

Oxelheim, Lars; Gregori, Aleksandra; Randøy, Trond; Thomsen, Steen

Working Paper

On the Internationalization of Corporate Boards

IFN Working Paper, No. 951

Provided in Cooperation with:

Research Institute of Industrial Economics (IFN), Stockholm

Suggested Citation: Oxelheim, Lars; Gregori, Aleksandra; Randøy, Trond; Thomsen, Steen (2013) :
On the Internationalization of Corporate Boards, IFN Working Paper, No. 951, Research Institute of
Industrial Economics (IFN), Stockholm

This Version is available at:

<https://hdl.handle.net/10419/81317>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

IFN Working Paper No. 951, 2013

On the Internationalization of Corporate Boards

Lars Oxelheim, Aleksandra Gregorič, Trond
Randøy and Steen Thomsen

On the Internationalization of Corporate Boards

Lars Oxelheim^{a,e}

Aleksandra Gregorič^b

Trond Randøy^c

Steen Thomsen^d

Abstract

Despite the global reach of their commercial activities, many multinational firms have proved slow in internationalizing their boards of directors. Based on a panel study of the internationalization of the boards of 347 non-financial firms from the Nordic countries, we find a higher fraction of international board membership in firms with more foreign sales, in firms with more foreign ownership and in firms whose shares are traded on foreign (mostly European) stock exchanges. Moreover, we find international directors and national directors with international experience complementary. The first-mentioned group is found to serve a monitoring role, related to financial internationalization of the firm, whereas the latter category fills an advisory role related to commercial internationalization. Hence, different types of firm internationalization – commercial versus financial – might call for different types of board internationalization.

Keywords: internationalization, international directors, international board experience, board composition, nomination committee, corporate governance.

JEL: F23; G30; G34; L22; M16

^aCorresponding author: Lund Institute of Economic Research, Lund University, P.O. Box 7080, 220 07 Lund, Sweden. Phone: +46708619361. E-mail: lars.oxelheim@fek.lu.se

^bCenter for Corporate Governance, Department for International Economics and Management, Copenhagen Business School, Porcelænshaven 24, DK-2000 Frederiksberg, Denmark. Phone: +4538152536. E-mail: agr.int@cbs.dk

^cUniversity of Agder, School of Management, Serviceboks 422, Bygg H, N-4604 Kristiansand, Norway, Phone: +4748141525. E-mail: trond.randoy@uia.no

^dCenter for Corporate Governance, Department for International Economics and Management, Copenhagen Business School, Porcelænshaven 24, DK-2000 Fredriksberg, Denmark, Phone: +4538152590. E-Mail: st.int@cbs.dk

^eResearch Institute of Industrial Economics, P.O.Box 55665, 102 15 Stockholm, Sweden, Phone: +4686654527. E-mail: lars.oxelheim@ifn.se

Acknowledgements

We acknowledge financial support by the Nordic Innovation Centre and NASDAQ OMX Nordic Foundation.

On the Internationalization of Corporate Boards

INTRODUCTION

Until fairly recently, most multinational firms had boards made up largely of domestic members despite the global nature of the firm's business activities. Increased financial integration and the crisis of 2008 has made this potential mismatch an issue. In this paper we address the internationalization of boards of publicly listed non-financial corporations. Our empirical analysis is based on firms from Denmark, Finland, Norway and Sweden (i.e. the Nordic countries). While these countries host the world's highest incidence of multinationals (UNCTAD, 2008), they began internationalizing their boardrooms rather recently. For instance, the telecom giants Ericsson of Sweden and Nokia of Finland started internationalizing their operations in the first half of the twentieth century but kept purely domestic boards until just before the turn of the century. Where present, international directors¹ in Nordic firms generally hold only a few board seats. This lopsided internationalization raises challenging questions for research and practice. If internationalization is so important, why is it not practiced more extensively in board rooms? What firms do in fact recruit international directors and why? Are the so-called multinational companies truly multinational or in reality monolithic giants dominated by old boys host country networks?

The above questions also invite a rethinking of the function of international board members. How do international directors differ from national directors? What is their role? Do they exercise control? Do they give advice and form valuable networks to promote firm activities abroad? The first role is associated primarily with the suppression of agency conflicts on behalf of investors (agency theory), while the second function is associated primarily with the provision of advice and resources to the firm and its managerial team (resource-dependence theory). In this paper, we promote the argument that agency concerns are the main driver of board internationalization, whereas operational business needs are met through appointments of national board members with international board, work or study experience.

Past research suggests that board composition changes with respect a firm's agency problems, the strategic contingencies faced by the organization and the institutional

¹As a footnote to this literature, we prefer to speak of "international directors" instead of "foreign directors" – a term that is widely used in the literature. In addition to avoiding any implicit xenophobia in the distinction between say "Nordic directors" and "foreigners/strangers", the term international director is more precise. A director with a foreign passport is not necessarily "foreign". She may, for example, have lived in the host country for decades, or even her whole life. To avoid confusion, we have nevertheless decided to retain the use of other classic terms, such as foreign sales and foreign ownership.

environment in which the firm operates (e.g. Adams, Hermalin & Weisbach, 2010; Linck, Netter & Yang, 2008; Harris & Raviv, 2005; Hermalin & Weisbach, 2003; Pfeffer, 1972). This implies that board composition is the outcome of an endogenous process. Accordingly, firms should manage the higher information processing and agency demands associated with the increasing complexity of international markets by constituting more efficient governance arrangements, e.g. by adding international board members that either have valuable experience with international constituencies or special expertise. Such directors not only can contribute by networking with the global suppliers, buyers and providers of finance, they also ensure transparency and accountability of firms' actions beyond the national context (Luo, 2005; Oxelheim & Randøy, 2003; Sanders & Carpenter, 1998).

While a large number of studies explore international corporate governance more generally, empirical research on the association between firm and board internationalization is quite limited. One stream of studies looks at the antecedents of the internationalization of the top management teams (Greve, Nielsen & Ruigrok, 2009; Olie, 2010; Stafsudd, 2006; VanVeen & Marsmann, 2008). Among the few studies that focus on the board of directors, Ruigrok, Peck & Tacheva (2007) study the differences between national and international directors in 210 publicly listed Swiss corporations. They show that international directors are more independent and hold fewer board seats than Swiss nationals. A few studies of U.S. firms operating internationally document that these firms have larger management teams with more internationally experienced and younger directors (Rivas, Hamori & Mayo, 2009; Sanders & Carpenter, 1998). A U.S.-based study of particular interest to our study is Masulis, Wang & Xie (2010). While their analysis focuses on the effects rather than determinants of board internationalization, they report a higher frequency of foreign independent directors on larger, more independent busy boards and on boards whose members own a smaller percentage of their firm's stock. More foreign independent directors are also found in firms with a higher share of foreign sales, higher growth opportunities, and in larger firms.

This study extends that line of research by analyzing the internationalization of the board of directors (supervisory board) in the Nordic countries. In doing so, we introduce a distinction between the commercial and financial internationalization of the firm, which turns out to have different implications for board internationalization. We also distinguish between two types of board internationalization: via the recruitment of international directors or national directors with international experience.

Our analysis is based on unique hand-collected directors' data for all publicly listed non-financial companies in the Nordic countries from 2001 to 2008. During these years, we observe a sizeable increase in the number of international directors. In 2001, at least one

international director was observed in 34 per cent of non-financial companies listed on the Nordic stock exchanges. By 2008, this figure had increased to 50 per cent. We also observe an increase, from 46 to 68 per cent during this period, in the share of firms with foreign owners among the largest five owners. In year 2008, more than 60 per cent of firms generated the majority of their sales abroad; this percentage changed only slightly since 2001.² These numbers suggest that international board memberships are slowly catching up with the internationalization of firms' operations and financing. At the same time, they indicate that there are still a relevant number of firms that operate internationally but keep purely domestic boards. What then are the factors influencing a firm's decision to recruit or not recruit an international director?

In response to this question, we observe a higher fraction of international board members in firms with a higher percentage of foreign sales, in firms with a higher percentage of foreign ownership and in firms whose shares are traded on foreign (mostly European) stock exchanges. In line with our expectations, we find more international directors in larger firms and in firms with higher growth opportunities. We also examine whether the conservatism of the "old boys' network" could be a barrier to appointments of international directors to the board and find that the incidence of international directors appears to be negatively influenced by the tenure of the board. As a contribution to the literature, we indentify national directors with international experience as an alternative way to internationalize the board. Contrary to our initial expectations, the frequency of international directors correlates positively with the fraction of nationals with international experience. The fraction of national directors with international experience in turn correlates positively with the commercial internationalization of the firms (i.e. the percentage of foreign sales) but not with foreign ownership. Combining this result with our evidence on the determinants of international directors on the board, we conclude that international directors and domestic directors with international experience have a complementary role on the board. Different types of firm internationalization – commercial versus financial – appear to lead to different types of board internationalization. Most importantly, both types of board internationalization need to be taken into account when evaluating the internationalization of corporate boards.

The positive relation between the percentage of international directors and the percentage of foreign sales can be perceived as an indication that firms with a higher share of foreign sales appoint more international directors to their boards. The theoretical arguments that underpin our hypotheses imply that the causality runs from commercial

² The percentages refer to the companies for which data on foreign sales are available. The percentages for international board members are slightly lower (30 per cent and 45 per cent, respectively) when we consider the larger sample of all non-financial public corporations with available board data. The percentage of the firms with a foreigner among the largest five owners in this larger sample increased from 41 to 63 per cent.

internationalization to board internationalization. However, a positive association between foreign sales and international board memberships might also indicate that international directors contribute to the expansion of foreign sales or that some additional factors that have not been included in the model simultaneously influence the decision to appoint an international director. Similar arguments could be made for other explanatory variables in our analysis (i.e. foreign ownership, foreign listing, firm performance, etc.). To examine the direction of causality we perform several additional tests following Dittmann, Maug & Schneider (2010) and other related studies. We identify foreign ownership, firm size, operational performance and board tenure as significant antecedents of board internationalization. While the positive correlation between foreign sales and international directors is consistent with theory and supported by anecdotal evidence we observe among Nordic firms, we cannot prove that the appointments of international directors *follow* increases in foreign sales. Our evidence is more consistent with the conclusion that international directors are appointed simultaneously with increases in foreign sales.

The paper is organized in six sections. Our literature overview and hypotheses are presented in the next section. In the section thereafter, we discuss the Nordic corporate governance system and the trend towards the internationalization of Nordic company boards. Next, we present the methodology used, our definitions of variables and the data. Then follows a section with our results and the closing section where we summarize our key findings.

LITERATURE OVERVIEW AND DEVELOPMENT OF HYPOTHESES

Theorizing on the appointment of international directors must arguably begin with the fundamental issues of supply and demand. Why do shareholders demand international directors? Why do directors accept seats on the boards of international companies? We propose that the demand and supply of international directors relates to the commercial and financial internationalization of the firm, firm size, economic and cultural system effects and other factors.

