# Gender Representation in Nordic Boards: Evaluation of Board Work

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January 4, 2012

**Abstract:** We study the consequences of gender representation on board work in listed firms in five Nordic countries. Using survey data on chairmen perceptions, we contribute to the literature on gender diversity in boards by providing an inside view. We find that the predominantly male chairmen are significantly less satisfied with the female board members, when directly asked to rate various groups of board members. When analyzing the grading of various aspects of board work, and controlling for a number of factors, we neither find evidence of gender diversity contributing positively on perceptions of board work. However, contrary to the idea that more homogeneous groups would work better when risk is high, we find some signs of a positive effect of gender diversity in high risk firms.

Keywords: Board of directors; Diversity; Gender minority; Board effectiveness.

JEL Classifications: G30, G34, J16, M14, C35.

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# **1. Introduction**

Gender representation on the board of listed companies is a topic that has come into focus during the last two decades both in media as well as in the academic press. There has been a significant increase in pressure from both society and investors to appoint women to both the management team as well as to the board of directors. Consequently, the number of women has increased drastically in both categories in the last decade (Burke and Mattis, 2005; Daily, Certo and Dalton, 1999). In their "Corporate Governance Report 2009", Heidrick & Struggles study the structural changes that are being made in 13 European countries in the wake of the financial crisis. Concerning gender diversity, the results of the study show that the number of women in the board room has increased from 6.5% in 2007, to 10% in 2009. According to them, Sweden and Finland lead the way with over 20% of the directors being female. Portugal and Italy have the lowest percentage of female board members (about 3%). One out of three of the studied European companies had no female board members.<sup>1</sup> Recently, some countries (for example Norway and Spain) have adopted a legislation enforcing minimum amounts of each gender to be represented on the board of listed companies. Several other countries are considering such legislation.

Diversity of the board is one of the key questions concerning corporate governance at the board level. The big question is how a well-diversified board functions compared to a lessdiversified board. One of the main aspects of diversity is gender representation. A large part of the previous research has focused on external data, studying either the effects of gender diversity on firm financial performance (Shrader et al., 1997; Adler, 2001; Carter et al., 2003; Catalyst, 2004; Rose, 2007; Marinova et al 2010; Randøy, Thomsen and Oxelheim, 2006), or on more concrete board work variables such as meeting frequency or monitoring (Adams and Ferreira, 2009; Yan and Huang 2009). However, the theoretical foundations for why women would have an effect on board work are less explored in the empirical literature. Nielsen and Huse (2010b) argue that traditional theories on boards do not provide much insight in how women would contribute to board effectiveness, and instead look into the literature on gender differences (e.g. Eagly and Johnson 1990) and group effectiveness theories (e.g. Gladstein 1984). We follow this approach and, instead of going through the long route of. studying the

<sup>&</sup>lt;sup>1</sup> For other recent data on gender board representation, see also e.g. Rhode and Packel (2010). Referring to a group of studies, they report that Norwegian corporate boards have 44 percent female members, Sweden has 27 percent, Finland has 26 percent, and Denmark 18 percent.

effects of gender representation on firm financial performance (a research line troubled by the fact that many other variables contribute to firm performance as well), or gender representation vs. quantitative variables for board work such as the meeting frequency and how board committee work is organized (variables which may be indicative for the work load / way of work, but not necessary to the quality of board work) we study, in line Nielsen and Huse (2010a, 2010b), perceptions of board work. Contrary to Nielsen and Huse (2010b), we study chairman responses rather than CEO responses. In listed firms in the Nordic countries, the CEO is increasingly seldom a member of the board, while the chairman is in key position for both how the board works, as well as influential concerning board appointments. In studying chairman responses, we thus provide evidence which definitely comes from within the board.

This study contributes to the literature by deepening the resource dependence perspective of how the female representation on boards may affect the board's work. The findings can be interpreted as evidence related to gender differences and group effectiveness theories. The latter suggest that more homogeneous teams work better, especially when risk is high. We test the relationship between chairman's perceptions of several aspects of board work and gender representation, including many control variables, such as firm risk. We find that when the number of women in the board goes up, there is an increasing and significant difference between how pleased the chairman (a male one in 97.5% of the cases) is with the male vs. female board members, to the latters' disadvantage. We do not find any evidence of the chairman being more please with more women on the board, but do find signs of negative effects. Contrary to suggested in the literature, we find that gender diversity may contribute positively on board work in high risk firms.

The remainder of this paper is organized as follows. In section 2 we discuss previous research and develop the hypotheses of the study; In Section 3 we describe the sample and data used in the study, as well as the empirical model. In Section 4 the results of the study are presented, and a summary is provided in section 5.

# 2. Theoretical background and hypotheses development

### 2.1. Board tasks and gender diversity

The principal agent problem in companies comes from the separation of ownership and control. In this view, the board of directors can be viewed as the guardian for the shareholders. Since the ownership in listed companies is typically dispersed, shareholders cannot monitor the managers themselves but instead need to employ someone who can. The shareholders elect board members to do just this – monitor the managers (Berle and Means, 1932; Jensen and Meckling 1976; and Fama and Jensen 1983). The board also has an advisory role concerning strategic decisions made by the management (Pfeffer & Salanicik 1978). Further, the board of directors is the unit in a company which has the ultimate responsibility for the company's activities, and also the unit which takes the large external decisions (Cadbury, 2002). The most important decision the board has to do is the hiring and, if necessary, firing of the company's CEO (Cadbury, 2002).

At least four different functions are typically attributed to a corporate board: The monitoring and controlling of managers, the role of boards as information providers and consultants, their role in monitoring the compliance with laws and regulations, and the role of the board in linking the company to the external environment (see e.g. Monks and Minow 2004, and Mallin 2004; for other studies on the characterizations of board tasks, see e.g. Pearce and Zahra 1989, Johnson, Daily, and Ellstrand 1996, and Hung 1998). Attitudes to and consequences from female representation in corporate boards can be analyzed in respect to their potential contribution to these roles of the board, and from several viewpoints such as the psychological, sociological, moral or economic point of view.

From the economic point of view, issues lately subject to several empirical studies have been whether gender diversity contributes to the effectiveness of the board, and how that is reflected in the financial performance of the firm (see e.g. Adler, 2001, Carter et al., 2003, and Catalyst, 2004, who found evidence in favour of a positive effect, while other studies have found no relationship or even a negative relationship, see e.g. Shrader et al., 1997, Rose, 2007, and Marinova et al 2010; see also e.g. Kochan et al., 2003 for a few negative and

positive effects).<sup>2</sup> Adams and Ferreira (2009) found that the initially encountered positive relationship between firm value and performance (measured by Tobin's q and ROA) on one hand, and gender diversity on the other, is not robust to any method of addressing the endogeneity of diversity. However, the average effect of gender diversity on firm financial performance was negative in their study. Concerning the Nordic countries, Randøy, Thomsen and Oxelheim (2006) studied the impact board diversity had on corporate performance of the 500 largest companies in Denmark, Norway and Sweden. Randøy et al found that Scandinavian boards are largely homogenous in terms of gender and nationality, and they found no significant effect of gender board representation on stock market performance or on ROA.

However, the theoretical foundations for why women would have an effect on board work are less explored. Carter, D'Souza, Simkins and Simpson (2010) find some support for a gender perspective both from a traditional agency perspective (Jensen and Meckling 1976), transaction cost economics (Wiliamson 1988), and a resource-dependence perspective (Pfeffer and Salancik 1978). From the agency perspective, board diversity may enhance board independence, and a more independent board might monitor better, unless minority directors are marginalized (see e.g. Westphal and Milton, 2000, for factors influencing such marginalization). From the point of transaction economies, one could argue that women might provide unique information to the board, which might improve strategic decision making (see e.g. Stephenson, 2004, concerning women and consumer markets). From the resource dependence perspective, gender diversity on boards may help in attaining and retaining talented female managers, and thus enhance the link to the female half of the talent pool available, and also provide stronger legitimacy for the firm (positive signalling) among women in the labor and product markets (Carter et al, 2010, Brancato and Patterson, 1999).

