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BOARD COMPOSITION AND FIRM PERFORMANCE IN THE NETHERLANDS

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Abstract

We analyze the relationship between performance and board composition of Dutch listed firms. Since the Netherlands has a two-tier board structure, we analyze both the impact of the size of the management board and the supervisory board. The supervisory board plays a role in (anti-) investor protection in the Dutch corporate governance system. Therefore, we use indicators of corporate governance as instrumental variables. We find that the size of the management board is not determining firm performance. We do, however, find support for a negative relationship between the size and composition (number of outsiders) of the supervisory board and firm performance.

1. INTRODUCTION

The conflict between remote shareholders and knowledgeable managers of firms is prominent in modern organization theory. Berle and Means [1932] introduced their concern for widely dispersed ownership and related monitoring problems. The resulting lack of effective mechanisms of corporate control (e.g. free-riding by shareholders) draws a lot of attention in the last two decades. One can observe a growing body of especially empirical research on corporate governance issues (such as CEO-duality, size and composition of the board, and remuneration of board members). Although the evidence on many of these issues is rather mixed [see e.g. Gugler, 1998 for a survey]. Legal protection of shareholders enhances the possibility that financiers get their share of the cash flow [cf. Shleifer and Vishny, 1997]. One of the aspects of legal protection of investors is the shareholder influence on monitoring of management, for instance through a saying on board composition. Especially for those cases where ownership concentration is low, shareowners would have an incentive to control the board composition to some extent, hoping that the control of the board influences firm performance and/or valuation. La Porta, Lopez-de-Silanes and Shleifer [1998] show that concentrated ownership seems to be the norm around the world. Apart from the US and the UK, where legal protection of shareholder rights is strong, most other countries have rather concentrated ownership. In some countries (such as the Netherlands) one can actually observe anti-investor protection instead of legal protection of shareholders. The rationale for anti-investor protection is a concern for long-run performance opposed to short-termism. Managers might be myopic due to perceived short-run pressure by stock markets, forcing them to take decisions that hurt long-run profitability (e.g. under-investment). In order to reduce this tendency, anti- investor protection provides managers with incentives to take long-run performance into account, with the risk, however, of increasing their entrenchment. Board-shareholder relations are in those cases examples of trust relations [cf. Porter, 1992].

Management turnover rates are indicators for the responsiveness of managers for firm performance. Non-natural management turnover rates in countries like Germany and the Netherlands are found to be smaller. This is strongly related to their

anti-investor protection climate, which indicates more focus on long term performance. Kaplan [1994a] reports a 10% turnover rate for Germany, while Van Oijen [2000] finds 8% for the Netherlands. Franks et al. (1998) report 14% for the UK, and Kaplan [1994b] finds 12% for the US. But also in cases of low turnover we would expect a serious interest of shareholders in the stability of the relationship between firm performance and board composition. So, no matter which system of corporate governance prevails, either a short-run market-oriented focus or a more continental European organization oriented approach, there is a serious interest in the board-performance relationship.

In this paper we address this board-performance relation for the Netherlands. The Dutch system of governance is rather unique in the world since it combines elements of market orientation (having a well-developed equity market) and elements of the more German-like control mechanisms. The focal point of this system is a two-tier board structure consisting of a management board (Raad van Bestuur) and a supervisory board (Raad van Commisarissen). We discuss this issue in Section 3 in detail. The management board can be compared with the US board of directors, although the average size of the Dutch board is smaller (3 members on average) as compared to the US size. The control function is largely taken over by the supervisory board (having 5 members on average), whose members are mostly appointed through co-option. Our main interest is in the sign of the performance-board relation.

The remainder of this paper is organized as follows. First, we present a short overview of the literature on this issue. Next, we discuss in detail the Dutch institutional context. We present the major issues in governance and in particular the board composition topic. Next, we present the data and methodology used. We propose an Instrumental Variable approach and present our results. The results confirm the negative impact of large supervisory boards on firm performance (and valuation). We sum up with a conclusion.

2. FIRM PERFORMANCE AND BOARD COMPOSITION

A board fulfills three major tasks [Goodstein et al., 1994]. First, it links the organization to its environment and secures critical resources [cf. Williamson, 1996]. Second, the board has an internal governance and monitoring task [cf. Barnhart et al., 1994]. It can discipline or remove ineffective management teams. The third role of the board is their leading role in strategic decision making [cf. Fama and Jensen, 1983]. In this paper we focus on the second task. Monks and Minow [1995] survey the literature on this topic and indicate that board monitoring indeed can improve the quality of manager's decisions.

