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in the Nordic Countries**

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# **Employee Representation and Board Size in the Nordic Countries**

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## **Employee Representation and Board Size in the Nordic Countries**

**Abstract:** Several European countries have mandatory employee representation on company boards, but the consequences for corporate governance are debated. We use employee representation rules in the otherwise quite similar Nordic countries (Denmark, Finland, Norway, and Sweden) to elicit information on shareholder preferences for employee representation and board size. We find that shareholders choose board structures that minimize the proportion of employee representatives. In Denmark and Norway employee representation depends on board size, and shareholders choose board sizes that minimize the number of employee representatives. However, many companies have more employee representatives than is mandatory. In Sweden, where the law mandates a fixed number of employee representatives (2 or 3 depending on firm size), shareholders choose to have larger boards. In Finland, where employee representation is not mandatory, less than one percent of companies choose to have it. Whatever, the merits of employee representation, shareholders appear to be mildly averse to it.

**Keywords:** Codetermination, board structure, corporate governance and company law

**JEL:** G30, G38, J54.

## Introduction

Several European countries – for example Germany, Austria, Denmark, Norway, Sweden and Slovenia – have mandatory employee representation on company boards (Jackson 2005).

Employee elected board members have the same rights and responsibilities as the shareholder elects. To illustrate, the Danish corporate governance code explicitly states that: *“Employee elected board members have the same rights, duties and obligations as the board members elected at the general meeting.”* Their votes count as much (one member one vote), and they get the same remuneration as board members elected by the shareholders.

Proponents of this system argue that it safeguards labour interests and provide valuable information to the board (Roberts and van den Steen 2001). Critics claim that employee representation reduces economic efficiency by preserving jobs and excessive wages rather than maximize value creation for shareholders (Jensen and Meckling (1979).

The exact system varies somewhat across countries. In large Germany corporations’ employees elect up to half of the seats on the supervisory board, but in case of a deadlock the vote of the chairman is always decisive. In Sweden employees can elect 2-3 members depending on company size. In Austria, Denmark and Norway they can elect 1/3 of the board (or as the law puts it: half as many as the shareholders), though the exact rules vary (a fact we will explore analytically in this paper). In China company employees often have the right to elect members to the board of statutory auditors, which are however different from US or European boards by not having decision rights like the right to hire and fire the CEO. The employee representatives are usually appointed in close cooperation with unions, and they are typically appointed to supervisory boards in two-tier systems like Germany and or semi-two tier systems such as Denmark, Norway and Sweden.

In other European countries such as in the Netherlands see e.g. Goodjick (2000), employees have a right to be heard concerning strategic decisions and also have a right to nominate board candidates. In France, Belgium, and Luxemburg “work councils” have varying degrees of influence on corporate decisions, which to a large extent depend on a voluntary agreement between the employees and the firm. The EU has tried to harmonize employee codetermination in the proposed fifth directive, but due to heavy resistance, mainly from the UK, only few initiatives have succeeded. One exception is the Directive from 1994 concerning establishment of work councils in larger companies c.f. 94/45/EC of 22 September 1994.

In this paper we examine the impact of different mandatory legal board representation rules in the 4 culturally and institutionally homogenous Nordic Countries (Denmark, Finland, Norway and Sweden).

Following agency theory see Jensen and Meckling (1979) we hypothesize that shareholders will want to minimize the number of employee directors. In countries where employee representation is not mandatory, they typically choose to have zero employee directors. This is not an option in Scandinavia (Denmark, Norway, Sweden), but shareholders can influence the fraction of employee representatives by varying the number of shareholder elected directors. We use their choices to elicit information on how they view employee representation. Finland, which has no mandatory representation, will be the benchmark. Presumably shareholders in Finnish firms will choose the number of directors, which they consider appropriate, given costs and benefits of board size. In contrast Denmark has a 1/3 rule, which is implemented by “rounding up” so that 1 out of 3 board members must be an employee representative while both 4, 5 or 6 board members will give the employees the right to elect two directors. Shareholders who want to minimize employee representation will therefore choose to have overall board sizes of 3 or 6 rather than 4 or 5. For larger boards they are likely to choose 6 or 9 shareholder directors (which means a total of 9 or 12

board members), but not 7, 8, 10 or 11. Norway has a similar 1/3 rule, but “rounding down” so that shareholders in Norway will have incentives to choose 5 or 7 members if they want to minimize the fraction of employee representatives on the board. Sweden has a numerical representation rule: employees get to nominate 2 or in large companies 3 directors. Swedish shareholders who want to minimize employee representation will therefore have incentive to choose large boards, although presumably they will have to weigh the costs and benefits of board size.

We find that shareholders do indeed choose board sizes, which minimize the number of employee directors. There are virtually no employee directors in Finnish firms. Swedish boards tend to be larger than Finnish boards, even controlling for firm size. Danish boards tend to have 6, 9 or 12 members, which minimizes the fraction of employee representatives. Norwegian boards in contrast tend to have 8 or 12 total board members. On the other hand, not all firms have board sizes which minimize employee representation so presumably its costs are weighed against other costs and benefits.

The article is organized as follows. First we provide a literature review in section 2. Based on this, we propose a number of hypotheses for empirical testing in section 3. Section 4 explains the legal institutional context in the Nordic countries. Section 5 describes the data and methodology, which are followed by section 6 where the results are presented. The article ends in section 7 with discussion and conclusion.

## **2. Literature**

The modest theoretical and empirical literature on codetermination can be separated into two broad strands with different views on the efficiency of employee representation. Either codetermination exists only because of legislative fiat and causes suboptimal firm performance, or codetermination is beneficial and improves firm performance (and may or may not require

legislation for its implementation). Below we review the main arguments and the empirical evidence.

