

# On the Internationalization of Corporate Boards

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## Abstract

We examine the internationalization of corporate boards in the Nordic countries (Denmark, Norway, Sweden and Finland) during 2001-2008. We find that board internationalization is positively related to other measures of international business activity. The percentage of international directors covaries with commercial and financial internationalization. However, international directors are not the only source of international expertise. We show that firms engaged in more international business activity tend to have domestic directors with greater international exposure through study, work and board experience. This suggests that both types of board internationalization—international directors and the international experience of nationals—should be taken into account when evaluating corporate boards. Our results indicate that these two types of directors may complement each other rather than being substitutes.

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## INTRODUCTION

Despite decades of internationalization, until recently most company boards around the world consisted almost exclusively of domestic directors. This has begun to change, and the internationalization of corporate boards presents a new form of internationalization. This paper investigates the relationship between board internationalization and various other kinds of internationalization of the firm. We examine these interactions in a study of Nordic companies over the period 2001-2008.

Corporate governance scholars generally underline three main functions of the board: the governance (monitoring), the strategic and the institutional or resource acquisition role (Adams, Hermalin & Weisbach, 2010; Pearce & Zahra, 1992). For the board to perform these functions efficiently, the structure of the board should mirror the agency problems, the strategic contingencies the firm faces, and the institutional environment in which it operates (e.g. Linck, Netter & Yang, 2008; Pfeffer, 1972). Many firms today operate globally. They sell their products on global markets, invest abroad, employ people from outside their home country, attract foreign equity investors and some list their shares on foreign stock exchanges. From a corporate governance point of view, this internationalization of firm operations and financing should be reflected in the composition of their boards of directors.

By appointing international board members, corporations are better able to manage the higher information-processing and agency demands associated with the complexity of international markets. International board members may be more competent in assessing firm performance in foreign markets and thus improve board monitoring. They may have valuable experience with foreign constituencies or may offer special expertise to firms accessing foreign product and

capital markets (Sanders & Carpenter, 1998). Appointing an international board member can also help a firm meet specific operational needs by providing access to important resources (Pearce & Zahra, 1992). International directors can contribute by networking with global suppliers, buyers and providers of finance; they ensure the transparency of strategic decisions and the accountability of the firm's actions beyond the national context, securing its international legitimacy and resource access (Luo, 2005; Oxelheim & Randøy, 2003). For the same reason, one could also imagine that companies with international boards would be more likely to further expand their business abroad, attract foreign investors, and list their shares on foreign stock exchanges.

However, international appointments do not come without costs. Logistical difficulties and informational disadvantages faced by international directors may weaken the board's monitoring efficiency. International directors may also be less familiar with the governance standards, rules and regulations of the country in which the firm is headquartered (Masulis, Wang & Xie, 2012). The additional costs associated with international directors' attendance at board meetings and their limited access to information specific to the firm's home country might reduce multinational corporations' incentives to appoint such directors. Smaller firms in particular might find it hard to attract international directors and bear the costs of their participation at board meetings. Language barriers and opposition from the existing board members could also impede such appointments. These problems could lead firms to pursue alternative ways of internationalizing their boards.

We propose that appointing home-country-based board members with international experience may be an alternative way of internationalizing a board. When the aforementioned barriers to board internationalization are high, firms may opt to appoint them in lieu of international directors, implying that these two types of board internationalization are substitutes. On the other hand, home-country-based directors with international experience may also have stronger

networks of international directors and consequently help firms recruit board members from abroad. Nationals with international experience and international directors might also fulfill different roles on board (advisory vs. monitoring). Hence, these two types of directors might complement each other on boards. In the latter case, we should observe a positive association between the share of international directors on a board and the share of internationally-experienced directors among the domestic directors.

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. There is a strand of literature that focuses on the antecedents of the internationalization of top management teams but few studies examine the internationalization of the board of directors (e.g. Ruigrok, Peck & Tacheva, 2007). A study of particular interest to this one, though US focused, is that of Masulis et al. (2012). They analyze the impact of independent directors domiciled in foreign countries (foreign independent directors) on the governance and performance of US public corporations. The study shows that these directors enhance the advisory function of the board due to their international background and expertise, while logistical difficulties and information disadvantages reduce their ability to monitor managers. In terms of the prevalence of these directors on boards, the study reports higher frequencies of foreign independent directors in firms with a higher ratio of foreign to total sales, in larger firms, in firms with higher growth opportunities and more independent and busier boards, and on boards whose members own a smaller percentage of their firm's stock.