The demand for international directors

According to the literature on the composition of the board of directors, non-executive directors fulfill two main functions: they monitor and they advice the management board/top management team (Adams & Ferreira, 2007; Linck et al., 2008; Raheja, 2005; Shleifer & Vishny, 1997; Tirole, 2006). The monitoring function, which is emphasized in

agency theory (Fama & Jensen, 1983), consists chiefly of ensuring sufficient oversight over company managers on behalf of the shareholders. In selecting their representatives, the shareholders will therefore search for experts – reputable individuals that they can trust. Empirical evidence from labor economics shows that, when there is uncertainty about the overall ability of the candidate and of his/her fit for a particular position, the employers will counteract uncertainty by gathering information, i.e. by soliciting the subjective opinions of people who know the candidate personally (Simon & Warner, 1992). This argument could be extended to the selection of directors by shareholders. The reliance on personal networks and the role of social capital in the directors' selection is indeed supported by existing literature (Kim & Cannella, 2008; Simon & Warner, 1992; Westphal & Stern, 2006). Following these arguments, we could therefore expect that domestic shareholders will select members from their own domestic networks, implying a lower likelihood for nomination of international directors. Moreover, domestic shareholders may be more confident that home country based directors will represent their interests more forcefully. A vast psychological literature shows that trustworthiness is enhanced by perceived demographic similarities, shared norms and values (e.g. Levine, Whitener & Cross, 2006). Finally, large domestic shareholders might also demand a board seat for themselves. Along the same lines, we conjecture for the case of financial internationalization of the firm that foreign shareholders, or companies who cater to foreign shareholders, are more likely to nominate international directors. Consequently, a higher share of international directors should be observed in firms with a higher share of foreign owners and in the firms whose securities are traded on non-domestic stock exchanges. In the latter case, the presence of an international director – in particular when originating from the foreign country where the firm's shares are traded – ensures accountability of the firm's actions and accounts abroad (Luo, 2005; Sanders and Carpenter, 1998). One can also expect that international board members are more familiar with the regulatory framework, institutions and political risk of countries where the firm's shares are traded than mere domestic directors (Oxelheim & Randøy, 2003). These arguments lead to Hypothesis 1:

Hypothesis 1: There is a positive correlation between the financial internationalization of the firm and the internationalization of the firm's board of directors.³

Financial internationalization is not the only possible driver of board internationalization. Several studies point to a positive relationship between the complexity and scope of a firm's operations and the structure of the corporate board (e.g. Linck et al., 2008). In relation to the internationalization of operational activities, Sanders & Carpenter (1998) introduce the "information economics argument". They advocate that internationalization of a firm's operations increases the complexity of monitoring due to a higher asymmetry

³ To clarify the statistical jargon, the working hypothesis is that no correlation exists.

of information between the manager and the board. This in turn demands the presence of international directors on the board. The proposition of a positive relationship between the internationalization of the firms' operational activities and the internationalization of the board of directors is consistent also with the second role of the board. In its advisory role, international directors bring to the board important expertise and important network ties, which can lead to better decisions and help to open up new business opportunities for the firm (based on arguments from the board literature; Daily, Dalton & Cannella, 2003; Johnson, Hoskisson & Hitt, 1993; Stearns & Mizruchi, 1993). As proposed by the resource-dependence theorists, directors will be selected because they have access to resources that are important for the firm (Pearce & Zahra, 1992). Thus, firms operating abroad or employing foreign personnel should appoint international directors since they are better able to understand the international business environment and compare the firm to global competitors. Moreover, international directors might provide valuable knowledge about international employees, suppliers or customers, while at the same time reflecting the firm's commitment to constituencies abroad (e.g. loyalty to international shareholders). We therefore hypothesize that a higher degree of commercial internationalization is associated with a higher number of international directors.

Hypothesis 2: There is a positive correlation between the commercial internationalization of the firm and the internationalization of the firm's board of directors.

Now we turn to factors that might limit the demand for international directors. First, we propose that appointments of international directors may be impeded by the conservatism of the existing board, which we proxy with the age and tenure of the board members. In relation to the first factor, other studies observe that individuals' age, language barriers and generational effects (Piekkari *et al.*, 1999) negatively impact the appointments of international directors to the board. Older board members might be more reluctant to new ideas, more risk-averse and less willing to accept new challenges. The expectation of such negative effects is in line with empirical evidence that reports a negative effect of directors' ages on firm performance and future growth (Cochran, Wartick & Wood, 1984; Rivas *et al.*, 2009; Rose, 2005). Older boards are also seen as less vigorous than younger boards (Cochran *et al.*, 1984). With regards to directors' tenure, Schnake, Fredenberger & Williams (2005) argue that boards dominated by directors with longer tenure may restrict the number of views and opinions that are openly discussed and debated by the board. Such heightened conservatism and reduced information processing might encourage "sloppy" management oversight (Schnake *et al.*, 2005), and the need to preserve a management-friendly atmosphere might work as a barrier to appointments of international directors to the board. Long-tenured board members may lose their ability to recognize and respond to changing environmental conditions. In line with these

arguments, Vafeas (2003) finds that boards with members that have long tenure are more management friendly and therefore presumably less inclined to “rock the boat”. In addition, a higher tenure of the domestic board members might reflect a slower pace of board changes over time and therefore less opportunity for new appointments. Altogether this leads to Hypothesis 3a:

Hypothesis 3a: There is a negative correlation between the age and tenure of board members and the internationalization of the firm’s board of directors.

Another obstacle to a firm’s internationalization of their board might be country-specific rules for board nominations. For example, within the Nordic corporate governance system (as is also the case in countries such as Germany and the Netherlands) many firms have to include employee representation on the board (commonly referred to as co-determination). In Denmark, the employees are entitled (but not obliged) to elect at least half of the number of board members elected by the owners, i.e. one third of the board members, though never fewer than 2 members in all firms employing more than 35 people. In the Norwegian firms with more than 30 employees, workers can elect 1 representative to the board of directors. In firms with at least 50 employees, they have the right to elect 1/3 of the board (but not less than 2 members), while in the firms with 200 or more employees the board members are nominated through a representatives assembly consisting of 12 members, among which 1/3 are employee representatives. These members can decide that 1/3 of the board shall be elected from among the employees. The Swedish Codetermination Act (1976) is only a framework law and gives the employees the right to choose 2 members (and 2 substitutes) to the board of companies with at least 25 members and 3 members in companies consisting of at least 1000 employees. Employee representation is limited to a maximum of half of the board of directors and (in total) the employee representatives can never exceed the number of owner-elected directors.⁴ In regards to employee representatives on the board, Finland deviates by having no regulation similar to the ones in the other Nordic countries.

While the presence of employee directors on the board limits the number of seats available for international directors, it might also negatively influence the nominations of international members among the owner-elected directors. Since employee directors are elected from among the employees (in Denmark and Norway) or union members (Sweden), the above argument on language barriers, reluctance to accept new ideas and risk-aversion apply to these directors as well. Empirical studies (i.e. Atanassov and Kim, 2009) also show that employee-elected board members might collude with management against shareholders. Therefore, they might oppose the nomination of international directors, which are likely to be more independent and stricter monitors (see for example

⁴ The description of the corporate law in the Nordic countries follows Hansen (2003).

Ruigrok et al., 2007). When given a voice in firm governance, the employees might use their power to direct the objective of the firm towards the maximization of their own interests (e.g. Faleye, Mehrotra & Morck, 2006), for example, towards reducing the firm's (board) internationalization in order to preserve high levels of domestic employment. Finally, directors originating from countries unfamiliar with codetermination might be reluctant to accept board positions in firms with employee representatives in the board room. Therefore,

Hypothesis 3b: There is a negative correlation between the incidence of employee-elected board members and the internationalization of the firm's board of directors.

As a contribution to the existing literature, we acknowledge that there are alternatives to hiring an international board member. For example, the shareholders might decide to train nationals internationally or to hire new nationals with previous international experience as a way of providing international expertise to the board. Although a potential board member may have neither passport nor childhood history in a foreign country, he/she could have gathered the requisite international experience by having spent considerable time there or in other similar locations (Carpenter, Sanders & Gregersen, 2001; Daily, Certo & Dalton, 2000; Gregersen, Allen & Black, 1998). Pertinent experience could involve an individual's education (Carpenter *et al.*, 2001), work life (Carpenter *et al.*, 2001; Reuber & Fisher, 1997; Tihany, Griffith & Russel, 2000; Wally & Becerra, 2001), experience of living in a foreign country (Herrman & Datta, 2002; Sambarya, 1996), international responsibility in a domestic company (Herrmann & Datta, 2002; Sambaraya, 1996), language capabilities (Buckley, Casson & Gulamhussen, 2002; Piekkari, Welch & Welch, 1999), international board positions (Carpenter & Westphal, 2001), other international connections (Athanasios & Nigh, 2002) or exposure to cultural diversity (Tihany et al., 2005). The question here is whether these nationals with foreign experience are actually substitutes for international directors. In other words, are nationals with international experiences recruited in place of international directors when commercial or financial internationalization calls for the internationalization of the board? This leads to Hypothesis 4:

Hypothesis 4: There is a negative correlation between the share of domestic directors with international experience and the internationalization of the firm's board of directors.

The supply of board members

From the supply side of board appointments, the relevant question is why highly qualified directors would bother to sit on the boards of international companies when they could, in principle, have equally prestigious, challenging and lucrative board positions in domestic companies, avoiding the hassle of travelling, language barriers, psychic distance and so on. The question becomes even more pertinent when considering the institutional context. The Nordic countries are known for low pay levels for executives and directors (Hedidrick & Struggles, 2009), while tax rates are high and board fees are taxed at source.⁵ For example, clause 138 in the Danish company law states that board fees should not exceed what is considered to be normal for similar types of work. Moreover, the Nordic company laws currently prevent differentiation of fees based on nationality (although it is possible to differentiate between different kinds of board positions, such as chair, vice-chair, committee membership, etc). The relatively low pay for directors on Nordic boards is most likely an impediment to these companies' ability to attract top level non-executive directors. We therefore conjecture that some kind of amenity value might be necessary to induce international directors to sit on Nordic boards. For example, they may gain prestige value from sitting on the boards of large companies or companies with well known brands as part of a career signaling effort or a buildup of reputation within impression management (Baruch, 2003). Firm size is found to be a critical determinant of reputational capital (Harmoni, 2003) and the same is found to apply to operational excellence (Harmoni, 2006). We therefore hypothesize that:

Hypothesis 5: There is a positive correlation between firm size and performance and the internationalization of the firm's board of directors.

THE INTERNATIONALIZATION OF NORDIC CORPORATE GOVERNANCE

Our empirical analysis concerns publicly listed companies from the Nordic region, which is located in the northern part of Europe. In addition to the Scandinavian countries of Denmark, Norway and Sweden, the Nordic region also encompasses Finland and Iceland. Because of its small size, Iceland is excluded from this study. As the borders between the five nations have shifted over the last five centuries, these countries share significant cultural similarities. Indeed, Denmark, Norway, Sweden and Finland can easily be regarded as siblings. They have similar corporate governance systems, with a focus on the alignment of interests between managers and industrial (corporate) owners; this can, in turn, be likened to a modified version of the German system (Angblad, Berglöf, Högfelt & Svancar, 2001). Despite the importance of large owners in a firm's corporate governance, the Nordic legal system offers strong protection to minority investors.

⁵ For Denmark, see <http://www.skat.dk/SKAT.aspx?oID=112711>.

Investor protection in the Nordic countries – an important aspect of corporate governance – in fact equals or nearly equals that in “common law” countries, such as the U.K. and the U.S.; the Nordic countries are furthermore characterized by the highest enforcement of investors’ rights in the world (La Porta, Lopez de Silanes, Shleifer and Vishny, 1998).

Although their corporate governance systems are fairly similar, the Nordic countries have slightly different board systems – a concept that requires clarification. Legal scholars generally recognize two functional levels (operational management and control) and distinguish between a management board, referred to as “top management” in some countries, and a board of directors. Depending on how these boards are organized in a firm, the board systems can be classified into a one-tier or a two-tier board system. The one-tier system combines the two boards into one, while strongly emphasizing outsider and insider members. In the two-tier system, the management board and the board of directors are kept separate. The firms analyzed in this study have, what we would call, a semi-two-tier system (Sinani, Stafsudd, Thomsen, Edling & Randøy, 2008).⁶ The Danish system is most similar to the blue-print two-tier system found in Germany. Danish corporations have two separate bodies – the executive (management) board and the supervisory board. By law, members of the management board can sit on the supervisory board, although this is not generally observed in practice. The governance structure in Norway, Finland and Sweden is, on the other hand, composed of the executive committee, which normally consists of a single person, the CEO, and the board of directors. By law, the CEO (as the only member from the executive level) can sit on the board of directors; such practice is observed in about 30 per cent of the firms in our sample. Other members of the board are all non-executives or employee representatives. In this sense, they operate quite independent from the day-to-day managers.

