment and economic value added. Second, one can measure performance using market data. In this class we have *Tobin's Q* (and all its related measurement problems), the market-to-book ratio, or the market-adjusted stock market returns. We use one accounting indicator which we label *PERFORM*, defined as the standardized arithmetic average of return on assets, sales, and equity, and the market indicator market-to-book ratio . From our data we cannot compute the market value of debt, which makes the computation of *Tobin's Q* impossible.

The variables are defined in the following tables. Table 1 gives performance indicators and control variables. We report the mean, median (to account for the underrepresentation of the large firms) and standard deviation. As can be seen from the mean and median of total assets, the table shows that the size distribution of the firms is skewed. The correlation coefficient between the accounting indicator *PER-*

TABLE 1
Firm-Specific Variables

Performance Indicators				Control Variables			
Variable	Mean	Median	Standard Deviation	Variable	Mean	Median	Standard Deviation
ROA	9.75	9.21	4.75	TA	2674	482	7915
ROS	6.92	6.33	4.71	L	61.59	62.49	12.34
ROE	11.72	9.83	5.01	CFA/TA	16.61	16.41	6.80
PERFORM	0.00	−0.07	0.87	DIVID/CFA	17.55	13.05	18.92
MB	1.98	1.51	1.60	Cv(SALES)	0.18	0.13	0.13
				Cv(ROA)	6.64	0.31	58.11
				DYN	0.34	0	0.48
				DIV	1.99	1.70	2.04
				SSPI	0.00	−0.15	1.00

The data refer to 94 Dutch listed non-financial (manufacturing firms). The source of the data is AMADEUS.
ROA = before-tax profits plus financial expense as a percentage of total assets;
ROS = before-tax profits plus financial expense as a percentage of sales;
ROE = before-tax profits plus financial expense as a percentage of equity capital;
PERFORM = arithmetic average of standardized ROA, ROS, and ROE;
MB = market to book value of equity;
TA = total assets minus depreciation;
L = leverage defined as total assets minus equity capital as a fraction of total assets;
CFA = adjusted cash flow, defined as cash flow plus depreciation;
CFA/TA = cash flow minus depreciation as a percentage of total assets minus depreciation;
DIVID/CFA = Dividend paid as a percentage of adjusted cash flow CFA;
Cv(SALES) = coefficient of variation of sales, defined as the mean over the standard deviation of sales;
Cv(ROA) = coefficient of variation of sales, defined as the mean over the standard deviation of the return on assets (ROA);
DYN = a dummy variable, indicating a stable (=0) or dynamic (=1) environment. If either the coefficient of variation of sales (as a proxy of demand uncertainty) or the return on assets (ROA) (as a proxy for profit uncertainty) is bigger than 0.5 we define the environment to be dynamic (DYN=1);
 DIV = diversification, defined by the percentage of non-core activities at the two-digit level. The total number of activities is 58, as defined by the Dutch Chamber of Commerce BIK-classification;
SSPI = standardized annual stock-price increase.

FORM and the market indicator market-to-book ratio equals 0.58. This relatively small correlation coefficient makes it necessary to analyze the board-performance nexus for both performance indicators. Table 1 gives the data on the conditioning variables (mainly derived from balance sheet and income data). The table includes data on total assets, leverage, cash flow, dividend, environmental uncertainty facing the firm, corporate diversification, and stock price increase. We use these variables to condition the performance indicators in the regression model. Dividend outlays are taken as instrumental variables. One can argue that this is the ultimate need of shareholders. In the regressions with two variables to be instrumented (insiders and outsiders) we use the dividend payout ratio as an additional instrumental variable [Chirinko et al., 2000]. Table 2 shows the governance variables. We give the size of the management board, the size of the supervisory board, the percentage of supervisory board members with ties to more than one firm, equity ownership by members of

TABLE 2
Governance Variables

Board Characteristics				Governance Indicators			
Variable	Mean	Median	Standard Deviation	Variable	Mean	Median	Standard Deviation
RVB	2.95	3	1.53	AIP1	0.66	1	0.48
RVC	4.95	5	1.83	AIP2	0.33	0	0.47
OUT	84.30	100	19.94	AIP3	0.24	0	0.43
EQRVB	3.47	0	12.83	AIP4	0.25	0	0.44
EQRVC	1.33	0	7.51	CONCP	25.70	19.07	21.01
REMUNRVB	941.18	875	667.85	BANK	5.34	3.05	7.55
REMUNRVC	35.48	32	18.54	PINS	4.39	1.22	5.37
				NETWORK1	0.14	0	0.35
				NETWORK2	0.14	0	0.36

The data refer to 94 Dutch listed non-financial (manufacturing firms). Sources of the data are: Bestuurders and Commissarissen [1997] and Handboek Nederlandse Beursfondsen [1996/1997].