Our study contributes to the existing literature in three ways. First, we advance the literature through a more detailed investigation of the relationship between firm and board internationalization. More specifically, we distinguish between the internationalization of the firm's commercial activities and its financing activities in order to analyze how each relates to

board composition. Second, we examine both the presence of international directors in general and that of particular nationalities. Third, we introduce a new dimension of board internationalization, defined as domestic directors with international board, work and study experience. We provide evidence of how this dimension is associated with firm internationalization and the presence of international directors.

Our analysis is based on hand-collected directors' data for publicly-listed non-financial companies in the Nordic countries from 2001 to 2008. Information on the identities of directors was gathered primarily from firms' annual accounts. Nationalities were identified based on the director's name and surname (a reliable approach for the Nordics due to the specific characteristics of Nordic names and surnames, which make it quite easy to identify whether a person is a national or not) and by carefully reading each directors' profile from firms' annual accounts. For reasons of robustness the result was checked against at least one other source, such as BoardEx, Boards and Auditors in Sweden's Listed Companies, or an internet source (Executive Profile & Biography from Bloomberg Business Week, LinkedIn, Forbes, Wikipedia). Based on these sources, we were able to identify the nationalities of almost all the directors. For the remaining few, we managed at least to identify whether or not they were international. Information on the international expertise of domestic directors was gathered from firms' annual accounts, and verified through BoardEx, by reading each director's Executive Profile & Biography from Bloomberg Business Week or other internet sources (as the ones stated above).

Our empirical analysis shows that Nordic corporations have become more international, over a range of measures going beyond sales and production. During the period 2001-2008 these firms on average generated more than half of their sales through foreign markets, a percentage that remains quite stable throughout the period. In 2001, foreign investors were found among the top five owners in about half of the firms; seven years later this was the case in 68 percent of the

firms in our sample. The share of firms with international directors increased from 32 percent in 2001 to 43 percent in 2008. An increase of a similar size (from 20 to 30 percent) is observed when only non-Nordic nationals are considered international<sup>1</sup>.

In line with the theory, we find the share of international directors to be positively correlated with the internationalization of both firm operations and financing. Higher proportions of international board members are observed in corporations with higher percentages of foreign sales, higher percentages of foreign ownership and in those listed on foreign stock exchanges, as well as in larger firms. We also find the prevalence of international directors to vary across industries, being significantly higher in the oil and transportation industries, and in those producing industrial and organic chemicals. Finally, we find a positive association between the proportion of international directors and the proportion of domestic directors with international experience, which covaries with a firm's commercial internationalization and cross-listing on foreign exchanges. These results suggest that both types of internationalization, international directors and the international experience of domestic directors, should be taken into account when evaluating the degree of internationalization of corporate boards. The observed relations are robust to alternative definitions of board and firm internationalization, to various time periods and (for firm size and financial internationalization) to the inclusion of firm fixed effects.

Given our research setting, it may be difficult to defend or identify a unidirectional causal relationship between corporate and board internationalization, as is often the case in international business and corporate governance research (Reeb, Sakakibara & Mahmood, 2012). Although we can mitigate the endogeneity problems by including firm fixed effects, we cannot eliminate them in any definite way. Nevertheless, establishing association may be seen as a first step towards establishing or rejecting causal relationship. In our study we found a strong and robust relationship between financial internationalization and board internationalization, but a much less

robust relationship with commercial internationalization. Moreover, we note that commercial internationalization has historically predated board internationalization by decades, while internationalization of stock markets came much later, although prior to current trends in board internationalization. This is consistent with the impression (which we submit for more formal testing by subsequent research) that board internationalization is primarily driven by (or primarily drives) financial internationalization.

The paper is divided into five sections. Our literature overview and hypotheses are presented in the next section. In the third section, we present the methodology used, our definitions of variables and the data. The results section follows, and in our closing section we summarize our key findings.

## **THE LITERATURE ON BOARD COMPOSITION**

Theorizing on the relationship between the characteristics of the firm, its resources, the environment in which it operates, and the composition of its board should start with an understanding of the roles boards play in corporations. Three main roles have been stressed in the literature. *The monitoring role* relates to the process by which top executives are hired, promoted, assessed and, if necessary, dismissed (Adams et al., 2010). *The advisory role* refers to the directors' involvement in setting the strategy of the firm (Adams et al., 2010). *The resource dependency role* details how directors facilitate the company's access to important resources and institutional legitimacy (Pearce & Zahra, 1992; Pfeffer & Salancik, 1978). Directors provide firms with advice but also legitimacy and channels of communication to external entities, thus access to important resources outside the firm.

