Why do firms have boards?

Morten Bennedsen*

March 2002

Abstract: In a world where corporate boards are not required by law, I identify a *governance* and a *distributive* motive for board establishment and board composition. I investigate the presence of these motives in a sample of 23.000+ closely held corporations. Board frequency increases with more owners, if control is diluted and in larger firms. Given firms have a board, non-controlling owners are more likely to be on the board when controlling owners are more powerful. Finally, consistent with an equilibrium interpretation of strategic board establishment, I find little effect of the presence of boards on performance. I conclude that both motives are significant and discuss related corporate governance implications.

Keywords: Boards, governance, distributive conflicts, ultimate ownership.
JEL Clssification: G3, L22.

I am grateful to Kasper Nielsen for excellent research assistance, to Hans Cristian Kongsted for econometric advice and to Martin Browning and Steen Thomsen for helpful comments and discussions.

* Department of Economics, Copenhagen Business School, Solbjerg Plads 3, 2000 F, Denmark, and Center for Economic and Business Research (www.cebr.dk). Email: mb.eco@cbs.dk. WEB: http://www.cbs.dk/staff/mortenbennedsen.

1 Introduction

In a world where boards are not required by law, which motives would an owner or a group of owners of a corporation have to establish such a resource consuming institution? In this analysis I provide evidence for two such motives: one related to the separation of ownership and control, and one related to distributional conflicts between controlling and non-controlling owners.

The most obvious motive, or group of motives, for voluntary board establishment is that boards create firm value by governing the firm and the management. This *governance* motive for board establishment dominates most of the legal literature (e.g. Clark (1986) and Easterbrook and Fischel (1986) and (1991)) as well as the economic (e.g Baysinger and Butler (1985) and Hermalin and Weisbach (1991)) and business literature (e.g. Harvard Business Review on Corporate Governance (2000)). Boards hire, monitor, provide incentives and expert support to the management of the firm and through this constructive interaction they contribute to the positive development of corporations.[1]

The governance motive is rooted in the traditional interpretation of the significant separation between ownership and control in modern corporations first pointed out by Berle and Means (1932) and formalized by Jensen and Meckling (1976). According to this view ownership is dispersed and the group of owners is weak relative to the powerful management. Thus, the role of the corporate board is to mitigate the agency problem through providing incentives for the management to act in the interest of the owners.

It is an established fact that the dispersed ownership structure fits only the largest corporations in US and UK (Shleifer and Vishny (1997)). The typical firm around the world has concentrated ownership structure with one or several

[1] In the literature on the role of corporate boards, there is sometimes a distinction between an agency approach focusing on the board's monitoring role and an institutional approach focusing on board's positive role in providing information, expert advice and a training ground for future CEOs. See Mace (1971) and Vancil (1981) for classic institutional contributions.

large owners (La Porta *et.al.* (1999)). Not only does this hold for all countries outside US and UK, it is also true for almost all firms in these countries that are not among the largest public corporations.

This leeds me to the second motive for board establishment in firms with concentrated ownership, namely that boards mitigate conflicts between controlling and non-controlling owners. I denote this the *distributive* motive for board establishment.

In firms with concentrated ownership, controlling owners are deeply involved in management, either by working directly in the corporation or by having strong incentives to personally monitor the management. Thus, such owners have a limited interest in the monitoring role, but of course they may still benefit from other governance activities by the board. Controlling owners may on the other hand have goals that are not aligned with non-controlling owners and in general they are able to pursue such goals through their strong impact on the corporate decision making. Having a board in such corporations limits the controlling owners' ability to exploit non-controlling owners.

I investigate these two motives for establishing a board in a sample of 23.000+ Danish closely held corporations for which the corporate law states that board establishment is voluntary.

My analysis of board motives consists of two parts: First, I characterize firms that have a board in 1999. The most significant factor here is related to ownership structure, as suggested by the distributive motive. In particular, the likelihood of a firm having a board increases in the number of owners and if control is diluted among several owners. Larger firms also tent to have boards more frequently, as suggested by the governance motive. I confirm these results by using fix effect models for a subsample of firms for which I have data on the ultimate personal ownership distribution from 1996 in addition to the 1999 data.

Second, I provide direct evidence for the presence of the distributive motive by

analyzing board composition. In particular I show that in firms managed by an owner, there is a larger tendency to have other owners on the board, than for firms not managed by an owner, i.e. non-controlling owners are more frequently on the board, when controlling owners are more powerful. I argue that this evidence can be explained by the distributive motive but not by the governance motive.

My overall conclusion is, therefore, that the distributive role of boards in this sample of closely held corporations is at least as important as the governance motive.

After analyzing why firms have boards, I proceed to the related question do boards create value? - i.e. do boards have any effect on corporate performance? The relationship between boards and performance is generally negative but highly insignificant when I use OLS. In addition I confirm this insight by using a simple Heckmann correction method. I argue that these results are consistent with an equilibrium interpretation of the two motives for board establishment.

There is by now a significant empirical literature on various aspects of corporate boards (see Hermalin and Weisbach (2001) for a recent survey). Most of the studies analyze boards in large public traded (US-) corporations for which board establishment is a legal requirement. Hence, the literature takes the existence of boards as given. A number of studies analyze the relationship between various aspects of board composition and corporate performance. Rosenstein and Wyatt (1990) and (1997) find that announcing that outside directors will be added to the job increases stock prices, whereas studies that regress the impact of the number of outside directors on profit in general find no significant effects (e.g. Baysinger and Butler (1985), Hermalin and Weisbach (1991) and Bhagat and Black (2000)). A second string of the literature has studied the behavior of boards. Most notably, there is a positive relationship between CEO turnover and below average performance (Denis and Denis (1995) and Weisbach (1988)) and there is evidence for that smaller boards are more effective monitors of the CEO than larger boards

(Yarmick (1996), Eisenberger *et.al.* and Wu (2000)). Shivdasani finds that outside directors and board ownership decrease the probability that a firm is taken over and Cotter *et.al.* (1997) find that outside directors in a board increase the take-over premium. Vafaes (1999) finds a negative relationship between the number of board meetings and firm performance. Brickley *et.al.* (1994) find that the market reaction to poison pills is positive only if the board has a majority of independent directors. Core *et.al.* (1999) show that the renumeration of the CEO increases in the number of outside directors, the number of older directors and the size of the board. Finally, a third string of the literature has studied factors that affect the composition of the corporate board. Hermalin and Weisbach (1988) and Denis *et.al.* (1999) find that poor performance increases the likelihood of more outside directors, Kaplan and Reishus (1990) show that poor performance reduces the likelihood that top management receives offers of entering other boards and Shivdasani and Yermack (1999) and Baker and Gompers (2000) document the involvement of the CEO in the selection of board members.

The present analysis makes two significant contributions to this literature. First, since I study firms in which board establishment is voluntary, I can provide a direct test of the underlying motives that owners have when they decide to set up a board. As I discuss below this can have important implications for our general understanding of boards and it may also provide new understanding of the composition of boards in corporations with compulsory board establishment. Second, to my knowledge this is the first paper to study boards in a large sample of closely held corporations.

The rest of the paper is organized as follows: In the next section, I present the data set and describe the legal environment for closely held corporations in Denmark. Section 3 provides evidence for the governance and the distributional motive for voluntary board establishment. Section 4 presents evidence for the distributive role using composition data. Section 5 looks at the performance effect

of board establishment. Finally, I discuss policy implications of my findings and conclude in Section 6.

2 Data and legal setting

To be able to investigate which motives owners have when they establish a board, it is conducive to study firms for which there is no legal requirement of board establishment. This leaves out all public traded corporations worldwide. Furthermore, to rigorously analyze the interaction between ownership structure, board establishment and board composition, data must also contain elaborated information on the ownership structure of the firms, preferable in such a detail that it is possible to construct the distribution of ultimate personal ownership for a significant subset of firms.