Various aspects play a role in increasing the monitoring role of (supervisory and management) boards. First, we have the size of the board. Haleblian and Finkelstein [1993] argue that the main advantage of a large (management) board is that a large group has more problem solving capabilities. It is likely however that very large boards are ineffective. Jensen [1993] notes that "..as groups increase in size they become less effective because the coordination and process problems overwhelm the advantages from having more people to draw from." Lipton and Lorsch [1992] put it a little stronger and state that ".. the norms of behavior in most boardrooms are dysfunctional." Zahra and Pearce [1989] argue that there might be a threshold, were board size may have a negative effect on company performance. Empirical evidence on this issue is rather scarce though. A notable exception is Yermack [1996] who finds strong support for a negative relationship between firm performance and board size.

A second variable of interest is the number of outside directors on the board. 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 CEO's may appoint independent directors to please shareholders with an illusion of active monitoring. The empirical evidence on the relation between firm performance and outsiders on the boards 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] find no convincing relationship.

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] find indeed significant, but non-monotonic associations between different levels of director stock ownership and Tobin's Q [cf. McConnel and Servaes, 1990].

Apart from these three characteristics some commentators argue that the monitoring role could benefit from strong procedures of reviewing management, a reduction of the power of the CEO to appoint new members, etc. These are to a large extent derivatives of the first three issues. We concentrate primarily on the size of the board (both manager and supervisory board) and the number of outsiders on the supervisory board. Ownership of stock by board members is limited in the Netherlands (about 3.5% for management board members and only 1.3% for supervisory board members on average in our sample, which is comparable to the figures Van Oijen [2000] reports). Despite that, we report our findings on ownership by members of the board of directors and supervisory board and the remuneration of the supervisory board (data on the remuneration of the board of directors is unavailable in the Netherlands). In general, the main hypotheses of this paper are that firm performance depends on the quality of monitoring as proxied by size of the board, number of outsiders in the board, and remuneration of board members.

A typical problem in estimating the performance-board composition relationship is the endogeneity of both groups of variables. If we know that a certain size of the board maximizes firm value, why don't we pick this optimal value? Suppose that all outcomes were optimal, controlling for other influencing variables we cannot observe a cross-sectional relation. In other words if there is no variation in the variable-values, no cross-sectional relationships could be established. But, if firms are constrained, e.g. by other variables indicating governance issues, we can use those variables to instrument the estimation. The latter is underpinned by our database. Based on this, we use the proposed Instrumental Variable approach.

3. DUTCH CORPORATE GOVERNANCE AND BOARD COMPOSITION

The focal point of the Dutch system 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 supervisory board's scope of influence varies substantially depending on which legal regime the firm adopts. There are three basic possibilities. First, Dutch firms are forced by law to adopt the so-called structural regime (Structuurregeling), when they satisfy all of the following conditions:

(1) the firm is a limited liability company (Naamloze Vennootschap), (2) subscribed capital exceeds 25 million guilders (approximately $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 (usually for an indefinite term), monitor, suspend, and dismiss members of the management, (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, restructurings, or financing. Members of the supervisory board are appointed for four year terms by co-option, that is, by the incumbent members of the supervisory board. An individual can not serve on both the supervisory and management boards of the same company. In practice, the management board has a very large influence on appointments to the supervisory board (Van der Goot and Van het Kaar, 1997). 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 relations between management and supervisory boards makes the Dutch two-tier system somewhat similar to the U.S. system, where executive managers sit on the board of directors (comparable to the supervisory board) and the CEO often chairs the board of directors (CEO-duality).

The second (legal) model is used by firms, that meet the criteria for the structural regime, but are majority foreign owned. They follow the mitigated structural regime (Gewijzigde Structuurregeling). Under this 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 model, 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.

It is clear that the structural regime allows managers to entrench more than in the other two models. In the structural regime the supervisory board takes decisions otherwise made at the annual shareholder meeting. Dutch law offers the possibility to adopt the structural regime voluntarily. This choice can be seen as a major device to protect management for investor pressure (defense instrument). About 25% of the firms in our sample 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). The issue of board composition is therefore intertwined with the other elements in the game between management and shareholders. We therefore describe in short other instruments of legal protection of shareholders and their use. Our first category of arguments is a list of other legal instruments to limit shareholder influence. After that we discuss shortly ownership concentration and the role of financial intermediaries.