A number of theoretical and empirical studies argue that there is a relationship between a firm's characteristics, the business environment in which it operates and the composition of its board. According to Hermalin & Weisbach (2003) board structures arise endogenously as a result of the economic actors' choices in response to governance issues and external challenges. Following this line of thought, one should expect the structure of the board to change along with the anticipation of various internal and external factors that influence the costs and benefits related to the specific makeup of the board and its effectiveness in fulfilling its functions (Linck et al., 2008).

The relationship between the business challenges of the multinational firm and its board structure is an example of this. The international business literature documents that operating in international environments (commercial internationalization) increases the complexity of firm operations (Oxelheim & Wihlborg, 2008). According to Sanders and Carpenter (1998), internationalization of firm operations increases information asymmetry between manager and board, leading to higher monitoring costs. The information processing demands increase due to increased managerial complexity and environmental uncertainty associated with international operations, and managing such demands requires instituting more efficient governance arrangements that can help the firm overcome the liability of foreignness (Luo, 2005). International directors with host country experience may possess knowledge that mitigates these asymmetries.

A positive relationship between the international scope of a firm's operations and the internationalization of its board is also consistent with the advisory and resource roles of the board. International directors bring important expertise and network ties, which can lead to better investment and operating decisions, and open up new business opportunities for the firm (e.g. Masulis et al., 2012). International directors might be better able to understand the international



business environment and compare the firm to global competitors. They can provide valuable knowledge about international employees, suppliers and customers, and at the same time they signal the firm's commitment to constituencies abroad.

Due to the globalization of financial markets, many corporations are international in relation to not only the scope of their operations but also the sources of their financing. During the last few decades we have witnessed increased integration of the financial markets, but also an increase in the number of countries, from about 75 after World War II to more than 200 in 2012. This implies that there is more idiosyncratic risk and a stronger demand for expertise to help firms successfully access international financial markets. Hence, besides a positive relation between a firm's commercial internationalization and its board structure, we should also expect corporations that rely on international sources of financing to have more internationalized boards.

The argument for the relationship between foreign ownership (as a measure of firm financial internationalization) and board internationalization is straightforward: when a foreign owner holds a large share in a company, she is able to influence the appointment of directors, likely in favor of those from her country of origin. Empirical evidence from labor economics shows that, when there is uncertainty about the overall ability of a candidate and his/her fit for a particular position, the employer will counteract the uncertainty by gathering information, that is by soliciting the subjective opinions of people who know the candidate personally (Simon & Warner, 1992). This argument can be extended to the selection of directors by shareholders and nomination committees. Reliance on personal networks and the role of social capital in the selection of directors is indeed supported by existing literature (Kim & Cannella, 2008; Westphal & Stern, 2006). Following these arguments, we expect international shareholders to select directors from their own domestic networks. A vast psychological literature shows that trustworthiness is enhanced by perceived demographic similarities, shared norms and values

(Levin, Whitener & Cross, 2006). Therefore, international shareholders may be more confident that directors from their own country will represent their interests more forcefully.

Companies that cater to foreign shareholders, or expect to do so in the future, might also be more likely, *ex ante*, to promote the nomination of international directors to their boards. The presence of an international director, in particular a native of the foreign country in which the firm's shares are listed, signals accountability to the international investor base (Luo, 2005; Sanders & Carpenter, 1998). This could in turn improve the firm's attractiveness to foreign investors. International board members may also be more familiar with the regulatory frameworks and institutions of the investors' countries of origin. They might transfer some of the better practices from these countries to their boards, reassuring current and potential foreign investors (Oxelheim & Randøy, 2003).

While the theory offers several arguments for board and firm internationalization to be related, several factors might prevent board structure from adjusting to changes in firm operations and financing. Masulis et al. (2012), for example, contradict Sanders and Carpenter (1998), arguing that international directors may be less capable of monitoring firm management due to their geographical distance from the company's headquarters, and unfamiliarity with the rules and practices of the company's country of origin. The cost of an international director attending a board meeting is higher. Due to logistical difficulties, directors might also be more reluctant to accept positions in foreign firms. The difficulties of attracting international directors and covering the associated costs might be especially relevant for smaller firms, which typically cannot offer high fees and commonly offer low prestige value. Moreover, the existing board members might oppose the appointment of international directors, fearing that it might disrupt the board atmosphere and make communication difficult. International business scholars show that

resistance is related to the incumbent directors' ages, language abilities, and board tenures (e.g. Piekkari, Welch & Welch, 1999).