The governance indicators refer to 94 Dutch listed non-financial (manufacturing firms). Source of the data is Chirinko et al. [2000].

RVB = number of members of the management board;

RVC = number of members of the supervisory board;

OUT = number of outside members of the supervisory board, that is the number of board members who hold board positions at other companies;

EQRVB = percentage of equity ownership by members of the management board;

EQRVC = percentage of equity ownership by members of the supervisory board;

REMUNRVB = remuneration (base salary) of a member of the management board (57 obs. Thousands of guilders);

REMUNRVC = remuneration (base salary) of a member of the supervisory board (73 obs. Thousands of guilders).

AIP1 = 1 if a firm issued preference shares, else AIP1=0;

AIP2 = 1 if the percentage of shares issued as certificates is equal to or greater than 50 percent, else AIP2 = 0;

AIP3 = 1 if a firm issued priority shares, else AIP3=0;

AIP4 = 1 if a firm is not required to implement the structural regime, but does so voluntarily, else AIP4=0;

CONCP = percentage of shares owned by the largest shareholder;

BANK = percentage of shares owned by a bank;

PINS = percentage of shares owned by a pension fund or insurance company;

NETWORK1 = 1, if a firm's supervisory board contains (a) member(s) of the management board of a financial intermediary, or if a member of the management board of the firm sits on a financial intermediary's supervisory board;

NETWORK2 = 1, is a firm's supervisory board contains (a) member(s) of the supervisory board of a financial intermediary.

the management board, equity ownership by members of the supervisory board, and total remuneration per member of both the management and the supervisory board. The average size of the management board is 3; supervisory boards have 5 members on average. A large majority of supervisory board members hold positions at board in other firms, which illustrates the intricate networking ties in the Dutch corporate system. Networking can be beneficial to a firm; it might, for example, facilitate access to resources. Alternatively, it can negatively affect corporate performance as outsiders do not only have the interest of the firm to look after. For instance, super-

visory board members who also hold positions at banks can be relatively risk averse if they also have to guard the interests of the bank as a supplier of debt. Note that networking is particularly facilitated by the Dutch system of co-option. The remuneration data clearly show the difference between the day-to-day tasks of the management board and the more incidental activities of the supervisory board. The average management board member earned almost 1 million guilders (about half a million U.S. dollars) in 1996. Note that we don't have separate data on CEO remuneration. Table 2 also shows alternative governance indicators (the instrumental variables in our analysis), for example legal anti-investor protection indicators (*AIP1* to *AIP4*), the concentration of ownership as measured by the percentage of shares held by the largest owner, the equity holdings by banks and institutional investors, and indicators of networking relationships between non-financial and financial firms. Almost all firms use some kind of legal anti-investor protection. The correlation between financial ownership and networking is not overwhelming but nevertheless substantial.

To provide some perspective, we compare the aforementioned characteristics of Dutch firms with those of U.S. firms, since most studies of boards deal with U.S. firms. The following observations can be made. First, Dutch firms are smaller on average than U.S. firms. Bartelsman [2001] reports that measured by the number of employees, U.S. firms are on average four times bigger than Dutch companies. Second, Yermack [1996] reports an average size of U.S. boards of 12 members. The average number of members of the management and supervisory board combined for Dutch firms in our sample is 8. Hence, Dutch "boards" on average are two-thirds the size of U.S. boards. However, if we strictly arithmetically correct for the size-differential between United States and Dutch companies, "boards" in the Netherlands are considerably bigger than in the United States (that is the implied "size-adjusted" number for Dutch "boards" would be 32!). Third, Yermack [1996] reports that the percentage of outsiders on U.S. boards equals 0.54. Given that only outsiders are allowed in Dutch supervisory boards, we can conclude that the percentage of outsiders in Dutch "boards" is somewhat higher (62.5 percent). Finally, non-natural management turnover rates in countries like Germany and the Netherlands are generally found to be somewhat smaller. Kaplan [1994a] reports a 10 percent turnover rate for Germany and van Oijen [2000] finds 8 percent for the Netherlands. Franks et al. [1998] report 14 percent for the UK, and Kaplan [1994b] finds 12 percent for the United States. On the other hand, Yermack [1996] reports 8.3 percent of director turnover (percent of board per year).