Although gender may in this way be linked to traditional theories, the fundamental reasons for why the gender aspect may be of importance for board work seem to rely elsewhere, in social and behavioral characteristics of women as compared to men. Nielsen and Huse (2010b) argue that traditional theories on boards do not provide much insight in how women would

 $<sup>^2</sup>$  Some further light on the issue may be found in the study by Lee and James (2003), who studied stock price fluctuation upon the appointment of a new CEO. Lee and James found that the price fell upon the appointment of a new CEO and the fall was even larger with the appointment of a female CEO. Their conclusion to this was that the market regards the CEO appointment as an increased risk and that this risk is even larger if the CEO is female.

contribute to board effectiveness, and instead look into the literature on gender differences (e.g. Eagly and Johnson 1990) and group effectiveness theories (e.g. Gladstein 1984) in order to draw hypotheses on why women might perform board tasks in a way different from men, and thus potentially contribute to board effectiveness in either a positive or negative way (for other papers on group effectiveness, see e.g. e.g., Cohen and Bailey 1997, Pelled 1996, and Williams and O'Reilly, 1998). This literature suggests that the nature of the tasks performed has an important influence on team composition and effectiveness, so that certain teams (e.g. more homogeneous or more heterogeneous) may be more successful in certain tasks in certain environmental situations. Thus the mandatory inclusion of women on boards might, from case to case, not only benefit but also hurt board performance.

An example of a negative effect from diversity in boards is suggested by Kanter (1977), who emphasizes on the importance of trust. Teams require incentives for cooperation. When direct incentives (e.g. through compensation systems) are hard to construct, trust becomes more important, and trust may be more easy to build up in homogeneous teams. Thus when uncertainty is high, firms might rely more on the homogeneity of the managerial team than on formal governance mechanisms as incentive providers. Rose (2007) points out that female board representation may lead to more perspectives (which may be good), but a more heterogeneous board may also slow down decision-making since the likelihood of reaching consensus may be smaller in more heterogeneous teams (Hambrick, Cho and Chen 1996, Rose 2007). Also the coordination of diverse top management teams may be more difficult and costly (Ancona and Caldwell 1992). Futhermore, even though board diversity might bring new perspectives into board work, the effect may not be visible if the unconventional members are either marginalized (see e.g. Nielsen and Huse (2010a) for empirical evidence on how perceptions of women as unequal board members can have a negative direct effect on women directors' contribution) or socialized, i.e. are unconsciously adopting the ideas of the majority (the conventional board members), in which case a potential performance effect does not materialize.

Some researchers (see e.g. Ancona and Caldwell, 1992; Murray, 1989) have reported empirical evidence supporting a negative relationship between top management heterogeneity and firm performance under certain conditions. They suggest, similar to Kanter (1977), that diverse teams would be more difficult and costly to coordinate and control than homogeneous teams and that the added costs would thus hurt performance. However, there is also empirical

contrary empirical evidence, suggesting a positive association between top management diversity and performance (e.g. Bantel and Jackson, 1989, and Hambrick et al., 1996). Dwyer, Richard, and Chadwick (2003) interpret such results as evidence indicating that diversity may enhance the breath of perspectives, cognitive resources, and overall problem solving capacity of the team.

The legendary pioneer on top female workers - Rosebeth Moss Kanter - started to use the concept 'tokenism', referring to boards practice of having female board members to make believe to the public that the boards are being fair and including female and issues when this is not really the case. Kanter's description the negative personal consequences of being a token as: 1) visibility that exacerbated pressures to perform; 2) isolated from informal social and professional networks; and 3) differences from male peers were exaggerated. Kanter also says that as the proportion of women in organizations is increasing, women's behavior becomes increasingly similar to that of men.

Empirical work on the effect of gender in corporate boards has revealed some interesting features which may be related to the social and behavioral characteristics of women as compared to men.<sup>3</sup> For instance, several studies indicate that gender-diverse boards are tougher monitors (Adams and Ferreira, 2009, Yan and Huang 2009), and have higher attendance rates on board meetings (Adams and Ferreira, 2009). In studies of gender in top management (Dwyer, Richard and Chadwick, 2003), results suggesting that the interaction between gender diversity and growth is significant for productivity has been obtained. However, most of these studies look at the relationship between external outcomes and gender representation, and may suffer from severe endogeneity problems (e.g. firms with better corporate governance procedures may both perform better, and have a better gender balance in their boards).

Instead of going through the long route i.e. studying the effects of gender representation on firm financial performance (a research line troubled by the fact that many other variables contribute to firm performance as well), or gender representation vs. direct board work variables such as meeting frequency and committee work (which are just outcomes and may not be actual measures of quality, and may also suffer from endogeneity problems), one

<sup>&</sup>lt;sup>3</sup> For recent surveys of research on women on boards, see e.g. Vinnicombe, Singh, Burke, and Bilimoria (2008), and Terjesen, Sealy, and Singh (2009).

alternative is to study perceptions on board work. This line of research opens up the possibility to directly ask questions on various board work variables, and contrast them to gender representation, i.e. to study whether boards with better gender balance are perceived to perform different board tasks in a different fashion. Naturally, since studying perceptions, the answers will reflect the respondents general attitude to women on boards (and if the majority of the respondents are male, the male attitude to women on boards). From the perspective of group dynamic theories, such a study will however produce important information on how groups with different levels of gender diversity are perceived to operate.

Nielsen and Huse (2010b) is one of the few studies which have looked at gender representation vs. opinions of the quality of board work. Their approach was to use a survey database, where CEO opinions of different board tasks were related to determinants including a women directors ratio. The purpose was to study whether women representation improves board work in areas where prior research has found evidence on gender differences, such as concerning strategic control, board development activities, open debate, and (reduced) conflict. For a sample of 201 Norwegian firms, they find that the ratio of women board directors have a positive direct relationship with board strategic control, whereas no direct relationship with board operational control was found.

The purpose of our study is to provide further evidence on gender-related perceived differences in board work. Contrary to Nielsen and Huse (2010b), we study chairman responses rather than CEO responses. In listed firms in the Nordic countries, the CEO is increasingly seldom a member of the board. In studying chairman responses, we thus provide evidence which definitely comes from within the board. Through the setting of the agenda for board meetings, and in influencing control on how board discussions proceed, the chairman of the board (CM) is moreover in a key position concerning how the board functions. In the Nordic corporate governance model, where an external nomination committee<sup>4</sup> representing large owners is in wide use especially in Norway, Sweden, and lately also in Finland, the CM is also typically influential in the selection of new board members. The chairman's perceptions are thus also in a key position for the development of gender diversity on a

<sup>&</sup>lt;sup>4</sup> In the Nordic countries, boards are typically elected for a period of one year only. The election of a new board is a task for the annual shareholders meeting (the AGM). The nomination committee, often selected by the AGM either directly or through a rule (including a number of large shareholders) prepares the proposal for board members to the next AGM. The chairman of the board is typically the contact person between the firm and the nomination committee, providing the committee his perception on current board members, and what skills the board might be in need of.

voluntary basis in the Nordic countries. Furthermore, as a suggestion for future work, both Nielsen and Huse (2010b) as well as Terjesen, Sealy, and Singh (2009) propose the use of views from multiple members of the board / the chairman of the board on board work / incoming board members. We contribute to the empirical literature in providing evidence from one such new angle, the chairman.

In line with Nielsen and Huse (2010b) and prior research (Bilimoria, 2000), we expect that women are particularly valued as board members for their ability to provide strategic input and generate more productive strategic discourse. Compared to operational control tasks, strategic decisions are more complex and creative, and can be expected to require a broader range of perspectives. Women's more participative management style (Pearce and Zahra, 1991) and in higher sensitivity (Bradshaw and Wicks, 2000) may result in a better and more multi-faceted discussion of many alternative strategies, and ultimately to better decision making on strategic issues. On the other hand, these same characteristics may hamper the more short-term, operational decision making, where the speed of the actions (avoiding delays) often is of utmost importance (Rose 2007).

*Hypothesis 1:* Gender diversity contributes positively to the discussion of long-term strategic development but may hamper the discussion of short-term operational development.