The costs associated with international directors call for alternative solutions. The shareholders may decide to hire domestic directors with international experience instead. Even without a passport and a childhood history in a foreign country, a domestic director could have gathered the required international experience by having spent a considerable time there or in similar locations (Carpenter, Sanders & Gregersen, 2001). Pertinent experience could include simply living abroad, education or work abroad (Tihany, Griffith & Russel, 2005), international responsibility in a domestic company (Herrmann & Datta, 2002), language skills (Piekkari et al., 1999), international board positions (Carpenter & Westphal, 2001), other international connections (Athanassiou & Nigh, 2002) or exposure to cultural diversity (Tihany et al., 2005). One major issue we address in this study is the role these internationally experienced directors play in offering an additional source of international expertise on boards. We do this by investigating their relation to firm internationalization, and to the share of international directors on boards.

Before proceeding with the empirical analysis, it is appropriate to outline a few relevant characteristics of the institutional setting for our study. The firms analyzed in this study are from countries with what can be called a semi-two-tier system.<sup>ii</sup> This means that members of the management board can sit on the supervisory board, but they may not constitute a majority (Hansen, 2003). In Denmark, the management board and the board of directors are mostly separated in practice. In other Nordic countries, the presence of the CEO on the board is more common; in our sample, the CEO sits on the board in about 37 percent of the firms. These specifics in the board structure derive from the history of the Nordic board system, which was based on the British system and, traditionally, provided for the constitution of a single body—the board of directors—which also included executive directors. A reform of company law in the first

half of the 20<sup>th</sup> century saw a reorganization of the board's role and the constitution of an executive committee (or a single person) responsible for managing the firm, while the board of directors retained superior and residual powers. The law does not impose any explicit restrictions on the management power that the board can exercise, or any sanctions if the board does conduct the day-to-day management (Hansen, 2003). Hence, the board of directors can potentially play an important role both in setting firm strategy and supervising the firm management's day-to-day implementation of that strategy.

The Nordic countries provide a good testing ground for studies of board internationalization because the domestic product market is limited, so companies have to internationalize early on in order to grow large. From an international perspective, Nordic companies tend to be highly internationalized and have been so for a long time. Moreover, given the limited domestic talent pool, it would seem natural for larger and growth-oriented Nordic companies to recruit international directors. However, board internationalization has only gained momentum relatively recently in the Nordic area. One reason is that residence requirements have gradually been relaxed because of European legal harmonization, facilitating board internationalization. This enables us to investigate which companies are particularly likely to internationalize their boards.

## **METHODOLOGY AND DATA**

### **Sample Selection and Data Collection**

Our statistical sample is based on the population of all publicly traded non-financial firms headquartered in Denmark, Finland, Norway or Sweden at the end of 2006. For these companies, we collected data for that year on the relevant board variables, such as the names of the CEO and directors, their nationality, gender, year of birth and first appointment to the board. In the second round, the data collection was extended to include each of the years 2001-2008<sup>iii</sup>. Identities of

directors were gathered primarily from firms' annual accounts. Directors' nationalities, defined on the basis of citizenship, were identified from information (directors' profiles) provided in annual reports and the director's name and surname. Using names and surnames to identify nationality is a reliable approach for the Nordics due to the specific characteristics of Nordic names and surnames, which make it quite easy to identify whether a person is a national or not. For reason of robustness, at least one additional source was used; such as Boards and Auditors in Sweden's Listed Companies, the Executive Profile & Biography from Bloomberg, Wikipedia or Forbes.

To secure data validity we verified the assignment of nationality to internationals using the BoardEx database<sup>iv</sup> (for the largest companies), Bloomberg's Executive Profile & Biography, Forbes, tax-related information (when publicly available) and other web-based sources. For example, we re-checked whether our assignment of nationality to a director matches the information from BoardEx or, if not available, the country in which the director completed her bachelor and high school studies. Considering that 20-30 years ago the student mobility across Europe was much lower than today, we believe that this is a good check for the nationality of a director. In cases where such information was not available or (although rarely) differed from our initial assignment of nationality, we searched other web-based sources, including references to the director in the local media. Based on these sources, we were able to identify the nationalities of 99.85 percent of the directors. For the remaining few, we were able to identify at least whether they resided in the country where the firm was headquartered or abroad.

Information on the international expertise of domestic directors was gathered from firm annual accounts, and verified through BoardEx, Bloomberg's Executive Profile & Biography, Forbes, and Wikipedia. Gathering such information required us to read the directors' biographies carefully. Data access issues forced us to limit the collection of this information to 2007 directors.

We collected three pieces of information: (1) whether they had studied abroad (international study experience); (2) whether they had worked for a foreign-based company (international work experience) at any point up to 2007; (3) whether they had been or still were the director of an international company (international board experience). Directorships of any subsidiaries of the focus company were not counted as international board experience. BoardEx and Bloomberg represent rich sources of the above information. The only variable that might suffer from measurement error is international work experience, since it was not always possible to determine whether a domestic director who had worked for a foreign company had actually worked abroad or just in a subsidiary of that company within her home country. In our robustness section, we therefore re-estimate our regression model excluding domestic directors' international work experience.