RESEARCH METHOD

A typical problem in estimating the nexus between performance and board characteristics is the endogeneity of both groups of variables. Following Demsetz and Lehn [1985], it can be argued that if a governance structure affects firm performance (and there is an optimal structure) and if the choice of this structure is endogenous (like the size of the board), value-maximizing firms will choose the optimal structure. In that case, controlling for other (conditioning) variables would imply that there is

no variation in the values of the performance and governance variables. The result would be that it is not possible to identify a relationship between performance and governance variables by the data (see also above).

Only if firms fail to optimize their governance structure, are we able to observe and identify the relevant parameters. Moreover, if firms are constrained, for example by other variables indicating governance issues, we can use those variables to instrument the estimation of the nexus between corporate performance and board characteristics. This would at least statistically solve the endogeneity problem mentioned earlier. Following Hermalin and Weisbach [2001, 10-11] we can explain our method in the following way. Typically, the empirical research on the impact of board variables on performance can be based on the following model.

$$(1) \qquad\qquad\qquad\qquad \rho_t = \alpha c_t + \epsilon_t$$

$$(2) \qquad\qquad\qquad\qquad c_t = \beta a_t + \eta_t$$

where ρ = corporate performance, c = board characteristics variables (size and composition), a = (other) governance variables, t = time, $\alpha\beta$ are parameters, ϵ and η are error terms. To deal with the endogeneity problem in this simultaneous system, we use the Instrumental Variable approach. As instruments (a) we take the other governance variables of Table 4, such as preference shares issued by a firm or the percentage of shares issued as certificates (no voting rights) or priority shares issued by firms (see above for a complete description of governance indicators). The reported estimation results below can be taken as the regression results of the first equation of system (1), using instrumental variables that come from equation(2).

RESULTS

Our estimation strategy runs as follows. We use two dependent variables, the accounting indicator *PERFORM*, the weighted accounting index, and the market-to-book ratio of equity capital. Following the two-tier regime, we estimate two classes of models for these dependent variables. One class contains the estimates for the management board indicator and one class for the supervisory board indicators. For both boards we analyze the impact of size, equity ownership, and remuneration. For the supervisory board we also estimate the impact of the number of outsiders on the board. Note that our definition of outsiders is restricted to supervisory board members that hold board positions at other firms (interlocking directorates). Furthermore, note that the management board of Dutch firms is largely involved in decision management and has a substantially weaker decision control role than the board of directors in the U.S. firms. The latter is given to the supervisory board.

We estimate performance models that include board characteristics as well as variables that condition for "normal" corporate performance as the independent variable. Note that in the statistical approach of this paper, the conditioning variables are only taken as indicators of the actual variables of the "true" structural corporate performance model. In particular, it is not implied that our set of conditioning variables characterizes the "true" structural corporate performance model. The condi-

tioning variables proxy for three classes of corporate performance. The first is product markets performance (size, cash flow, and diversification). Second is financial market performance (financial structure, share price increases). Third is product market uncertainty (coefficients of variation). Finally, we use industry dummies to take account of the industry-specific characteristics of the performance model.

The conditioning variables are the following:

- size of the firm: proxied by the log of total assets;
- financial structure: proxied by leverage;
- cash flow generated by the firm;
- diversification of the firm: proxied by the number of out-of-core acivities of the firm;
- uncertainty faced by the firm: measured by the coefficient of variation of cash flows and return on assets (ROA);
- share price increases (standardized);
- industry dummies: in total 8 sectors are included (administrative, chemicals, construction, electric equipment, foods, metals, retail, and transport).

We estimate equation (1) as :

(3) $$P = b0 + b1 \log(RVB) + b2 \log(TA) + b3\,L + b4\,CFA/TA$$

$$+ \; b5\,DIV + b6\,DYN + b7\,SSPI + \Sigma\,dj\,INDj + e$$

where $P = PERFORM$ or MB; $\log(RVB)$ = logarithm of the size of the management board; $\log(TA)$ = logarithm of total assets minus depreciation; L = leverage, CFA/TA = ratio of cash flow minus depreciation and total assets minus depreciation; DIV = indicator of diversification; DYN = dummy variable indicating uncertainty; $SSPI$ = standardized share price increase; $INDj$ = 1, if the firm is industry j, else $INDj = 0$. e = residual; bi and dj are parameters to be estimated.