The financial internationalization of Nordic firms was common in the period in between WWI and WWII and many of them cross-listed at several international exchanges in that period (Oxelheim, 2001). In the post WWII-period, however, severe capital controls were used in the Nordic countries restricting Nordic firms’ access to international capital markets (Oxelheim, 1997, 2001). Financial integration came to a temporary halt, but a new wave of financial internationalization started in the 1970s when the oil crisis made Nordic governments urge their corporate sectors to take foreign loans, something that also as a general feature (via opportunities to lead and lag payments) contributed to make capital controls at force less efficient. Capital controls were then *de jure* abolished at the end of the 1980s and beginning of the 1990s. However, as shown by Oxelheim (1997), the *de facto* financial integration of Nordic capital markets came about already at the

⁶ The Norwegian board system actually does not include a management board, but has the option of using one or two levels of boards (“styre” and “representantskap”).

beginning of the 1980s, resulting in a wave of cross-listings and equity floating abroad by Nordic firms.

The internationalization of the boards of Nordic firms started late in comparison to their commercial and financial internationalization. The reason for this late start was not a legal ban on international board members but the requirement that a majority of the board members had to be residents – partly for perceived legal accountability reasons. However, in the mid-1990s this ban was replaced by a ban against the discrimination of European board members (although some EU-restrictions still apply). Therefore, we should expect to observe an increase in the incidence of international board members during the first decade of the 21st century, particularly in the corporations characterized by substantial commercial and financial internationalization.

Figure 1 shows the changes in the international board representation over the period 2001-2008 by reporting the percentage of firms with at least one international director on the board. In order to isolate the changes in the average proportion of international representation that are due to the entrance of new firms into our sample, we calculate these percentages only for firms that were present in our sample throughout the period (i.e. a balanced panel). We observe a general increase in the representation of international directors on Nordic boards, an increase that has been particularly pronounced in recent years. While Norway remains in the top position with regards to international directors (61 per cent of firms had at least one such director on the board in 2008), other countries were slowly catching up towards the end of the period; the highest jump is observed in Denmark, where the percentage of firms with at least one international director on the board increased by more than 20 percentage points during the period of our analysis.

Place Figure 1 about here

To complement Figure 1, we present the evolution of commercial and financial internationalization during 2001-2008 in Figure 2. The percentages here again refer to the firms that were present in the sample during the whole period. The figure indicates a relevant increase in the percentage of firms in which a foreign shareholder owns at least one of the five largest blocks (from 46 per cent in 2001 to nearly 70 per cent in 2008). Similarly, we look at commercial internationalization by counting the number of firms that generate more than half of their revenues abroad; the percentage of these firms varies slightly around 60 per cent during the first five years and then decreases to below 60 per cent during 2006-2008.

Place Figure 2 about here

Table 1 conveys the sample⁷ characteristics with regards to the extent of firm internationalization in the Nordic countries. As illustrated in the table, Norway exhibits the highest commercial internationalization of firms and the highest proportion of international ownership, which to some extent reflects the international character of the oil industry. Norway also holds the highest relative number of firms that have recruited international members to their boards (see also Figure 1). At any rate, the proportion of international sales does not vary much across countries and also remained relatively stable across the years of our analysis. In 2001, the firms in our sample made nearly 59 per cent of their sales abroad, while in 2008 the foreign sales represented on average 56.5 per cent of total sales. During 2001-2008, the average firm increased its foreign sales by 0.3 percentage points per year.

As one dimension of financial internationalization we can observe an increase in the average percentage of the shares held by foreign blockholders, from 4.60 per cent in the year 2001 to nearly 10 per cent in 2008; the average yearly change in the percentage of foreign ownership (among the five largest blocks) was around 1 percentage point. If we restrict our sample only to the firms where at least one of the five largest blocks is held by a foreigner, the percentage of foreign ownership increases from 10 per cent in 2001 to 13 per cent in year 2008. The percentage of firms where a foreign owner is listed among the five largest owners in 2008 was above 60 per cent and varied only slightly across the four countries (see also Figure 2). For our second dimension of financial internationalization we find that less than half of Nordic firms in our sample trade their shares on other European, U.K. or U.S. stock exchanges. The highest level of financial internationalization in this respect is observed in Norway and Finland (49 per cent of the firms in our sample have their shares traded on cross-border exchanges), while the lowest number of firms with their shares traded on international exchanges is found in Denmark (29 per cent). About 47 per cent of Swedish firms in our sample have their shares traded on other stock exchanges.

Place Table 1 and Table 2 about here

Descriptive statistics for the main variables reflecting the structure of Nordic boards for the firms in our sample are presented in Table 2. Note that for two variables – the number of international directors on the nomination committee and the number of national members with international board, work experience or international education –

⁷ The data refer to the final number of firm-year observation used in the empirical analysis. For more information about the sample, see the Methodology and Data-section.

the data refers to the average of the years 2006 and 2007.⁸ The numbers reported in Table 2 confirm the increasing trend in the internationalization of Nordic boards; the percentage of internationals among the owner-elected directors has, for example, increased by more than 5 percentage points during 2001-2008 (i.e. from 9.29 per cent to 16.91 per cent). The share of all board seats allocated to international directors increased from 8.50 per cent in 2001 to 14.23 per cent in 2008. Moreover, we observe that a large share of national board members has some kind of international experience abroad, either in terms of education, work or board experience. When looking only at firms with at least one such director on the board, the percentage of national members with international experience exceeds 40 per cent. This suggests that they bring something important to the board, such as international experience, expertise and networks, and therefore act as an alternative resource to international directors. The numbers outlined in Table 2 also indicate that international directors are also present on the board's nomination committees. This is particularly interesting for Norway and Sweden, where the members of nomination committee are not members of the board and where the internationalization of the nomination committee might be a pre-step towards (further) internationalization of the board.

Before we continue with the analysis of the antecedents of the internationalization of Nordic boards, let us take a closer look at the characteristics of the international directors. The first issue we consider is the director's country of origin. A large share of the international directors in our sample comes from other Nordic countries, the U.S. and the U.K. In 2007, for example, close to 20 per cent of all international directors on Danish boards came from the U.S. or the U.K., while the largest part was nationals of other Nordic countries (about 50 per cent). Directors from other EU-countries (EU countries outside the Nordic region and the U.K.) counted for 21 per cent of the international seats on Danish boards. The situation is quite similar in Finland, where directors from the U.S. and the U.K. represented about 14 per cent of all international directors and nearly 53 per cent were from other Nordic countries. Directors from other EU-countries (EU countries outside the Nordic region and the U.K.) on Finnish boards counted for close to 25 per cent of the international seats.

The share of U.K. or U.S. international directors was, on the other hand, larger in Norway, where these directors occupied about 34 per cent of all international seats. The share of other Nordic directors in Norwegian firms was around 40 per cent. Similar to Norway, a large percentage of U.S. or U.K. directors was observed on Swedish boards, where these directors held about 34 per cent of all international seats, in comparison to

⁸ To be precise, the data were collected both at the end of 2006 and 2007. However, for some firms the information for year 2006 was complemented by the information from 2007, when more complete. Therefore, the average value over both periods was used in the analysis.

about 44 per cent held by directors from other Nordic countries. For Norway and Sweden directors from other EU-countries (EU countries outside the Nordic region and the U.K.) filled a smaller share of the international seats (15 per cent and 12 per cent, respectively) compared to firms from Denmark and Finland. To give a flavor of the representation of other nationalities, we present some numbers for the year 2007. Nordic boardrooms in 2007 hosted 10 Asian directors (China, India and Japan), 3 South American directors (Chile, Mexico, and Ecuador), 6 directors from the former Communist countries (Russia, Ukraine, and Serbia), 3 directors from Australia and 7 from Canada. All in all, slightly more than 15 per cent of all non-Nordic directors came from outside Europe.

Our data shows no significant age difference between domestic and international directors. However, the average tenure of international directors is significantly lower than that of national directors: 3.7 years versus 5.7 years. This probably reflects that firms have started appointing international directors fairly recently. About 14.4 per cent of international directors are females. This percentage is similar to that for national directors (14.8 per cent). The high percentage might be partly driven by the gender quota effect in Norway, which has motivated companies to search for qualified females – potential directors – from outside the country; in the year 2007, 32 per cent of all international directors on Norwegian boards were females and nearly 13 per cent of all females on Norwegian boards were from other countries, the largest share coming from Sweden (more than 30 per cent of all international females in our Norwegian sample).

METHODOLOGY AND DATA

Sample

Our statistical sample is based on the population of all publicly traded non-financial firms headquartered in Denmark, Finland, Norway and Sweden during 2001-2008. For these companies, we collected data on a number of board variables, such as the names of the CEO and the directors, their gender, year of birth, first appointment to the board and nationality. These provided us with a total of 831 firm-year observations for Denmark (with complete information with regard to these variables), 801 firm-year observations for Finland, 814 firm-year observations for Norway and 1,768 firm-year observations for Sweden, corresponding to the eight year period between 2001 and 2008.⁹ The main

⁹Not all firms have been listed on the stock exchange since 2001 and were included in the sample from the year corresponding to the year of listing onwards. The same applies to firms that delisted during the period of the analysis. Furthermore, information on directors' ages and tenure was not equally rich across all the years of our analysis, which means that we operate with an unbalanced panel. Information on the board was

sources of our information on directors are firm annual reports. However, secondary data regarding the nationalities of board members was not always available, and we resorted to telephone interviews and e-mail to fill the gap and to verify some other variables. We were able to identify whether any of the directors were non-national in 98 per cent of the firm-year observations. Due to source constraints, additional, more detailed information was collected for a single year (2006/2007). This limited information includes information on each director's international work, board experience or their studies abroad.

The collected board information was merged with financial data and ownership data. Financial data were collected from the Worldscope/Thomson Financial Database, whereas the ownership data were from the Thomson Ownership database. Since financial and ownership data were not available for all the firms in our sample, we ended up with a final sample consisting of 2,108 firm-year observations (347 firms). The main reason for the loss of observations was the lack of information on the percentage of foreign sales, which is one of the key variables of our study that cannot be excluded from the analysis. As evidenced in Table 3, where we compare all firms with available data on board and foreign sales with the other listed firms for which data on foreign sales were not available, the excluded firms are generally smaller; they have fewer international directors on the board, are less likely to trade on a foreign market and have a lower share of domestic directors with international experience. Our sample is therefore biased towards large and generally more internationalized corporations. To address this issue, we re-estimated our regressions on a larger sample, in which the percentage of foreign sales is set to 0 for all the firms with missing data on foreign sales. The results are quantitatively similar; therefore, we continue by presenting the descriptive statistics and results for the smaller sample of firms, for which we could measure foreign sales.

The definitions of the variables used in our regression models are presented in Table 4. Table 5 shows the descriptive statistics, calculated for the 2,108 firm-year observations that correspond to the sample size in our baseline model (model (1)).

Place Table 3 – Table 5 about here

As evidenced in Table 5, the firms in our sample have, on average, between six and nine members of the board (both employee and owner-elected), depending on the country. With the exception of Norway, the average age of directors is around 55 years old; the lower age (50 years) for Norwegian national directors is probably the result of the gender quota and the appointments of relatively younger female directors on Norwegian boards

unavailable for about ten per cent of firm-year observations. No systematic pattern between these and other units is observed.