Directors' data were available for a total of 831 firm-year observations for Denmark (providing complete information with regard to the above variables), 801 for Finland, 814 for Norway and 1,662 for Sweden, over the period 2001-2008.

### **Descriptive Statistics of International Directors**

Looking at the nationalities of the directors in our sample, we find that the share of all board seats allocated to international directors during 2001-2008 increased, from an average of 7.8 percent in 2001 to 13.6 percent in 2008. The percentages are smaller when we only consider directors from outside the Nordic countries to be international (5.0 percent in 2001; 8.3 percent in 2008).

Looking at the characteristics of the international directors, we find an increase in the presence of shareholder-elected female directors, from 5 percent in 2001 to around 19 percent in 2008<sup>v</sup>.

Foreign directors are, on average, slightly older than domestic directors ( $t=3.10$ ,  $p<0.01$ ) and have shorter tenure (3.7 years compared to 6 years for domestic directors;  $t=20.01$ ,  $p<0.01$ ). Both the average (median) tenure and age of international directors have increased over the years (by

approximately one year). We also observe a slight increase in the average (median) age of domestic directors (by approximately one year) over the period. Their average tenure has increased by slightly more than half a year.

A large share of the international directors in our sample comes from other Nordic countries, with the US and the UK forming the next largest shares. In 2007, for example, 30 percent of all international directors on Danish boards came from the US or the UK, 43 percent from other Nordic countries and 20 percent from other EU countries (excluding the Nordic region and the UK). In Finland, directors from the US and the UK represented about 17 percent of all international directors, other Nordic countries more than 40 percent and other EU countries close to 30 percent. Directors from the UK or the US occupied about 34 percent of the international seats in Norwegian firms, and 30 percent in Swedish firms. Other Nordic directors made up around 40 percent (in Norway) and 44 percent (in Sweden). Directors from other EU countries filled a smaller share of the international seats in Sweden and Norway (around 18 percent) than in Denmark and Finland.

To illustrate the representation of other nationalities than mentioned above, we present some further numbers for the year 2007 across all four Nordic countries. There were 13 Asian directors (China, India, Japan, and Thailand), three South Americans (Chile, Mexico, and Ecuador), seven from former Communist countries (Russia, Ukraine, and Serbia), three from Australia and eight from Canada.

Regarding international expertise among domestic board members, we found that a relatively large share had international study, work or board experience. On an average Nordic board, approximately 20 percent of nationals had occupied a board seat in a foreign (non-related) company, and slightly less than 37 percent had been abroad as a student, employee or board

member. The percentage directors with studies abroad vary across the countries from 33 percent in Denmark, followed by Sweden (36 percent) and Finland (37 percent) to nearly 42 percent in Norway. For domestic directors with international board experience, the highest percent of these directors is observed in Denmark and Finland (22 percent), followed by Sweden (21 percent) and Norway (15 percent).

For our empirical analysis, board information was merged with financial and ownership data. Financial data were collected from the Worldscope/Thomson Financial Database, ownership data 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 2,106 firm-year observations (346 firms). The main information lacking was for several firms the percentage of foreign sales, which is one of the key variables in our study and cannot be excluded from the analysis. Our sample is therefore biased towards large and generally more internationalized corporations. Thus any generalization of the presented results to smaller firms should be made with caution.

## **Variables**

We now continue by describing our variables and discussing the estimation methodology. Our main *dependent variable* is the percentage of international members out of the total number of shareholder-elected directors on a board (PercentINT). By looking at the percentages we aim to capture both the presence of international directors, and the weight of international representation on boards. To address potential doubts over whether a Nordic national can really be considered “foreign” in other Nordic countries, we also analyze the prevalence of non-Nordic directors on the Nordic boards. Since there are generally very few of these, we use a simple dummy variable (*D\_StrictlyInternational*), set to 1 if there is at least one non-Nordic director on the board, and 0 otherwise.