**Inefficiency.** One line of reasoning is that codetermination is detrimental since allocative efficiency is optimized when control and property rights reside in a single residual claimant (Alchian and Demsetz, (1972). In their original article Jensen and Meckling (1979) ask why, if it is beneficial, firms need to be compelled by law to adopt it and view codetermined firms as running the risk of being employee managed, and hence, less competitive. In effect, the legal imposition of codetermination is evidence that it is not performance enhancing. Jensen and Meckling argue that firms with high levels of employee determination run the risk of becoming labour-managed firms or at least being pushed in that direction. In their view labour-managed firms will become less competitive because of 1) a lack of equity capital due to the need to share profits with employees (not all capital can be borrowed), 2) the horizon problem (old employees will be reluctant to invest), 3) the common-property problem (incentive distortions and conflicts in sharing profits among employees), 4) The non-transferability problem (lower labour mobility and other problems because workers' cannot take their ownership rights with them when they quit), and 5) the control problem (e.g. difficulties in controlling the managers who control the employees).

Jensen and Meckling note that nothing prevents shareholders from asking employees to sit on the board, but this very rarely happens. "A striking fact about industrial democracy is that it cannot be effected on any significant scale voluntarily. Without fiat, codetermination would be virtually nonexistent. Given a choice, potential investors will not voluntarily put their wealth in the hands of codetermined firms." There have in fact been voluntary experiments with so called Employee Representation Plans in the US, Australia and other countries e.g. see Patmore (2007). The US



movement appears to have been started by J. D. Rockefeller Junior as part of a union avoidance strategy see Gemmill (1928) and Patmore (2007). It involved a dialogue between managers and employees in work councils and even (in rare cases) voluntary board representation see Taras and Kaufmann (2006). However, its importance has waned since the 1930s.

**Efficiency.** The alternative viewpoint holds that codetermination is beneficial. This literature argues that the Alchian and Demsetz analysis ignores the human capital investment potential of employees. Employees are vulnerable to opportunism and therefore do not make human capital investments unless they are protected against it. Codetermination may provide a remedy for this problem by giving workers a say on corporate decisions (Furubotn and Wiggins 1984).

Aoki (1980) formulates a game theoretical model in the form of a cooperative game between the owners and the firm's employees. A key feature of his model is the presence of firm specific knowledge or asset specificity, which creates potential hold up problems. In his model, management serves as an arbitration device estimating each party's bargaining power (reflected by their outside options), when determining the firm's strategy, as well as each party's share of profit. In Aoki's model, co-determination by employees is determined endogenously and it is shown that the existence of firm specific skills make co-determination socially optimal.

Furubotn (1988) focuses on the problem of providing employees with incentives to invest in firm specific projects arguing that hold up problems may be alleviated by a voluntary contract where the employee's co-determination is specified. Furubotn's argument is that mandatory co-determination is more efficient in reducing transactions costs and distributing resources than a voluntary solution.

Levine and Tyson (1990) point to a coordination problem not considered in the Jensen and Meckling and the Alchian and Demsetz framework. Suppose that there are performance-improving benefits from codetermination and that the industry governance structure is presently one with no codetermination. A prisoner's dilemma problem emerges. A single firm that moves first to adopt

codetermination will likely change the relative bargaining power of labor and cause a reduction in the compensation differential between management and labor to the disadvantage of its managers.

Freeman and Lazear (1995) view codetermination as an information channel that may promote cooperation between the board and employees during hard times increasing the probability of concessions and decreasing the likelihood of strikes.

In the same tradition, Roberts and van den Steen (2001) find that co-determination is necessary to ensure firm specific investments by employees. The authors analyze three different ways of doing this. First, there is the possibility of offering employees a proportion of firm profits via a contract with the shareholders, but this presumes that profits are verifiable. Second, employees may be given the right to negotiate ex post over the firm's profit. Third, they consider co-determination on the corporate board, so employees may be able to influence the firm's strategic decisions. They argue for the latter solution in firms where human capital is important, such as in law firms, accounting firms and consulting firms. Such labour intensive firms may for example be organized as partnerships. In capital and technology intensive firms the preferred mode may be employee ownership, for example e.g. in Microsoft where employees at one point owned half of the firm's stock. In the absence of co-determination the employees will use other more costly ways to seek influence, such as strikes. Roberts and van den Steen conclude that limited employee influence is only sustained in highly flexible labour markets such as the US and the UK.

Bainbridge (1998) analyses why some US firms have voluntarily involved their employees in the top managerial decisions process. He argues that their organizational structure may have become too hierarchic making it more difficult to monitor employees, including management teams below the Board of Directors. Employee involvement makes employees feel that they belong to a collective unit, i.e. that their job is not just something, which needs to be done in order to earn a

living. As a result, he argues, the productivity of the employees is enhanced, as well as their work flexibility, so that firm can operate more efficiently.

Armour and Deakin (2003) study employee protection and co-determination focusing on transfers of undertakings and other restructurings in the view of the European Community legislation in the form of the Acquired Rights Directive. The rules require that in such situations, representatives of the employees affected have a right to be informed and consulted by the relevant employers. The authors present a theoretical analysis showing that rules can be seen as protecting employees firm specific human capital when it is put directly at risk by a restructuring. They show that the degree to which the rules can be understood to be efficient depends on how far they assist or obstruct ex post bargaining over the adjustment of claims between the different parties affected by the change.

**Empirical evidence.** Gorton and Schmid (2004) examine the performance effects of equal (50%) employee representation on the boards of the largest 250 German nonfinancial companies 1989-1993. They find that firm value is on average 31% lower with 50% employee representation than with 1/3 participation. Employee representatives in equal representation firms appear to use their power to secure employment so that labour costs are around 50% higher. They also find that equal representation firms tend to increase their leverage. Both findings are consistent with Jensen and Meckling (1979), but hard to reconcile with the positive effects hypothesized by Aoki (1980), Furubotn (1988), or Roberts and Stern (2001).

Faleye, Mehrotra, and Morck (2006) examine the consequences of employee ownership including (stock from employee share ownership packages, bonus plans etc.) among listed US firms selected in 1995. They find that labour holds more than 5% of the stock in more than 10% of the firms they examine. In these firms, labour is typically the largest shareholder. Controlling for other factors labour managed firms are found to have 16% lower firm value, invest less, take fewer risks and to be less productive. Again the results are consistent with Jensen and Meckling (1979).