We have basically two sets of variables under the control of the firm (performance and board size/composition). Given our description of Dutch corporate governance and our discussion of the endogeneity problem in the preceding section, we consider the choice of board characteristics to be intertwined with other governance issues (the second equation of system 1), such as the legal variables, concentration of ownership, and control by financial institutions through ownership and networking or even directly via dividend outlays. Therefore, we instrument the board variables with the following factors (see Table 2 for definitions):

- anti-investor protection: we use four indicators: $AIP1$ indicating priority shares, $AIP2$ indicating tradable depository receipts, $AIP3$ indicating priority shares, $AIP4$ indicating the voluntary choice for the structural regime;
- ownership concentration: blockholding by the largest shareholder;
- ownership by banks and institutional investors;
- network relationships between the board members of non-financial and financial firms;
- dividend outlays.

TABLE 3
Estimation Results for the Management Board and the Supervisory Board

	Management Board		Supervisory Board	
	PERFORM	*MB*	*PERFORM*	*MB*
Board variable				
Log(*RVB*)	0.228	0.506	−2.221[a]	−1.902[b]
Log(RVC)	(0.508)	(0.594)	(0.971)	(1.022)
Conditioning				
Variables	−0.033	−0.029	0.392[a]	0.391[a]
Log(*TA*)	(0.097)	(0.119)	(0.182)	(0.188)
L	−0.012[a]	0.016[a]	−0.012[a]	0.016[a]
	(0.005)	(0.008)	(0.006)	(0.008)
CFA/TA	0.022	0.012	0.036[a]	0.030
	(0.014)	(0.019)	(0.018)	(0.022)
DIV	0.028	−0.001	0.028	−0.007
	(0.046)	(0.068)	(0.057)	(0.062)
DYN	−0.578[a]	−0.574[a]	−0.345	−0.408[b]
	(0.153)	(0.204)	(0.214)	(0.222)
SSPI	0.355[a]	0.236[b]	0.385[a]	0.262[a]
	(0.144)	(0.153)	(0.110)	(0.151)
Constant	0.719[a]	1.131	2.115	1.376
	(0.316)	(1.011)	(1.768)	(0.936)
Number of firms	92	92	92	92
R^2	0.521	0.355	0.271	0.356
RSS	27.360	65.674	41.097	65.617

a. significant at 95 percent confidence level.
b. significant at 90 percent confidence level.
The parameter estimates are based on the following equation: $P = b0 + (b1 \log(RVB), b1 \log(RVC)) + b2 \log(TA) + b3\ L + b4\ CFA/TA + b5\ DIV + b6\ DYN + b7\ SSPI + \Sigma\ dj\ INDj + e$.
We instrument log(*RVB*) (columns 2 and 3) and (log(*RVC*) (columns 4 and 5) by *AIP1*, *AIP2*, *AIP3*, *AIP4*, *CONCP*, *BANK*, *PINS*, *NETWORK1* and *NETWORK2*. *P* is either *PERFORM* or market-to-book *MB*, the other variables are defined in Tables 1-3, *INDj* refers to the industry dummy variables (8 industries in total), *e* is a disturbance term, *bi*'s and *dj*'s are parameters, estimated by Instrumental Variable estimation. Standard errors in parentheses are heteroskedastic-consistent. We list the adjusted R^2 and the residual sum of squares and the number of observations. Industry dummy parameters are not reported.

In line with equation (2), we assume that these variables might affect the decisions on the board characteristics to such an extent that we may observe the relation between performance and board characteristics (equation (1)).

Table 3 (management board panel) shows the results of equation (3). We give the parameter estimates for the conditioning variables only. Table 3 shows that leverage and uncertainty affect both performance measures. The size of the management board has no impact on performance, however. This result does not come as a surprise, since the Dutch management board is small on average and is focused on day-to-day operations. Experimenting with higher-order terms does not lead to any significant

result, which leads us to conclude that the size of the management board is not reflected in performance.

Next, we analyze the more interesting supervisory board characteristics. First, we estimate the analogue of equation (1) with log(RVC) replacing log(RVB). Table 3 (supervisory board panel) gives the results.

From Table 3 (supervisory board panel) we can observe that the size of the supervisory board has a negative impact on performance (especially *PERFORM*, but also *MB* at the 90 percent confidence level). Our results imply support for inefficiencies in Dutch supervisory boards in line with Yermack's [1996] results for U.S. board size. Moreover, because Dutch corporate law requires that only outsiders, (that is, non-management directors can be members of supervisory boards), Table 3 also reveals a negative relationship between the increased involvement of outsiders (non-managers) and corporate performance in Dutch corporate governance.