Our regression models use three main *explanatory variables*, chosen in accordance with our earlier suppositions. We measure firm financial internationalization using a dummy variable (FEX) set to 1 if the company's shares are cross-listed on a foreign stock exchange and 0 otherwise. FEX1 is a dummy variable that we assign the value 1 for the firms whose shares are listed on at least one non-Nordic stock exchange and 0 otherwise. The other variable measuring financial internationalization is a proxy for foreign ownership. We measure this by the share of foreign-owned shares as a proportion of all shares held by the five largest owners (Foreign\_ShBlocks)<sup>vi</sup>. Meanwhile, non-Nordic\_ShBlocks is the percent of shares held by non-Nordic investors in the sum of shares held by the first five largest shareholders. As an alternative, we use the aggregate percentage of a company's votes that are owned by foreigners but this is only available for Sweden between 2001 and 2006 (Fristedt & Sundqvist, 2007) and not for the other three countries. The explanatory variable used as a proxy for the firm's commercial internationalization is foreign sales as a percentage of total sales (FOREIGNSALES\_TS)<sup>vii</sup>. To account for alternative methods of board internationalization, we include the variable (INTEXPERIENCE), which measures the percentage of national board members with any type of international experience (board, work or education).

We include a set of *firm-specific control variables* that are likely to correlate with board internationalization. To control for the ability of the firm to attract international members (due to amenity potential, reputation effects, etc.) we include firm size, measured by the logarithm of the firms' total assets (SIZE), in constant year 2000 prices (million Euros). We conjecture that some kind of amenity value might be necessary to induce international directors to sit on Nordic boards due to the relatively low pay offered (Heidrick & Struggles, 2009). The SIZE variable may also be motivated by studies showing that directors gain prestige value from sitting on the boards of large companies or companies with well-recognized brands that enhance their personal reputation

(Baruch, 2003; Harmoni, 2006). We control for firm performance by including return on assets (ROA), defined as earnings before interest and tax, divided by total firm assets (as a percentage). Poorly-performing firms could have a greater need for international expertise, but may also be less able to attract international directors; the presence of international directors might also influence operational performance. Following Masulis et al.'s (2012) study on the internationalization of US boards, we control for a firm's growth opportunities using TOBIN's Q and for investment in research and development (RD)<sup>viii</sup>.

In terms of *board-specific control variables*, we construct the variable (BOARD AGE), which refers to the median age of the nationals on the board. Scholars show that older board members might be more reluctant to accept new ideas, more risk-averse and less willing to accept new challenges, such as a more international board culture (Cochran, Wartick & Wood, 1984). On the other hand, the appointment of an international director could cause a change in the median age of domestic directors if, for example, it occurs alongside the retirement of older board members. As an alternative, we control for the median tenure of domestic directors (BOARD TENURE). Schnake, Fredenberger & Williams (2005) observe that boards dominated by directors with longer tenure are characterized by heightened conservatism and reduced information processing. This might reduce the directors' ability to recognize or respond to changing business conditions (Vafeas, 2003). A longer tenure among the domestic board members might reflect a slower pace of board change and therefore less opportunity for new international appointments<sup>ix</sup>.

The board-specific control variables also include a dummy variable for the presence of the CEO on the board (CEO\_board), and a variable capturing the share of employee-elected directors (EMPLDIR). The advisory role of the board might be stronger when the CEO is present. We control for employee directors since the earlier arguments on language barriers, reluctance to accept new ideas and risk aversion might apply to these directors as well as to older directors.

Moreover, foreign directors originating from countries unfamiliar with codetermination might be reluctant to accept board positions in firms with employee representatives in the boardroom.

All our regressions also include industry, time and country effects. Descriptive statistics and partial correlation coefficients for the variables included in the regressions are reported in Table 1. The numbers are calculated over the final number of firm-year observations used in the empirical analysis.

Place Table 1 about here

As illustrated in Table 1, an average firm in our final sample of 346 firms generates 54 percent of their total sales from foreign markets (median value = 56.4 percent), 5.5 percent as operating profit (median value = 7.82 percent), invests 6.9 percent of its sales in research and development (median value = 0), and has a TOBIN's Q-value of 1.8 (median value = 1.4). The average size of the firms in our sample (in assets) is 1.83 billion Euros (in constant year 2000 prices; median value = 292 million Euros). Slightly more than 6 percent of the firms are listed on foreign stock markets. On average, foreign owners hold nearly 20 percent of all shares in the five largest blocks of shares (median value = 7.5 percent). Approximately 13 percent of board seats in our firms are allocated to employees (median value = 0); more than 40 percent of domestic directors have international experience, on average (median value = 37.5 percent).

Looking at the dynamics of our explanatory variables over the period 2001-2008 (numbers not reported), we observe in particular an increase in the percentage of foreign ownership, by approximately 10 percentage points, for the average firm over the period. Foreign sales as a percentage of total sales remain relatively constant across the years; a slight decrease is observed

in 2007 and 2008. Some of the firms delisted their shares from foreign markets, resulting in a decrease in the percentage of cross-listed firms, from 7 percent in 2001 to 5.2 percent in 2008.