(Gregorič *et al.*, 2010). The longest tenure for directors is observed in Denmark: half of the domestic board members in an average Danish firm have been sitting on the board for more than four years. The average (median) tenure of a national director in other Nordic countries is slightly lower but still higher than four years.

Variables: definitions

We now continue by describing our dependent and explanatory variables and discussing the estimation methodology.

Dependent Variable: Our main dependent variable is the percentage of international members out of the total number of board members (*PercentINT*). By looking at the percentage of international directors on the board we capture both the presence of an international director and the size of the international representation on the board. In order to provide an insight on the direction of causality and control for unobserved firm-characteristics, we examine changes in the number of international directors on the board. We define two variables: the variable (*NewlyappointedINT*) that measures the number of international directors appointed to boards in a given year and the variable (ΔINT) that measures the change (positive and negative) in the number of international directors (between year t-1 and year t).

Explanatory Variables: Our regression models use a number of explanatory variables, chosen in accordance with the hypotheses stated above. We use five different variables to proxy for the internationalization of the firm's operations and financing. As a proxy for financial internationalization we use two variables. The first captures a firm's involvement in international financial markets, and this variable is a dummy variable reflecting the trade of a firm's shares on an international stock exchange. This variable (*FOREIGNEXCHANGE*) takes the value of 1 if the company's shares are traded on cross-border stock exchanges and zero otherwise. It is based on the information from Amadeus database and collected for one point in time only (end of year 2006). The other variable reflecting financial internationalization is a foreign ownership variable (*FOREIGNOWN*) measured as the sum of ownership shares held by foreign owners when present among the top five owners of the firm. The explanatory variable used as a proxy for the firm's commercial internationalization is foreign sales as a percentage of the firm's total sales (*FOREIGNSALES_TS*).¹⁰ To capture board conservatism, we construct the variable (*DOMESTIC BOARD AGE*) that refers to the median age of the nationals on the board. We also look at the percentage of domestic directors that are older than the median board

¹⁰ It would be useful if we had information on the distribution of a firm's sales by geographic region since we could then test whether the country of origin of each of the foreign members corresponds to the importance of this country in terms of firm exports. However, Thomson Financials provides such information for few of the firms in our sample.

age, i.e. 54 years (*OLDERBOARD*), and at the percentage of directors that have been sitting on the board for more than a mandate, i.e. 4 year period (*LONGTENURED**DIR*). The influence of employee directors is measured by the percentage of employee-elected members on the board (*EMPLOYEE**DIR*).

To control for a potential substitution effect between the appointment of an international board member and a national member with international experience, we include the variable (*INTEXPERIENCE*) that measures the percentage of national board members with any type of international experience (i.e. international board experience, international work experience or international education). In this regard, the international experience of an individual board member is registered as 0 or 1 in accordance with what is reported in the annual reports. For this variable, we only have information corresponding to the average of the years 2006 and 2007. Firm size is measured by the logarithm of the firms' total assets (*SIZE*), in constant year 2000 prices. Firm performance is measured by return on assets (*ROA*), defined as the earnings before interests and taxes, divided by total firm assets (in per cent).

Control variables: Following Masulis et al.'s (2010) study on the internationalization of U.S. boards, we control for the firm's growth opportunities (*Tobin's Q*) and a variable measuring the firm's research and development activity (*RDpercent*). Tobin's Q is defined as the market value of firm equity plus the book value of firm assets minus the book value of firm equity, all divided by the book value of firm assets. The intensity of the firm's research and development is measured as the percentage of the firm's total sales that are allocated for research and development. Following other studies (Faleye et al., 2006), we set this percentage to zero whenever financial information is available for the firm but no information on research and development expenses is reported. In selected specifications we control for the size of the board (*BOARD SIZE*). All our regressions also include industry, time and country effects.

Statistical methods

Our main dependent variable – the percentage of international directors on the board (*PercentINT*) – takes the value of zero for a nontrivial fraction of the population but is roughly continuously distributed over the strictly positive values. While we could in principle still use the OLS estimator, applying OLS would very likely generate negative fitted values. Moreover, a distribution of the dependent variable that piles up at zero does not have a conditional normal distribution, which means that our inferences would only have asymptotic justification. Therefore, estimating a Tobit model is more appropriate in this case since it allows us to better account for the specific distribution of our dependent

variable (Wooldridge, 2003). The estimates of the Tobit regressions on a pooled sample are later presented in Table 7-8.

As with almost all business research, establishing causation is a challenge because of the endogeneity and likely interdependence of board and business internationalization. The coefficients estimated in Tables 7-8 could therefore equally well be interpreted as associations rather than the causal relations predicted by our hypotheses. A positive correlation between firm sales and the percentage of international members on the board could (for example) be interpreted as support for our hypothesis that firms with a higher share of foreign sales tend to (on average) appoint more international directors to the board. However, the causation could also plausibly run the other way: the presence of international directors on the board of an international corporation might boost the firm's international experience and positively contribute to foreign sales. Or, some other (unobserved) firm-specific factors (like "a globalization strategy" or "a global opportunity") might simultaneously influence a firm's international performance and board internationalization, leading to potentially spurious correlations between the variables.

One solution to such problems is using instrumental variables (IV). However, the validity of the IV approach depends on the availability of instruments, which in practice is hard to obtain. Moreover, several of our explanatory variables are potentially subject to endogeneity issues, which strictly speaking mean that we would have to find a valid instrument for each of these variables. We therefore opt for an alternative solution and estimate three additional models to alleviate (although not completely eliminate) the endogeneity problem. First, we re-estimate our reference model with firm fixed-effects and all the explanatory variables lagged by one year. Tobit fixed effect models estimated on short-time periods are found to be biased and inconsistent, and therefore we use the OLS specification (see Dittmann et al., 2010) for these models. Second, to account for reverse-causality (in addition to unobserved effects) we include the lagged dependent variable as an additional (incomplete) test of causality in accordance to Granger (1969). The results of these estimations are (later) presented in Table 9.

Third, we analyze the change in the number of international board members by defining our dependent variable in terms of the number of international directors newly appointed to the board (*NewlyappointedINT*) or as the change in the number of international board members in a given year (ΔINT)¹¹. By differentiating the dependent variable, we neutralize unobserved fixed or slowly changing factors that could be correlated with board internationalization and our explanatory variables as well as consider inertia in board structure (Farrell & Hersch, 2005). Accounting for the inertia is important since

¹¹ We thank the editor and reviewer for this suggestion.

empirical studies show that governance is sticky, i.e. that firms alter their governance structure rather slowly in response to economic factors (e.g. Gillan, 2006). We model the number of newly appointed international directors (*NewlyappointedINT*) as a Poisson process, where the probability of a firm appointing (y) international members to the board equals $P(Y=y)=e^{-\mu} \mu^y/y!$, $y = 0, 1, 2$ etc. To account for overdispersion, we relax the equi-variance assumption and apply a robust estimate of the variance-covariance matrix of the estimator (Cameron & Trivedi, 2005)¹². The model with the change in the number of international board members as the dependent variable is estimated by OLS with cluster robust standard errors. The results of these estimations are later presented in Table 10.

EMPIRICAL RESULTS

The correlation matrix in Table 6 gives us a first insight into the pattern of associations between the percentage of international directors on the board and selected explanatory and control variables. As evidenced in the matrix, the percentage of international directors is higher in larger firms (in terms of total firm assets), in the firms with larger boards and in the firms with higher growth opportunities (when measured by *RDpercent*). Contrary to our expectations, firms with more national members with international experience also have a higher incidence of international directors on the board. Finally, we observe a significant positive correlation between the percentage of international board members and the variables reflecting the internationalization of the firm's activities, such as foreign ownership, the firm's shares traded on international stock markets (dummy) and foreign sales (as percentage of total firm sales). However, a negative and significant correlation is observed for other directors' tenure (see the *LONGTENURED* variable) and return on assets. Hence, the first impression from this matrix is that both agency theory and resource-dependence theory provide relevant explanations of board internationalization.

To further analyze these relations and test our 5 hypotheses, we proceed with the multivariate analysis. We note, however, that the correlation table indicates no severe

¹² The use of a Poisson estimator is appropriate in cases where the response variable is discrete and takes only non-negative values. The number of newly appointed directors corresponds to these characteristics: in 85 per cent of our firm-year observations the number of newly appointed directors was 0, in 12 per cent the firms appointed 1 international director to the board, in 2 per cent this number was equal to 1, while in the remaining 1 per cent this number was higher than 2 (maximum 7). The Poisson estimator is however based on the assumption that the mean and the variance of the dependent variable is given by μ , which is a parameter specific to the firm and is a deterministic function of a number of firm observable characteristics x_k . This equality is rarely satisfied in practice. Following Cameron & Trivedi (2005), we compute a simple overdispersion test statistic and confirm that indeed the null hypothesis of no overdispersion can be rejected at 0.01 percentage level.

multicollinearity problems. This is confirmed by the variance inflation factors; the values for all our regressors are below the critical threshold of ten, confirming that there is no problematic multicollinearity. To mitigate the influence of outliers, the upper and lower-most percentiles for each financial variable are set equal to the values at the 1st and 99th percentiles in each year, respectively.

Place Table 6 about here

We start our multivariate analysis by presenting the results of a pooled Tobit regression in Table 7 where the percentage of international directors (*PercentINT*) is first regressed on a number of firm-specific characteristics in model (1). Board-related variables capturing board conservatism are then added in models (2) and (3) of Table 7. As evidenced in model 1, Table 7, the percentage of international directors on the board is higher in firms with a higher percentage of foreign sales in total sale, and in firms with a higher share of foreign ownership among the largest five investors. It is also higher in firms whose shares are traded on cross-border stock exchanges. This is in line with our *Hypotheses 1 and 2*.

In model (2), Table 7, we add board-specific variables, i.e. the median age of domestic board members (*DOMESTICBOARDAGE*) and the percentage of employee-elected directors on board (*EMPLOYEEEDIR*). In model (3) we, in addition, include the percentage of directors that have been sitting on the board for more than 4 years (*LONGTENUREDİR*).¹³ Model (3) is our reference model.

As evidenced in model (2) and model (3), the impact of median board age is negative but not significant across both specifications. It could, however, be argued that, due to the similarities in the Scandinavian languages, the language barriers are not an issue for Scandinavian directors that sit on the boards of other Scandinavian countries. With the term “Scandinavian countries” we mean Denmark, Norway and Sweden. Therefore, we construct an alternative measure where (for firms operating in Denmark, Sweden and Norway) we do not count other Scandinavian directors as international directors. The results for this restricted definition of international directors are presented in model (4), Table 7. When applying this definition of international directors, the impact of domestic board age remains negative but not significant at the standard levels of significance. With regard to board tenure, our results indicate that the incidence of international directors is

¹³We re-estimated models (2) and (3) by using the percentage of older board members (*OLDERBOARD*), namely the percentage of directors of age higher than the median board age, 54 years, at the place of the median domestic age variable. The coefficients for this (alternative) proxy of board age are negative but not statistically significant (results not presented for the sake of space). Since it is hard to say what age should be considered as “young” or “old”, we continue by presenting the results for the median domestic age variable.

lower in firms with a higher share of long-tenure directors. The negative association is in line with the argument that the directors that have been sitting on the boards for a longer period might be more friendly to the management and less ready to “rock the boat” by bringing in an international board member. Moreover, a higher share of long-tenured directors may reflect a generally slower pace of board changes in some firms, which (considering the fact that Nordic boards have started to open their doors to internationals only recently) would imply a lower potential for international board appointments. All in all, *Hypothesis 3(a)* is only partly supported.