The impact of gender diversity on the effectiveness of board work in general is somewhat ambiguous. Based on e.g. Fondas and Sassalos (2000), who found that female directors have higher expectations on board work, and Huse and Solberg (2006), who suggest that being less experienced, female directors may spend more time preparing for board meetings, Nielsen and Huse (2010b) argue that female board members may contribute to the enhancement of board work through various development activities. They also obtained empirical support for this prediction. However, the lower experience of women from both board work as well as from operational tasks can also be interpreted differently. Female board members, the latter ones often being or having been CEOs in other firms. Thus gender representation may also hamper the efficiency of the board. Kanter (1977) suggests that homogeneous groups may perform better when uncertainty is high. Murray (1989) found, for oil companies, support for a negative effect of temporal heterogeneity through change on firm long-term performance. Adams and Ferreira (2004) report that firms with higher risk (measured by the standard

deviation of monthly stock returns) employ less female directors. Their result is robust to a number of specifications and control variables, and some attempts trying to rule out reversed causality or self-selection. This result is in line with other studies that find a lower number of women in riskier firms (Hillman and Canella, 2007). Also Francoeur et al (2008) study gender effects (on financial performance) taking risk (stock beta) into account, and find that the return on equity (ROE) is significantly higher in low-risk firms when the female representation in the board is high, while the corresponding difference is not significant (although positive) for medium and high risk firms.<sup>5</sup>

*Hypothesis 2:* Gender diversity has a less positive / a negative effect on general board work (its effectiveness) in high risk firms.

When interpreting our results concerning the hypotheses above, one must remember that we are studying perceptions, not actual problem solving / work effectiveness in boards. These may be different. E.g. Phillips, Liljequist, and Neale (2008) report from a study of group decision making that when new members were socially similar to existing members, the subjective satisfaction was high but actual problem solving results were not. In fact the more heterogeneous group was much better at accomplishing the problem-solving task.

#### 2.2. Consequences of legislations on board diversity

Since the beginning of 2008, all Norwegian listed companies has to have a least 40 percent of each gender on the board. The law was adopted in 2005,<sup>6</sup> given the Norwegian companies three years to adopt. Hoel (2005) reports that the increase was from about 6% in 2000 to 22% already in 2005. Also Spain has adopted strict regulation concerning female board representation on Spanish listed companies. The Spanish law says that by 2015, 40 percent of the board member has to be of each gender. According to De Cabo, Gimeno and Escot (2007), only 6.6 to 8.6 percent of the directors in the largest Spanish firms are women in 2005 and 2008. Grosvold, Brammer and Rayton (2007) studied changes in board composition in Norway and the U.K. before and right up until the gender equality act was adopted in

<sup>&</sup>lt;sup>5</sup> Moreover, when taking risk into account using the Fama-French (1992, 1993) three-factor model instead of beta only, a significant positive excess return (captured by the alpha of the model) was obtained for high-risk firms with a high number of female officers. However, a significant excess return was not obtained for firms with a high degree of female board directors.

<sup>&</sup>lt;sup>6</sup>Section 6-1a of the Norwegian Public Limited Liability Companies Act.

Norway. They found that the number of female board members increased significantly during the period studied, and much more rapidly in Norway than in England. The changes were mainly due to the Norwegian legal change, and not because of sector-specific changes, which makes the authors conclude that the rapid growth in board diversity has been completed without any reduction in the quality of directors. On the other hand, Ahern and Dittmar (2011) analyze the Norwegian case and report that the constraint imposed by the quota caused a significant drop in the stock price at the announcement of the new law, followed by a large decline in Tobin's Q over the following years. This is consistent with the idea that firms choose boards to maximize value, and were constrained by the new law. They report that the quota led to younger and less experienced boards, increases in leverage and acquisitions, and a deterioration in operating performance, an outcome which may be interpreted as consistent with less capable boards.

Elstad and Ladegard (2010) studied an increase in female directors' effect on female directors' situation. Their results show that women on company boards feel that they receive more information and engaging in more informal social interaction with women is increasing. In addition, every woman's perceived influence increases when the proportion of women increases. Finally, Gregoric, Oxelheim, Randoy, and Thomsen (2010) study whether the increased gender diversity in four Nordic countries, including Norway, has happen at the cost of other forms of diversity, and find support for the idea that gender diversity is more of a substitute for other forms of diversity, rather than a complement.

We study whether the perceptions of board work in boards with high vs. low gender representation differ between countries where there were quotas for women (Norway) versus countries without (Denmark, Finland, Iceland and Sweden). If part of the attitudes towards women on boards are negative simply because male dominated boards are unused to women, or because fewer women easier are marginalized and obtain less information which hampers participation, boards with more women in them (due to a quota) might have come around these problems, and work better. I.e. the attitudes towards more diversified boards might then be more positive. On the other hand, if a quota drives towards the inclusion of less competent members, the attitudes towards women on boards might be less positive. Hence we test for a two-sided hypothesis.

*Hypothesis 3*: There is a difference between the attitudes towards women on boards between responses from Norway versus the other Nordic countries.

## **3.** Data and Methodology

### 3.1. The sample

The study was performed as a questionnaire study. A questionnaire was sent out to the Chairman of all companies listed on the OMX Nordic Stock Exchange as well as on the Oslo Stock Exchange.<sup>7</sup> The total number of companies was 780. The respondents were promised anonymity, i.e. to prevent recognition, results on the responses can be reported only for large enough groups. After the initial mailing, reminders were sent to all respondents in order to increase the response rate. The overall response rate was 20.1%, ranging from 10.6% for Norway to 31.3% for Sweden. Table 1 reports on responses rates per country, while Table 2 reports descriptive statistics for the responding firms and the whole population.<sup>8</sup>

### 3.2. Financial and other data

The survey data was combined with financial and ownership data concerning the firm, and its board composition. The financial and ownership data were collected from three sources. The primary source was the Amadeus database, complemented by missing data from Datastream, or, as a last resort, annual reports from the companies websites. Table 2 shows that our firms are larger than the population of firms to which the questionnaire was sent in terms of turnover, and total assets for non-financial firms. In terms of the number of employees, they are smaller, and our sample of financial firms are also smaller in terms of total assets as compared to corresponding firms in the population. Our non-financial firms are also marginally more profitable, while our financial firms somewhat less profitable as compared to

<sup>&</sup>lt;sup>7</sup>Questionnaires were sent out to the chairmen of companies that were listed on the OMX Nordic Stock Exchange on November 13<sup>th</sup> 2007 and on the Oslo Stock Exchange on May 30<sup>th</sup> 2008.

<sup>&</sup>lt;sup>8</sup> The survey was broad in terms of questions, and only some of the questions relating to board work are analyzed here. A total of 158 chairman responses were returned, but because of lack of data concerning the questions used in this study, we had to exclude one company from the analysis. The sample used in this study is therefore 157 observations.

the population. The difference between average total assets for financial firms in the sample and population is statistically significant at the 10% level (a t-value of 1.83).

We also collected data concerning the board composition from annual reports and the companies' websites. This set of data includes names and gender of the board members, as well as data on their tenure. In the Nordic countries, board members are elected at the annual shareholders meeting and given power and duties by laws, company charter and other directions given at shareholder meetings. In many Nordic companies, also the employees of a company may appoint their own representatives to attend board meetings. In Sweden, Norway, and Denmark the employees' representatives have voting power, while in Finland and on Iceland the employees' representatives typically do not have voting power.9 The balance between outside and inside directors also differ in the Nordic countries from for example that in the U.S., since the boards of Nordic companies are typically only allowed to have one inside director, while the U.S. the inside directors may be in majority. In this study, we start by studying the impact of board heterogeneity on the chairman's opinion of the board using the broader definition, i.e. including employee representatives both in the numerator as well as the denominator of the variables such as the female proportion / foreign proportion of the board. However, we then also perform robustness tests using variables only based on the board members elected by the annual shareholders meeting.

Table 3 reports on the gender composition in our final sample. Our final sample covers 157 firms with a total of 925 board members, of which 158 (17.1%) are female. Only 17 firms (10.8%) have more than three females on the board.

#### 3.3. The survey responses

Sir Adrian Cadbury (2002) claims that three things affect the effectiveness of a board: the composition of the board; the balance of membership and skill of the chairman. The board's composition has to make the board a well-functioning team. A well functioning board is essential for the development of the company. In this study, we will not ask the chairperson to judge himself/herself, only to judge the board composition when it comes to broad competence, sector knowledge, finance knowledge, gender representation, and sufficient

<sup>&</sup>lt;sup>9</sup> For more information on employee representation in Nordic boards, see e.g. Gregoric et al (2010).

network of contacts. The chairperson's view is only one person's view, however this person is in many ways the most important person of the board.

We presented five and ten questions to the chairmen concerning the board composition (how pleased they are with different aspects of its composition, such as the female representatives of the board) and board work (how pleased they are with how the board is working in different specified areas related to board work, such as with the long run strategy of the firm), respectively. The chairmen were asked to grade their views on the quality of the board work on a Likert-type scale ranging from 1 (very poor) to 5 (very good).