For these reasons I use a dataset for Danish closely held corporations. In Denmark closely held corporations can be incorporated as "aktieselskaber" or "anpartsselskaber". Both firm types have limited liability, but the latter has less legal institutional requirements. It requires a smaller amount of capital when incorporated and there is no requirement about having boards, a fact that make them suitable for the present analysis. The legal motivation for "anpartsselskaber" is that it should provide as much flexibility as possible in particular to accommodate the limited organizational resources of small firms, which is why "anpartsselskaber" cannot go public by being quoted on a stock exchange.[2]

My dataset is extracted from a database covering all Danish firms.[3] There are approximately 140.000 firms in Denmark out of which 50.986 are "anpartsselskaber". To be included in the analysis I make two additional requirements: the firms most be active, defined as the 1999 yearly account statement is recorded in

[2] The Danish company law for "anpartsselskaber is inspired by the German company law for "Gesellschaft mit beschränkter Haftung", GmbH, and both these corporate types have many similarities with the S-corporation in the US.

[3] The data origin to the Ministry of Business and Trade in Denmark.

the dataset, and there should be at least some ownership information, defined as the name of at least one owner. After imposing these two criteria I end up with a sample of 23.192 firms.

Panel A in Table 1 shows the size of these firms. All firms publish assets and equity, but I only have sales data for approximately one third of the sample. The table shows that most of these firms are very small indeed. The median asset size for the whole sample is 1.666.000 Dkr, which is equivalent to approximately 200.000 USD. The median sales size for the subset of firms publishing this information is 1.091.000 Dkr, which is equivalent to approximately 120.000 USD.

For some of the analysis below I impose the criteria that data contains ultimate ownership information. Ultimate ownership information is defined as sufficient ownership information to track the distribution of ownership stakes among the ultimate personal owners of a firm. Hence, to track the ultimate ownership distribution of a given firm A, I must have complete ownership information about the owners of A. If any of these owners are corporations, I must have complete ownership information on these corporation too. This continues backwards until I end up with the distribution of ultimate personal owners of company A. Thus, in the following, whenever I speak about the number of owners or the distribution of ownership for the subsample of firms with ultimate ownership information, I mean the number of ultimate personal owners or the distribution of ultimate personal ownership, where all corporate ownership has been assigned to individuals. The strength of the present analysis is that my grand data set contains all firms in Denmark and in addition there is little foreign, foundational or other kind of non-personal (ultimate) ownership of the two types of closely held corporations in Denmark. Hence, I am able to track the complete distribution of ultimate personal owners for 13.357 out of the 23.192 firms.

For the purpose of analyzing distributive conflicts between owners of a corporation the requirement of ultimate ownership information induces a significant

selection bias. If a strong owner wish to divert resources from other owners it may be in this strong owner's interest to obscure information about his or hers real ownership stake, through e.g. holding companies or not revealing the true ownership stake. Hence, it is important to notice that due to this bias I expect that the amount of distributive conflicts may be lower in the ultimate ownership data set than in the larger data set.

Panel B in Table 1 displays the distribution of firms on the total number of owners in my two data set. Most of the firms are small firms with a single personal owner, but I still have 6.801 firms in the larger data set and 2.252 firms in the ultimate subsample with multiple owners. The criteria of ultimate ownership implies a bias towards single owner firms and slightly smaller firms relative to the larger data set.

It is worth noticing that 18 pct. or 4.174 firms (13 pct. or 1.746 firms in the ultimate ownership subsample) have chosen to establish a board in 1999. The next section analyzes which characteristics these firms have.

Finally, the most recent data for these firms are from 1999. For 6.386 of the 1999-firms in the ultimate ownership subsample I also have ownership and accounting data from 1996. This is useful for the fixed effect analysis of board establishment below.

3 Evidence on motives for board establishment.

3.1 Board establishment in closely held corporations.

In general there is no reason to expect that all firms have a board. Boards are costly institutions and consume corporate resources, both pecuniary through the renumeration of the board members and non-pecuniary like time and other organizational resources. The governance motive for board establishment stated that boards are introduced to govern the firm by hiring, monitoring and actively

supporting the management of the firm. A clear statement of the governance motive is found in Fama and Jensen (1983), who analyze the corporate board as an internal control mechanism, which reduces the agency problem between controlling managers without ownership stakes and dispersed owners with little control:

> "The common apex of the decision control systems of organizations, large and small, in which decision agents do not bear a major share of the wealth effects of their decisions is some form of board of directors. Such boards always have the power to hire, fire, and compensate the top-level decision managers and to ratify and monitor a group (the board) helps to ensure separation of decision management and control (that is, the absence of an entrepreneurial decision maker) even at the top of the organization." (p.311).

There is little formal theoretical analysis of the fundamental roles of boards.[4] Most legal and business studies take the governance motive as given and then studies determinants for optimal and actual board structure.

Closely held corporations are interesting because of the lack of active external market for corporate control, an important factor in reducing agency problems in public corporations. Thus, closely held corporations are left with only internal control mechanisms to mitigate agency problems and the most important of these is the corporate board (Jensen (1993)). In addition, ownership is concentrated, implying that controlling owners have incentives to pursue their interest in the corporations. Both of these factors imply that minority owners have serious concern of being exploited by controlling owners (O'Neill 1987). Hence, the

[4] Adams (2001) makes a formal analysis of the governance role of the board by analyzing the monitoring or agency role against the institutional or advising role. Hermalin and Weisbach (1998) provides a theoretical analysis of board composition, showing how the degree of independence from the top-management is a result of a bargaining game between owners and management.

distributive motive for board representation is likely to be significant in these firms.

The distributive motive for board establishment stated that the role of a board is to monitor that all owners are treated similar in the corporation, in particular that minority owners are not serious exploited by majority owners. Boards reduce controlling owners' ability to pursue their own interest by providing a more transparent decision making environment. By setting standards for how decisions must be taken, for communication between the management and the board for the flow of information from the management to the board, the board increases the non-controlling owners' ability to monitor and to affect the decisions taken by the controlling owners.

In the absence of formal models of why firms have boards, I proceed by informally deriving empirical predictions of the two motives for board establishment. In the following subsections I look for these implications in data.

According to the governance motive, boards should be more frequent in firms where the increased value from having a board exceeds the cost of establishing and running a board. The gain in value is correlated with size and complexity of the operations. Thus, *my first prediction is that size and board establishment is positively correlated.*

A second implication from the governance motive is that the more noisy environment the firm operates in the more likely it is to have a board, since the gain from using the board members' expert knowledge and network is higher. Thus, *my second prediction is that noise and board establishment is positively correlated.*

In many closely held corporation will the owners be deeply involved in management. In particular it is quite common that the CEO is an owner. In such firms the monitoring role of the CEO according to the governance motive is less important, since the CEO's incentives are aligned with the group of owners' incentives. Hence, *my third prediction is that the board frequency rate is lower in*

firms where the CEO is an owner relative to firms with an outsider as CEO.

The empirical implication of the distributive motive is that board frequency is linked to ownership structure. In particular, assume that there is a single owner of a given firm. Since this owner internalized all cash flow in the firm, there is no distributional reason to have a board. To proceed this line of thinking, let us then assume that the single owner invites two business partners to buy a share of the firm but that the initial owner keeps a majority stake. The distributional motive then states that the new owners may require that there is established a board of the firm before they are willing to buy their minority shares. The board limits the old owner's ability to exploit the minority owners in the future. *My fourth prediction is, therefore, that the number of owners is positively correlated with board frequency.*

One way to limit the amount of expropriation in closely held corporation with few owners is to dilute control among several owners (see Bennedsen and Wolfenzon (2000) for a theoretical discussion and Bennedsen *et.al.* (2001) for the empirical verification of control dilution in closely held corporations). By doing this no owner can unitarily govern the firm and, hence, owners must collaborate to achieve control which may induce the group of controlling owners to internalize a larger fraction of the firm's cash flow. This limits their interest in diverting corporate resources. For the present purpose, control dilution implies that no single owner can alone decide if a firm should establish a board or remove an already established board. If board establishment only happens for distributive reasons, a majority owner would have limited interest in establishing or keeping a board if she had no intention of selling some of her ownership stake. On the other hand if control is diluted, there is no single owner that can decide on the board decision. Hence, *my fifth prediction is that boards should be more frequently observed in corporations with diluted control.*

In the next subsection I test these five hypothesis, but before this it is worth making one remark on the interaction between these hypothesis. Hypothesis 1 and 2 are consistent with the governance motive but may not be fully inconsistent with the distributive motive and similar hypothesis 4 and 5 are consistent with the distributive motive, but may not be inconsistent with the governance motive. Hence, to obtain more direct evidence for the distributive motive, I must look at situations where the two motives have opposite predictions. This is done in the following section, where I analyze composition evidence.