### **Correlation patterns**

The correlation matrix in Table 1 gives us a first insight into the associations between the percentage of international directors on a board and various explanatory and control variables. We find 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 listing of shares on foreign stock markets and foreign sales (as a percentage of total firm sales). As evidenced in the matrix, the percentage of international directors is higher the larger the firm (in total assets), the more research-intensive it is and the weaker its operational performance (ROA) is. Firms with a higher share of internationally experienced domestic directors also have proportionally more international directors on their boards. To further analyze these relations, we proceed with the multivariate analysis.

The correlation patterns from Table 1 above indicate no severe multicollinearity problems. This is confirmed by the variance inflation factors; the values for all our regressors are below the critical threshold of ten. To mitigate the influence of outliers in our analysis, the upper and lower-most percentiles for each financial variable are set equal to the values at the 1<sup>st</sup> and 99<sup>th</sup> percentiles respectively, in each year.

### **Multivariate analysis**

Our main dependent variable—the percentage of international shareholder-elected directors on the board (PercentINT) —takes the value 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, it might 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. Estimating a Tobit model is more appropriate since it allows us to better account for the specific distribution of our dependent variable (Wooldridge, 2002). When applying the alternative definitions of international directors (D\_StrictlyInternational, D\_USUK; both dichotomous variables) we estimate a pooled Probit regression with robust standard errors. For these models, we report the coefficients and corresponding marginal effects (in the case of the Tobit model, conditional on the dependent variable being uncensored) at the mean of the explanatory variables.

As with almost all research on international business and corporate governance, establishing causation between a phenomenon (e.g. commercial internationalization) and a specific outcome (e.g. board internationalization) is challenging since we are rarely afforded an ideal research setting in which the assignment of the firms to treatment and control group is random. The issue gets even more complicated when the treatment (commercial internationalization) is not a discrete, but a continuous variable (Reeb, Sakakibara & Mahmood, 2012). If commercial internationalization depends on unobservable factors that correlate with the error term, we will likely obtain inconsistent estimates of its effect on our outcome variable; in our case the incidence of international directors on board. Moreover, reverse causality is a problem. The presence of international directors on the board might in itself influence the degree of firm internationalization.

Several approaches have been proposed to address the endogeneity problem (for recent overview in relation to international business research, see Reeb et al. 2012). The applicability of each of these approaches depends on the empirical setting, data availability, the extent to which our variables of interest vary in time, the possibility to identify an exogenous proxy for the explanatory variables, etc. These limitations also determine the way the problem of non-random

assignment is addressed in our empirical analysis. We can curb the endogeneity problem by including firm fixed effects in our robustness section, and by obtaining valuable clues from case studies. We however cannot eliminate endogeneity concerns in any definite way given our current research design. Thus, as in many other studies of boards (Adams et al. 2010), our results can be at best interpreted as joint statements about both the director selection process and the effect of board composition on firm internationalization. The coefficients presented in Tables 2-5 below should therefore be interpreted as evidence of associations rather than causal relationships.

## **EMPIRICAL RESULTS**

We start by presenting the results of a Tobit regression in which the percentage of international directors is regressed on a number of firm-specific characteristics (model (1), Table 2). We note that board internationalization (PercentINT) is higher in firms with higher foreign sales, a greater degree of foreign ownership and whose stocks are listed on foreign stock exchanges. Both business and financial internationalization thus appear to matter. These results are in line with agency views of the board's monitoring role, which may be more effectively accomplished by international directors. The positive effect of business internationalization is also consistent with strategy and resource dependency theories, which stress the board's role in giving advice and providing access to resources that are critical to efficient international operations.

We also observe more international directors in larger firms, those with lower ROA and, in line with other studies, more research and development. The negative correlation between the ROA and board internationalization might indicate a rise in firms' demand for international expertise in difficult economic times; when a firm is performing poorly, shareholders might be more prone to reshuffle the existing board, which might increase the likelihood of one of the new directors coming from abroad<sup>x</sup>. However, we can easily imagine that this negative association reflects

some other (unobserved) factors. For example, it may be that appointments of international directors occur in line with firm restructuring, investments or other challenges in foreign markets, which could also result in poorer operational performance. Finally, among the industry effects (not reported in the table), the oil, transportation and chemical industries, which tend to be highly internationalized businesses, tend to have more international boards than construction, apparel, textiles and footwear.