Guedri and Hollandts (2008) examine employee ownership and employee board representation in 250 French companies 2000-2005. They find no significant effect of employee board representation, but a curvilinear effect of employee ownership.

However, in a sample of 786 listed German firms active in 2003 Fauver and Fuerst (2006) find no overall significant effect, but rather that a moderate employee representation 33-50% of the board is actually good for company performance (q values), while performance decreases when employees are in the majority. They quote industry leaders and private equity managers praising codetermination. They also find that employee representation is particularly valuable in firms operating in industries that require coordination and special skills or knowledge (which they proxy with “trade, transportation, computers, pharmaceuticals, other manufacturing, and construction”).

According to Fauver and Fuerst (2006) the Nordic countries – which have employee representation of around 1/3 - might not be far from the optimum. The findings resonate with qualitative evidence from the Nordic countries. In a study of 41 Danish firms Christensen and Westenholz (1999) find that the employee representatives over the years begin to share the shareholder elected board members’ views on firm strategy, market conditions etc, and argue that the employee representatives are consciously or unconsciously socialized and adopt the views of the shareholder elected board members.

### **3. Hypotheses**

The research strategy in this paper is to identify the revealed preferences of shareholders for employee representation. The percentage of employee directors can be influenced by choosing the number of shareholder representatives, which they elect. If greater employee representation increases firm value, they should be highly motivated to establish a suitably high percentage, whereas a low percentage indicates that employee representatives are regarded as a cost factor.

We follow Jensen and Meckling (1979) in regarding employee representation on company boards as a constraint on shareholder rights, to which the shareholders may be either indifferent (if the constraint is not binding) or adverse (if it is). The implication is that the shareholders will generally want to minimize employee representation.

The Danish and Norwegian rule (see section 4 for further details) is that employees are entitled to elect half as many board members as the shareholders, but the rounding rules are slightly different. A peculiarity of the Danish rule is “rounding up”, i.e. that employee has the right to elect a new member whenever they have less than 50% of the board members which the shareholders have. The Norwegian rule is a minimum of two employee representatives up to a total board size of 8, three employee representatives for board with a total of 9-11 members and 4 for a total board size of 12 to 15. In both countries there is a minimum of two employee representatives. Thus a given total board size of say 8, will give company employees the right to elect one more employee representative in Denmark (3) than in Norway (2). Shareholders who want to minimize the fraction of employee representatives will choose the number of shareholder directors to accommodate these rules. Taking this into consideration we show the representation rules numerically in Table 1 and calculate which board sizes minimize the percentage of employee representatives.

(INSERT TABLE 1)

The configurations in grey minimize the proportion of employee members. All else equal, we expect shareholders to be particularly fond of these combinations. This of course raises the question of what we mean by “high”. Frequencies can be tested against other parts of the distribution, but since firm size is clearly not equally distributed, we find it preferable to test them

against our benchmark, Finland, which is our first best measure of what the board size distribution would have been in the absence of regulation.

We propose this as hypothesis 1.1 and 1.2.

**Hypothesis 1.1:** *Compared to Finland there will tend to be a higher frequency of Danish firms with 6, 9 or 12 board members.*

**Hypothesis 1.2:** *Compared to Finland, there will tend to be a higher frequency of Norwegian firms with 8 or 12 board members.*

One strategy, for example, is to minimize the number of employee representatives; another similar (but not identical) strategy is to minimize their share of the vote. As a corollary, the first best strategy is to have zero employee representatives. Following Jensen and Meckling (1979) we expect this to be the case in the absence of government fiat. Thus in a country like Finland, where employee representation on boards is not longer mandatory, we expect zero employee board members.

**Hypothesis 2:** *Finish firms will have no employee directors.*

If the law (as in Sweden) mandates a given number of employee members, we postulate that shareholders will react by electing more shareholder representatives than they otherwise would have in order to counter the influence of the employee directors. However, having large boards may be

costly (Yermack, 1996, Coles et al. , 2008), so we do not expect shareholders to choose infinitely large boards, but rather to trade off the costs of employee directors against the costs of large boards. Using Finland as the control group we therefore propose hypothesis 3.

**Hypothesis 3:** *Swedish firms will have larger boards than Finland, even controlling for firm size.*

A quota rule (such as in Denmark and Norway) implies that a given fraction of board members must be employee members. From a shareholder viewpoint, this should increase the costs of electing a shareholder representative, since each new shareholder director will be accompanied by say half an employee director. We therefore propose hypothesis 4.

**Hypothesis 4:** *Shareholders in Denmark and Norway will tend to elect fewer shareholder representatives to the board compared to shareholders in Sweden and Finland.*

The last two hypotheses deal with the presence of employee board representation and corporate governance attributes as well as firm performance.

**Hypothesis 5.1:** *The probability of having no employee elected board members is negatively influenced by board size*

In case the board consists of many members this may reflect a pressure from various shareholders to gain influence on the firm's decision process, so that the owners would seek to do whatever they can to mitigate employee representation.

**Hypothesis 5.2:** *The probability of having no employee elected board members is negatively influenced by the percentage owned by the largest owner*

This is especially the case when there is a dominant owner who has the power and willingness to minimize employee representation, which is captured in hypothesis 5.2.

**Hypothesis 6:** *The probability of having employee elected board members is positively influenced by firm performance*

There is reason to believe that when a firm performs well there is a higher possibility to have employee elected board members. Employees are presumably more likely to seek influence in successful firms, where there are more rents to share than in badly performing firms, whereas bargaining will be less promising.

#### **4. The Nordic Legal Board setup<sup>1</sup>**

The three Scandinavian countries (Denmark, Norway Sweden) have semi two-tier boards. Company law in all three countries prescribes that there must be both one or more responsible managers (“administrerende direktør” in Denmark and Norway, in Sweden, the “verkställande direktör” VD) and a board (“Bestyrelsen” in Danish, “Styret” in Norwegian and “Styrelsen” in Swedish). The two-tier nature of the systems is evidenced by the fact that the CEO does not have to be a board member, and indeed is not a board member in half of the Swedish listed (Henrekson and Jakobsson 2012). Company law requires that some larger companies also have an additional board, such as “bedriftsforsamling” in Norway.