3.2 Board establishment in 1999

Univariate analysis.

Table 2 provides the first evidence for the presence of the distributional motive for board establishment. Remember that 4.174 of the 23.191 firms with some ownership information chose to have a board, which is equivalent to a board frequency rate of approximately 18 pct. The table shows that board frequency is clearly increasing in the number of owners. Whereas only 11 pct. of the single owned firms have a board, it is more than half of the firms with 3-5 owners and close to two thirds of the 103 firms with 6 or more owners. The second part of table 2 gives a similar picture for the subset of firms for which I have ultimate ownership information. Hence, table 2 confirms hypothesis four above.

The final part of table 2 takes a closer look at the ultimate ownership sample and exploit the additional information about (ultimate) control allocation. In addition to the number of ultimate owners I have also divided the firms according to if control is diluted or not among these ultimate owners. For three or more owners, I define control dilution as no ultimate owner possessing 50 pct or more of the corporation. If there are two ultimate owners, control dilution depends on the decision process and obviously control cannot be diluted in a single owner firm; hence, I focus on firms with three or more owners. It is clear from the table

that the frequency of board establishment is higher when control is diluted. This is true for any number of owners, which is consistent with hypothesis five above.

Table 3 provides specific evidence for hypothesis 3, which stated that board frequency should be higher in firms with outsider CEOs (i.e. CEOs who are not owners) relative to firms with insider CEOs. In the dataset I have the name of the CEO in the companies and the names of the owners. Hence, I split sample according to if the CEO is an owner or not and look at the board establishment frequency in each of these subsamples. Panel A does this in the large sample of firms with some ownership information and it shows that for all companies with one to five owners, it is the case that the frequency of having a board is significantly higher when the CEO is an outsider. Only among the 103 firms with six or more owners do I observe a higher frequency when the CEO is an insider. The χ^2-test of difference in the board frequency rate is significant at the 1 pct. level. The same picture is drawn in panel B where I use the ultimate ownership data set. The only difference in this case is that there is the same board frequency across the two categories for firms with three owners. Again, the χ^2-test of difference in the board frequency rate is significant at the 1 pct. level. Hence, I conclude that board establishment rate is higher for firms in which the CEO is not an owner, which is consistent with hypothesis three.

Multivariate analysis.

Since the number of owners presumably is correlated with the size of the firm, it is important to make more general multivariable tests for the presence of the distributive motive in board establishment.

The model I test is,

$$BOARD99 = f(NO, SIZE, CD, NOISE, CEO, FAGE)$$

The endogenous variable is $BOARD99$, i.e. if a given company has chosen

to establish a board in 1999. On the right hands side I add firm size, noise in the business environment, and CEO ownership to capture the governance motive, and the number of owners (NO) and control dilution (CD), defined as a dummy for if all owners have less than 50 pct. ownership stake, to capture the presence of the distributional motive. Since there may be some dynamic effects of board establishment I also add the age of the firm as an explanatory variable.

Since the data is limited by the account information provided by small closely held corporations, I focus on variables which publication is required by law. Thus, for the whole sample my size variables are the book value of assets or the amount of equity in the corporation. I choose the former in the first two models, presented in table 4. In addition to these variables around one third of the companies do voluntary publish sales information and I use this information in Model 3 through 6.

A good measure of noise for small CHCs is difficult to achieve. My noise measure is the 5 year variance on sales for each firm.

To construct the variable for the numbers of owners I began with dummies for 2, 3, 4, 5 and 6+ owners. Using a Wald test, I realized that the effect of having 3, 4, 5 and 6+ owners where the same and significantly different from having one or two owners. Hence, in the presented regressions I chose to put in dummies for 2 and 3+ owners.

Table 4 provides the logit regression results for different models on my dataset. Model 1, 3 and 5 use the large data set of all firms with some ownership information. Model 2,4 and 6 use the smaller dataset of firms with ultimate ownership and these models include the control dilution variable.

The results of the six models are all very similar. The number of owners has a positive effect on board establishment and this effect is significant at a 1 pct. level in all six regressions. Hence, there seem to be strong support for that more owners increase the likelihood that a given firm chooses to establish a board.

Control dilution is positively correlated with board establishment. In Model 1, where I use all 13.355 firms with ultimate ownership this effect is significant at a 1 pct. level. In Model 4 and 6 there are much less firms, since I use respectively one and five years of sales information. The control dilution effect is still positive, however, the effect is not significant in these subsets.

I allow for non linear effects from firm size by adding squared values as well. Size has a positive effect on board establishment in all models. In Model 1 and 2 the ASSET variable is significant on a one pct. level. The same is true for the SALES variable in Model 3 and 4. The squared size variable is negative and significant in all four models, confirming non linear effects. The significance of the size (and other variables) is less strong in Model 5 and 6.

The noise effect is measured through the VAR and VAR^2 variable in Model 5 and 6. The sign is positive in both models on VAR and negative on VAR^2, which indicates that a more noisy variable is correlated with higher board frequency. However, these effects are not significant at a 10 pct. level.

The CEO variable is negatively correlated with board establishment in all models, which means that firms with an insider CEO tends to have lower board frequency. This effect significant at a one pct. level for five out of six models.

Finally, the regressions show that older firms are significantly more likely to have a board.

It is worth noting that the explanatory power of the models are not great. The Pseudo-R^2 is 11-13 pct. in Models 1, 3 and 6, but as low as 3 pct. in Model 5.

In addition to the presented models, I have run various other versions to check for robustness of my results. First I checked on various subsamples of the firms, e.g. large firms, both conditioned on ASSETS larger than 1 mill Dkr and conditioned on SALES being published and larger than 1 mill Dkr. Second, I checked if the results were driven by the large number of single-owned firms, by

running the models on firms with two or more owners. Third, I assumed a normal distribution (probit) instead of a logistic distribution (logit). None of the above results changed in any of these exercise, however, when the dataset were reduced to a small number of firms, some of the results were less significant.

3.3 Fixed effect analysis.

Using cross-sectional data for board establishment raises the potential critique, that some of the omitted or variables may be correlated with the residual implying that there is a potential for biased results. I can partly check for this by exploiting that I in addition to the 1999 data also have data from 1996 for a large subset of my firm sample.

Table 5 shows changes in size and number of owners for four group of firms with some ownership information: firms that did not have a board in either 1996 nor 1999; firms that decided to establish a board during the four years; firms that decided to remove an existing board; and, firms that had a board in both periods. It is worth remarking that there is an alternative for firms without a board in 1996 that decide to establish a board, namely to change the status of the firm from "anpartsselskab" to "aktieselskab" which is the standard stock corporation and for these type of firms boards are required by law. Similarly, a "aktieselskab" may have chosen to become "anpartsselskab" because it wants to remove its board. These two groups of firms fall out of my sample, but I can still track them in my grand dataset, since this contains all firms in Denmark. In Panel A I have added these firms to the sample, whereas Panel B presents analysis for firms which are "anpartselskaber" in both years.

The two panels of Table 5 provide the same picture: Firms that decided to establish a board between 1996 and 1999 grew more than firms that had no change in board statue. Firms that decided to remove a board, on the contrary, did in average experience a reduction in size.

All four groups of firms experienced a reduction in the average number of owners. However, the average reduction was highest for the firms that removed a board and lowest for the firms that decided to establish a board.

Having two observations for each firm allows me to run a conditional logit regression (Green (2000) pp. 862-65) in which all firm specific characteristics are left out. Thus, if there is any firm specific noise that I was not able to capture above this is left out in the following.

The result of such an conditional logit model is presented for eight different models in Table 6. Notice that the conditional logit procedure leaves out all firms in which there has been no change in board status, thus in the large data set of all firms with some ownership information (Model 1) there are only 302*2 observations back in this sample. This number reduces to 136*2 in the sample with ultimate ownership information (Model 2). If I in addition requires sales information (Model 5 to 8) the numbers reduces further to 69*2 respective 50*2.

The number of owners (now measured as the actual number of owners) is positively correlated with board establishment in all eight models. In the samples with more than 100 firms (Model 1 through 4) this effect is significant on a 1 pct. level.