Board composition is influenced by legal arguments. Firms may voluntarily adopt the protection of the structural regime. This choice affects the issue of board composition. Since other legal protection instruments exist, these might have an indirect impact on board composition. There are three main additional instruments. First, firms are allowed (with a priori permission by shareholders meeting) to issue

preference shares to a friendly trust office with the same voting rights as ordinary shares but with a fixed dividend pay-out with priority. Preference shares may be sold at nominal value to the trust office with the obligation to pay only 25% of the amount up front. In our sample 66% 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% of the firms adopts this type of protection. Third, firms can issue priority shares and curtail voting power (in 24% 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 [see Gelauff and Den Broeder, 1997, 67]. In total only 13 of our 94 firms in the sample do not use one of the instruments listed above. This figure shows that anti-investor/takeover protection is quite common in the Netherlands. Finally, the structural regime and the issue of priority shares are almost never combined.

Two other control mechanisms are relevant for our analysis. Firstly, there is general ownership concentration. As Shleifer and Vishny [1997] argue ownership concentration might be a substitute for legal instruments. Since shareholders are rather ill protected one might expect a large degree of shareholder concentration. This is only partially the case. About half of all the Dutch listed firms have a shareholder that owns more than 20 per cent of the shares outstanding. The second instrument is control by financial institutions. As in Germany, Dutch banks are allowed to hold equity and to have bankers on the board. Moreover, in the Netherlands pension funds and insurance companies are important suppliers of financial capital. If a bank for instance is an important provider of debt, it might also want to exert some control via equity stakes or decisions on the board. Banks have about 5% of the shares on

average, institutional investors about 4%, and about 25% of the firms has direct or indirect networking relationships with financial institutions.

Concluding, one can argue that Dutch board composition cannot be separated from the general setting of corporate governance. The impact of board composition on performance should therefore take 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.

4. DATA DESCRIPTION

We use cross-sectional 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. This group is about 60 per cent of all the firms listed at the Amsterdam Stock Exchange (AEX). We use the AMADEUS-file for the balance sheet and profit and loss account variables (the Dutch version is called REACH) and the data published by the main Dutch financial newspaper Het Financieele Dagblad (Handboek Nederlandse Beursfondsen, 1996/1997). One of the issues in analyzing firm performance is the choice of the performance measure. There are mainly two categories of indicators. Firstly, we have the accounting measures, the traditional ones like return on assets (*ROA*), equity (*ROE*), investment (*ROI*), and sales (*ROS*), and the more modern concepts like cash flow return on investment (*CFROI*) and economic value added (*EVA*). Secondly, 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 (*MB*) ratio, or the market-adjusted stock market returns (*MAR*). We use one accounting indicator which we label *PERFORM*, defined as the standardized arithmetic average of *ROA*, *ROS*, and *ROE*, and the market indicator *MB*. From our data we cannot compute the market value of debt, which makes the computation of *Tobin's Q* impossible.

We discuss our data by subject. Definitions of the variables are given in the Tables. First, Table 1 gives the performance data (and the stock market data). We give the mean, median, and standard deviation in order to attribute skewness of the data (under-representation of the large firms). The correlation coefficient between *PERFORM* and *MB* is 0.58. This implies that it is necessary to analyze both performance or valuation indicators. Table 2 gives the data on the control 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, diversification of the firm, and stock price increase. We will use these variables to condition the performance indicators in the estimation. We use the dividend outlays as an instrument. 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 pay-out ratio as an additional instrumental variable [see also Chirinko et al., 2000]. Table 3 shows the board characteristics. We give the size of the board of directors, the size of the supervisory board, the percentage of outside members of the supervisory board, equity ownership by members of the board of directors, equity ownership by members of the supervisory board and total remuneration of the supervisory board. Table 4 shows the other governance indicators (the instrumental variables). We present the 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.

Table 1 – Performance indicators

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;

Variable	Mean	Median	Standard deviation
ROA	9.75	9.21	4.75
ROS	6.92	6.33	4.71
ROE	11.72	9.83	5.01
PERFORM	0.00	-0.07	0.87
MB	1.98	1.51	1.60

Table 2 – Control variables

The data refer to 94 Dutch listed non-financial (manufacturing firms). The source of the data is AMADEUS.

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.

Variable	Mean	Median	Standard deviation
TA	2674	482	7915
L	61.59	62.49	12.34
CFA/TA	16.61	16.41	6.80
DIVID/CFA	17.55	13.05	18.92
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

Table 3 – Board characteristics

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).