Boards in Scandinavia hire and fire the CEO and ratify or modify major decisions, policies and strategies (but must not take part in daily management and some legal scholars

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<sup>1</sup> This section draws on Thomsen and Conyon (2012) chapter 16.



therefore categorize Scandinavian boards as one-tier or hybrid systems). In Finland companies can choose whether to have supervisory board, but most choose a one-tier system. In this study we focus on the structure of the non-executive (supervisory) board – which can be compared to a board of directors in the US or UK (and in Finland)

The Scandinavian countries (Denmark, Norway and Sweden) but not Finland has mandatory employee representation. Employees in larger firms have the right (but not the obligation) to elect around 1/3 of the supervisory board members. We will explore the specific rules in the following.

Employee representation has increased governance diversity in the sense of bringing a different stakeholder group into the board, and also indirectly because the fraction of females among employee directors is somewhat higher than among shareholder-elected board members. However, the international diversity has been kept low, because employee directors have so far been only recruited among domestic employees. By law the employee directors are elected by the domestic employees only.

As for board networks, previous research shows the Scandinavian countries are so-called small worlds, i.e. more clustered than would be expected by chance, regarding both owner and board networks. The small size of these economies invites small world effects, which are further reinforced by cultural and ethnic homogeneity. As a somewhat crude generalization everybody in the business elite knows everybody else – or someone who knows them. But some characteristics make Nordic firms more autarchic than the smallness of the population would indicate. Generally boards are quite small (reflecting small companies, although somewhat inflated by roughly 1/3 employee representatives) and smaller boards make fewer connections. Family firms are often closely held and boards dominated by family members tend to have fewer outside directorships than non-family board members. Employee elected board members almost never sit on the boards of

other companies. Unlike in Germany, bankers are not allowed to sit on the boards of non-financial companies in Scandinavia.

Stock markets in Scandinavia have historically been small compared to the Anglo-American market based economies, while banks have been large and influential as in Germany. Ownership structures vary between the countries, but distinct characteristics are business groups in Sweden (e.g., the Wallenberg), families and foundations in Denmark (e.g., the Carlsberg Foundation) and government ownership in Norway (e.g., Statoil).

**Denmark.** In connection with the amendment of the Danish Corporate Act of 1973 employees were given an option/right to be represented on the board in larger firms if a majority of the companies' employees vote in favour for employee representation. Pertaining to the current Danish Company Act § 140 employees must receive half of the seats appointed by shareholders, hence they have at least one third of the total seats on the supervisory board. The law was proposed by the Social Democrats parties (i.e. the left), but the conservative/liberal (the right) parties supported the bill, as they anticipated that Denmark would probably be forced to introduce some kind of employee codetermination by the EU (then known as the EEC). Denmark and the UK joined the EU that year and several conservative/liberal politicians feared that the EU would harmonize codetermination based on the German system. See Rose (2008) for an analysis of the Danish system for employee appointed board members.

Granting employees a say in the decision process reflects a higher degree of stakeholder orientation. The idea that companies should not only be managed to serve the interests of the owners is acknowledged in several Northern European countries, where management's duty of loyalty is presumed to be broader compared to the Anglo-American framework in which the notion of shareholder value unanimously prevails, see e.g. Rose (2004) for an analysis of management's duty of loyalty. In addition, it is not uncommon that Nordic Company laws not only contain provisions

that address the protection of shareholders, but just as well concern the protection of creditors c.f. minimum capital requirements, restrictions on how much capital that can be available for dividends to shareholders or formal procedures aiming at securing the financial interests of creditors when planning a merger etc.

The system with employee representation has lived a quiet long and unnoticed life after its emergence over thirty years ago. It appears that only few people, parties or organizations have ever publicly questioned the suitability of the current system. A plausible reason is that the issue of codetermination is politically controversial.

**Norway.** The Norwegian regulations regarding employee representation on boards of publicly traded companies are comprised of three thresholds; more than 30, 50 to 200, and above 200 employees.

As a general rule listed companies in Norway with more than 200 employees are legally obligated to have a corporate assembly according to the Norwegian company law (asal) §6-35(1), unless it is agreed that a corporate assembly should not be used 6-35(2), where at least one third of the members and deputies are elected by and from the employees §6-35(4). Furthermore in cases where unions or employees comprise more than two thirds of the employees this group may demand that additional observers and deputy representatives up to a number corresponding to half of the employee representatives are elected §6-35(4). All the rules regarding employee representation on boards of listed companies are contingent on the company not having a corporate assembly.

In companies with 30-50 employees a majority of the employees **may** demand to get **one** board representative and one observer with corresponding deputies §6-4(1). If the company has 50-200 employees the majority of employees may demand up to **one third** and **at least two** representatives and deputies §6-4(2). Both the mentioned paragraphs are valid as long as the company does not have a corporate assembly, in other words the company only has a general assembly.

If a company with more than 200 employees has an agreement that the company should not have a corporate assembly §6-35(2) the employees **shall** elect at least **one** board member and deputy, **or** two observers, in **addition** to the members following for companies with 50-200 employees §6-4(3).

To sum up employees in Norwegian companies with more than 30 employees can demand representation on company boards. The representatives proposed by employees are elected by and from the employees themselves. For companies with more than 200 employees, employee board representatives shall comprise one third plus at least one additional board member as measured against the total size of the board. The latter rule is applicable whenever there is an agreement between employees and the company that a corporate assembly should not be established.

**Sweden.** The following paragraph refers to legislation regarding employee representation on boards in Sweden for private enterprises. Unless otherwise specified § refers to the Act on Private-Sector Employee Representation on the Board (1987).

The foundation for the reasoning regarding employee representation on boards in Sweden is to ensure that employees get insight into, and influence on the company`s operations §1.

The minimum threshold for the right of employees to be present on the board of their employing company is 25 employees, whereas the next and final threshold is in companies with more than 1000 employees, §4.