Size is also positively correlated with board establishment and this effect is significant in all eight models.

I use two measures of the relationship between management and the owners. The first is if the CEO is an owner or not, while the second is the actual ownership stake of the CEO. The CEO insider effect is negatively correlated with board establishment in the first two models and this effect is significant for the ultimate sample. In Model 5 and 6 the sign is reversed, however, the effect is highly insignificant.

The size of the CEO's ownership stake is negatively correlated to board establishment frequency for all four relevant models. This effect is significant at a

1 pct. level in the two models using the ultimate ownership sample.

To sum up, I believe the analysis has confirmed the insight from the cross sectional analysis above: board frequency is positively correlated to the number of owners and size and negatively correlated with the size of the CEO's ownership stake. Unfortunately, none of the 302 firms that changed board during these four years also experienced a change in control dilution, implying that I cannot meaningfully add control dilution to the list of variables in this fixed effect analysis.

4 Composition evidence.

I now proceed to provide supplemental evidence for the distributive motive by analyzing the composition of the boards. The motivation for this adjunct analysis is that even though the evidence presented above, that board frequency is positively correlated with number of owners and control dilution, is consistent with the distributive motive, it may not be completely inconsistent with the governance motive. In particular; having more owners, often implies that the largest owner is smaller and thus has less incentive to monitor the management. Hence, it is possible to argue that a higher board frequency in this case is also consistent with the governance motive. A similar argument exists with respect to the control dilution effect: having diluted control implies that the largest owner is relatively small, which reduces the largest owner's incentive to monitor the management. I argue that the additional evidence in the present subsection support the distributive motive and cannot be explained by the governance motive.

In general board members are either owners, employees (inclusive managers) in the firm or outside representatives which I for simplicity will call "experts". Consider two firms which have chosen to establish boards, but where one firm has an owner manager and the other firm has an outsider manager. Who should be on the boards of these firms?

The distributive motive predicts that there should be more owners on the board when the firm is managed by an owner. If non-controlling owners are afraid of being oppressed by the controlling owner and being on the board increases the non-controlling owners' resistance to being exploited, then there should be a tendency towards having a larger share of the non-controlling owners on the board when the controlling owner is a manager in the firm, relative to firms with outsider managers.

According to the governance motive, there is less or the same reason to have owners on the board, when the manager is an owner herself, since her incentives are more aligned with the group of owners. With an owner manager it may, therefore, be more beneficial to improve the advising role of the board by including more outside experts and reduce the monitoring role by reducing the number of owners on the board. Thus, the governance motive predicts a smaller share of non-controlling owners being board members when the controlling owner is a manager, relative to when the manager is an outsider.

In table 7, I split the sample according to if the CEO is an owner or not. I provide three measures of board composition: first, if there exists at least one non-CEO board member who is also an owner; second, the frequency of having all non-CEO owners on the board; and third, the share of all non-CEO owners who in addition are board members. Since this exercise requires multiple owners, I restrict my sample to the firms with ultimate ownership information and more than two owners in panel a) and three or more owners in panel b).

In both panels, there is a clear tendency of having more owners among the board members when the firm is managed by an owner. This holds for all three composition measures and both panels. If the firm has an insider owner there is clearly a higher frequency of having one additional non-CEO owner among the board members, a higher frequency of having all non-CEO owners on the board and a higher average share of the non-CEO owners who are also board

members. All these effects are significant at the 1 pct. level using a χ^2 test. The only difference between the two panels is the higher board frequency in panel b) reflecting that in general firms with two owners have a lower board frequency than firms with more owners.

Table 8 presents the regression results for a general analysis of the composition evidence. I estimate the effect of having an insider as CEO on two measures of board composition: the likelihood of having one non-CEO owner on the board and the ratio of non-CEO board members. To measure if the CEO is an owner I both use a dummy for CEO ownership and the actual ownership stake owned by the CEO.

I control for size using either assets or sales and for leverage using the ratio of equity to assets. Panel A shows the results for all firms with ultimate ownership and two or more owners. From Model 1 I notice that having an owner CEO increases the likelihood of having at least one other non-CEO owner on the board. This effect is significant at a 1 pct. level. In addition, Model 2 shows that the likelihood of having at least one non-CEO on the board increases in the size of the CEOs ownership stake. This is clearly consistent with the distributive motive: the more powerful the controlling owner is the more important it will be for the non-controlling owners to be present on the board.

The result is confirmed in Model 3 and 4, which uses the ratio of non-CEO owners on the board. It is increasing in the presence of an owner CEO and this effect is significant on a 1 pct. level. In Model 4, the size of the CEO's ownership stake is again positively correlated to the ratio of non-CEO's on the board, but the effect is not significant any more.

Using the much smaller SALES sample in Model 4 to 8 supports the insight above. Having an owner CEO increases the likelihood of having a non-CEO owner on the board and increases the ratio of non-CEO's on the board. However, only the former effect is now significant at a 1 pct. level. The actual ownership stake

is still positively correlated to the likelihood of having a non-CEO on the board and to the ratio's of non-CEOs on the board, but the effects are not significant.

Panel B in Table 8 presents the analysis for the smaller sample of firms with ultimate ownership and three or more owners. The results confirms the insight from the analysis above. The effect of having a CEO owner is positive on both measures of having owners on the board and these effects are significant in all regressions. The actual size of the CEO ownership is also positively correlated with both composition measures, even though the effects are not significant on a 10 pct. level.

To sum up I believe the presented composition evidence provide clear support for the distributive role of boards. Board representatives are chosen as representative for the individual owners. Non-controlling owners are concerned about the power of the controlling owner(s) and if the controlling owners are powerful, the non-controlling owners have larger incentive to seek influence on corporate matters through being on the board.

5 Do boards improve performance?

In the previous sections I have investigated the motives that a group of owners have when they decide to establish a corporate board. In the present section I look at the contribution that boards deliver to the corporation by analyzing if boards create value. As mentioned in the introduction, the existing empirical literature has focused on the connection between the composition of a board, in particular the proportion of outsiders to insiders, and performance. To my knowledge, this is the first empirical analysis of the more fundamental question: do firms with boards perform differently from firms without boards.

What is the expected connection between board establishment and performance? To some extent it may depend on which motive the owners had when the board was established. If the board was established to hire and monitor the

management and develop the overall strategic goals of the corporation it is expected that a board contributes positively to a firm's performance. If not, there is little reason for spending corporate resources on having this costly institution. However, this argument does not imply that I should observe a positive effect of boards on performance in a cross-sectional dataset. If it is believed that each firm has made an optimal choice on board establishment according to the governance motive, there should be no significant relationship at all. Firms without boards have calculated that the increase in performance does not cover the corporate resources that a board consumes and firms with boards have come to the opposite conclusion. Thus, in equilibrium there should be no visible effect in cross-sectional data.

If the board mainly is an distributive device for the owners it is not clear a priori what the relationship between performance and board establishment is expected to be. In the absent of a board, control is allocated to a CEO and presumably to the largest owner if they are different. It is conceivable that they are able to achieve more benefits from the corporation than they would have been able to in the presence of a board and this would imply that the rest of the owners are worse off. However, this may or may not affect performance, depending on the mechanisms through which the controlling owner and/or CEO achieve their goal. The mechanisms may include suboptimal investment activities that increase their private benefit or it may include other kind of "tunneling" activities such as transfer pricing with corporations owned by the controlling owner(s). In such cases establishment of a board should increase the performance of the firm through limiting these activities. On the other hand, the mechanisms may include pure distributional activities such as paying out the surplus in higher salaries or bonuses to the controlling owner and the CEO. In this case there is no reason to expect that the introduction of a board increases operating performance. Finally, it may also be that boards established only because of the distributive motive may

decrease firm value: boards increase the level of monitoring of the management and, as suggested by Buchardt *et.al.* (1997), this may decrease the incentives of the CEO in a situation where part of what drives a CEO is the possibility of pursuing projects that provide her with private benefits; or, it may simply be that the introduction of a board makes the decision processes more cumbersome and slow. In these cases the owners are willing to incur the overall cost associated with the introduction of the board to be sure that they are not exploited by other owners or management.

Since the expected effect depends on if firms are in equilibrium or out-of-equilibrium, the relative importance of the two motives and the sign of the distributive motive's effect on performance, the relationship between boards and performance must eventually be an empirical question.