The first of our ten questions on board work is about the board work in general. Next, we ask whether the chairperson believes that the board work is carried out efficiently and also how the board makes decisions. We further ask about the board discussions concerning the company's short-term and long-term development, respectively. We also the chairperson about how actively the board discuss the company's business strategy, and how actively the board reviews the company's business plan, strategy, objective, and budget, whether the board's has a clear understanding for the company's financial (quantitative) objectives as well as the company's non-financial (qualitative) objectives. Since it is important that the board maintain a good relationship with the CEO and investors (Charon, 2005), we moreover ask how functional the boundary between owners, the board, and the management is. The questionnaire questions can be obtained from the authors, and are later in this paper reported (in an abbreviated form) as the columns of Table 5.

### 3.4. Methodology of the study

Our dependent variables are the chairmen's responses from the survey, i.e. their perceptions of board work on a scale from 1 to 5. We estimate ordered probit models to test our hypotheses. As dependent variables, we include the gender proportion of the board (percent of female members) in order to test whether boards with more females are perceived to function better or worse). For hypothesis one, we especially focus on the coefficients for short-term and long-term (strategic) decision making. Hypotheses two is tested by the use of an interaction variable: the gender proportion is interacted with a risk variable (stock volatility). This variable will be included later in our models. Hypothesis three is tested using a dummy variable for Norway. As potential determinants for how satisfied the chairman is in the work

of the board, and as control variables, we include board and firm characteristics as described below.

Board characteristics. Our key explanatory test variable is *Female\_members*, defined either all female members (Female\_members\_ALL, now including female employee as representatives), or only the elected female board members (Female\_members\_ELECT), in percentage of either all, or only of the elected board members, respectively. We also include other board characteristics which may influence board work. Foreign\_members and Dependent\_members are defined as the foreign board members, and the members dependent of the firm, over all board members (*Foreign\_members\_ALL* and *Dependent\_members\_ALL*). of the elected (Foreign\_members\_ELECT or only members and Dependent\_members\_ELECT). With these we can test whether board heterogeneity through foreigners has an impact on the chairman's satisfaction with the board, and whether the inclusion of firm dependent members influences board work. We can also address the question of whether e.g. a potential influence from gender is equal for the elected and the employee representatives.

Since board size may clearly matter (see e.g. Yermack 1996, and Coles, Daniel, and Naveen 2008 for discussion and results concerning optimal board size), we include the logarithm of either the total board or the elected board (*Board\_size\_ALL* and *Board\_size\_ELECT*). As older and more experienced chairmen may feel that they get the board working in a better way, we finally also include *Chairman\_age* and *Chairman\_tenure*, measured as the chairman's physical age, and the number of years as the chairman in the firm, respectively. All the board characteristics are collected from the annual reports of 2007 for the OMX-listed companies, and from 2008 for Oslo-listed companies, and complemented from external public sources when needed for variables such as *Chairman age* and *Chairman tenure*.

**Firm characteristics.** Also the type of the firm may influence the chairman's satisfaction with the board work. As firm controls, we include variables for firm size, profitability, ownership structure as well as sector. Firm size is proxied by the *Ln\_turnover*, the logarithm of turnover for the last accounting year. As a profit variable we use *ROA*, the return on total assets from the last full accounting year prior to the survey. Since ownership is often very

concentrated in the Nordic countries, and may influence the work of the board through the demands of some very large owners, we include *Own\_5\_largest*, a variable measuring the percent of equity owned by the five largest shareholders. *Risk* is measured as the daily stock price volatility for the firm's stock, and is estimated from the returns for the 12 months prior to the study.<sup>10</sup> We also finally include a dummy for Norway, as well as *Sector*, a dummy for industrial / manufacturing firms, including firms in the categories of "Industrials", "Materials", "Energy", and producing "Consumer staples". The categorization has been made on the basis the classifications by the NASDAQ OMX and the Oslo Stock Exchange.

Our ordered probit models with robust standard errors are of the following form:

$$CM's opinion of board work =$$
  

$$\lambda_0 + \lambda_1 (BoardChar)_i + \lambda_2 (FirmChar)_i + \lambda_3 (Norway)_i + e_i, \qquad (1)$$

where *BoardChar* is a vector of board characteristics (*Female\_members, Foreign\_members, Dependent\_members, Board\_size, Chairman\_age* and *Chairman\_ tenure,* the four first in either their *ALL* or *ELECT* form), *FirmChar* is a vector of firm characteristics (*Ln\_turnover, ROA, Own\_5\_largest,* and *Sector,* and later also *Risk),* and *Norway* is a dummy for Norway where there is a compulsory rule of 40% women on corporate boards. The risk variable (and an interaction variable using it) and the dummy for Norway are only used in latter models as specific tests for whether gender difference has a different effect in high risk firm, and to test for differences between a country with quotas for women on boards and the other countries, respectively.

## 4. Results

### 4.1. Results concerning board work

<sup>&</sup>lt;sup>10</sup> For some firms, as many as 12 months of past stock price data was not available. We then used past stock price data for the period existing, as long as it exceeded 6 months, to calculate the volatility (for 6 observations), and for those with a even less data available, used the average volatility for other firms in the same sector in our sample (the volatilities for 10 firms, from five different sectors, were proxied in this way).

Our questions for the chairman start with overall questions concerning board members, including how satisfied the chairman is with the male respective female members of the board. He was asked to answer on a scale from 1 (very poor) to 5 (very good). Descriptive statistics for the responses on these two questions are reported in Table 4. The chairman's grading of the female and male board members show that male board members receive a higher grade overall, and the difference is statistically significant at the 1% level both when comparing the averages (in Panel A, a t-value of 2.72) as well as in a pairwise t-test when comparing responses given by the same chairmen on the two questions (in Panel B, a t-value of 3.79). Since all but four of our responding chairmen are male, this result is similar to that in Nielsen and Huse (2010a), who found that the gender of the respondent had an impact on the assessment of women's contributions to decision-making, with significantly lower ratings being provided by male respondents.

Interestingly, the grade for the male members is increasing with the number of women in the board. Most of the differences between subgroups are also statistically significant, except for two cases, one of which has a low number of observations. The pattern is the same both in Panel A, where the grouping is based on the total number of women (i.e. female employee representatives are included), and in Panel B when employee representatives are excluded. For the female board members, the case is the opposite: their grading goes down when the number of women in the board is increasing from one to two or more. Consequently, the gap between the grades for male and female board members increases, in favor of the male board members, when the number of female board members grows. This effect goes directly against the hypotheses concerning effects of tokenism (through the mechanisms of polarization, information sharing, and social exclusion) tested in Elstad and Ladegard (2010) and found to be reduced with an increased ratio of female board members. Since observations from Norway, where there is a quota for women on boards in place, lie in the higher categories (in the highest, out of 23 observations, 15 i.e. 65% come from Norway), one way to interpret the result might be that a sudden quota makes it harder to find competent women for boards in large quantities. However, Norway alone cannot fully explain the result.<sup>11</sup> Since only four out of our 157 chairmen are female, a possible alternative explanation might e.g. be that male chairmen are uncomfortable with boards with a larger number of women, and may to a higher

<sup>&</sup>lt;sup>11</sup> Although the responses from Norway are more in favour of men, and less for women, as compared to those for other countries, the differences are however not statistically significant.

degree in such a case find help from, and appreciate, the male board members in such boards.<sup>12</sup>

Next, we analyze the questions concerning board work. Even though women might get lower gradings when they, based on their personal characteristics, are being compared to men, they might favourably contribute to the board work as a whole either generally, on in certain areas. Table 5 reports the average grades on our questions concerning board composition and board work, grouped according to the total proportion of female board members (including the employee representants).

Panel A of Table 5 shows that when the female proportion of the board increases, variables for "broad composition" and "sufficient representation of gender" naturally go up, but "sector competence" goes down (but not significantly so), while network contacts and knowledge of financial issues are about unaffected. For the more specific board work variables, there seems to be a slight (but statistically insignificant) inversed U-shape pattern, with scores mostly increasing, but eventually decreasing, with the number of female board representatives.