From §4 follows that if a company within the last fiscal year on average has employed at **least 25 employees**, then the employees have the right to claim **two** employee representatives with corresponding deputies on the board. If a company within the last fiscal year on average has employed at **least 1000** employees the employees can claim **three** board representatives with corresponding deputies. However, the law clearly states that employee representatives **cannot** under any circumstance **exceed** the number of board representatives.

From §6 it follows that the decision to make use of the right of employee board representation is taken by a local union bound by collective agreement with the company. If employees decide to wave the right of employee board representation the current board shall be informed about the decision in writing. §10 specifies that the term for the employee board representatives is also determined by the respective union, but the term may not exceed four years.

In general the Swedish law of employee board representation is limited by a threshold of two employee representatives for companies with 25-1000 employees and three employee board representatives for companies with more than 1000 employees. These rules apply as long as the employee board representatives do not represent a majority of the total board members. The decision to wave the right of employee board representation is taken by a union bound by a collective agreement with the company.

For an overview of the rules see table 2.

(INSERT TABLE 2)

## 5. Data and methodology

Our sample is based on the population of all publicly traded firms (excluding banks and other financial institutions) headquartered in Denmark, Finland, Norway and Sweden during 2001-2008. As employee representation in boards is regulated by law solely for larger firms (Table 2) we restrict the analysis to include Danish firms with at least 35 employees, Swedish firms with at least 25 employees, Norwegian firms with at least 30 employees, and Finnish firms with at least 150 employees. For these companies, we collected data on board size and number of employee representatives. The director information was hand collected from firm annual reports. The collected board information was then merged with financial data from Worldscope/Thomson Financial Database, whereas ownership data are from Thomson Ownership database. In total, over the entire time period we have 3901 observations on boards with 3 or more members from a total of 664 companies: 112 Danish, 117 Finnish, 137 Norwegian, and 298 Swedish companies with at least one registration of the number of board members in the time period. Figure 1 displays the probability distribution of board size in all the countries.

(INSERT FIGURE 1)

Employees were represented in 1611 (41%) boards, whereas 2284 (59%) boards were without employee elected members. For 6 boards the number of employee elected members was unknown.

(INSERT TABLE 3)

In Table 3 descriptive statistics for some key variables are presented for each of the two groups. The selected performance measures are Number of employees, Volatility, Size, Q, ROE, Owner, Sales, EA, and Sharerep, which are the most commonly used in the literature. Specifically, the variables are defined as follows: **Owner** is the percentage of shares owned by the largest owner. **Size** is assets in euros.  $Q = (\text{debt} + \text{market capitalization}) / \text{total assets}$ ,  $ROE = \text{net-income} / \text{total shareholder equity}$ ,  $EA = \text{long term debt} / \text{total liabilities}$ ,  $\text{Sharerepurchase} = \text{share-purchase} / \text{market capitalization}$ .

Standard Industry Classification (SIC) Codes are used to control for potential industry effects.

The variable **Industry** is SIC codes at one digit level. Due to the sparse dataset a finer classification has not been possible.

The number of board members was registered all eight years for 320 companies distributed on countries as 73 Danish, 74 Finnish, 44 Norwegian, and 129 Swedish companies, and both board sizes and information on the number of employee representatives in the boards were registered for 72 Danish, 74 Finnish, 44 Norwegian, and 118 Swedish companies in the entire period.

To adjust for the serial correlation that exists between yearly outcomes within firms, analysis of the categorical multivariate longitudinal data is performed using ordinary GEE (e.g. Diggle et al. (2002)). The marginal model is specified as a generalized linear model with either logit or cumulative logit as link function. Repeated binary outcomes are analysed with an exchangeable working correlation while repeated multinomial ordinal outcomes are analyzed with an independence working correlation.

## 6. Analysis and results

First, we found that Finland is characterised by almost total absence of employee representatives. Only four Finnish companies had employee directors in the board. Moreover, the employees were only represented in on average 3½ out of eight possible years for the four companies. This verifies hypothesis 2.

(INSERT TABLE 4)

As seen in Table 4 and Figure 1 the distribution of number of board members varies across countries. Denmark is characterized by a relatively high number of boards with 6 or 9 members. In Norway boards with 5 or 7 members are the most frequent, whereas 5-8 members dominate the board size distribution in Sweden. In Finland the distribution of board sizes is broadly speaking concentrated on boards with 5, 6, or 7 members. The Danish, Swedish, and the Norwegian board size distributions are significantly different from the Finnish board size distribution, and considering only boards *with* employee representation in the other countries the differences become even more significant.

The frequency of Danish companies with 6, 9, or 12 board members is 41.2%, whereas the similar number is 28.4% for Finnish companies (see Table 4). If we restrict the comparison to Danish boards *with* employee directors the frequency of board sizes 6, 9, or 12 is 54.4%, an even more pronounced difference than above. Analysis of all boards, correcting for performance and external variables in a GEE analysis with binary outcome (Table 5), reveals that the odds for a Danish company having 6, 9, or 12 board members is 2.2 (95% CI: 1.4-3.6) times the corresponding odds for a comparable Finnish company. The difference between Denmark and Finland is significant with  $p=0.002$  and hypothesis 1.1 seem to be verified.



Norwegian firms with boards of size 8 or 12 constitute 16.5% (27.7% among boards *with* employee members), while the corresponding frequency among Finnish firms is 8.4% (see Table 4). The difference between Norway and Finland is significant ( $p=0.015$ , based on all boards and controlling for performance and other external variables, Table 5) and the odds for Norwegian firms having 8 or 12 board members is 2.9 (95% CI: 1.3-6.4) times the corresponding odds for Finnish boards. Hereby, hypothesis 1.2 is verified. .

An overall comparison of Sweden and Finland indicates that Swedish companies have stochastically larger board sizes than Finnish companies, which also verifies hypothesis 3. The frequency of Swedish companies with more than six members is 45.8%, whereas the same frequency is 16.2% for Finnish companies. As seen in Table 5 the difference in board size distributions is significant when comparing Sweden and Finland even when controlling for the influence of performance and number of employees. The odds for Finnish companies having small board size is 7.1 (95% CI: 4.7-10.9) times odds for comparable Swedish companies, and hypothesis 3 is hereby verified.