Our empirical results tend to support *Hypothesis 3(b)*. In most specifications, the presence of employee directors correlates negatively and significantly with the percentage of international directors on the board. The negative correlation persists if we define our dependent variable as the percentage of owner-elected international directors, although the effect is statistically significant only for model (4) in Table (7), where we use the restricted definition of international directors on the board, i.e. excluding other Scandinavian directors (results not reported for the sake of space).

Next we turn to the potential substitution effects between nationals with international experience and international board members in model (5), Table 8. Due to data restriction, information about the percentage of national directors with international experience is limited to years 2006 and 2007. In model (5) we therefore assume that the percentage of these directors on average does not vary across years (i.e. zero within firm variation). Contrary to our expectations, the association between *INTEXPERIENCE* and *PercentINT* is positive and statistically significant; the more internationally experienced the national directors are, the higher is the percentage of international directors on the board. This result is a rejection of our *Hypothesis 4* and suggests that international directors and national directors with international experience perform different functions on the board, i.e. that they are complements rather than substitutes. We obtain further support for this conjecture when we regress *INTEXPERIENCE* on a set of firm-specific characteristics in model (6), Table 8. This regression is estimated only for the period 2006-2007 (due to data restrictions mentioned above). We find that the share of national members with international experience increases with the internationalization of the firm’s commercial activities (measured by the foreign sales variable); the share of these directors is higher also when a firm’s shares are traded abroad, while we observe no significant correlation with foreign ownership. Finally, boards with a higher percentage of employee directors have a lower share of internationally experienced board members. All in all, these results suggest that there are no substitution effects between board internationalization and the presence of national directors with international experience.

Before discussing the supply side factors, we do some further analysis with regards to a foreign owner's influence on board appointments. In model (7), Table 8, we investigate whether a higher number of international board members are observed in the firms in which there is also at least one international member of the nomination committee. It makes sense to do this analysis for Sweden and Norway since in these countries the nomination committee is not part of the board of directors but constituted as an external body elected directly by shareholders at the annual shareholder meeting. Twenty per cent of the Swedish and Norwegian firms in our sample have international membership on their nomination committee. Moreover, international membership of the nomination committee (*INT_NOM*) is positively and significantly correlated with the extent of foreign ownership. The existence of international members on the nomination committee can be seen as a proxy for the presence of a large foreign shareholder. Furthermore, international nomination committee members might also proxy potential network effects since these members typically are part of directors' network in their home country, they have better access to international candidates for board positions, which should imply a higher incidence of international director appointments. We therefore include a dummy variable indicating the presence of an international member on the nomination committee (*INT_NOM*) and re-estimate the model on a restricted sample of Swedish and Norwegian firms (see model (7)). In line with our expectations, the presence of at least one international member of the committee positively and significantly correlates with the percentage of international directors on the board. While more analysis and better data on the directors' inclusion in the international networks are needed to ascertain our evidence, the fact that a positive coefficient is observed for this variable (even when we control for the percentage of foreign ownership) suggests that internationalizing the nomination committee paves the way into international directors' networks and access to more international board candidates.

Place Table 7 and Table 8 about here

Finally, we observe a larger percentage of international directors in larger firms, which is in line with our proposition that larger firms can attract more and better international directors (*Hypothesis 5*). In line with other studies, firms with higher growth opportunities – when measured in terms of research and development – have a higher share of international directors on board.

Altogether, the results presented above show a positive correlation between the percentage of international directors, a firm's commercial internationalization (measured by the share of foreign sales in total sales) and financial internationalization (measured by the dummy for the firm's shares traded on an international stock exchange and the percentage of foreign ownership). A higher share of international investors is also

observed in larger firms, in firms with lower board tenure and in firms with higher growth opportunities.

While our hypotheses might lead to inference about a causal relationship, most of our explanatory variables are potentially endogenous and further analysis is needed to ascertain the real causal effect. Put differently, the estimators applied in Tables 7 and 8 will consistently estimate the effects of the explanatory variables on our dependent variable only in the case that, after controlling for various factors influencing the dependent variable, the remaining error term is not correlated with any of the explanatory variables.

The results of further analysis tackling endogeneity issues are presented in Tables 9 and 10. In model (8), Table 9, we replicate our reference regression model by using the lagged values of the explanatory variables and including firm-fixed effects in all our regressions. In model (9), we re-estimate the Tobit regression from model (3) by adding the lagged dependent variable as additional explanatory variable and include the explanatory variables with one year lag. We must note here that both these methods are very conservative and remove most (all) of the cross-sectional variation (Dittmann et al., 2010), which makes it hard to obtain significant coefficients for variables that change slowly over time, as is the case for board-related variables. As shown by Zhou (2001), when a firm's contractual environment and governance arrangements change slowly over time and when their structure reflects a "stable" or long-term relation with firm-specific characteristics, the fixed-effects estimator based on the within firm, year-to-year changes, will not detect a relationship even if one exists. As a third step, we regress the changes in the number of newly appointed international directors on a set of firm and board-specific variables in model (10), Table 10. Alternatively, we estimate the regression for the change in the number of international directors on the board as reported in model (11), Table 10.

Place Table 9 and Table 10 about here

The coefficients for (*FOREIGN SALES_TS*) remain positive in most of the new estimations, but they are no longer significant at the standard levels of significance. The same holds for the cross-border exchange variable (*FOREIGNEXCHANGE*). While the lack of significance might be due to the fact that these variables do not change much over time (or are by definition time-invariant), we cannot convincingly show that commercial internationalization or share trading on foreign stock exchanges causes the internationalization of the Nordic boards. On the other hand, our results show that international directors' appointments follow an increase in foreign ownership. This result is in line with agency theory based arguments and may imply that international directors

in Nordic countries mainly provide monitoring (on behalf of foreign owners) or alternatively that international owners tend to choose directors within their network (i.e. international directors). Firm size and (in some specifications) firm operational performance (*ROA*) are also found to be important determinants of board internationalization. Finally, a higher percentage of long-tenured directors (*LONGTENURED*) exert a negative impact on the appointments of international directors on the board, which could indicate that conservatism and entrenchment may play a role in limiting international board representation. The impact of employee directors is not statistically significant. All in all, the additional analyses indicate a casual effect in relation to *Hypothesis 1*, *Hypothesis 3(a)* and *Hypothesis 5*.

Robustness tests

As argued above, the insignificant coefficient for the foreign sales variable might be due to the relatively small year-by-year variation in firm sales. In order to address this issue, we estimate a number of alternative specifications. For example, we estimate a model where we regress the percentage of international directors on a dummy variable indicating a relevant change in the percentage of foreign sales, i.e. an increase of foreign sales to above 50 per cent share of total firm sales, and other explanatory/control variables and a model where the changes in the percentage of international directors are regressed on lagged changes in the percentage of foreign sales and other variables (i.e. a non-contemporaneous difference-on-difference regression, following Anderson, Reeb, Upadhyay & Zhao, 2001). While we observe a positive and significant correlation between the contemporary change of international directors on the board and foreign sales, the significance disappears when we use lagged change in the explanatory variables.¹⁴

Finally, we estimate an IV regression where we regress the number of international directors on the board on the percentage of foreign sales in total firm sales and other variables, in which the percentage of foreign sales is instrumented by the wage margin, expressed as the wage costs as a percentage of the firm's turnover. This variable has been suggested as an important determinant of a firm's export behavior (Wakelin, 1998)¹⁵, while at the same time should not impact the international board representation, after controlling for the firm's internationalization and other firm-specific variables, such as firm size and industry. Since the main regression is of a Poisson type, the standard linear

¹⁴ Results not reported here but will be sent upon request.

¹⁵ Other firm characteristics that might influence a firm's export performance are R&D, wage costs, differential resources, technological orientation, marketing skills, firm strategies, human capital, managerial attitudes and perceptions, etc. (Salomon & Shaver, 2005). These variables are not included in the first stage regression due to data limitations, insignificant correlation with foreign sales or because they do not satisfy the exclusion restriction condition.

instrumental variable method does not apply. Following Cameron & Trivedi (2005), we proceed as follows. In the first step, we regress the percentage of foreign sales on the wage margin and all the other independent variables and compute the residuals. Given that we have panel data, we use the Random Effect (RE) estimator and cluster-robust standard errors. In the second step, we estimate the RE Poisson regression including the residual from the first step as a regressor. These residuals should control for the endogeneity of the foreign sales variable. Since the estimated rather than the actual residuals are used in the second step, the standard errors are corrected by running a bootstrap with 200 applications. The results of the empirical analysis and robustness tests are presented in Table 11. The positive coefficient of the first-stage residual can be interpreted as the effect of the latent factor on the share of foreign sales and the appointments of international directors. While the positive correlation between foreign sales and international directors is consistent with theory and anecdotal evidence among large Nordic firms, we cannot show that the appointments of international directors *follow* increases in foreign sales. Our evidence is more consistent with the conclusion that international directors are appointed along with increases in foreign sales, which might be driven, however, by other unobserved factors.

Place Table 11 about here

DISCUSSION AND CONCLUDING REMARKS

In this paper, we study the internationalization of corporate boards. Similar to the theory on the internationalization of the firm's production, we contribute to the literature by identifying theoretically motivated reasons for the internationalization of boards. Based on a theoretical framework - encompassing Resource dependency theory and Agency theory - we formulate five hypotheses. The empirical tests apply to a panel of 347 non-financial publicly listed corporations from the Nordic region.

As the first study to make a distinction between financially and commercially motivated board internationalization, we observe a higher fraction of international board members in firms with a higher percentage of foreign sales, in firms with higher percentage of foreign ownership and in firms whose shares are traded on foreign (mostly European) stock exchanges. In line with our expectations, we find more international directors in larger firms and in firms with higher growth opportunities. We find the incidence of international directors negatively associated with the tenure of the board and conclude

that conservatism of the “old boys’ network” may be a barrier to appointments of international directors.

As another contribution to the literature, we also consider whether firms recruit national directors with international work, board experience or education as an alternative governance solution to appointing an international director. We find that there is a positive correlation between a high fraction of these domestic directors with international experience and the commercial internationalization of the firms (i.e. the percentage of foreign sales) - but no significant correlation with foreign ownership. When combined with our findings in regards to the determinants of the international directors on the board, we conclude that international directors and national directors with international experience have a complementary role on the board. We propose that the first-mentioned group serves a monitoring role on the board along with the financial internationalization of the firm whereas the latter category fills an advisory role together with commercial internationalization. Hence, different types of firm internationalization – commercial versus financial – might call for different types of board internationalization. Both types of board internationalization need to be taken into account when evaluating the “internationality” of corporate boards.

Future research on board internationalization should investigate the presented set of hypotheses, particularly by elaborating on the matching of a firm’s geographic sales (markets) to the nationality of its board members. For example, one can explore whether firms whose major market is in China are more likely to have a Chinese national on the board. Also, will a firm listed in the U.K. have a higher probability of having a board member from that country and, if so, how does this affect the firm’s profitability? Further research should also focus on the time specificity and historical context of the antecedents. Will the relative strengths of commercial and financial competencies prevail in different time periods, or can we expect the relationship to change over time?

REFERENCES

- Adams, R.B., Hermalin, B.E. & Weisbach, M.S. 2010. The role of boards of directors in corporate governance: a conceptual framework and survey. *Journal of Economic Literature* 48(1): 58-107.
- Adams, R. & Ferreira, D. 2007. A Theory of friendly boards. *Journal of Finance* 62(1): 217-250.
- Anderson, R. C., Reeb, D. M., Upadhyay, A. & Zhao, W. 2011. The Economics of Director Heterogeneity. *Financial Management*, Spring 2011:5.38.