Tables 6 and 7 report the results from estimating ordered robust probit estimations in line with our model 1, but excluding the firm risk variable and a dummy for Norway at this stage. Our variable of interest is *Female\_members* in its *ALL* (Table 6) or *ELECT* (Table 7) form, i.e. either including or excluding employee representants. As the tables show, the variable has, with one exception (for the question 'Clear non-financial objects' in both tables) a negative sign. It is significant in three cases in Table 6, indicating that the chairman's perception of board work is significantly reduced with increases in the female proportion of the board both concerning board work in general, its work with issues related to short-term development, as well as the functional boundary between owners, board, and the management. Excluding employee representatives (male and female alike) slightly improves the perception of female board members, since *Female\_members* is now significantly negative only once, for our last

<sup>&</sup>lt;sup>12</sup> This goes in line with the result that the significance levels for group differences are slightly enhanced by analyzing responses from male chairmen only, since our four female chairmen gave slightly higher scores for female (an average of 4.5) as opposed to male board members (an average of 4). We tested for whether chairman characteristics or board size variables might have some explanatory power for cross-sectional differences between the chairman responses, but did not find any significance for e.g. age nor chairman tenure, or the size of the board as explanatory variables.

question. Robustness tests indicate that these results are not essentially affected by the gender of the responding chairman.<sup>13</sup>

Other interesting results are that more tenured chairmen in every case have a more positive perception of board work, in 4 (6) cases significantly so, while chairman age is more ambiguous: it has a significant positive effect in 2 (1) cases in Table 6 (Table 7) and a significant negative effect once, for the functional boundary between owners, board, and the management. Out of our firm characteristics, the always positive and mostly significant  $Ln_turnover$  indicates that board work is perceived as more positive in larger firms, perhaps reflecting better opportunities to attract qualified board members to such firms. When  $Own_5_{largest}$  is significant (three times in Table 6, and once in Table 7), it is always negative, perhaps indicating more conflicts of interest between boards and owners in firms with high ownership concentration.

According to our hypothesis one, we expected that gender diversity could contribute positively to the discussion of long-term strategic development but might hamper the discussion of short-term operational development. We have so far found no evidence of perceived positive influences from increases in the female proportion of the board. However, there is (in Table 6) some evidence in favour of a negative effect concerning short-term development (a negative and significant coefficient for *Female\_members\_ALL*). Our hypothesis one has thus only obtained weak partial support.

Next, we test for whether the benefits from female members are different in high vs. low risk firms. We do this by estimating model 1 using variables for the elected board, including *Risk* as a measure for firm risk, and also including an interaction variable *Risk\_40\_Female*, defined as *Female\_members\_ELECT* times *Risk\_40*, a dummy variable taking the value of zero if firm risk (stock return volatility) is below 40% (a value somewhat higher than the average volatility in our sample, 34.3%) and otherwise the value of one. This interaction variable allows for changes in the slope for *Female\_members\_ELECT* for firms with high risk. Table

<sup>&</sup>lt;sup>13</sup> Including an interaction variable for a female chairman (a female chairman dummy times the female proportion of the board) typically resulted in a negative, not positive, coefficient for the interaction variable. Since in all cases with a female chairman, the female proportion of the board is at the higher end, this is mostly a reflection of female chairmen being in general more critical to board work than men (as reflected in the lower response scores on all but one out of the ten questions concerning board work). The interaction variable was significant only once, for long-term development (a t-value of -2.63), indicating that our four responding female chairmen gave significantly lower scores than the male ones for board work on long-term development issues in their boards (which had a higher proportion of women than the sample average).

7 reports the coefficients for these two new variables, together with the coefficient for *Female\_members\_ELECT*.

The results in Table 8 are in line with our previous ones in the sense that the sign for the explanatory variable *Female\_members\_ELECT* is negative for all but the same single response model as before, i.e. when explaining the responses on 'Clear non-financial objectives'. Moreover, now the significance of that variable is enhanced, we find a significant negative coefficient for *Female\_members\_ELECT* in five i.e. half of our models, including the model for discussion on short-term development. Risk seems to have a negative influence on board work: it receives a negative coefficient in nine out of ten models, and is significant in two. However, contrary to our hypothesis two, we do not find support for the expectation that more homogeneous boards would work better when risk is high. The sign for *Risk\_≥40\_Female* is positive in all but one case, and significantly so in three cases: for 'Board work in general', 'Decision making', and 'Board work efficient'. These results instead indicate that gender diversity would contribute more positively than otherwise when risk is high.

Our third hypothesis concerns potential differences between female board members in Norway as compared to the other four countries. This is done by including a dummy as well as an interactive variable (the dummy for Norway times our *Female\_members*, in its *ELECT* form) in models otherwise identical to those reported in Table 7. The results in Panel B of Table 8 show that the interactive dummies for Norway are twice significant, and positive in both cases. This happens for the questions on clear financial and non-financial objectives, respectively. At the same time, the country dummies for Norway are significantly negative, which may be an indication of a multicollinearity effect. Since the levels of female board members are in general higher in Norway as compared to the other countries (an average of 43.7% female as compared to 14.4% for the other countries), multicollinearity may make it hard to separate the effect of gender from the country / legal restriction effect. We therefore also reproduced the results for that approximate half of our sample where the female representation is higher than 20% (67 observations; results not reported here). The results remain ambiguous, since we found one significantly negative and one significantly positive coefficient for Norway\_female. The dummy Norway was never significant. We therefore do not find strong support for a legal effect, i.e. that the perceptions of female board members

would be different in Norway where there was a mandatory 40% rule coming, as compared to other countries.

### 5. Summary and conclusions

Most studies on the effects of gender diversity on board work rely on external data on firm results or data on variables describing workloads of the board. Data from within the board has been called for by many researchers (e.g. Terjesen, Sealy, and Singh 2009, and Nielsen and Huse 2010b). We contribute by reporting on perceptions of board work by the chairman of the board. The chairman typically interacts with the nomination committee on work done by the current board, and is thus influential for the election of board members. It is thus of great interest to study whether his opinions are related to the degree of gender diversity within the board.

This study is based on survey data for 157 chairmen of the board (97.5% male) in five Nordic countries. The chairmen answered questions concerning overall board performance, i.e. they did not answer the questions with the intention of relating the answers to other question such as gender issues. Board composition data was collected separately from public sources and not through the questionnaire. Controlling for a number of factors which may influence the chairman's opinion of the board, such as firm characteristics, board size and characteristics, chairman age and tenure, we study how the chairman's grading of different aspects of board work is related to the proportion of female board members. We find a significant difference between the chairman's opinion of male and female board members, in favor of men. The difference is increasing with the gender diversity in the board. We also find that the proportion of women, especially when also employee representatives are included, relates to the chairman's perceptions of different aspects of board work with a persistently negative coefficient, significant e.g. concerning the functional boundary between owners, board, and management. When firm risk (stock volatility) is accounted for, we find (contrary to the suggestion in the literature on more homogeneous boards functioning better when risk is high) signs of a positive effect from gender diversity on perceptions of board work in high risk firms. We do not find evidence for a significant difference between the responses from Norway (where a mandatory quota for women on boards has been introduced) and the other Nordic countries.

Our results awake the question of why the chairman believes that the board is performing worse when there are more female board members included. There are some extreme possible explanations for this. First, the female board members might be less qualified. Women do not have the same operational and leadership experience in the Nordic countries. For example the Swedish private sector is largely male-dominated, with approximately 90 percent of management teams being male. It might be so that women add less value to board work, because the skill pool is less deep for women. Gutek and Larwood (1987) point out several key reasons why women may have a less deep skill pool.<sup>14</sup> Other possibilities include men's difficulties to take advantage of the knowledge of female board members (females may be marginalized, see Kanter 1977, and the effects of the perceptions of females as unequal board members vs female director contribution in Nilesen and Huse 2010a). The results of the study indicate the need of more research on not only on the factual outcomes of gender diversity of firm performance, but also on the potential obstacles that may hamper gender influence when already on a board.

<sup>&</sup>lt;sup>14</sup> These are: First, there are differences in expectations for women and men in what is considered appropriate for each gender. Second, partners to women and men differently inclined to support and monitor the other's career, which usually means that men have more support in their careers than women. Third, the parenting is very different responsibilities of women and men. A fourth argument concerns that women encounter more obstacles and limitations working life than men do, in the form of discrimination and different types of stereotyping.

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# **Table 1. Response rates**

Descriptive statistics are reported for the responses received from a survey directed to the Chairmen (CM) of all companies listed at the Nordic OMX Stock Exchanges, and the Oslo Stock Exchange, at the end of 2007, and May 2008, respectively. A total of 780 companies were included in the study.