(INSERT TABLE 5)

Moreover, the analysis reported in Table 5 showed, that companies with few employees have higher odds for lower board size than the larger companies.

Considering the number of shareholder elected members there is a significant difference between Denmark and Norway on one side and Sweden and Finland on the other side.

(INSERT TABLE 6)

From Table 6 it is found that all else equal the difference between countries is highly significant. Compared to Sweden, the odds of Danish companies having few shareholder elected directors is 7.4 (95% CI: 5.1-10.8) times higher, the similar odds for Norwegian companies is 4.7 (95% CI: 3.4-6.5) times higher than while for Finnish companies the odds for few shareholder elected directors is 2.5 (95% CI: 1.7-3.6) times higher. Hereby, hypothesis 4 is verified.

Due to the very few Finnish companies with employee directors (structural zeros) Finland is excluded in the analysis of factors influencing the presence of employee directors in boards. The result is seen in Table 7. None of the performance indicators seemed to significantly influence whether boards include employee representatives or not. The relatively small number of observations limits the possibility to simultaneous analysis of possible interaction effects, but in the final model relevant interactions were included and none were found to be significant. As seen in Table 7 controlling for country only the size of boards and number of employees have a significant effect on whether companies have employee representation. Smaller boards have significantly lower odds of employee representation than the larger boards and the odds of having representatives increases with increasing number of employees. This means that hypothesis 5.1 is rejected.

Furthermore, our results (Table 7) reveal that there is no relation between the probability of having employee members and firm size, the percentage owned by the largest owner, or firm performance, so hypotheses 5.2 and 6 must be rejected.

## **7. Discussion and conclusion**

In this study we have found evidence that company shareholders tend to minimize the number of employee-elected directors. This finding is consistent with the observation that companies across the world tend to have employee representation only when it is mandatory (Jensen and Meckling,

1979). Although some companies choose to have different board sizes, we find that the employees in these firms typically choose not to exercise the right to elect employee directors. Very few choose to have more employee directors than is mandated.

Since shareholders are willing to accommodate so precisely to the rules, it must be costly to have employee members. Some qualified board members are not elected. In other cases firms must choose to elect board members, which they would otherwise not have elected. Our findings therefore provide indirect support to the sceptics, who like Jensen and Meckling (1979), see employee representation as cost factor rather than a contribution to value creation.

To be sure, the fact that shareholders try minimize employee representation does not in itself imply that it is socially inefficient. It is possible that employees gain more than shareholders lose from this arrangement, and that it is therefore socially optimal. It is even possible that it is collectively optimal for shareholders to have a mandatory quota if the long-term effect is to avoid strikes and other kinds of labour unrest (because of prisoner's dilemma problems it might be privately optimal for individual firms to resist voluntary employee representation). This is not obvious, however. Strike activity in Denmark, Norway, and Sweden has indeed been lower, since employee representation was enacted during the 1970es (Stokke and Thornqvist, 2001), but has been quite high compared to the US or UK with no employee representation (Borrdogna, 2010).

However, advantages of employee representation would need to be traded off against potential costs such as higher costs of capital, delays in decision making, resistance to work force reductions and so on. Thus more research is necessary for a comprehensive assessment of the costs and benefits of codetermination granted by law.

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Denmark				Norway			
Shareholder representatives	Employee representatives	Total Board size	Percentage employee representatives	Shareholder representatives	Employee representatives	Total Board size	Percentage employee representatives
1	2	3	66.67%	1	2	3	66.67%
2	2	4	50.00%	2	2	4	50.00%
3	2	5	40.00%	3	2	5	40.00%
4	2	6	33.33%	4	2	6	33.33%
4	3	7	42.86%	5	2	7	28.57%
5	3	8	37.50%	6	2	8	25.00%
6	3	9	33.33%	6	3	9	33.33%
6	4	10	40.00%	7	3	10	30.00%
7	4	11	36.36%	8	3	11	27.27%
8	4	12	33.33%	9	3	12	25.00%
8	5	13	38.46%	9	4	13	30.77%
9	5	14	35.71%	10	4	14	28.57%
10	5	15	33.33%	10	5	15	33.33%
10	6	16	37.50%	11	5	16	31.25%
11	6	17	35.29%	12	5	17	29.41%

**Table 1. The Danish and Norwegian quota rules expressed numerically**

For a given number of shareholder representatives, the table calculates the mandatory number of employee representatives for the country's quota rule, the total board size (shareholder representatives + employee representatives) and the percentage of employee representatives. The gray rows show configurations, which (locally) minimize the fraction employee representatives,

<b>Criteria</b>	<b>Number</b>	<b>Nomination</b>	<b>Vote /appointment</b>
<b>Denmark</b> > 35 employees	min. 1/3	workers only	vote
<b>Norway</b> < 30 and > 50	1 person	workers only	vote
> 50	min. 2 or max. 1/3	workers only	vote
<b>Sweden</b> > 25 and < 1000	2 persons	appointed by trade union	appointed by trade U.
> 1000	3 persons	appointed by trade union	appointed by trade U.
<b>Finland</b> > 150	(*)agreement with employer	decided in worker council	vote if no agreement

(\*) Max. 4 members or ¼ of number of other members and choice of board (employer may ultimately decide between supervisory board or management board)

Source: SEEurope, European Trade Union Institute (2004)

**Table 2. Overview of worker board representation in the Nordic countries**



	<b>With employee directors.</b> <b>N=1611</b>		<b>Without employee directors.</b> <b>N=2284</b>	
	Mean	S.D.	Mean	S.D.
<b>Boardsize</b>	8.311	1.625	5.763	1.307
<b>Q</b>	1.266	0.995	1.528	1.806
<b>ROE</b>	7.347	17.550	3.996	22.898
<b>Size</b>	2387.0	11846.6	767.98	2832.8
<b>Owner</b>	27.218	17.280	24.108	17.377
<b>Sharerep</b>	0.0142	0.0317	0.0068	0.0204
<b>Sales</b>	13237.4	37535.9	1666.4	5597.2
<b>EA</b>	0.2551	0.0124	0.2710	0.2373
<b>Volatility</b>	0.3936	0.1727	0.5496	0.5999

**Table 3. Descriptive statistics for performance measures for firms with and without employee elected directors.** Means are average of within firm means and standard deviations are estimated standard deviations of the within firm means.