Subsequently, we analyze supervisory board composition. We split the size variable into two components. The first component refers to the number of directors who are only a member of the supervisory board of one particular firm. We refer to them as insiders. The second components consists of directors who are supervisory board member of a particular firm but also hold a board position in at least one other company. We refer to those members as outsiders. In our interpretation outsiders reveal whether or not supervisory board members (and thus firms) are involved in networking relationships. To take account of the difference between insiders and outsiders equation (4) can be specified as follows*:*

$$(4) \qquad P = b0 + b1 \log(1+(1-OUT/100)\times RVC) + b2 \log(OUT/100\times RVC)$$

$$+ \ b3 \log(TA) + b4 \ L + b5 \ CFA/TA + b6 \ DIV + b7 \ DYN + b8 \ SSPI$$

$$+ \ \Sigma dj \ INDj + e$$

where *OUT* represents the percentage share of *outsiders*, so:$(1-OUT/100)\times$RVC = number of inside members (*INSIDERS*); $OUT/100\times RVC$ = number of outsiders.

We transformed the number of insiders by log(1+*INSIDERS*) to avoid a loss of observations (there are quite a few boards with outsiders only). Table 4 gives the estimation results. Note that we included one additional instrument (dividend to cash flow: *DIVCFA*).

Table 4 shows that the number of outsiders negatively affects firm performance. It might be the case that management boards indeed influence the appointment of members of the supervisory boards, in firms under the structural regime that do not heavily control management's activities. Through the system of co-option it might even be true that friendly persons are given jobs (and remuneration) for not monitoring activities.

Subsequently, we analyze equity ownership by both members of the management board and by members of the supervisory board. Ownership by management board members is not widespread. For 9 firms members of the management board have ownership above 5 percent of the total equity capital; for the supervisory board

TABLE 4
Estimation Results Supervisory Board: Outsiders versus Insiders

	PERFORM	MB
Board Variables		
$Log(1+(1-OUT/100)\times RVC)$	−0.562	−0.339
	(0.484)	(0.662)
$Log(OUT/100\times RVC)$	−1.591[a]	−1.794[a]
	(0.656)	(0.744)
Conditioning Variables		
$Log(TA)$	0.323[a]	0.401[a]
	(0.118)	(0.150)
L	−0.010	0.018[a]
	(0.006)	(0.008)
CFA/TA	0.039[a]	0.029
	(0.017)	(0.024)
DIV	0.022	−0.013
	(0.052)	(0.066)
DYN	−0.422[a]	−0.464[a]
	(0.194)	(0.226)
SSPI	0.365[a]	0.221
	(0.138)	(0.176)
Constant	0.404	0.744
	(0.604)	(0.904)
Number of firms	92	92
R^2	0.316	0.225
RSS	38.555	77.894

a. significant at 95 percent confidence level.

The parameter estimates are based on the following equation: $P = b0 + b1 \log(1+(1-OUT/100)\times RVC) + b2 \log(OUT/100\times RVC) + b3 \log(TA) + b4\ L + b5\ CFA/TA + b6\ DIV + b7\ DYN + b8\ SSPI + \Sigma dj\ INDj + e.$

We instrument $\log(1+(1-OUT/100)\times RVC)$ and $\log(OUT/100\times RVC)$ by *AIP1*, *AIP2*, *AIP3*, *AIP4*, *CONCP*, *BANK*, *PINS*, *NETWORK1* and *NETWORK2*, and *DIVCFA*. *P* is either *PERFORM* or market-to-book *MB*, the other variables are defined in Tables 1-3, *INDj* refers to the industry dummy variables (8 industries in total), *e* is a disturbance term, *bi*'s and *dj*'s are parameters, estimated by Instrumental Variable estimation. Standard errors in parentheses are heteroskedastic-consistent. We list the adjusted R^2, the residual sum of squares and the number of observations. Industry dummy parameters are not reported.

only 3 firms have substantial ownership by board members. This should be kept in mind in interpreting the results printed in Table 5. Analogously to the number of insiders, we transformed *EQRVB* and *EQRVC* to avoid a loss of observations

Table 5 (management board panel) shows that equity ownership by management board members does not affect performance; a similar conclusion can be drawn from Table 5 (supervisory board panel) for the supervisory board members.

Finally, we analyze the impact of remuneration per board member on corporate performance. As firms in the Netherlands have only recently been required by law to publish data on remuneration of supervisory board members we only have data for 56 of our 94 firms for management board remuneration and for 71 of the 94 firms for supervisory board payment. We compute the average remuneration per member.