	Number of questionnaires sent	Number of responses	Response rate
Denmark	188	36	19.1%
Finland	130	18	13.8%
Iceland	22	4	18.2%
Norway	188	20	10.6%
Sweden	252	79	31.3%
TOTAL	780	157	20.1%

### TABLE 2. Descriptive statistics for responding firms and the target population

Descriptive statistics are reported for the listed firms in Denmark, Finland, Iceland, Norway and Sweden that were targeted in the survey (the "Population", 780 firms). We also report statistics for the responding firms (the "Sample", 157) from which firms we received from the chairman a filled-in questionnaire concerning the questions used in this study. The firms are divided into Financials (banks, investment and insurance companies) and Non-financials based on the sector codes used by the OMX exchanges and the Oslo Stock Exchange (both use the same ten categories). We report averages, medians, standard deviations, and the number of firms for which the financial information item has been obtained ("Obs") for the following variables: Turnover (in 1000s of euros), No. of employees, Total assets (in 1000s of euros), Return on total assets (ROA, defined as Net Profit to Total Assets) and Solidity (defined as Equity to Total Assets). The financial data applies to the last available reporting year prior to the date that the questionnaire was sent out (typically this is 2007 for Norway and 2006 for the others). The data was collected from Amadeus, Datastream, and annual reports for the companies.

		Non-financials		Fin	ancials
		Sample	Population	Sample	Population
Firms		128	615	29	165
Turnover, 1000 EUR	Mean Median St. dev.	1 568 728 109 025 5 898 271	1 058 814 101 826 3 939 259	557 410 58 886 1 206 106	543 775 53 981 2 039 941
	Obs	125	604	24	142
Number of employees	Mean Median St. dev. Obs	3 649 477 10 579 123	4 405 396 22 460 569	1 057 194 2 447 25	1 520 135 4 679 139
Total assets, 1000 EUR	Mean Median St. dev. Obs	1 552 503 118 315 5 370 715 128	1 049 915 102 364 3 696 905 615	3 870 473 297 256 11 530 148 29	12 379 270 570 934 53 042 764 165
ROA, percent	Mean Median St. dev. Obs	5.07 7.88 17.70 127	4.22 6.40 16.28 613	5.10 2.24 7.03 59	5.95 2.40 9.64 162
Solidity, percent	Mean Median St. dev. Obs	46.85 45.03 19.35 127	49.07 45.58 20.11 610		

# TABLE 3. The female board members and board size

The table reports the number of female board members on the board, both using a large board membership definition in Panel A (including employee representants) as well as only for the members selected by the annual shareholders meeting (Panel B).

Panel A. All board members	No female on the Board	One female on the Board	Two females on the Board	Three or more females on the Board	Number of companies
Board members total					
3	6	0	1	0	7
4	7	2	1	0	10
5	14	9	6	1	30
6	10	12	2	4	28
7	3	7	6	7	23
8 or more	3	18	20	18	59
Total	43	48	36	30	157
Panel B. Elected board members	No female on the Board	One female on the Board	Two females on the Board	Three or more females on the Board	Number of companies
Board members total					
3	7	0	1	0	8
4	12	5	3	0	20
5	17	9	14	1	41
6	11	18	3	4	36
7	4	8	10	5	27
8 or more	2	11	5	7	25
Total	53	51	36	17	157

## TABLE 4. Overall perceptions of the female and male board members

Respondents were asked to indicate the degree to which they are pleased with the female and male board members, respectively. The respondents were given five alternatives from 1 (very poor) to 5 (very good). Below we report the average grading and its standard error (in parenthesis) for female and male board members, grouped based on the the number of female board members on the board, both when including all board members (i.e. also employee representatives, in Panel A) as well as only for the members selected by the annual shareholders meeting (Panel B). The t-tests are for differences between group averages assuming differences in group standard deviations. In Panel B, we report also the result of a pairwise t-test, comparing of the responses for male and female board members (i.e. only using observations where both responses are available from an individual chairman). Obs is the number of responses to the question within the group, and is also separately reported in Panel B for the number of pairs compared in the pairwise t-test. \*,\*\*, and \*\*\* denotes a significant difference in a two-sided test at the 10%, 5%, and 1% levels, respectively.

Panel A. All board members	No female on the Board	One female on the Board	Two females on the Board	Three or more females on the Board	Total
Grading of female members	N/A	4.03 (0.79)	3.91 (0.95)	3.93 (0.88)	3.94 (0.89)
Obs		35	35	29	99
Grading of male members	4.13 (0.70)	4.18 (0.62)	4.29 (0.57)	4.33 (0.61)	4.22 (0.63)
Obs	38	44	35	30	147
Difference in means		0.15	0.37	0.40	0.29
T-test for group differences		0.94	1.98**	2.03**	2.78**
Number of firms	43	48	36	30	157
Panel B Flected board	No female on the	One female on the	Two females on		Total
members	Board	Board	the Board	nree or more females on the Board	
Grading of female members	Board N/A	<b>Board</b> 4.02 (0.92)	the Board           3.89 (0.82)	Inree ormore femaleson the Board3.94 (0.93)	3.94 (0.89)
Grading of female members Obs	Board N/A	<b>Board</b> 4.02 (0.92) 42	the Board           3.89 (0.82)           36	Inree or more females on the Board3.94 (0.93)16	3.94 (0.89) 94
Grading of female members Obs Grading of male members	Board N/A 4.13 (0.67)	<b>Board</b> 4.02 (0.92) 42 4.30(0.63)	the Board         3.89 (0.82)         36         4.22 (0.59)	Inree or           more females           on the Board           3.94 (0.93)           16           4.29 (0.59)	3.94 (0.89) 94 4.22 (0.63)
Grading of female members Obs Grading of male members Obs	N/A 4.13 (0.67) 48	Board 4.02 (0.92) 42 4.30(0.63) 46	3.89 (0.82)         36         4.22 (0.59)         36	Inree or           more females           on the Board           3.94 (0.93)           16           4.29 (0.59)           17	3.94 (0.89) 94 4.22 (0.63) 147
Grading of female members Obs Grading of male members Obs Difference in means	N/A 4.13 (0.67) 48	Board 4.02 (0.92) 42 4.30(0.63) 46 0.28	3.89 (0.82)         36         4.22 (0.59)         36         0.33	Inree or           more females           on the Board           3.94 (0.93)           16           4.29 (0.59)           17           0.36	3.94 (0.89) 94 4.22 (0.63) 147 0.29
Grading of female members Obs Grading of male members Obs Difference in means T-test for group differences	N/A 4.13 (0.67) 48	Board 4.02 (0.92) 42 4.30(0.63) 46 0.28 1.65*	3.89 (0.82)         36         4.22 (0.59)         36         0.33         1.98**	Inree or         more females         on the Board         3.94 (0.93)         16         4.29 (0.59)         17         0.36         1.31	3.94 (0.89) 94 4.22 (0.63) 147 0.29 2.72**
Grading of female members Obs Grading of male members Obs Difference in means T-test for group differences Pairwise t-test for difference	N/A 4.13 (0.67) 48	Board 4.02 (0.92) 42 4.30(0.63) 46 0.28 1.65*	the Board         3.89 (0.82)         36         4.22 (0.59)         36         0.33         1.98**	Inree or         more females         on the Board         3.94 (0.93)         16         4.29 (0.59)         17         0.36         1.31	3.94 (0.89) 94 4.22 (0.63) 147 0.29 2.72** 3.79**
Grading of female members Obs Grading of male members Obs Difference in means T-test for group differences Pairwise t-test for difference (Obs)	N/A 4.13 (0.67) 48	Board 4.02 (0.92) 42 4.30(0.63) 46 0.28 1.65*	Charles off         the Board         3.89 (0.82)         36         4.22 (0.59)         36         0.33         1.98**	Inree or         more females         on the Board         3.94 (0.93)         16         4.29 (0.59)         17         0.36         1.31	3.94 (0.89) 94 4.22 (0.63) 147 0.29 2.72** 3.79** (93)

### TABLE 5. The chairman's perceptions about the board

The table reports descriptive statistics on two sets of questions: five questions concerning the composition of the board (in Panel A), and ten questions concerning board work (in Panel B). In both cases, the respondents (the chairmen of the boards) were asked to evaluate the board composition or board work. The respondents were given five alternatives from 1 (very poor) to 5 (very good). We report averages and standard deviations (in parenthesis) for these responses, grouped in four categories according to the percentage of total women (including the employee representatives) in the board. Since different subquestions may have different response rates, the MIN and MAX number of responses in the subquestions within a group are reported on the last row in each panel.