Boardsize	3	4	5	6	7	8	9	10	11	12	13	14	15	p-value
<b>Denmark</b>	2.6	10.3	13.6	20.7	13.6	12.5	19.0	3.3	2.7	1.5	0.0	0.1	0.1	<b>0.002</b>
<b>Empl rep.</b>	0.0	0.6	3.6	22.8	13.8	17.8	29.3	5.2	4.2	2.4	0.0	0.2	0.2	<b>&lt;0.0001</b>
<b>Norway</b>	1.4	4.9	26.0	17.6	18.0	16.1	8.7	5.0	1.8	0.4	0.0	0.0	0.0	<b>0.015</b>
<b>Empl rep.</b>	0.0	0.3	5.2	14.3	23.0	26.9	16.2	9.9	3.6	0.8	0.0	0.0	0.0	<b>&lt;0.0001</b>
<b>Sweden</b>	0.3	5.6	15.7	15.2	17.5	15.2	11.3	9.2	5.8	3.2	1.1	0.0	0.0	<b>&lt;0.0001</b>
<b>Empl rep.</b>	0.0	0.1	1.9	4.5	10.8	19.0	21.9	19.6	12.7	7.1	2.3	0.0	0.0	<b>&lt;0.0001</b>
<b>Finland</b>	4.1	6.8	26.4	25.4	21.1	8.4	3.0	3.5	1.3	0.0	0.0	0.0	0.0	

**Table 4. Companies distributed according to country and board size.** The numbers are percentages over the period 2001-2008. Board size for boards *with* employee directors is shown as the row named Empl rep. Further, p-values for comparison with the boardsize distribution for Finland are given in the last column.

Parameter	Comparison of Denmark and Finland <sup>1</sup> N=1551			Comparison of Norway and Finland <sup>2</sup> N=1491			Comparison of Sweden and Finland <sup>3</sup> N=1196		
	Estimate	S.E.	P-value	Estimate	S.E.	P-value	Estimate	S.E.	P-value
<b>Intercept</b>	0.0172	0.3696	0.9628	-1.0517	0.7397	0.1551	.	.	.
<b>Country</b>	0.7866	0.2460	0.0014	1.0628	0.4082	0.0092	1.9582	0.2700	<.0001
<b>Employees &lt;150</b>	-0.3435	0.4205	0.1361	-1.0780	0.6315	0.1224	1.7694	0.3712	<.0001
<b>150-1000</b>	-0.4524	0.2262		-0.6686	0.3856		1.3884	0.2402	
<b>Volatility</b>	-0.8791	0.5385	0.1026	0.3000	0.7030	0.6695	0.6760	0.4651	0.1461
<b>Size</b>	-0.0000	0.0000	0.1714	-0.0000	0.0000	0.3398	-0.0001	0.0000	0.0013
<b>Q</b>	0.0046	0.0988	0.9628	0.0228	0.0832	0.7841	0.1300	0.0665	0.0505
<b>ROE</b>	0.0006	0.0040	0.8775	-0.0023	0.0043	0.5931	-0.0055	0.0039	0.1595
<b>Owner</b>	-0.0101	0.0057	0.0773	0.0114	0.0076	0.1316	-0.0083	0.0054	0.1292
<b>Sales</b>	-0.0000	0.0000	0.9686	-0.0000	0.0000	0.2839	-0.0000	0.0000	0.0228
<b>EA</b>	-0.6313	0.4409	0.1522	-1.5651	0.6487	0.0158	0.2921	0.4338	0.5008
<b>Sharerep</b>	-0.8173	1.2219	0.5036	1.9956	3.4956	0.5681	-1.9799	1.6472	0.2294
<b>Industry</b>	.	.	0.5630	.	.	0.6397*	.	.	0.3675

**Table 5.** Comparison of board size in Denmark, Norway, and Sweden with Finnish boards. P-values from Score test statistics and parameter estimates with standard error (S.E.) from GEE analysis. Number of employees is categorized as <150, 150-1000, or >1000, with >1000 as reference category. Finland is used as Country reference category.

1) Binary GEE model, where the probability of 6, 9, or 12 board members is modeled.

2) Binary GEE model, where the probability of 8, or 12 board members is modeled.

3) Multicategory cumulative logit model GEE with board size each year as repeated outcome.

Estimates for cut-points (levels) are not reported.

\*) Due to the small sample size the effect could not be estimated in the full model and the P-value calculated in the model without insignificant performance variables

Variable	Full Model (N=1994)			Reduced model (N=3895)		
	Estimate	S.E.	P-value	Estimate	S.E.	P-value
<b>Employees</b>			<0.0001			<0.0001
<b>&lt;150</b>	1.0824	0.2819		1.4984	0.1935	
<b>150-1000</b>	1.2488	0.1896		1.2959	0.1487	
<b>Country</b>			<0.0001			<0.0001
<b>Denmark</b>	2.2945	0.2394		2.0073	0.1894	
<b>Finland</b>	0.0840	0.2619		0.9182	0.1817	
<b>Norway</b>	2.0884	0.2539		1.5413	0.1684	
<b>Size</b>	-0.0001	0.0000	0.0012	-0.0001	0.0000	<0.0001
<b>Sales</b>	-0.0000	0.0000	0.8623			
<b>Volatility</b>	0.1253	0.3677	0.7430			
<b>Q</b>	0.0094	0.0586	0.8797			
<b>ROE</b>	-0.0042	0.0112	0.1594			
<b>Owner</b>	-0.0032	0.0041	0.4203			
<b>EA</b>	-0.5732	0.3170	0.0692			
<b>Sharerep</b>	0.1625	1.1433	0.8856			
<b>Industry</b>	.	.	0.1436			