TABLE 5
Estimation Results for Equity Ownership of the Management Board and the Supervisory Board

	Management Board		Supervisory Board	
	PERFORM	*MB*	*PERFORM*	*MB*
Ownership Variables				
Log(1+*EQRVB*)	0.019	-0.302	-2.213	-0.709
Log(1+*EQRVC*)	(0.234)	(0.427)	(0.258)	(0.398)
Conditioning Variables				
Log(*TA*)	-0.013^a	0.005	0.006	0.031
	(0.058)	(0.120)	(0.033)	(0.081)
L	-0.012	0.024	-0.014	0.008
	(0.007)	(0.013)	(0.006)	(0.011)
CFA/TA	0.025^a	0.023	0.025^a	0.020
	(0.013)	(0.021)	(0.012)	(0.021)
DIV	0.028	0.005	0.046	0.056
	(0.046)	(0.084)	(0.039)	(0.079)
DYN	-0.608^a	-0.756^a	-0.611^a	-0.642^a
	(0.147)	(0.297)	(0.142)	(0.200)
SSPI	0.344^a	0.208	0.351^a	0.234
	(0.090)	(0.164)	(0.098)	(0.174)
Constant	0.634	0.898	0.927	1.922
	(0.569)	(1.064)	(0.652)	(1.211)
Number of firms	92	92	92	92
R^2	0.531	0.233	0.510	0.261
RSS	26.676	78.112	27.967	75.334

a. significant at 95 percent confidence level.

The parameter estimates are based on the following equation: $P = b0 + (b1 \log(1+EQRVB), b1 \log(1+EQRVC)) + b2 \log(TA) + b3\ L + b4\ CFA/TA + b5\ DIV + b6\ DYN + b7\ SSPI + \Sigma dj\ INDj + e$.

We instrument log(1+*EQRVB*) (log(1+*EQRVC*)) by *AIP1*, *AIP2*, *AIP3*, *AIP4*, *CONCP*, *BANK*, *PINS*, *NETWORK1* and *NETWORK2*. *P* is either *PERFORM* or market-to-book *MB*, the other variables are defined in Tables 1-3, *INDj* refers to the industry dummy variables (8 industries in total), *e* is a disturbance term, *bi*'s and *dj*'s are parameters, estimated by Instrumental Variable estimation. Standard errors in parentheses are heteroskedastic-consistent. We list the adjusted R^2 and the residual sum of squares and the number of observations. Industry dummy parameters are not reported.

Table 6 (management board panel) shows that remuneration of management board members has a slightly positive impact (90 percent confidence interval) on the *PERFORM* indicator. When remuneration is used in the (stock) market indicator of corporate performance the impact is no longer significant. Table 6 also gives the corresponding results for the remuneration per supervisory board member. The supervisory board panel of the table shows that there is no relation between remuneration and corporate performance.

SUMMARY AND DISCUSSION

This paper evaluates the nexus corporate performance board characteristics for the Netherlands. The Dutch system of corporate governance is interesting, because

Table 6
Estimation Results for Remuneration per Member of the Management Board and Supervisory Board

	Management Board		Supervisory Board	
	PERFORM	*MB*	*PERFORM*	*MB*
Variable				
Log(*REMUNRVB*)	0.753[a]	−0.529	−0.030	−0.688
Log(*REMUNRVC*)	(0.421)	(0.615)	(0.301)	(0.632)
Conditioning Variables				
Log(*TA*)	−0.314[a]	0.026	−0.058	−0.003
	(0.141)	(0.221)	(0.087)	(0.130)
L	0.008	0.021	-0.010	0.025[a]
	(0.012)	(0.013)	(0.006)	(0.010)
CFA/TA	0.040[a]	0.028	0.032[a]	−0.019
	(0.018)	(0.025)	(0.014)	(0.020)
DIV	0.050	0.087	0.096[a]	0.088
	(0.047)	(0.097)	(0.045)	(0.082)
DYN	−0.479[a]	−0.595	−0.478[a]	−0.747[a]
	(0.218)	(0.347)	(0.166)	(0.258)
SSPI	0.186	0.398	0.326[a]	0.383[a]
	(0.076)	(0.254)	(0.097)	(0.148)
Constant	−4.036	3.715	0.647	2.667
	(2.600)	(3.241)	(0.849)	(2.137)
Number of firms	56	56	71	71
R^2	0.374	0.237	0.509	0.408
RSS	16.900	48.220	21.296	44.711