	% women (inc	l. employee repre	sentatives) in the	board
Chairman response\female	Zero percent	$>0$ but $\leq 20\%$	$\geq 20$ but $< 40\%$	$\geq$ 40%
percentage of the board members				
Panel A. Questions concerning boa	rd composition.	Does the board	have	
- a broad composition	4.02 (0.71)	4.26 (0.64)	4.27 (0.60)	4.30 (0.56)
- sector competence	4.12 (0.82)	3.92 (0.84)	3.90 (0.85)	3.91 (0.60)
- adequate knowledge of current				
financial issues	4.30 (0.60)	4.35 (0.63)	4.29 (0.61)	4.35 (0.65)
- sufficient representation by				
gender	3.05 (1.40)	3.08 (1.16)	3.62 (1.07)	4.48 (0.79)
- sufficient network of contacts	4.12 (0.85)	4.26 (0.79)	4.00 (0.77)	4.17 (0.89)
MIN and MAX number of obs	41 to 43	39	52	23
Panel B. Questions concerning boa	rd work. <i>Please</i>	evaluate		
- the board's work in general	4.14 (0.71)	4.31 (0.57)	4.10 (0.63)	4.00 (0.52)
- how the board makes decisions	4.21 (0.74)	4.41 (0.55)	4.17 (0.58)	4.17 (0.58)
- how the board discusses the				
company's short-term development	4.42 (0.59)	4.26 (0.68)	4.19 (0.63)	4.09 (0.79)
- how the board discusses the				
company's long-term development	3.91 (0.95)	4.05 (0.83)	4.14 (0.80)	3.73 (0.94)
- if the board actively discusses				
business strategy	4.30 (0.80)	4.21 (0.70)	4.42 (0.75)	4.04 0.82)
- if the board actively reviews the				
business plan, strategy, objective,				
and budget	4.16 (0.75)	4.18 (0.64)	4.35 (0.71)	4.00 (0.60)
- how the board discusses financial				
objectives/quantitative	4.21 (0.68)	4.31 (0.61)	4.13 (0.82)	4.17 (0.72)
- how the board discusses non-	<b>2 52</b> (0 0 5)	<b>2</b> (0, (0))	0.00	0 (0 (0 50)
financial objectives/qualitative	3.52 (0.86)	3.69 (0.69)	3.75 (0.81)	3.68 (0.72)
- if the work of the board is carried	1 22 (0 72)		1 12 (0 66)	101(0.77)
out efficiently	4.22 (0.72)	4.27 (0.56)	4.13 (0.66)	4.04 (0.77)
- now functional the boundary				
between owners, the board, and the	4 14 (0 00)	4 15 (0.97)	101(095)	2 78 (0 74)
management 1s	4.14 (0.90)	4.15 (0.87)	4.04 (0.80)	5.78 (0.74)
MIN and MAX number of obs	42 to 43	37 to 39	51 to 52	22 to 23

#### Table 6. Determinants of chairman's opinion of the board; all board members

The table reports estimated coefficients and z-scores (within parentheses) as well as goodness-of-fit statistics from regressing, in ordered probit models with robust standard errors, chairman responses on different questions concerning the quality of board work (on a scale from 1, lowest, to 5, best), on a set of determinants. All relative board variables (*Female-Members\_ALL*, *Foreign\_members\_ALL*, and *Dependent\_members\_ALL*) are measured as percentages (of females, foreign members, and dependent members) out of the complete board i.e. including employee representants. *Board\_size\_ALL* is the logarithm of the number of members in the total board. *Chairman\_*tenure is the number of years as chairman in the current board, while *Chairman\_age* is his/her physical age. The firm characteristics are: *Own\_5\_largest*, the percent of equity owned by the five largest shareholders; *Ln\_turnover*, the logarithm of the firm's turnover for the last accounting year; *ROA*, the return on total assets; and *Sector*, a dummy for industrial / manufacturing firms. Variables significant at least at the 10% level are in boldface.

Dependent	<b>Board work</b>	Decision	Dis	cussion of	
/ explanatory variable	in general	making	short-term development	long-term development	business strategy
Female_members_ALL	-1.0610	-0.8297	-1.2117	-0.4657	-0.3284
	(-1.70)	(-1.22)	(-1.73)	(-0.73)	(-0.54)
Foreign_members_ALL	-0.0070	-0.4435	-0.5770	0.4067	0.1457
	(-0.01)	(-0.93)	(-1.07)	(0.86)	(0.25)
Dependent_members_ALL	-0.2753	0.0190	-0.0929	0.8273	0.8828
	(-0.44)	(0.03)	(-0.15)	(1.33)	(1.35)
Board_size_ALL	0.5044	0.3210	-0.8011	0.0502	-0.2156
	(1.59)	(0.83)	(-2.20)	(0.16)	(-0.59)
Chairman tenure	0.0709	0.0491	0.0430	0.0203	0.0408
	(2.62)	(1.84)	(1.62)	(0.90)	(1.66)
Chairman age	-0.0167	-0.0151	0.0261	-0.0100	0.0282
	(-1.16)	(-1.02)	(1.75)	(0.69)	(1.90)
Own_5_largest	0.0031	-0.0025	0.0039	-0.0038	-0.0079
	(0.67)	(-0.49)	(0.82)	(-0.85)	(-1.77)
Ln_turnover	0.1647	0.2091	0.1349	0.0737	0.0743
	(3.35)	(4.27)	(2.59)	(1.59)	(1.66)
ROA	-0.0013	0.0017	-0.0011	-0.0033	-0.0057
	(-0.23)	(0.31)	(-0.20)	(-0.59)	(-0.87)
Sector	-0.5451	-0.4373	-0.5574	-0.0099	0.0231
	(-2.41)	(-1.95)	(-2.65)	(-0.05)	(0.12)
Wald Chi2	25.43	25.00	28.91	9.32	19.19
Pseudo R2	0.0848	0.0978	0.0869	0.0337	0.0668
OBS	136	136	136	134	136

# Table 6, cont.

Dependent / explanatory variable	Review of business plan, strategy, objective, budget	Clear financial objectives	Clear non- financial objectives	Board work efficient	Functional boundary between owners, board, management
Female_members_ALL	-0.2681	-0.5510	0.2937	-1.0593	-1.4053
	(-0.44)	(-0.95)	(0.52)	(-1.49)	(-2.51)
Foreign_members_ALL	-0.3036	-1.1482	-0.3891	0.5804	-0.0312
	(-054)	(-1.68)	(-0.75)	(1.06)	(-0.05)
Dependent_members_ALL	1.0776	0.1382	0.5939	-0.0262	1.0523
-	(1.65)	(0.22)	(0.91)	(-0.05)	(1.90)
Board_size_ALL	0.1177	0.1275	0.2912	0.1111	0.1691
	(0.30)	(0.41)	(0.86)	(0.34)	(0.55)
Chairman tenure	0.0376	00255	00002	0.0520	0.0466
	(1.52)	(1.10)	(0.01)	(2.09)	(1.54)
Chairman age	0.0113	0.0045	-0.0167	-0.0090	-0.0263
-	(0.78)	(0.34)	(-1.11)	(-0.59)	(-2.27)
Own_5_largest	-0.0148	-0.0074	0.0020	-0.0002	-0.0027
-	(-3.11)	(-1.73)	(0.48)	(-0.05)	(-0.58)
Ln_turnover	0.1545	0.1637	0.0673	0.0831	-0.1131
	(3.06)	(3.05)	(1.54)	(1.55)	(2.19)
ROA	-0.0127	-0.0002	-0.0170	0.0063	-0.0016
	(-1.96)	(-0.03)	(-2.85)	(1.03)	(-0.24)
Sector	-0.3213	-0.1959	-0.1550	-0.3874	-0.1667
	(-1.46)	(-0.96)	(-0.77)	(-1.73)	(-0.73)
Wald Chi2	28.93	22.77	16.35	10.62	27.37
Pseudo R2	0.1090	0.0677	0.0408	0.0457	0.0624
OBS	136	136	135	133	136

## Table 7. Determinants of chairman's opinion of the board; elected board members

The table reports estimated coefficients and z-scores (within parentheses) as well as goodness-of-fit statistics from regressing, in ordered probit models with robust standard errors, chairman responses on different questions concerning the quality of board work (on a scale from 1, lowest, to 5, best), on a set of determinants. All relative board variables (*Female-Members\_ELECT, Foreign\_members\_ELECT*, and *Dependent\_members\_ELECT*) are measured as percentages (of females, foreign members, and dependent members) only out of the board members elected at the annual shareholders meeting i.e. excluding employee representants. *Board\_size\_ELECT* is the logarithm of the number of elected board members. *Chairman\_tenure* is the number of years as chairman in the current board, while *Chairman\_age* is his/her physical age. The firm characteristics are: *Own\_5\_largest*, the percent of equity owned by the five largest shareholders; *Ln\_turnover*, the logarithm of the firm's turnover for the last accounting year; *ROA*, the return on total assets; and *Sector*, a dummy for industrial / manufacturing firms. Variables significant at least at the 10% level are in boldface.