Table 9 reports the relationship between performance and board establishment in my data. The choice of performance and explanatory variables is significant restricted by what these small closely held corporations do publish in their yearly statements. All firms publish pre tax profit and 95 pct. publish operating profit. In general, operating profit is a better performance measure than pre tax profit for two reasons: First, the latter include financial activities and other non-operational activities. Second, pre tax profit forms the basis of what the firm has to pay in tax. In these small firms, managers and owners have a significant discretion in deciding how much tax a firm should pay in a given year. Thus, pre tax profit may to a large extent reflect tax consideration rather than the actual performance of the firm.

I analyze four different models, which differ on sample size and information requirement. I apply two different ways of estimating each model. First, I use simple OLS regression and, second, I apply a Heckman correction method, where the treatment part is the decision to establish a board or not.

In the first model (Model (a)) I do not use sales information, thus I am able

to analyze almost all firms in my sample using the ratio of pre-tax profit to assets as the endogenous variable. I control for the degree of leverage through the ratio of equity to assets and I control for size through the logarithm of assets.

Model (b) to (d) use sales data and thus limit the number of firms significantly. They all have operating profit to sales as the endogenous variable and control for the degree of leverage as in Model (a). However, in these models I control for size using the logarithm to $1 + SALES$. Model (b) tests on all firms with sales information, whereas Model (c) requires in addition that I have ultimate ownership information and Model (d) requires ultimate ownership and larger firms (measured as sales greater than 1 mill. DKR).

The effect of board establishment is in general negative but insignificant when I use OLS. Only in Model (d) is the BOARD variable positive and in addition significant on a 10 pct. level. In the rest of the models, the board variable is negative and far from being significant.

The picture drawn from the OLS regressions does not change significantly when I apply the simple Heckman correction method. The "treatment part of the approach (i.e. if the firms have boards or not) is modeled using the relevant variables from Table 5 excluding industry dummies. In particular, I use Model (1) as the logit model in Model (a) and Model (3) as the logit model in Model (b) to (d). The effect of board establishment is derived as the coefficient to the Inverse Mills Ratio (see Johnston and DiNario (1997) pp. 447–449). In Model (a) I observe an positive effect from board on performance and this effect is significant on a 5 pct. level. In Model (b) to (d) the board effect is far from being significant and alternates between being positive and negative.

It is worth noticing that the explanatory power varies a lot between the presented models. In Model (a) the R^2 is unrealistic high when I use OLS but falls to an reasonable level when I use the Heckman Correction method. Model (b) and (c) have low R^2 which reflects that my model is not doing a good job for the

whole sample of firms. When I select larger firms that provide more information (Model (d)) R^2 increases significantly, which may be a signal of these firms being more profit oriented.

To control the robustness of the results, I have regressed a number of alternative model specification. I have used four different performance measures: the ratio of pre tax profit to assets; the ratio of operating profit to assets; the ratio of operating profit to sales; and, the ratio of operating profit of cash adjusted assets. For each of these performance measured I have tested on the following samples: all firms with ownership information; firms with ultimate ownership information; firms with sales larger than one mill. DKR; and, firms with more than two ultimate owners. Due to data limitations I have not been able to add to the explanatory variables presented in Table 9. In all these alternative regressions the board variable effect on performance is in general insignificant. The sign is in most but not all cases negative.

To sum up, I conclude that boards' effect on performance of small closely held corporations is insignificant. I believe the lack of strong relationship between boards and performance supports the equilibrium interpretation discussed above; since firms choose to establish a board when the benefits are larger than the costs, there is in general little measurable effect of board establishment on the performance in this cross-sectional dataset.

6 Discussion

The previous literature on boards has taken the existence and the basic role of a board as given. It assumes that boards are in place because corporate law in general requires it and the fundamental role of a board is to govern the firm by hiring and monitoring the management and by setting up the overall strategic guidelines for the management. This approach is useful to study the optimal size, composition and organization of a board, but within this approach it may

be difficult to analyze the more fundamental question of the owners' interest in establishing a board.

I have suggested that, in addition to the governance motive, there exists a distributive motive for board establishment, namely that the role of the board is to secure non-controlling owners that they are not exploited by the controlling owners. I investigated this motive in a sample of 23.000+ closely held corporations for which board establishment is voluntary by law. I find significant evidence for the distributive motive being important both in establishing and in deciding the composition of a board.

I believe these findings are important because it may place the discussion about optimal board structure in a slightly different perspective. Owners do not only select board members to increase the value of the firm, but also to have their own agents present in the board room to control that they receive their promised share of the corporation's return. For instance, this may explain why firms hesitate to implement boards with many outsiders or with a small number of members, even if such compositions are expected to increase the performance of the firm.

Closely held corporations are in general believed to be organizations with limited investor protection. This may be one reason for why the distributive board motive is strong in my sample. It is an interesting question, if the distributive motive is as significant in larger, public traded corporations. Following Jensen (1993) discussion of external and internal control mechanisms for public traded firms, it is likely that the lack of an active market for corporate control in closely held corporations imply that these are more dependent on internal control mechanisms. The absence of external control mechanisms may therefore be one argument for why the distributive motive could be more visible in closely held than in public held corporations, since external control mechanisms limit controlling owners ability to oppress non-controlling owners.

Fama and Jensen (1983) derive an opposite argument. They notice, that owners in closely held corporations have stronger incentives to get involved in the firm which mitigates the agency problem present in public traded corporations with dispersed ownership structure. They conclude that boards in closely held corporation, therefore, more frequently will consist of experts that are close to the top-management of the firm. However, their argument focuses entirely on the agency problem between owners and management and not on the distributional conflicts between controlling and non-controlling owners.

Investors in public traded corporations are in general better protected by law and courtroom practice than investors in closely held corporations (see O'Neal (1987)). A good legal protection limits the controlling owners ability to exploit the non-controlling owners, which implies that the significance of the distributive motive for board establishment and board composition is affected by the degree of investor protection. It is, therefore, plausible that increased investor protection decreases the relative importance of the distributive board motive, thus making boards more focused on governance, which should have a positive effect on firm value. This interesting relationship is left for future research.

Appendix:

List of Variables:

All ApS w. OI	"Anpartsselskaber'' with at least one stated owner.
ApS w. UOI	"Anpartsselskaber'' with complete ultimate ownership information.
Assets	Book value of assets in mill. DKR.
BoardXX	Dummy, 1 iff the firm had a board in year XX.
CD	Dummy, 1 iff control is diluted in 1999, i.e. no owner owns 50 pct. or more of the firm.
CEO Insider.	Dummy, 1 iff the CEO is an owner of the firm.
CEO share	The ownership stake owned by the CEO.
FAGE	Firm age in years.
Industry dummies	Dummies for 1-digit industry codes.
NO2	Dummy, # of ultimate owners = 2.
NO3+	Dummy, # of ultimate owners ≥ 3.
Sales	Sales in mill. DKR.
VAR	5 year variance on sales (1995-1999).

Table 1: Company size and number of owners.

This table shows the size and number of owners in the grand sample covering all firms with at least some ownership information (All ApS, w. OI) and in the sample of firms for which there is ultimate ownership information (ApS w. UOI).

Panel A: Company size in 1999 in 1.000 DKR, measured by assets, equity and sales.

		Assets	Equity	Sales
All ApS, w. OI	Mean	5076	2422	6121
	Median	1665	456	1091
	N	23191	23191	7232
ApS w. UOI	Mean	3833	1897	2977
	Median	1701	465	1839
	N	13357	13357	2751
With Board	Mean	6690	3261	4155
	Median	2629	860	1611
	N	1746	1746	498
Without Board	Mean	3403	1692	2721
	Median	1604	444	1870
	N	11611	11611	2293

Panel B: Number of owners in 1999.

		1	2	3	4	5	6+	Total
All ApS w. OI	N	16390	4903	1196	467	132	103	23191
ApS w. UOI.	N	11005	1823	372	112	32	13	13.357

Table 2: Boards frequency sorted by number of owners and control dilution.

The top part of the table shows board frequency sorted by number of owners in the grand sample of all firms with some ownership information. The middle part shows board frequency sorted by number of ultimate owners in the sample of firms with ultimate ownership information. The final part shows board frequency sorted by number of ultimate owners and control dilution in the sample of firms with ultimate ownership information and three or more owners.