- Angblad, J., Berglöf, E., Högfelt, P. & Svancar, H. 2001. Ownership and control in Sweden – strong owners, weak minorities and social control. In Barca, F. & M. Becht (Eds), *The control of corporate Europe*. Oxford: Oxford University.
- Atanassov, J. & Kim, H.E. 2008. Labor and corporate governance: international evidence from restructuring decisions. *Journal of Finance* 64(1): 341-374.
- Athanassiou, N. & Nigh, D. 2002. The impact of the top management team's international business experience on the firm's internationalization: social networks at work. *Management International Review* 42(2): 157-181.
- Baruch, Y. 2003. *Managing Careers*. London: Prentice Hall.
- Buckley, P.J., Casson, M. & Gulamhussen, M.A. 2002. Internationalization – real options, knowledge management and the Uppsala approach. In Havila, V., Forsgren, M. & H. Håkansson (Eds), *Critical perspectives on internationalization*. Oxford: Elsevier Science.
- Cameron, A.C. & Trivedi, P.K. 2005. *Microeconometrics. Methods and applications*. Cambridge: Cambridge University Press.
- Carpenter, M.A., Sanders, G.W. & Gregersen, H.B. 2001. Bundling human capital with organizational context: The impact of international assignment experience on multinational firm performance and CEO pay. *Academy of Management Journal* 44(3): 493-511.
- Carpenter, M.A. & Westphal, J.D. 2001. The strategic context of external network ties: Examining the impact of director appointments on board involvement in strategic decision-making. *Academy of Management Journal* 44(4): 639-660.
- Cochran, P., Wartick, S. & Wood R. 1984. The average age of boards and financial performance, revisited. *Quarterly Journal of Business and Economics* 23(4): 57-63.
- Daily, C.M., Certo, T. & Dalton, D.R. 2000. International experience in the executive suite: The path to prosperity? *Strategic Management Journal* 21(4): 515-523.
- Daily, C.M., Dalton, D.R. & Cannella, A. Jr. 2003. Corporate governance: Decades of dialogue and data. *Academy of Management Review* 28(3):371-382.
- Dittman, I., Maug, E. & Schneider, C. 2010. Bankers on the Boards of German Firms: What They Do, What They are Worth, and Why They Are (Still) There. *Review of Finance*, 14:35-71.
- Fama, E.F. & Jensen, M.C. 1983. Separation of ownership and control. *Journal of Law and Economics* 26(2): 301-325.

- Faleye, O., Mehrotra, V. & Morck, R. 2006. When labor has a voice in corporate governance. *Journal of Financial and Quantitative Analysis*, 41(3): 489-510.
- Farrell, K. A. & Hersch, P. L. 2005. Additions to corporate boards: the effect of gender. *Journal of Corporate Finance* 11(1-2): 85-106.
- Gillian, S. L. 2006 Recent Developments in Corporate Governance: An Overview. *Journal of Corporate Finance*, 12:381-402.
- Granger, C. W. J. 1969. Investigating causal relations by econometric models and cross-spectral methods, *Econometrica* 27:424-438.
- Gregersen, H.B., Allen, A.J. & Black, J.S. 1998. Developing leaders for the global frontier. *Sloan Management Journal* 40(1): 21-32.
- Gregorič, A., Oxelheim, L., Randøy, T. & Thomsen S. 2010. How diverse can you get? Gender quotas and the diversity of Nordic Boards. Lund Institute of Economic Research. *Working Paper* 2010/5, Lund University.
- Greve, P., Nielsen, S. & Ruigrok, W. 2009. Transcending borders with international top management teams: A study of European financial multinational corporations, *European Management Journal* 27(3): 213-224.
- Hansen, J. L. 2003. *Nordic company law. The regulation of public companies in Denmark, Finland, Iceland, Norway and Sweden*. Copenhagen: DØF Publishing.
- Harmoni, M. 2003. The impact of reputation capital on the career paths of departing employees. *Journal of Intellectual Capital* 4(3):204-315.
- Harmoni, M. 2006. Executive career advancement in career moves across employers: the role of organization level predictors. *International Journal of Human Resource Management* 17(6):1129-1151.
- Harris, M. & Raviv, A. 2005. Allocation of decision-making authority. *Review of Finance* 9(3): 353-383.
- Heidrick and Struggles. 2009. *Boards in Turbulent Times*. Corporate Governance Report 2009.
- Hermalin, B.E. & Weisbach, M.S. 2003. Boards of directors as an endogenously determined institution: a survey of the economic literature. *Economic Policy Review* April: 7-26.
- Herrmann, P. & Datta, D.K. 2002. CEO successor characteristics and the choice of foreign market entry mode: An empirical study. *Journal of International Business Studies* 33(3): 551-569.

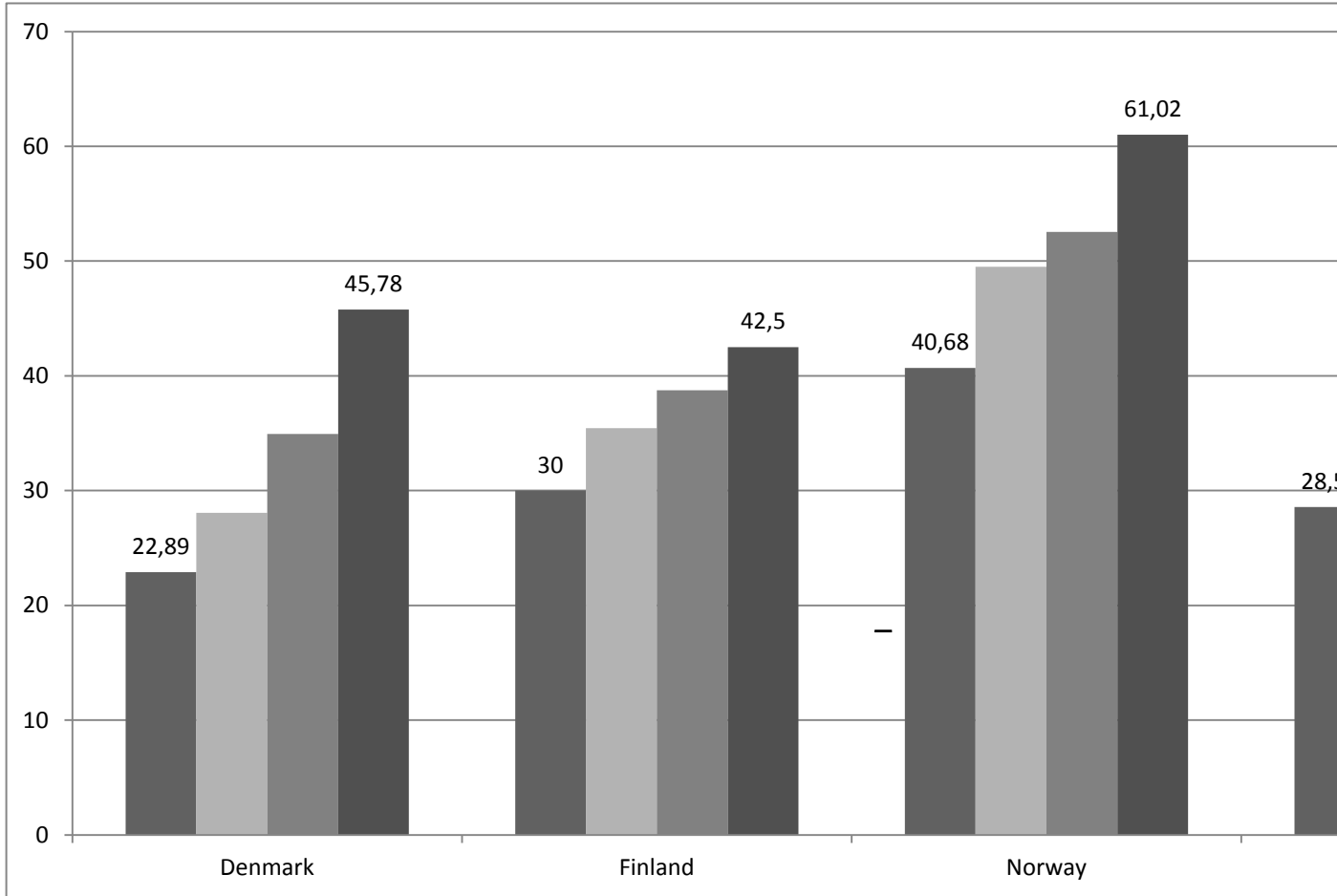
- Johnson, R.A., Hoskisson, R.E. & Hitt, M.A. 1993. Board of director involvement in restructuring: the effects of board versus managerial controls and characteristics. *Strategic Management Journal* 14 (special issue): 33–50.
- Kim, Y. & Cannella A.A. 2008. Toward a social capital theory of director selection. *Corporate Governance: An International Review* 16(4): 282-293.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A. & Vishny, R. 1998. Law and finance. *Journal of Political Economy* 106(6): 1113-1155.
- Levin, D.Z., Whitener, E.M., & Cross, R. 2006. Perceived trustworthiness of knowledge sources: the moderating impact of relationship length. *Journal of Applied Psychology* 91(5): 1163-1171.
- Linck, J.S., Netter, J.M. & Yang, T. 2008. The determinants of board structure. *Journal of Financial Economics* 87(2): 308-328.
- Luo, Y., 2005. How does globalization affect corporate governance and accountability? A perspective from MNEs. *Journal of International Management*, 11: 19-41.
- Masulis, R., Wang, C. & Xie, F. 2010. Globalizing the boardroom – The effect of foreign directors on corporate governance and firm performance. *Conference paper*, Financial Management Association Annual Conference, New York.
- Olie, R. 2010. Top management teams and societal context: the international dimensions of top management. In Devinney, T.M., Pedersen, T. & L. Tihany (Eds), *The past, present and future of international business and management, advances in international management Volume 23*. New York: EmeraldBooks.
- Oxelheim, L. 1997. *Financial markets in transition – globalization, investment and economic growth*. London: Routledge and International Thomson Press.
- Oxelheim, L. 2001. Routes to equity market integration – the interplay between politicians, investors and managers. *Journal of Multinational Financial Management* 11(2): 183-211.
- Oxelheim L, & Randøy, T. 2003. The impact of foreign board membership on firm value. *Journal of Banking and Finance* 27(12): 2369-2392.
- Pearce, J.A. & Zahra, S. 1992. Board composition from a strategic contingency perspective. *Journal of Management Studies* 29(4): 411-438.
- Pfeffer, J. 1972. Merger as a response to organizational interdependence. *Administrative Science Quarterly* 17(3): 382–392.