Dependent	Board work	Decision	Dis	cussion of			
/ explanatory variable	in general	making	short-term development	long-term development	business strategy		
Female_members_ELECT	-0.9260	-0.9417	-0.8598	-0.2643	-0.1425		
	(-1.55)	(-1.44)	(-1.22)	(-0.42)	(-0.24)		
Foreign_members_ELECT	0.0056	-0.4012	-0.6285	0.2735	0.1423		
	(0.01)	(-0.90)	(-1.18)	(0.60)	(0.27)		
Dependent_members_ ELECT	-0.7582	-0.1055	0.0695	0.9131	0.3541		
	(-1.12)	(-0.15)	(0.10)	(1.52)	(0.52)		
Board_size_ELECT	0.2964	0.3905	-0.0739	0.1810	-0.3208		
	(0.71)	(0.82)	( <b>-1.82</b> )	(0.44)	(-0.74)		
Chairman tenure	0.0763	0.0527	0.0384	0.0219	0.0470		
	( <b>2.84</b> )	( <b>2.01</b> )	(1.46)	(1.00)	( <b>1.90</b> )		
Chairman age	-0.0119	-0.0137	0.0221	0.0105	0.0325		
	(-0.82)	(-0.91)	(1.52)	(0.70)	( <b>2.16</b> )		
Own_5_largest	0.0037	-0.0020	0.0025	-0.0035	-0.0070		
	(0.81)	(-0.42)	(0.53)	(-0.79)	(-1.62)		
Ln_turnover	0.1789	0.2140	0.1227	0.0763	0.0841		
	( <b>3.60</b> )	( <b>4.15</b> )	( <b>2.25</b> )	(1.62)	( <b>1.85</b> )		
ROA	-0.0023	0.0017	-0.0006	-0.0031	-0.0065		
	(-0.40)	(0.29)	(-0.11)	(-0.55)	(-0.99)		
Sector	-0.5501	-0.4444	-0.5092	-0.0470	-0.0047		
	(- <b>2.44</b> )	( <b>-2.01</b> )	(- <b>2.37</b> )	(-0.24)	(-0.02)		
Wald Chi2	24.06	27.31	23.57	10.87	18.62		
Pseudo R2	0.0831	0.1002	0.0722	0.0324	0.0616		
OBS	136	136	136	134	136		

# Table 7, cont.

Dependent / explanatory variable	Review of business plan, strategy, objective, budget	Clear financial objectives	Clear non- financial objectives	Board work efficient	Functional boundary between owners, board, management
Female members FLECT	-0 1158	-0 4825	0 3159	-0 9396	-1 3563
remaie_memoens_bbber	(-0.18)	(-0.79)	(0.55)	(-1.33)	(-2.49)
Foreign_members_ELECT	-0.2917	-1.0295	-0.3482	0.5234	-0.0209
	(-0.56)	(-1.71)	(-0.75)	(1.00)	(-0.04)
Dependent_members_					
ELECT	0.4021	-0.6671	0.0007	-0.2632	0.7196
	(0.61)	(-1.00)	(0.00)	(-0.46)	(1.16)
Board_size_ELECT	-0.0826	-0.2131	0.1399	0.0473	0.1236
	(-0.18)	(-0.52)	(0.34)	(0.11)	(0.31)
Chairman tenure	0.0450	00336	0.0060	0.0544	0.0526
	(1.84)	(1.48)	(0.28)	(2.23)	(1.73)
Chairman age	0.0189	0.0121	-0.0100	-0.0072	-0.0208
-	(1.32)	(0.90)	(-0.69)	(-0.46)	(-1.85)
Own_5_largest	-0.0131	-0.0063	0.0034	-0.0002	-0.0018
-	(-2.88)	(-1.48)	(0.83)	(-0.04)	(-0.40)
Ln_turnover	0.1719	0.1831	0.0828	0.0861	0.1262
	(3.27)	(3.30)	(1.89)	(1.60)	(2.35)
ROA	-0.0141	-0.0016	-0.0178	0.0060	-0.0020
	(-2.11)	(-0.23)	(-2.81)	(0.99)	(-0.31)
Sector	-0.3583	-0.2065	-0.1858	-0.3814	-0.1962
	(-1.63)	(-1.01)	(-0.93)	(-1.71)	(-0.87)
Wald Chi2	27.83	25.25	12.72	10.50	22.68
Pseudo R2	0.0951	0.0692	0.0320	0.0439	0.0551
OBS	136	136	135	133	136

### Table 8. Robustness tests for influences of firm risk and legal restrictions

The table reports, in Panel A, estimated coefficients and z-scores (within parentheses) from regressing, in ordered probit models with robust standard errors, chairman responses on different questions concerning the quality of board work (on a scale from 1, lowest, to 5, best), on a set of determinants indentical to those in Table 7 (see Table 7 for variable descriptions), and in addition to that, on *Risk* and *Risk\_\geq40\_Female*. Risk is defined as the (annualized) daily stock price volatility for the firm's stock for the past year, while *Risk\_\geq40\_Female* takes the value of *Female\_members\_ELECT* in case firm risk exceeds 40%, a value close to the sample median, and is zero otherwise. Only values for *Female\_members\_ELECT*, *Risk*, and *Risk\_\geq40\_Female* are reported. In Panel B, we report the corresponding effects of *Norway*, a country dummy, and of *Norway\_female*, an interaction variable taking the value of *Female\_members\_ELECT* in case the responses are from Norwegian firms, and zero otherwise. Only values for *Norway* and *Norway\_female* are reported in Panel B. Variables significant at least at the 10% level are in boldface.

Explanatory variable /	Panel A. Mode	ls testing for	the effects of risk	Panel B. N the effect o	Panel B. Models testing for the effect of legal restrictions	
Dependent variable	Female_members _ELECT	Risk	Risk_≥40_Female	Norway	Norway_female	
Board work in	-1.2898	-1.2099	2.0805	0.1559	-0.8914	
general	(-1.88)	(-1.29)	(1.92)	(0.10)	(-0.23)	
Decision making	-1.3189	-1.4939	2.0950	-1.1727	1.9633	
	(-1.85)	(-1.48)	(1.75)	(-0.68)	(0.48)	
Discussion of	-1.2252	-0.3980	1.8916	1.3885	-5.5803	
short-term development	(-1.68)	(-0.41)	(1.59)	(0.74)	(-1.27)	
Discussion of	-0.4620	0.0844	0.9496	0.6902	-2.5455	
long-term development	(-0.66)	(0.10)	(0.89)	(0.35)	(-0.58)	
Discussion of	-0.2990	-0.4435	0.8466	1.7816	-5.0968	
business strategy	(-0.43)	(-0.45)	(0.85)	(1.07)	(-1.31)	
<b>Review of business</b>	-0.1267	-0.3810	0.1261	00693	0.3842	
plan, strategy, objective, budget	(-0.18)	(-0.39)	(0.12)	(0.04)	(0.10)	
Clear financial	-0.4769	-1.2176	0.1128	-2.6077	5.5214	
objectives	(-0.74)	(-1.31)	(0.11)	(-2.17)	(2.09)	
Clear non-	0.1351	-1.5507	1.2064	-3.6413	7.8700	
financial objectives	(0.22)	(-1.77)	(1.33)	(-3.09)	(3.12)	
Board work	-1.3505	-1.5193	2.2070	1.2187	-3.4758	
efficient	(-1.77)	(-1.75)	(1.82)	(0.60)	(-0.70)	
Functional	-1.1674	-1.2079	-0.7857	0.2325	-0.6435	
boundary	(-1.83)	(-1.14)	(-0.77)	(0.23)	(-0.28)	
between owners, board.						
management						