		Number of Owners						Total
		1	2	3	4	5	6+	
All ApS w. OI	Frequency	0.11	0.26	0.49	0.57	0.60	0.62	0.18
	N	16390	4903	1196	467	132	103	23191
	χ^2-sig. = 0.00							
ApS w. UOI.	Frequency	0,10	0,21	0,45	0,53	0,47	0,69	0,47
	N	11005	1823	372	112	32	13	13.357
	χ^2-sig. = 0.00							
ApS w. UOI. & control dilution.	Frequency			0,49	0,55	0,52	0,69	0,51
ApS w. UOI. & one dom. owner.	Frequency			0,36	0,44	0,20	n.a.	0,37
	N			372	112	32	13	529
	χ^2-sig. = 0.00							

Table 3: Board frequency and CEO ownership.

Panel A: Board frequency sorted by the CEO being an owner (insider) or not (outsider) in the sample of all firms with ownership information.

		Number of Owners					
		1	2	3	4	5	6+
CEO insider	N insider CEO	12720	3677	847	294	90	59
	N, with board	1336	814	394	156	48	37
	Frequency	0.11	0.22	0.47	0.53	0.53	0.63
CEO outsider	N outsider CEO	3670	1226	349	173	42	44
	N, with board	522	461	198	112	31	27
	Frequency	0.14	0.38	0.57	0.65	0.74	0.61
χ^2-sig. = 0.00							

Panel B: Board frequency sorted by the CEO being an owner (insider) or not (outsider) in the sample of firms with ultimate ownership information.

		Number of Owners					
		1	2	3	4	5	6+
CEO insider	N insider CEO	8775	1526	303	77	22	9
	N, with board	845	279	137	37	10	7
	Frequency	0.10	0.18	0.45	0.48	0.45	0.78
CEO outsider	N outsider CEO	2230	297	69	35	10	4
	N, with board	275	96	31	22	5	2
	Frequency	0.12	0.32	0.45	0.63	0.50	0.50
χ^2-sig. = 0.00							

Table 4: Logit-tests of Board Establishment.

This table shows the result of logit regressions for the frequency of board establishment. Model 1, 3 and 5 use the sample of all firms with some ownership, whereas Model 2, 4 and 6 use the sample of firms for which there is ultimate ownership information for which the control dilution variable is defined. Model 1 and 2 use assets as size measure, whereas Model 3 to 6 use sales as size measure. In addition Model 5 and 6 also include the 5-year variance on sales as a noise measure.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
NO=2	0.996 (0.042) (***)	0.835 (0.068) (***)	1.096 (0.076) (***)	0.905 (0.126) (***)	0.390 (0.142) (***)	1.288 (0.256) (***)
NO=3+	2.098 (0.053) (***)	1.610 (0.179) (***)	2.176 (0.092) (***)	1.520 (0.326) (***)	1.148 (0.193) (***)	1.759 (0.592) (***)
ASSETS	0.017 (0.001) (***)	0.026 (0.003) (***)				
$ASSETS^2$	-1.01E-05 (1.12E-06) (***)	-4.86E-05 (1.02E-05) (***)				
SALES			0.006 (0.001) (***)	0.031 (0.006) (***)	0.020 (0.022)	0.084 (0.035) (**)
$SALES^2$			-3.61E-06 (9.60E-07) (***)	-1.25E-04 (3.35E-05) (***)	-5.54E-04 (5.60E-04)	-0.001 (8.9E-04)
VAR					8.62E-09 (5.41E-09)	4.3E-04 (4.2E-04)
VAR^2					-1.10E-17 (6.59E-18)	-2.0E-04 (4.1E-04)
CD		0.616 (0.204) (***)		0.459 (0.373)		0.745 (0.734)
CEO	-0.516 (0.041) (***)	-0.405 (0.064) (***)	-0.523 (0.071) (***)	-0.483 (0.111) (***)	-0.181 (0.139)	-0.730 (0.245) (***)
FAGE	0.016 (0.002) (***)	0.014 (0.002) (***)	0.018 (0.003) (***)	0.015 (0.004) (***)	0.012 (0.006) (*)	0.022 (0.009) (**)
C	-2.054 (0.088) (***)	-2.437 (0.151) (***)	-2.092 (0.168) (***)	-2.556 (0.317) (***)	-1.676 (0.430) (***)	-2.839 (0.659) (***)
Industry dummies	YES	YES	YES	YES	YES	YES
Pseudo-R^2	0.114	0.077	0.124	0.073	0.030	0.122
N	23188	13355	7233	4074	1805	1021

Note: (***) = significant at a 1 pct. level,
(**) = significant at a 5 pct. level,
(*) = significant at a 10 pct. level.

Table 5: Cross-table for changes in board establishment between 1996 and 1999.

Panel A: Cross-table for changes in board establishment. All firms, which were ApS in 1996 or 1999.

	- Board in 96 - Board in 99	- Board in 96 + Board in 99	+ Board in 96 - Board in 99	+ Board in 96 +Board in 99
Change in mean ASSETS.	969.4	3399.0	-147.2	1365.4
Change in median ASSETS.	119	1634	43	179
Change in mean number of ultimate owners.	-0.04	-0.01	-0.32	-0.07
Change in median number of ultimate owners.	0	0	0	0
N	5531	162	142	869
Change in mean SALES.	138.5	2624.5	-1002.1	570.0
Change in median SALES.	34	590	-187	50
N	1684	32	35	255

Panel B: Cross-table for changes in board establishment. All firms, which were ApS in 1996 and 1999.

	- Board in 96 - Board in 99	- Board in 96 + Board in 99	+ Board in 96 - Board in 99	+ Board in 96 +Board in 99
Change in mean ASSETS.	693.9	2504.4	-365.5	1148.4
Change in median ASSETS.	116	844	-62	163
Change in mean number of ultimate owners.	-0.04	-0.02	-0.26	-0.07
Change in median number of ultimate owners.	0	0	0	0
N	5468	51	138	794
Change in mean SALES.	130.5	2294.8	-1005.7	397.3
Change in median SALES.	34	259	-187	34
N	1663	14	33	231

Table 6: Fixed effect analysis.

This table reports the results of a fixed effect (conditional logit) analysis for firms in 1996 and 1999. The endogenous variable is board establishment. Model 1, 3, 5 and 7 use the sample of all firms with some ownership, whereas Model 2, 4, 6 and 8 use the sample of firms for which there is ultimate ownership information. Model 1 to 4 use assets as size variable, whereas Model 5 to 8 use sales. Model 1, 2 , 5 and 6 use the CEO insider dummy as measure of CEO ownership, whereas Model 3, 4, 5 and 6 use the actual CEO ownership share.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Number of Owners	1.090 (0.305) (***)	1.898 (0.534) (***)	1.032 (0.302) (***)	1.972 (0.545) (***)	0.456 (0.447)	0.965 (0.862)	0.428 (0.449)	0.769 (0.854)
ASSETS	3.57E-04 (6.26E-05) (***)	2.24E-04 (7.43E-05) (***)	3.54E-04 (6.25E-05) (***)	0.35E-03 (9.12E-05) (***)				
SALES					2.18E-04 (1.08E-04) (**)	1.94E-04 (1.11E-04) (*)	2.17E-04 (1.09E-04) (**)	2.27E-04 (1.23E-04) (*)
CEO insider	-0.284 (0.241)	-0.694 (0.313) (**)			0.050 (0.464)	0.114 (0.540)		
CEO share			-3.18E-03 (2.56E-03)	-0.015 (2.68E-03) (***)			-2.01E-03 (4.90E-03)	-0.014 (5.58E-03) (***)
Pseudo R^2	0.193	0.162	0.193	0.296	0.096	0.098	0.098	0.215
N	604	372	604	372	138	100	138	100

(***) = significant at a 1 pct. level,
(**) = significant at a 5 pct. level,
(*) = significant at a 10 pct. level.

Table 7: Board composition and CEO ownership in the ultimate ownership sample.

Panel A: Board composition and CEO ownership in firms with two or more owners.