- Piekkari, R., Welch, D. & Welch, L. 1999. In the shadow: the impact of language on structure, power and communication in the multinational firm. *International Business Review* 8(4): 421-440.
- Raheja, C.G. 2005. Determinants of board size and composition: A theory of corporate boards. *Journal of Financial and Quantitative Analysis* 40(2), 283-306.
- Reuber, A.R. & Fischer, E. 1997. The influence of the management team's international experience on the internationalization behaviour of SME. *Journal of International Business Studies* 28(4): 807-825.
- Rivas, J.L., Hamori, M. & Mayo, M. 2009. Board composition and firm internationalization. *Academy of Management Conference Proceedings*.
- Rose, C. 2005. The composition of semi-two-tier corporate boards and firm performance. *Corporate Governance: An International Review* 13(5): 691-701.
- Ruigrok, W., Peck, S. & Tacheva, S. 2007. Nationality and gender diversity on Swiss corporate boards. *Corporate Governance: An International Review* 15(4): 546-557.
- Ruigrok, W., Peck, S., Tacheva, S., Greve, P. & Hu, Y. 2006. The determinants and effects of board nomination committees. *Journal of Management and Governance* 10(2): 119-148.
- Salomon, R. & Shaver, J.M. 2005. Export and domestic sales: their interrelationship and determinants. *Strategic Management Journal* 26(9): 855-871.
- Sambaraya, R. 1996. Foreign experience of top management teams and international diversification strategies of U. S. multinational corporations. *Strategic Management Journal* 17 (9): 739-746.
- Sanders, G. & Carpenter, M.A. 1998. Internationalization and firm governance: the roles of CEO compensation, top team composition, and board structure. *Academy of Management Journal* 41(2): 158-178.
- Schnake, M., Fredenberger, W. & Williams R. 2005. The influence of board characteristics on the frequency of 10-K investigations of firms in the financial services sector. *Journal of Business Strategies* 22(2): 101-117.
- Shleifer, A. & Vishny, R.W. 1997. A survey on corporate governance. *Journal of Finance* 52(2):737-783.
- Simon, C. & Warner, J. 1992. Matchmaker, matchmaker: the effect of old boy networks on job match quality, earnings, and tenure. *Journal of Labor Economics* 10(3): 306-330.

- Sinani, E., Stafsudd, A., Thomsen, S., Edling, C. & Randøy, T. 2008. Corporate governance in Scandinavia: comparing networks and formal institutions. *European Management Review* 5(1): 27–40.
- Stafsudd, A. 2006. People are strange when you're a stranger: senior executives select similar successors. *European Management Review* 3(3): 177-189.
- Stearns, L.B. & Mizruchi, M.S. 1993. Board composition and corporate financing: the impact of financial institution representation on borrowing. *Academic Management Journal* 36(3): 603-618.
- The Swedish Codetermination Act 1976.
- Tihany, L.D., Griffith, A. & Russel, C.J. 2005. The effect of cultural distance on entry mode choice international diversification, and MNE performance: a meta-analysis. *Journal of International Business Studies* 36(1): 270-283.
- Tirole, J. 2006. *The Theory of Corporate Finance*. Princeton: Princeton University Press.
- Zhou, X. 2001. Understanding the determinants of managerial ownership and the link between the ownership and performance: comment. *Journal of Financial Economics* 62: 559-571.
- UNCTAD. 2008. *World Investment Report 2008*. Geneva: UNCTAD.
- Wakelin, K. 1998. Innovation and export behaviour at the firm level. *Research Policy* 26(7-8): 829-841.
- Westphal, J. D. & Stern, I. 2006. The other pathway to the boardroom: Interpersonal influence behavior as a substitute for elite credentials and majority status in obtaining board appointments. *Administrative Science Quarterly* 51(2): 169-204.
- Vafeas, N. 2003. Length of board tenure and outside director independence. *Journal of Business Finance and Accounting* 30(7-8): 1043-1064.
- Van Veen, K. & Marsman, I. 2008. How international are executive boards of European MNSc? National diversity in 15 European countries. *European Management Journal* 26(3): 188-198.

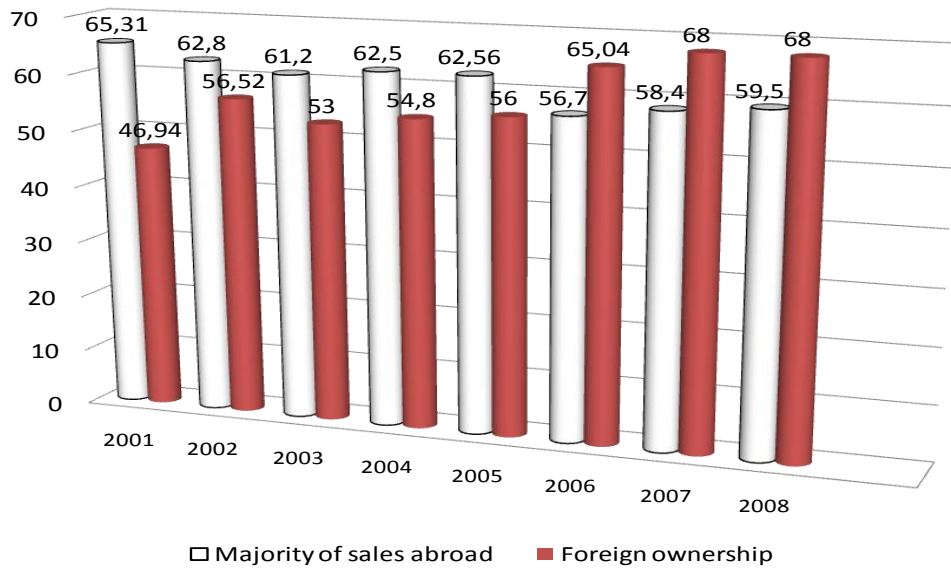
Tables and Figures

Figure 1 Percentage of Nordic firms with international directors during 2001-2008



Notes: The numbers are calculated over a balanced sample of 83 Danish firms, 80 Finnish firms, 59 Norwegian firms and 147 Swedish non-financial firms that were present in our sample in each of the years 2001-2008.

Figure 2 Percentage of Nordic firms with majority of sales abroad (>50%) and the percentage of Nordic firms with at least one foreign owner among the five largest owners during 2001-2008



Notes: The percentage is calculated over a balanced sample of 83 Danish firms, 80 Finnish firms, 59 Norwegian firms and 147 Swedish non-financial firms that were present in our sample in each of the years 2001-2008.

Table 1 Internationalization of Nordic firms between 2001-2008 (sample firms)

Year	Country	Foreign sales as percentage of total sales	Percentage of largest 5 blocks owned by foreigners	Percentage of largest 5 blocks owned by foreigners (Restricted)
		Mean (Sd)	Mean (Sd)	Mean (Sd)
2001	DENMARK	56.29(30.56)	5.64(10.60)	11.28(12.78)
	FINLAND	62.12(27.22)	4.38(7.87)	9.25(9.31)
	NORWAY	60.15(28.01)	3.92(5.25)	6.61(5.37)
	SWEDEN	57.64(27.27)	4.46(9.30)	11.15(11.99)
	ALL	58.97(28.03)	4.59(8.72)	9.86(10.57)
		Mean (Sd)	Mean (Sd)	Mean (Sd)
2008	DENMARK	48.79(33.13)	7.80(11.50)	9.80 (12.11)
	FINLAND	53.18 (23.67)	8.86(11.37)	13.50(11.60)
	NORWAY	69.30(23.72)	11.08(12.63)	14.60(12.60)
	SWEDEN	56.55(26.10)	7.88(10.54)	12.80(10.92)
	ALL	56.45(27.14)	9.86 (10.57)	12.58(11.72)

Notes: The mean values are calculated for the 2,108 firm-year observations or 347 Nordic non-financial firms that correspond to the sample size in our baseline model (Model 1). Percentages for foreign ownership are presented separately for all firms and (restricted) to the firms with at least one foreign owner among the largest five.

Table 2 Internationalization of Nordic boards (sample firms)

	International board members (% of all board members)		International board members (% of all owner-elected board members)		National directors with international experience (% of all national directors)		International directors on nomination committee (% of all members)	
	2001	2008	2001	2008	2006/2007		2006/2007	
					All	Restricted	All	Restricted
Denmark	5.79	14.73	8.17	20.30	35.20	39.42	25.0	50.00
Finland	9.50	13.10	9.50	13.10	35.00	39.92	12.22	39.80
Norway	13.42	17.38	15.42	21.81	36.13	39.98	12.92	68.90
Sweden	7.50	12.80	8.90	15.10	38.47	44.50	4.86	29.44
All	8.50	14.23	9.29	16.91	36.70	41.60	8.09	39.73

Notes: The mean values for board variables are calculated for the 2108 firm-year observations or 347 firms that correspond to the sample size in our baseline model (model 1, Table 7). The data on the nomination committee refer to a much smaller sample since many of the firms in our analysis do not have a nomination committee: the firms with such a committee in place numbered only 4 in Denmark, 51 in Finland, 68 in Norway and 198 in Sweden. Percentages for the national directors with international experience and for international directors on the nomination committee are presented separately for all firms and for a sample that was restricted to firms having at least one member with international experience, or at least one international director on the nomination committee.

**Table 3: Descriptive statistics for sample firms and firms excluded from the main analysis
(due to unavailability of data for foreign sales)**

	sample firms	excluded firms	t-test for the difference in means
International directors on board (%)	11.40	7.16	-8.18***
Shareholder elected international directors (%)	13.20	8.87	-7.45***
Foreign ownership (%)	6.95	4.68	-6.52***
Nationals with international experience (% of all nationals)	37.08	30.83	-7.45***
Median board age	54.09	53.04	-5.70***
Directors with tenure longer than 4 years (%)	44.34	37.42	-7.44***
Employee-elected directors (%)	13.18	8.66	-9.68***
Board size	7.33	5.99	-21.34***
Firm size (total assets, in year 2000 mio EURO prices)	1732.38	132.19	-15.53***
Tobin's Q	1.79	1.92	2.89***
Return on assets	4.99	-3.67	-11.51***
Foreign exchange dummy	0.48	0.18	-20.17***

Table 4: Definition of the variables

VARIABLE LABEL	Explanation
PercentINT	(number of international directors/number of board members directors)*100
Δ INT	Change in the number of international board members between year (t) and (t-1)
INTEXPERIENCE	Per cent of national directors with foreign education, work or board experience
LONGTENUREDİR	Percentage of directors on board with the tenure longer than 4 years
DOMESTIC BOARD AGE	Median age of domestic board members
DOMESTIC BOARD TENURE	Median tenure of domestic board members
OLDERBOARD	Percentage of directors of age higher than the median board age (54 years)
BOARDSIZE	Number of directors on board
FOREIGNSALES_TS	Percentage of foreign sales in relation to total sales
FOREIGNOWN	Percentage of foreign ownership
TOBIN'S Q	Market value of firm equity plus the book value of firm assets minus the book value of firm equity, all divided by the book value of firm assets
ROA	Return on assets (earnings before interests and taxes, divided by firm total assets), in per cent
FOREIGNEXCHANGE	Dummy variable that we assign the value 1 for the firms whose shares are traded on other stock exchanges, and 0 otherwise
SIZE	Total firm assets in 2000 constant Million Euro prices
RDpercent	Percentage of research and development in relation to total firm sales.

Table 5: Descriptive statistics for the variables used in the regression model

	DENMARK	FINLAND	NORWAY	SWEDEN
	Mean (S.d.)	Mean (S.d.)	Mean (S.d.)	Mean (S.d.)
PercentINT	9.75 (15.36)	11.60 (17.75)	13.10 (17.65)	10.65(16.13)
INTEXPERIENCE	34.62 (22.60)	35.62(23.30)	38.18(22.31)	38.29(25.11)
BOARD SIZE	7.38 (2.10)	6.31(1.57)	7.10(1.84)	8.22 (2.25)
DOMESTIC BOARD AGE (median)	55.53 (5.49)	55.41(4.92)	50.52(5.27)	54.48 (4.62)
DOMESTIC BOARD TENURE(median)	5.70 (2.88)	5.35(3.40)	4.14 (3.58)	5.04 (2.44)
LONG TENURE DIRECTORS (%)	53.47 (25.11)	46.58 (26.98)	28.50 (25.39)	47.46 (25.52)
EMPLOYEEEDIR (%)	24.29(16.42)	0.40 (2.62)	19.45 (16.13)	14.12(12.62)
FOREIGN SALES_TS (%)	49.97(32.80)	56.40(25.34)	63.35(26.36)	56.95 (26.48)
FOREIGN EXCHANGE (% of firms)	30.73	53.52	55.19	52.30
FOREIGN OWNERSHIP	7.54 (13.17)	6.72(10.29)	8.56(12.00)	6.80(11.40)
SIZE	1369.25	1892.81	2373.50	1812.50
(in year 2000 Euro Mio prices)	(3755.5)	(4385.7)	(5405.11)	(4107.18)
ROA (EBIT/TOTAL ASSETS)	6.32(15.20)	8.83(11.16)	4.55(15.47)	5.61 (19.97)
Tobin's Q	1.80(1.31)	1.67(0.85)	1.82 (1.37)	1.85(1.20)
R&D (as percentage of total sales)	13.37 (54.76)	3.84 (7.43)	4.13 (21.29)	9.01(42.45)

Notes: The number of firm-year observations varies across different explanatory variables. The descriptive statistics are calculated for the 2,108 observations that correspond to the sample size in our baseline model (model (1)).