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;
EQRVB = percentage of equity ownership by members of the management board;
EQRVC = percentage of equity ownership by members of the supervisory board;
REMUN = remuneration of the supervisory board in thousand guilders (62 firm observations)

Variable	Mean	Median	Standard deviation
RVB	2.95	3	1.53
RVC	4.95	5	1.83
OUT	84.30	100	19.94
EQRVB	3.47	0	12.83
EQRVC	1.33	0	7.51
REMUN	241.11	200	173.41

Table 4 – Governance indicators

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

AIP1 = 1 if a firm issued preference shares, else AIP1=0;
AIP2 = 1 is the percentage of shares issued as certificates is equal to or greater than 50%, else AIP2=0;
AIP3 = 1 is 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.

Variable	Mean	Median	Standard deviation
AIP1	0.66	1	0.48
AIP2	0.33	0	0.47
AIP3	0.24	0	0.43
AIP4	0.25	0	0.44
CONCP	25.70	19.07	21.01
BANK	5.34	3.05	7.55
PINS	4.39	1.22	5.37
NETWORK1	0.14	0	0.35
NETWORK2	0.14	0	0.36

The tables show that the size of the firms is uneven (as can be seen from the mean and median of total assets for instance). The average size of the management board is 3, which is small compared to e.g. the US boards. The supervisory boards have 5 members on average, of which a large majority is outsider. Almost all firms use some kind of legal anti-investor protection. Financial ownership and networking is not overwhelming but substantial.

5. RESULTS

Our estimation strategy runs as follows. We use two dependent variables, *PERFORM*, the weighed accounting index, and the Market-to-Book ratio of equity capital (*MB*). For both variables we estimate two classes of models. One class contains the equations for the management board indicator and one class for the supervisory board indicators. For both boards we analyze the impact of size and equity ownership. For the supervisory board we also estimate the impact of the number of outsiders on the board and the impact of remuneration of the board members. It is good to repeat here that the management board of Dutch firms is more involved in day-to-day operations and has a substantially weaker monitoring role than the board of directors in the US firms. The monitoring role is given to the members of the supervisory board.

We estimate performance models that include governance characteristics and conditioning variables that describe "normal" performance. These conditioning variables are the following:

- size of the firm: we proxy size by the log of total assets;
- financial structure: we proxy financial structure by leverage;
- cash flow generated by the firm;
- diversification of the firm: we proxy diversification by the number of out-of-core activities of the firm;
- uncertainty faced by the firm: we measure this by the coefficient of variation of cash flows and return on assets (*ROA*);
- share price increases (standardized);

- industry dummies: in total we include 8 sectors: administrative, chemicals, construction, electric equipment, foods, metals, retail, and transport.

The first model we estimate is:

$P = b0 + b1 \log(RVB) + b2 \log(TA) + b3\ L + b4\ CFA/TA + b5\ DIV +$
$b6\ DYN + b7\ SSPI + \Sigma\ dj\ INDj + e$ "equation (1)"

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). Following Demsetz and Lehn [1985], we argue that if a governance structure affects firm performance (and so there is an optimal structure) and if the choice of this structure is endogenous (like the size of the board), it is likely that each firm chooses its optimal structure. The result would be that a relation between performance and governance variables can not be identified by the data (see also section 2). Only if firms fail to optimize their governance structure, we are able to observe and identify the relevant parameters. Given our description of Dutch governance it is likely that the choice for board characteristics is intertwined with other governance issues, like the legal variables, concentration of ownership, control

by financial institutions via ownership and networking or even directly via dividend outlays. Therefore, we instrument the board variables with the following factors:

- 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.

We assume that these variables might affect the decisions on the board composition to such an extent that we may observe the relation between performance and board composition.

Table 5 shows the results of equation 1. We give the parameter estimates for the conditioning variables only.

Table 5 – Estimation results for the management board

The parameter estimates are based on the following equation:

$$P = b0 + b1 \log(RVB) + b2 \log(TA) + b3 L + b4 CFA/TA + b5 DIV + b6 DYN +$$

$$b7 SSPI + \Sigma dj INDj + e$$

We instrument $\log(RVB)$ 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.

	PERFORM	MB
Board variable		
Log(RVB)	0.228	0.506
	(0.508)	(0.594)
Conditioning variables		
Log(TA)	-0.033	-0.029
	(0.097)	(0.119)
L	-0.012	0.016
	(0.005)	(0.008)
CFA/TA	0.022	0.012
	(0.014)	(0.019)
DIV	0.028	-0.001
	(0.046)	(0.068)
DYN	-0.578	-0.574
	(0.153)	(0.204)
SSPI	0.355	0.236
	(0.144)	(0.153)
Constant	0.719	1.131
	(0.316)	(1.011)
Statistics		
Number of firms	92	92
R^2	0.521	0.355
RSS	27.360	65.674

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Table 5 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 did 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 6 gives the results.