a. Significant at 95 percent confidence level.
b. Significant at the 90 percent confidence level.
The parameter estimates are based on the following equation: $P= b0 + (b1 \log(REMUNRVB), b1 \log(REMUNRVC)) + b2 \log(TA) + b3\ L + b4\ CFA/TA + b5\ DIV + b6\ DYN + b7\ SSPI + \Sigma dj\ INDj + e$
We instrument log(*REMUNRVB*) (log(*REMUNRVC*)) by *AIP1*, *AIP2*, *AIP3*, *AIP4*, *CONCP*, *BANK*, *PINS*, *NETWORK1* and *NETWORK2*. *P* is either *PERFORM* or market-to-book *MB*, the other variables are defined in Tables 1-3, *INDj* refers to the industry dummy variables (8 industries in total), *e* is a disturbance term, *bi*'s and *dj*'s are parameters, estimated by Instrumental Variable estimation. Standard errors in parentheses are heteroskedastic-consistent. We list the adjusted R^2 and the residual sum of squares and the number of observations. Industry dummy parameters are not reported.

it combines both elements of primarily market orientation (compare the United States and UK) and more German-like control mechanisms. In the Netherlands, a two-tier board system is prevalent. An important characteristic of supervisory boards (in two of the three discussed legal models) is the principle of co-option. This principle is the subject of a heated discussion in the Netherlands [Gelauff and den Broeder, 1996].

We find no evidence of a relationship between performance and the size of the management board in the Netherlands. Given the role of the management board and its size (3 members) on average we conclude that they perform effectively. The opposite holds for the size and composition of the supervisory board. We find evidence for a negative impact of the size of this board. This supports the findings of Yermack [1996] for U.S. companies. Also, the number of outsiders is negatively associated

with performance (which is not in line with Hermalin and Weisbach [1991], Bhagat and Black [1997; 1998], and Dalton et al. [1998]). This negative relationship, which is strongly related to the size, however, suggests that the introduction of more outsiders in the supervisory board is not necessarily the best solution to the Berle-Means problem of free-ridership of shareholders. The influence of managers on the composition of the board may be too substantial. Finally, we find no hard evidence of any relation between remuneration of board members and corporate performance.

Implicitly, we find support for the alleged negative impact of one of the most crucial institutional characteristics of Dutch corporate governance: co-option of the supervisory board. Through co-option the incumbent members of the supervisory board appoint new members. Apparently incumbent members or the managers who influence this choice do a bad job. Dutch shareholders are not only relatively poorly protected, because of the array of defense mechanisms that is actually used by listed firms (only 13 of the 94 firms of our sample don't use any of the researched defense instruments), but also have no real influence on the size and composition of supervisory boards, which are negatively associated with performance.

NOTES

1. See, for example, Gugler [1998] for a survey.
2. See Hermalin and Weisbach [2001] for a survey.
3. See Kabir, Cantrijn, and Jeunink [1997] for similar findings.

REFERENCES

Barnhart, S. W., Marr, M. W. and Rosenstein, S. Firm Performance and Board Composition: Some New Evidence. *Managerial and Decision Economics*, July 1994, 329-40.

Bartelsman, E. J. Success and Failure: Learning from Differences in OECD Countries. Mimeo, presented at the Conference Board Workshop, Groningen, April 2001.

Bayesinger, R. D. and Butler, H. N. Corporate Governance and the Board of Directors: Performance Effects of Changes in Board Composition. *Journal of Law, Economics and Organization*, 1985, 101-124.

Berle, A. A. and Means, G. C. *The Modern Corporation and Private Property*. NY: Mac Millan, 1932.

Bestuurders en Commissarissen. 's-Gravenhage: Delwel, 1997.

Bhagat, S. and Black, B. Do Independent Directors Matter? Working paper, 1997.

_____**.** The Uncertain Relationship Between Board Composition and Firm Performance. New York: Columbia Law School Sloan Project, 1998, 291-316.

Boot, A. W. W. and Macy, J. R. Objectivity, Proximity, and Adaptability in Corporate Governance. Mimeo, presented at Groningen University, June 1999.

Byrd, John W. and Hickman, K. A. Do Outside Directors Monitor Managers? *Journal of Financial Economics*, October 1992, 195-221.

Cantrijn, A. L. R., Leunink, A. A. and Kabir, R. Beschermingsconstructie en de rol van de aandeelhouder, NIBE-katern 24, Nederlands Instituut voor Bank en Effectenbedrijf, 1993.

Chirinko, B., Ees, H. van, Garretsen, H., and Sterken, E. Performance, Financial Ownership and Networking in the Netherlands. *German Economic Review,* forthcoming.