	One Owner (non-CEO) in Board	All (non-CEO) Owners in Board	Ratio of (non-CEO) Owners who are Board Members.
CEO insider numbers	385	301	
CEO insider frequency	0.82	0.64	0.73
N, total = 470			
CEO outside numbers	84	25	
CEO outside frequency	0.54	0.16	0.37
N, total = 156			
χ^2-sig.:	0.00	0.00	0.00

Panel B: Board composition and CEO ownership in firms with three or more owners.

	One Owner (non-CEO) in Board	All (non-CEO) Owners in Board	Ratio of (non-CEO) Owners who are Board Members.
CEO insider numbers	177	104	
CEO insider frequency	0.93	0.54	0.83
N, total = 191			
CEO outside numbers	46	13	
CEO outside frequency	0.77	0.22	0.37
N, total = 60			
χ^2-sig.:	0.00	0.00	0.00

Table 8: Board composition and CEO ownership in the ultimate ownership sample.

Panel A: Firms with 2 and more owners.
The table shows regressions result for the determinants of non-CEO owners in the board in our sample firms with ultimate ownership and 2 or more owners. Model 1,2, 5 and 6 use the representation of one (non-CEO) owner in the board. Model 3,4, 7 and 8 use the share of non-CEO owners who are board members. CEO ownership is measured both as a dummy for the CEO being an owner or not and as the actual share of stocks possessed by the CEO.

	Model 1 Logit	Model 2 Logit	Model 3 OLS	Model 4 OLS	Model 5 Logit	Model 6 Logit	Model 7 OLS	Model 8 OLS
Endogenous variable:	One (non-CEO) owner in board.	One (non-CEO) owner in board.	Ratio of (non-CEO) owners in board.	Ratio of (non-CEO) owners in board.	One (non-CEO) owner in board.	One (non-CEO) owner in board.	Ratio of (non-CEO) owners in board.	Ratio of (non-CEO) owners in board.
NO=3	0.931 (0.145) (***)	1.010 (0.148) (***)	2.368 (0.219) (***)	2.380 (0.223) (***)	0.521 (0.298) (*)	0.590 (0.303) (*)	1.799 (0.400) (***)	1.794 (0.406) (***)
NO=4+	0.636 (0.229) (***)	0.707 (0.234) (***)	2.462 (0.323) (***)	2.426 (0.332) (***)	0.356 (0.480)	0.513 (0.487)	1.396 (0.608) (**)	1.376 (0.621) (**)
ASSETS	0.030 (8.78E-03) (***)	0.028 (8.64E-03) (***)	0.041 (9.28E-03) (***)	0.041 (9.29E-03) (***)				
$ASSETS^2$	-1.10E-04 (0.55E-04) (**)	-1.03E-04 (5.45E-05) (*)	-5.98E-05 (1.57E-05) (***)	-6.07E-05 (1.57E-05) (***)				
SALES					1.15E-04 (3.54E-05) (***)	1.20E-04 (3.62E-05) (***)	1.43E-04 (0.35E-04) (***)	1.47E-04 (3.51E-05) (***)
$SALES^2$					-1.94E-09 (9.74E-10) (**)	-2.06E-09 (1.02E-09) (**)	-1.58E-09 (4.44E-10) (***)	-1.61E-09 (4.45E-10) (***)
EQ/A	-2.16E-05 (9.70E-06) (**)	-2.23E-05 (9.66E-06) (**)	-3.18E-05 (1.24E-05) (**)	-3.17 (1.24E-05) (**)	1.18E-06 (0.21E-04)	-1.05E-07 (0.21E-04)	6.25E-07 (2.49E-05)	1.45E-06 (0.25E-04)
CEO	1.134 (0.219) (***)		0.570 (0.209) (***)		1.278 (0.439) (***)		0.500 (0.363)	
CEO-SHARE		9.45E-03 (2.99E-06) (***)		2.21E-03 (3.72E-03)		8.62E-03 (5.48E-03)		0.27E-03 (6.36E-03)
C	-2.986 (0.238) (***)	-2.393 (0.182) (***)	2.056 (0.233) (***)	2.436 (0.221) (***)	-3.567 (0.484) (***)	-2.845 (0.357) (***)	1.579 (0.414) (***)	1.492 (0.394) (***)
Pseudo-R^2	0.047	0.034			0.061	0.043		
Adj- R^2			0.072	0.069			0.053	0.050
N	2359	2359	2354	2354	658	658	657	657

Note: (***) = significant at a 1 pct. level,
(**) = significant at a 5 pct. level,
(*) = significant at a 10 pct. level

Panel B: Firms with 3 and more owners.
The table shows regressions result for the determinants of non-CEO owners in the board in our sample firms with ultimate ownership and 3 or more owners. Model 1,2, 5 and 6 use the representation of one (non-CEO) owner in the board. Model 3,4, 7 and 8 use the share of non-CEO owners who are board members. CEO ownership is measured both as a dummy for the CEO being an owner or not and as the actual share of stocks possessed by the CEO.

	Model 1 Logit	Model 2 Logit	Model 3 OLS	Model 4 OLS	Model 5 Logit	Model 6 Logit	Model 7 OLS	Model 8 OLS
Endogenous variable:	One (non-CEO) owner in board.	One (non-CEO) owner in board.	Ratio of (non-CEO) owners in board.	Ratio of (non-CEO) owners in board.	One (non-CEO) owner in board.	One (non-CEO) owner in board.	Ratio of (non-CEO) owners in board.	Ratio of (non-CEO) owners in board.
NO=3	1.258 (1.073)	1.312 (1.083)	2.712 (1.973)	2.671 (1.698)	17.310 (0.536) (***)	17.752 (0.696) (***)	2.810 (2.552)	3.034 (2.597)
NO=4+	0.962 (1.088)	0.971 (1.107)	2.795 (1.702)	2.633 (1.743)	17.212	17.796 (0.722) (***)	2.628 (2.604)	2.911 (2.670)
ASSETS	0.092 (0.034) (***)	0.094 (0.033) (***)	0.190 (0.062) (***)	0.199 (0.063) (***)				
$ASSETS^2$	-1.89E-03 (8.66E-04) (**)	-1.92E-03 (8.39E-04) (**)	-2.77E-03 (1.26E-03) (**)	-2.98E-03 (1.26E-03) (**)				
SALES					2.36E-04 (1.32E-04) (*)	2.41E-04 (1.31E-04) (*)	3.65E-04 (1.41E-04) (**)	3.83E-04 (1.42E-04) (***)
$SALES^2$					-1.03E-08 (7.62E-09)	-1.03E-08 (7.64E-09)	-1.07E-08 (5.09E-09) (**)	-1.09E-08 (5.15E-09) (**)
EQ/A	-6.02E-06 (1.68E-05)	-8.06E-06 (1.66E-05)	-2.56E-05 (3.18E-05)	-2.83E-05 (3.19E-05	0.29E-04 3.82E-05	2.53E-05 (3.85E-05)	3.98E-05 (5.56E-05)	4.39E-05 (5.72E-05)
CEO	0.937 (0.320) (***)		1.110 (0.502) (**)		2.156 (1.047) (**)		1.519 (0.842) (*)	
CEO-SHARE		4.22E-03 (5.23E-03)		8.41E-04 (0.010)		0.013 (0.011)		8.67E-03 (0.017)
C	-3.414 (1.134) (***)	-2.794 (1.136) (**)	0.838 (1.748) (*)	1.755 (1.789)	-21.581 (1.227) (***)	-20.571	-0.976 (2.597)	-4.35 (2.668)
Pseudo-R^2	0.041	0.024			0.110	0.064		
Adj- R^2			0.027	0.017			0.050	0.030
N	517	517	515	515	150	150	149	149

Note: (***) = significant at a 1 pct. level,
(**) = significant at a 5 pct. level,
(*) = significant at a 10 pct. level.

Table 9: Test of performance effect of board establishment.

The table presents the results from regressing the connection between performance and board estblishment. There are two differenct performance measures: pre-tax proffit / asset and operating profit / sales. Model (a) and (b) use the sample of all firms with ownership informations. Model (c) use the sample of firms with ultimate ownership and sales information. Model (d) is similar to (c) but use only large firms.