Table 6– Estimation results for the supervisory board

The parameter estimates are based on the following equation:

$$P = b0 + b1 \log(RVC) + b2 \log(TA) + b3\ L + b4\ CFA/TA + b5\ DIV + b6\ DYN + b7\ SSPI + \Sigma\ dj\ INDj + e$$

We instrument log(RVC) 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.

	PERFORM	MB
Board variable		
Log(RVC)	-2.221	-1.902
	(0.971)	(1.022)
Conditioning variables		
Log(TA)	0.392	0.391
	(0.182)	(0.188)
L	-0.012	0.016
	(0.006)	(0.008)
CFA/TA	0.036	0.030
	(0.018	(0.022)
DIV	0.028)	-0.007
	(0.057)	(0.062)
DYN	-0.345	-0.408
	(0.214)	(0.222)
SSPI	0.385	0.262
	(0.110)	(0.151)
Constant	2.115	1.376
	(1.768)	(0.936)
Statistics		
Number of firms	92	92
R^2	0.271	0.356
RSS	41.097	65.617

We 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). This implies that we find support for inefficiencies in Dutch supervisory board in line of Yermack's [1996] results for US board size.

Subsequently, we analyze supervisory board composition. We split the size variable into two components: *insiders* and *outsiders*. Equation (2) can be specified as follows:

P = b0 + b1 log(1+(1-*OUT*/100)*RVC) + b2 log(*OU*T/100*RVC) +
b3 log(*TA*) +b4 *L* + b5 *CFA/TA* + b6 *DIV* + b7 *DYN* + b8 *SSPI* +
Σ dj *INDj* + e   "equation (2)"

where *OUT* represents the percentage share of *outsiders*, so:
(1-*OUT*/100)*RVC = number of inside members (*INSIDERS*);
OUT/100*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 7 gives the estimation results. Note that we included one additional instrument (dividend to cash flow: *DIVCFA*).

Table 7 - Estimation results supervisory board: outsiders versus insiders

The parameter estimates are based on the following equation:

$$P = b_0 + b_1 \log(1+(1-OUT/100)*RVC) + b_2 \log(OUT/100*RVC) + b_3 \log(TA) +$$

$$b_4 L + b_5 CFA/TA + b_6 DIV + b_7 DYN + b_8 SSPI + \Sigma d_j IND_j + e$$

We instrument $\log(1+(1-OUT/100)*RVC)$ and $\log(OUT/100*RVC)$ 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, IND$_j$ refers to the industry dummy variables (8 industries in total), e is a disturbance term, b$_i$'s and d$_j$'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.

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

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Table 7 shows, not surprisingly, that it is the number of outsiders that is negatively affecting firm performance. This contradicts the notion that appointing outsiders resolves the Berle-Means agency problem. It might be the case that management boards indeed influence the appointment of members of the supervisory boards, in firms acting under the structural regime, which do not heavily control management's activities. Through the system of co-option it might even be so that friendly persons are given jobs (and remuneration) just not to monitor activities.

Further, we analyze equity ownership of both members of the management board and of members of the supervisory board. Ownership by management board members is not widely spread. For 9 firms members of the management board have ownership above 5% of the total equity capital, for the supervisory board only 3 firms have substantial ownership of board members. This should be kept in mind in interpreting the results printed in Tables 8 and 9. Analogously to the number of insiders, we transformed *EQRVB* and *EQRVC* to avoid a loss of observations.

Table 8– Estimation results for equity ownership of the management board

The parameter estimates are based on the following equation:

$$P = b0 + b1 \log(1+EQRVB) + b2 \log(TA) + b3\ L + b4\ CFA/TA + b5\ DIV + b6\ DYN + b7\ SSPI + \Sigma\ dj\ INDj + e$$

We instrument $\log(1+EQRVB)$ 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.