Dalton, D. R., Daily, C. M., Ellstrand, A. E., and Johnson, J. L. Meta-Analytic Reviews of Board Composition, Leadership Structure, and Financial Performance. *Strategic Management Journal*, March 1998, 269-90.

Demsetz, H. and Lehn, K. The Structure of Corporate Ownership: Causes and Consequences. *Journal of Political Economy*, December 1985, 1155-77.

Fama, E. F. and Jensen, M. C. Separation of Ownership and Control. *Journal of Law and Economics,* 26, June 1983, 301-325.

Franks, J., Mayer, C., and Renneboog, L. Who Disciplines Bad Management? Mimeo, 1998.

Gelauff, G. M. M. and Broeder, C. den. *Governance of Stakeholder Relationships: The German and Dutch Experience*. Den Haag: CPB, 1996.

Goodstein, J., Gautam, K., and Boeker, W. The Effects of Board Size and Diversity on Strategic Change. *Strategic Management Journal*, March 1994, 241-250.

Goot, L. R. T., van der and Kaar, R. H. van het. Beschermingsconstructies, Structuurregime en Ondernemingswaarde. *MAB*, October 1997, 497-507.

Gugler, K. Corporate Governance and Economic Performance, A Survey. Mimeo, Department of Economics, University of Vienna, 1998.

Haleblian, J. and Finkelstein, S. Top Management Team Size, CEO Dominance, and Firm Performance: the Moderating Roles of Environmental Turbulence and Discretion. *Academy of Management Journal*, August 1993, 844-63.

Handboek Nederlandse Beursfondsen. Het Financieele Dagblad, 1996/1997.

Hermalin, B. and Weisbach, M. The Effects of Board Composition and Direct Incentives on Firm Performance. *Financial Management*, Winter 1991, 101-112.

_____**.** Boards of Directors as an Endogenously Determined Institution: A Survey of the Economic Literature, NBER working paper no. 8161, 2001.

Jaarboek van Nederlandse Ondernemingen 1996/97. Amsterdam Exchanges: Beursmedia, 1997.

Jensen, M. C. The Modern Industrial Revolution, Exit, and Failure of Internal Control Systems. *Journal of Finance,* July 1993, 831-80.

Jong, A. de, Kabir, R., Marra, T., and Roell, A. *Ownership and Control in the Netherlands*, Technical Report, European Corporate Governance Network, 1998.

Kabir, R., Cantrijn, D., and Leunink, A., Takeover Defences, Ownership Structure and Stock Returns in The Netherlands: An Empirical Analysis, *Strategic Management Journal*, February 1997, 97-109.

Kaplan, S. N. Top Executive Rewards and Firm Performance: A Comparison of Japan and the United States. *Journal of Political Economy*, June 1994a, 510-46.

_____**.** Top Executives, Turnover, and Firm Performance in Germany. Journal of Law, *Economics and Organization*, April 1994b, 142-59.

La Porta, R., Lopez de Silanes, F., Shleifer, A., and Vishny, R. W. Law and Finance. *Journal of Political Economy*, December 1998, 1113-55.

Lipton, M. and Lorsch, J. W. A Modest Proposal for Improved Corporate Governance. *Business Lawyer*, November 1992, 59-77.

McConnel, J. J. and Servaes, H. Additional Evidence on Equity Ownership and Corporate Value. *Journal of Financial Economics*, September 1990, 595-612.

Monks, R. A. G. and Minow, N. *Corporate Governance*. Cambridge: Basil Blackwell, 1995.

Morck, R., Shleifer, A. and Vishny, R. W. Management Ownership and Market Valuation; an Empirical Analysis. *Journal of Financial Economics*, January/March 1988, 293-315.

Ooijen, P. van. Essays on Corporate Governance, with Empirical Analyses for the Netherlands. Ph.D. dissertation, University of Amsterdam, 2000.

Rosenstein, S. and Wyatt, J. G. Outside Directors, Board Independence, and Shareholder Wealth. *Journal of Financial Economics*, August 1990, 175-91.

Shleifer, A. and Vishny, R. W. A Survey of Corporate Governance. *Journal of Finance*, June 1997, 737-83.

Williamson, O. E. *The Mechanisms of Governance.* New York: Oxford University Press, 1996.

Yermack, D. Higher Market Valuation of Companies with a Small Board of Directors. *Journal of Financial Economics*, February 1996, 185-211.

Zahra, S. A. and Pearce, J. A. Boards of Directors and Corporate Financial Performance: A Review and Integrative Model. *Journal of Management*, June 1989, 291-334.