	Model (a)		Model(b)		Model(c)		Model(d)	
Endogenous Variable:	Pre Tax Proffit / ASSETS		OpP/SALES		OpP/SALES		OpP/SALES	
Sample	All ApS w.OI		ApS w. OI and Sales inf.		ApS w. UOI and Sales inf.		ApS w. UOI and Sales inf. Sales>1mill.DKR.	
:	OLS	Heckman Correction Model	OLS	Heckman Correction Model	OLS	Heckman Correction Model	OLS	Heckman Correction Model
C	2.277 (0,463) (***)	-0.731 (0.087) (***)	-3.521 (0.552) (***)	-7.688 (1.590) (***)	-1.538 (0.282) (***)	-3.230 (0.711) (***)	0.224 (0.047) (***)	-0.062 (0.167)
BOARD	0.084 (0.179)		-0.228 (0.230)		-0.009 (0.128)		0.022 (0.011) (*)	
INVERSE MILLS RATIO		0.069 (0.030) (**)		-0.387 (0.665)		0.073 (0.257)		-0.007 (-0.034)
EQUITY/ASSETS	0.938 (0.002) (***)	0.038 (0.005) (***)	-0.016 (0.032)	-0.049 (0.071)	-0.006 (0.014)	0.467 (0.163) (***)	0.071 (0.008) (***)	0.135 (0.040) (***)
LOG(ASSETS)	-0.410 (0.052) (***)	0.085 (0.007) (***)						
LOG(1+SALES)			0.480 (0.056) (***)	0.634 (0.127) (***)	0.242 (0.028) (***)	0.193 (0.046) (***)	-0.017 (0.004) (***)	-0.012 0.012
Industry Dummies	YES	YES	YES	YES	YES	YES	YES	YES
R-squared	0.88	0.06 Adj.R^2	0.01	0.03 Adj.R^2	0.03	0.08 Adj.R^2	0.10	0.12 Adj.R^2
Prob(F-statistic)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
No. of Observations	23082	23082	6772	6772	3830	3830	2112	2112

Note: (***) = significant at a 1 pct. level,
(**) = significant at a 5 pct. level,
(*) = significant at a 10 pct. level.

References

[1] Adams, R. B. (2001), "The Dual Role of Corporate Boards as Advisors and Monitors of Management: Theory and Evidence, Working Paper, Federal Reserve Bank of New York.

[2] Baker, M. and P. Gompers (2000) "The Determinants of Board Structure and Function in Entrepreneurial Firms", Working Paper, Harvard Business School.

[3] Baysinger, B. and H. Butler (1985), "Corporate Governance and the Board of Directors: Performance Effects of Changes in Board Composition", *Journal of Law, Economics and Organizations*, 1, pp. 101-24.

[4] Bennedsen, M. and D. Wolfenzon (2000), "The Balance of Power in Closely Held Corporations", *Journal of Financial Economics*, October, 2000.

[5] Bennedsen, M., M. Fosgerau and D. Wolfenzon (2002), "Control dilution, distribution of ownership and performance of Closely Held Corporations", Unpublished working paper, Copenhagen Business School.

[6] Berle, A. and G. Means (1932), *The Modern Corporation and Private Property*, Macmillan, New York.

[7] Bhagat, S. and B. Black (2000), "Board Independence and Long-Term Firm Performance", Working Paper, University of Colorado.

[8] Brickley, J., J. Coles and R. Terry (1994), "Outside Directors and Adoption of Posion Pills", *Journal of Financial Economics*, 35, p. 371-390.

[9] Burkart, M., D. Gromb, and F. Panunzi, 1997, Large shareholders, monitoring, and the value of the firm, *Quarterly Journal of Economics* 112, 693–728.

[10] Clark, R. (1986), *Corporate Law*, Little, Brown and Company.

[11] Core, J., R. Holthausen and D. Larcker (1999), "Corporate Governance, Chief Executive Officer Compensation, and Firm Performance", *Journal of Financial Economics*, 51, p. 371-406.

[12] Cotter, J., A. Shivdasani and M. Zenner (1997), "Do independent director enhance target shareholder wealth during tender offers?", *Journal of Finance*, 43, pp. 195-218.

[13] Denis, D. and D. Denis (1995), "Performance Changes Following Top Management Dismissals", *Journal of Finance*, 50, pp. 1029-1055.

[14] Denis, D., D. Denis and A. Sarin (1999), "Ownership and board structure in publicly traded corporations", *Journal of Financial Economics*, 52, pp. 187-224.

[15] Easterbrook, F.H. and D.R. Fischel (1986), "Close Corporations and Agency Cost", Stanford Law Review 271 (1986)

[16] Easterbrook, F.H., and D.R. Fischel (1991), *The Economic Structure of Corporate Law*, Harvard University Press.

[17] Eisenberg, T., S. Sundgren and M. Wells (1998), "Larger Board Size and Decreasing Firm Value in Small Firms", *Journal of Financial Economics*, 48, p. 35-54.

[18] Fama, E. and M. Jensen (1983), "Seperation of Ownership and control", *Journal of Law and Economics*, 26, pp. 301-325.

[19] Green, W.H., (2000), *Econometric Analysis.*, Prentice Hall.

[20] Harvard Business Review on Corporate Governance, 2000.

[21] Hermalin, B. and M. Weisbach (1988), "The Determinants of Board Composition", *The RAND Journal of Economics*, 19 (4), pp. 589-606.

[22] Hermalin, B. and M. Weisbach (1991), "The Effects of Board Composition and Direct Incentives on Firm Performance", *Journal of Financial Management*, 20 (4), pp. 101-112.

[23] Hermalin, B. and M. Weisbach (1998), "Endogenously Chosen Boards of Directors and their Monitoring of the CEO", *American Economic Review*, 88, pp. 96-118.

[24] Hermalin, B. and M. Weisbach (2001), "Boards of Directors as an Endogenously Determined Institution: a survey of the economic literature", Working Paper 8161, NBER.

[25] Jensen, M. (1993), "The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems". *Journal of Finance* 48 (3), pp. 831-880.

[26] Jensen, M. and W. Meckling (1976), "Theory of the firm: Managerial behavior, agency costs, and ownership structure", *Journal of Financial Economics* 3, 305–360.

[27] Johnston, J. and J. DiNario (1997), *Econometric Methods*, McGraw-Hill.

[28] Kaplan S. and D. Reishus (1990), "Outside Directorships and corporate Performance", *Journal of Financial Economics* 27, pp. 389-410.

[29] La Porta, R., F. Lopez-de-Silanes and A. Shleifer (1999), "Corporate ownership around the world", *Journal of Finance* 54, 471–517.

[30] Mace, M., *Directors: Myth and reality*, Boston: Harvard Business School Press, 1971.

[31] O'Neals, F.H., (1987), "Oppresion of minority shareholders: Protecting minority rights", Close Corporations Law Symposium, Cleveland State Law Review.

[32] Rosenstein, S. and J. Wyatt (1990), "Outside Directors, Board Independence, and Shareholder Wealth", *Journal of Financial Economics* 26, pp. 175-184.

[33] Rosenstein, S. and J. Wyatt (1997), "Inside Directors, Board Effectiveness, and Shareholders Wealth", *Journal of Financial Economics* 44, pp. 229-248.

[34] Shivdasani, A. (1993). "Board Composition, Ownership Structure, and Hostile Takeovers". *Journal of Accounting and Economics* 16 (1/2/3), pp. 167-198.

[35] Shivdasani, A. and D. Yemack (1999), "CEO Involvement in the Selection of New Board Members: An Emperical Analysis", *Journal of Finance* 54, pp. 1829-1854.

[36] Shleifer, A. and R. Vishny (1997), "A survey of corporate governance", *Journal of Finance* 52, 737–783.

[37] Vafaes, N. (1999), "Board Meeting Frequency and Firm Performance", *Journal of Financial Economics,* 53, (july), p. 113-42.

[38] Vancil, R., *Passing the baton: Managing the process of CEO succession*, Boston: Harvard Business School Press, 1987.

[39] Weisbach, M. (1988), "Outside Directors and CEO Turnover", *Journal of Financial Economics* 20, 431-460.

[40] Wu, Y. (2000), "Honey, I Shrunk the Board", Working Paper, University of Chicago.

[41] Yermack, D. (1996), "Higher Valuation of Companies with a Small Board of Directors", *Journal of Financial Economics* 40, 185-212.