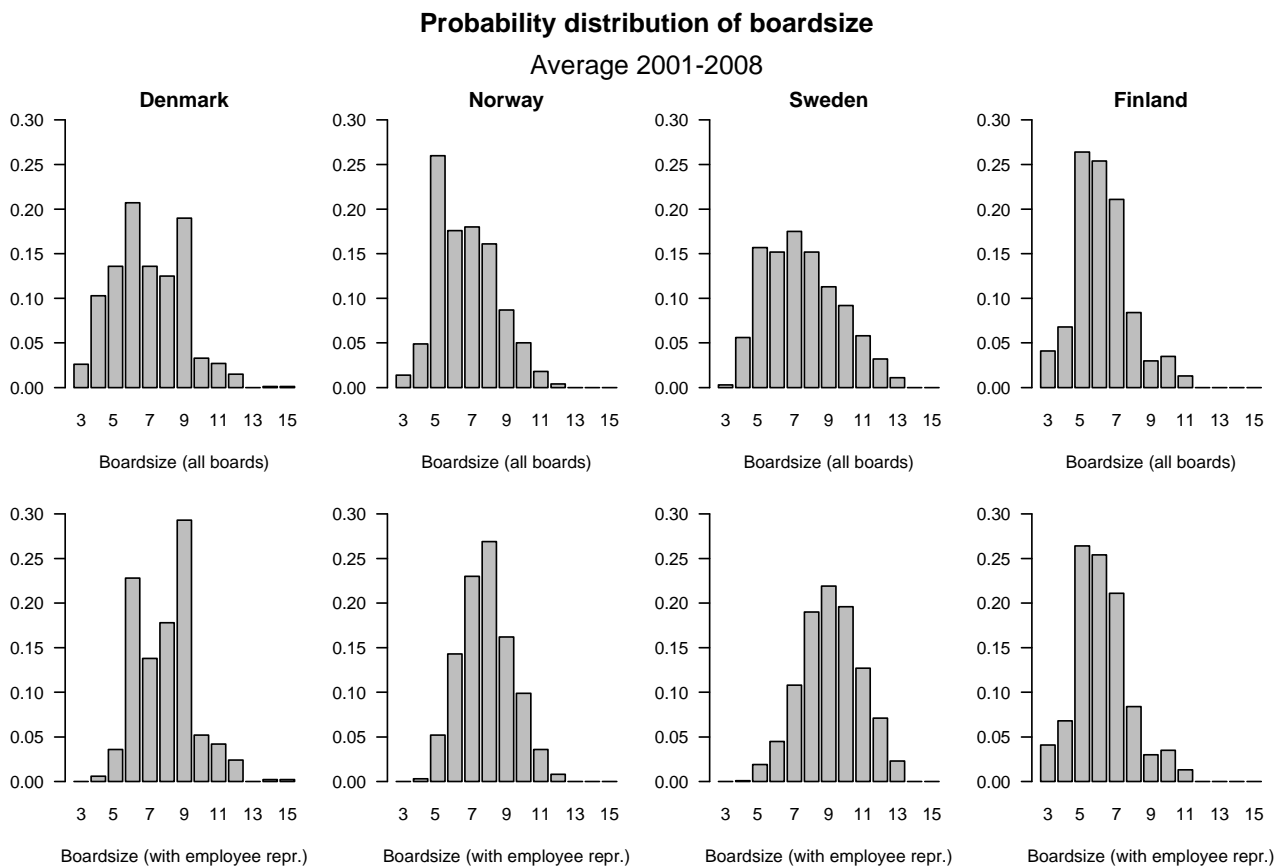
**Table 6. Comparison of number of shareholder elected directors for all countries.**

P-values from Score test statistics and parameter estimates from GEE analysis of the multcategory cumulative logit model with number of shareholder elected directors each year as repeated outcome. Number of employees is categorized as <150, 150-1000 or >1000, with <1000 as reference category. Sweden is used as reference category for countries. Estimates for cut-points (levels) as well as estimates for industry groups are not reported.

Variable	Full Model (N=1551)			Reduced model (N=3116)		
	Estimate	S.E.	P -value	Estimate	S.E.	P-value
<b>Intercept</b>	4.4268	0.6192		3.8906	0.5273	
<b>Boardsize</b>	-0.5674	0.0748	<0.0001	-0.5313	0.0498	<0.0001
<b>Employees</b>			0.1575			0.0028
<150	0.3420	0.1591		0.5238	0.1446	
150-1000	0.0361	0.1056		0.0438	0.0902	
<b>Country</b>			0.0001			<0.0001
Denmark	-1.6186	0.3426		-1.5391	0.2930	
Norway	-0.7877	0.3530		-0.7958	0.2799	
<b>Volatility</b>	0.1828	0.2842	0.5491			
<b>Sales</b>	-0.0000	0.0000	0.0776			
<b>Size</b>	0.0000	0.0000	0.3925			
<b>Q</b>	0.0439	0.0462	0.2133			
<b>ROE</b>	0.0024	0.0015	0.1668			
<b>Owner</b>	-0.0027	0.0030	0.4447			
<b>EA</b>	0.1301	0.1781	0.5437			
<b>Sharerep</b>	-0.1222	0.6820	0.8766			

**Table 7. Analysis of presence of employee directors.**

P-values from Score test statistics and GEE parameter estimates from analysis of the influence on the probability of *no* employee elected directors in the board. Number of employees is categorized as <150, 150-1000 or >1000, with <1000 as reference category. Sweden is used as reference category for countries. (Finland is excluded). The effect of Industry could not be estimated in the full model. In the reduced model Industry was significant ( $p=0.0011$ ) and the estimates in the table are corrected for the effect of Industry.



**Figure 1.** Average boardsize distribution for each country. First row of figures shows the boardsize distribution for all boards and second row shows boardsize for boards with employee representation.