	PERFORM	MB
Ownership variable		
Log(1+EQRVB)	0.019	-0.302
	(0.234)	(0.427)
Conditioning variables		
Log(TA)	0.013	0.005
	(0.058)	(0.120)
L	-0.012	0.024
	(0.007)	(0.013)
CFA/TA	0.025	0.023
	(0.013)	(0.021)
DIV	0.028	0.005
	(0.043)	(0.084)
DYN	-0.608	-0.756
	(0.147)	(0.297)
SSPI	0.344	0.208
	(0.090)	(0.164)
Constant	0.634	0.898
	(0.569)	(1.064)
Statistics		
Number of firms	92	92
R^2	0.531	0.233
RSS	26.676	78.112

Table 9 - Estimation results for equity ownership of the supervisory board

The parameter estimates are based on the following equation:

$$P = b_0 + b_1 \log(1+EQRVC) + b_2 \log(TA) + b_3 L + b_4 CFA/TA + b_5 DIV + b_6 DYN + b_7 SSPI + \Sigma d_j IND_j + e$$

We instrument 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, IND_j refers to the industry dummy variables (8 industries in total), e is a disturbance term, b_i's and d_j'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.

	PERFORM	MB
Ownership variable		
Log(1+EQRVC)	-0.213	-0.709
	(0.258)	(0.398)
Conditioning variables		
Log(TA)	-0.006	0.013
	(0.033)	(0.081)
L	-0.014	0.008
	(0.006)	(0.011)
CFA/TA	0.025	0.020
	(0.012)	(0.021)
DIV	0.046	0.056
	(0.039)	(0.079)
DYN	-0.611	-0.642
	(0.142)	(0.200)
SSPI	0.351	0.234
	(0.098)	(0.174)
Constant	0.927	1.922
	(0.652)	(1.211)
Statistics		
Number of firms	92	92
R^2	0.510	0.261
RSS	27.967	75.334

Table 8 shows that equity ownership by management board members does not affect performance; a similar conclusion can be drawn from Table 9 for the supervisory board members.

Finally, we analyze the impact of supervisory board remuneration on performance. Here we only have data for 61 of our 94 firms (data for the board of directors is not available for the Netherlands in the year of observation).

Table 10 - Estimation results for remuneration of the supervisory board

The parameter estimates are based on the following equation:

$$P = b_0 + b_1 \log(RENUM) + b_2 \log(TA) + b_3 L + b_4 CFA/TA + b_5 DIV + b_6 DYN + b_7 SSPI + \Sigma d_j IND_j + e$$

We instrument $\log(RENUM)$ 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, IND_j refers to the industry dummy variables (8 industries in total), e is a disturbance term, b_i's and d_j'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.

	PERFORM	MB
Ownership variable		
Log(REMUN)	-0.869	-0.812
	(0.408)	(0.772)
Conditioning variables		
Log(TA)	0.317	0.294
	(0.179)	(0.323)
L	-0.003	0.022
	(0.011)	(0.012)
CFA/TA	0.026	-0.035
	(0.026)	(0.012)
DIV	0.058	0.016
	(0.059)	(0.085)
DYN	-0.297	-0.324
	(0.196)	(0.271)
SSPI	0.340	0.676
	(0.088)	(0.125)
Constant	2.445	4.873
	(1.123)	(2.158)
Statistics		
Number of firms	61	61
R^2	0.310	0.602
RSS	19.667	30.062

Table 10 shows that remuneration has a negative impact on performance, if we look at the *PERFORM* indicator. Note that we include the total amount of guilders paid to the board. Large boards apparently get paid more in total. If we analyze average remuneration per board member *REMUN/RVC*, the significant impact vanishes. It is, however, not plausible though that remuneration is evenly distributed over members. So, we can use total remuneration as a second proxy of the size of the supervisory board. The results of Table 10 confirm our previous findings on the negative impact of board size on firm performance.

6. SUMMARY AND DISCUSSION

This paper evaluates the board-performance relationship for the Netherlands. The Dutch corporate governance is an interesting case, because it combines both elements of primarily market orientation (cf. US 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 subject of a heated discussion in the Netherlands [cf. Gelauff and Den Broeder, 1996].

We find no evidence of a relationship between performance and 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] and suggests that smaller boards are more effective. 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 of course strongly related to the size, however, suggests that the introduction of more outsiders in the supervisory board not necessarily is 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

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substantial. Finally, we find a negative association between remuneration of supervisory boards (as a whole) and performance (accounting measure). This can be explained by the fact that remuneration of total boards reflects their size.

Implicitly, we find support for the alleged negative impact of one of the most crucial elements of Dutch corporate governance: co-option of the supervisory board. Through co-option the incumbent directors appoint the new ones. Apparently they or the managers who influence this choice do a bad job. Dutch shareholders are not only relatively ill-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 they also have no real influence on the size and composition of supervisory boards, which are negatively associated with performance.

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