Table 6: Correlation matrix

	Percent INT	Δ INT	INT EXPE RIENCE	EMPLDIR	LONG TENUR. DIR	DOM. BOARD AGE	OLDER BOARD	BOARD SIZE	FOR. SALES _TS	FOR. OWN	TOB Q
PercentINT	1.00										
Δ INT	0.43*	1.00									
INTEXPERIENCE	0.33*	0.12*	1.00								
EMPLDIR	-0.08*	0.02	-0.12*	1.00							
LONGTENUREDIR	-0.12*	-0.14*	-0.04	0.04	1.00						
DOM. BOARD AGE	0.03	-0.04	-0.04	-0.11*	0.31*	1.00					
OLDERBOARD	0.04*	-0.04	-0.00	-0.02	0.25*	0.73*	1.00				
BOARDSIZE	0.10 *	0.12*	0.01	0.56*	-0.02	0.10*	0.09*	1.00			
FOR.SALES_TS	0.13*	0.06*	0.21*	0.01	0.02	0.05*	0.07*	0.09*	1.00		
FOREIGNOWN	0.34*	0.16*	0.02	0.02	-0.11*	-0.04*	-0.03	0.02	0.02	1.00	
TOBIN'S Q	-0.03	-0.03	0.01*	0.01	0.04	-0.12*	-0.10*	-0.07*	0.06*	-0.00	1.00
ROA	-0.06*	-0.05*	-0.13*	0.10*	0.17*	0.13*	0.12*	0.13*	0.01	0.00	0.18
FOR.EXCH.(FX)	0.19*	0.10*	0.17*	0.04	-0.12*	-0.05*	0.02	0.26*	0.14*	0.02	0.11
SIZE	0.22*	0.11*	0.10*	0.20*	0.00	0.25*	0.26*	0.58*	0.18*	0.06*	-0.1
RD	0.11*	-0.01	0.07*	-0.07*	-0.02	-0.02	-0.00	-0.07*	-0.01	0.05*	0.17

Note: The table presents partial correlation coefficients for the main variables used in the empirical analysis. The coefficients are calculated over the sample of 2108 firm-year observations for which complete information is available.

*. * denote statistical significance at 5 per cent, respectively.*

Table 7: Percentage of international directors on board (Tobit regression)

DEPENDENT VARIABLE	PercentINT			PercentINT (restricted)
	model (1)	model (2)	model (3)	model (4)
LONGTENUREDIRE			-0.111*** [-3.615]	-0.057* [-1.666]
EMPLOYEEIDIRE		-0.209*** [-3.206]	-0.218*** [-3.343]	-0.272*** [-3.637]
DOMESTICBOARDAGE		-0.260* [-1.60]	-0.132 [-0.796]	0.158 [0.849]
FOREIGNSALES_TS	0.112*** [4.023]	0.111*** [3.966]	0.116*** [4.130]	0.103*** [3.307]
FOREIGNOWN	0.772*** [12.657]	0.762*** [12.197]	0.733*** [11.649]	0.753*** [10.977]
FOREIGNEXCHANGE	5.412*** [3.075]	5.364*** [3.038]	5.140*** [2.912]	3.435* [1.763]
ROA	-0.133*** [-2.630]	-0.111** [-2.169]	-0.092* [-1.803]	-0.156*** [-2.828]
SIZE	4.072*** [8.090]	4.718*** [8.749]	4.726*** [8.775]	5.201*** [8.704]
Tobin's Q	-0.444 [-0.577]	-0.442 [-0.577]	-0.349 [-0.456]	1.034 [1.229]
RDpercent	0.069*** [3.261]	0.070*** [3.265]	0.073*** [3.403]	0.071*** [3.111]
Log-likelihood	-4706.1	-4663.7	-4647.1	-3880.3
R-squared	0.24	0.25	0.25	0.24
Observations	2,108	2,099	2,094	2,094

Notes: The R-squared for Tobit regression is actually the R-squared from a corresponding OLS regression. The dependent variable in all specifications is the percentage of international directors on the board (PercentINT). In model (4) Nordic directors sitting on the boards of firms from the other Nordic countries are not counted as international directors. Constant not reported. t-statistics are reported in brackets. All regressions include country dummies, and common time and industry effects. ***, ** and * denote statistical significance at 1, 5 and 10 per cent, respectively.

Table 8: International expertise on board – Substitution effect (Tobit regression)

DEPENDENT VARIABLE	PercentINT	INTEXPERIENCE	PercentINT
	model(5)	model(6)	model(7)
INTEXPERIENCE	0.095*** [2.832]		
PercentINT		0.164** [2.348]	
INTDIR_NOMC			25.258*** [11.159]
LONGTENUREDIR			-0.072* [-1.945]
DOMESTICBOARDAGE			-0.091 [-0.440]
EMPLOYEEEDIR	-0.145** [-2.201]	-0.433*** [-4.913]	-0.387*** [-4.963]
FOREIGNSALES_TS	0.095*** [3.347]	0.121*** [3.011]	0.104*** [3.039]
FOREIGNOWN	0.767*** [12.654]	0.065 [0.691]	0.269*** [3.722]
FOREIGNEXCHANGE	4.489** [2.518]	7.461*** [3.056]	5.441*** [2.739]
ROA	-0.082 [-1.554]	-0.113 [-1.075]	0.040 [0.797]
SIZE	4.345*** [8.254]	0.970 [1.265]	3.614*** [5.640]
Tobin's Q	-0.519 [-0.669]	-0.309 [-0.328]	-1.298 [-1.484]
RDpercent	0.073*** [3.384]	0.024 [0.693]	0.050* [1.919]
Log-likelihood	-4605.6	-2477.8	-2053.7
R-squared	25.19	16.91	44.98
Observations	2054	593	939

Notes: The R-squared for Tobit regression is actually the R-squared from a corresponding OLS regression. The dependent variable in all specifications is the percentage of international directors on board (PercentINT), except for model (6), where we look at the percentage of nationals with international work, study or board experience. Constant not reported. t-statistics are reported in brackets. All regressions include country dummies, and common time and industry effects. ***, ** and * denote statistical significance at 1, 5 and 10 percent, respectively.

Table 9: Percentage of international directors on board

DEPENDENT VARIABLE	PercentINT	PercentINT
	OLS (FE) model (8)	TOBIT model (9)
PercentINT _{t-1}		1.211*** [45.961]
LONGTENURED _{t-1}	-0.035* [-1.891]	-0.032* [-1.916]
DOMESTICBOARDAGE _{t-1}	0.029 [0.220]	-0.033 [-0.347]
EMPLOYEE _{t-1}	0.049 [0.788]	0.029 [0.845]
FOREIGNSALES_TS _{t-1}	-0.007 [-0.367]	0.015 [1.021]
FOREIGNEXCHANGE		0.268 [0.279]
FOREIGNOWNERSHIP _{t-1}	0.194*** [3.921]	0.116*** [3.063]
ROA _{t-1}	0.026 [0.826]	-0.032 [-1.262]
SIZE _{t-1}	2.463** [2.429]	1.158*** [3.771]
RDpercent _{t-1}	0.011 [0.717]	-0.010 [-0.950]
Tobin's Q _{t-1}	-0.250 [-0.588]	-0.120 [-0.319]
Log-likelihood	...	-3302.4
R-squared	0.12	0.80
Observations	1,882	1,785

Notes: The R-squared for Tobit regression is actually the R-squared from a corresponding OLS regression. The dependent variable in all specifications is the percentage of international directors on the board (PercentINT). Constant not reported. t-statistics are reported in brackets. All regressions include country dummies, and common time and industry effects. ***, ** and * denote statistical significance at 1, 5 and 10 percent, respectively.

Table 10: Change in the number of international directors on board

DEPENDENT VARIABLE	NewlyAppointedINT	Δ INT
	Poisson Regression model (10)	OLS (robust s.e.) model (11)
LONTENUREDIR _{t-1}	-0.001 [-0.369]	-0.001* [-1.55]
N_REPLACEDINT _{t-1}	0.447*** [4.577]	
BOARD SIZE _{t-1}	-0.093** [-2.106]	-0.047*** [-4.774]
DOMESTIC BOARD AGE _{t-1}	-0.011 [-0.769]	-0.003 [-0.939]
EMPLOYEEEDIR _{t-1}	0.004 [0.695]	0.002* [1.852]
PercentINT _{t-1}	0.005 [1.049]	-0.008*** [-5.870]
FOREIGNEXCHANGE	0.108 [0.688]	0.009 [0.269]
FOREIGNSALES_TS _{t-1}	0.001 [0.211]	0.000 [0.113]
FOREIGNOWN _{t-1}	0.021*** [4.316]	0.006*** [3.104]
ROA _{t-1}	-0.009*** [-2.719]	-0.001* [-1.55]
SIZE _{t-1}	0.268*** [4.174]	0.063*** [4.793]
Tobin's Q _{t-1}	0.015 [0.269]	0.002 [0.153]
RDpercent _{t-1}	-0.001 [-0.409]	-0.000 [-0.535]
Constant	-3.839*** [-3.514]	0.061 [0.325]
Observations	1,785	1,785
R-squared	0.15	0.07

Notes: The R-squared for the Poisson regression is actually the value of the R-squared of a corresponding OLS regression. Constant not reported. t-statistics (z-statistics for the Poisson regression) are reported in brackets. All regressions include country dummies, and common time and industry effects. ***, ** and * denote statistical significance at 1, 5 and 10 per cent, respectively.

Table 11:
Robustness check - Percentage of international directors on boards (IV regression)

DEPENDENT VARIABLE	Step (1) FOREIGNSALES_TS	Step (2) Number of international directors
BOARDSIZE	-0.339 [-0.616]	0.156*** [4.427]
LONGTENUREDİR	0.035 [1.254]	-0.004** [-2.122]
EMPLOYEEĐİR	-0.057 [-0.762]	-0.006 [-1.116]
DOMESTICBOARDAGE	0.088 [0.518]	-0.002 [-0.276]
FOREIGNOWN	0.042 [0.606]	0.013*** [4.005]
FOREIGNEXCHANGE	2.388 [0.724]	0.290* [1.763]
FOREIGNSALES_TS		0.001 [0.238]
PUHAT		0.007* [1.866]
ROA	-0.043 [-0.808]	-0.001 [-0.952]
Tobin's Q	1.383** [2.438]	-0.014 [-0.386]
SIZE	3.599*** [2.900]	0.146*** [4.255]
RDpercent	-0.040 [-1.245]	0.001** [2.114]
Wage margin	-0.003*** [-5.159]	
Log-likelihood		-1803.52
R-squared	0.10	0.25
Observations	2,081	2,081

*Notes: All regressions include country dummies, and common time and industry effects. Constant not reported. t-statistics (for the first step regression) and z-statistics (for the second step regression) are reported in brackets. ***, ** and * denote statistical significance at 1, 5 and 10 per cent, respectively.*