In model (2), Table 2, we add board-specific control variables, namely the median age of domestic board members (BOARDAGE) and the percentage of employee-elected board members (EMPLOYEEEDIR). We observe more foreigners on boards with younger domestic directors. While this negative association could be explained by the reluctance of older directors to open the boardroom to international directors, it may simply be that international directors are nominated in place of retiring directors, implying that boards with more directors close to retirement age might have decided to postpone hiring international directors until they retire. No significant correlation is observed for the tenure of the domestic members (results not reported), or the share of employee directors. The coefficients remain qualitatively unaffected when we control for the presence of the CEO on the board and for board size (results not reported).

If we re-estimate model (2), replacing the foreign to total sales ratio with foreign to total assets (as a proxy for international production rather than sales), we lose around half of our sample, but again find a positive and significant relation between business and board internationalization. The effects of other variables are qualitatively the same (results not reported). We also estimate model (3), using the aggregate percentage of votes held by all (not just the largest five) foreign shareholders to measure international ownership, although this variable is only available for 110 Swedish firms during 2001-2006 and not for the firms from other Nordic countries. As in models

(1) and (2), we find a positive and significant association between international ownership (voting rights) and the internationalization of the board.

Place Table 2 about here

The coefficients presented in Table 2 might reflect spurious relations if our right-hand-side variables (e.g. ROA) correlate with unobservable factors that are also linked to the presence of international directors on boards. To mitigate these endogeneity concerns, in Table 3 we re-estimate our reference model for the percentage of international directors on boards (PercentINT) with fixed effect estimator that removes the unobserved firm-specific time-constant effects. Since Tobit fixed-effect models estimated over short time periods are found to be biased and inconsistent, we use the OLS specification (see Dittmann, Maug & Schneider, 2010). As presented in Table 3, model (2a) and (3a) the coefficients for (FOREIGN SALES\_TS) remain mostly positive, but are no longer significant. This lack of significance might, however, be due to the fact that the share of foreign sales for firms in our sample does not change much over time.<sup>xi</sup> The influence of the variable indicating listing on a foreign exchange still stands when we look at non-Nordic exchanges only (FEX1). Meanwhile, the results strongly support the positive association between international directors and foreign block ownership. The association remains positive and significant when we re-estimate the regression using the percentage of votes held by foreign stockholders in Swedish firms. In this case, the coefficient of the foreign listing variable is also positive and significant for both measures (results not reported). All in all, these results are in line with theory and imply that international directors in Nordic firms cater the needs of foreign owners in these firms.

Place Table 3 about here



Of our control variables, only firm size is found to be significantly associated with board internationalization. This result is not surprising as large firms are more likely to have significant international business activity in absolute terms and to have achieved a level of complexity and sophistication that calls for international directors. The positive association between firm size and the presence of international directors might also indicate that these firms find it easier to attract international directors. Thus, the limited supply of international candidates might represent a barrier to board internationalization for smaller Nordic firms.

Due to similarities in the Nordic countries' cultures, histories, legal systems and (for Scandinavian countries) languages, one might question whether other Nordic directors can really be considered "foreign". For example, how foreign is a Swedish director born in Lund (in the south of Sweden) who sits on a Danish board? In order to address these concerns but also to provide additional evidence regarding the relation between board and financial internationalization, we re-estimate model (2) from above using an alternative definition of international directors, counting only non-Nordic foreigners on the Nordic boards. The results of these regressions are presented in Table 4, models (4) and (4a), and discussed below.

In model (4), we regress a dummy variable indicating the presence of a non-Nordic international director on a board, on a set of firm and board-specific characteristics, using the same explanatory variables as in model (2), Table 2. In model (4a), we adjust our explanatory variables to capture non-Nordic block ownership (*non-Nordic\_ShBlocks*) and listing on non-Nordic stock exchanges (*FEX1*). In model (5), the analysis is further restricted to investigate the presence of US and UK directors. Here the dummy variable indicating their presence (*D\_USUK*) is regressed on the percentage of shares (within the five largest blocks) held by US and UK investors (*USUK\_ShBlocks*), a dummy variable indicating cross-listing on US or UK stock exchanges (*FEX<sub>USUK</sub>*), and the control variables defined earlier.

Place Table 4 about here

In all these models we observe a positive relationship between foreign ownership, listing on foreign stock exchanges and the presence of international (non-Nordic or US/UK) directors on boards. The magnitudes of the coefficients for foreign ownership and foreign listing increase when we match the nationality of the directors to the nationality of the foreign owners or the country in which the firm is listed (i.e. non-Nordic or US/UK). These results support the interpretation that international board members cater large foreign investors. The positive association with foreign listing also indicates that these directors provide legitimacy or accountability in the eyes of smaller or potential future investors for the firms that cross-list on foreign stock exchanges.

Finally, in Table 5, we turn to the association between nationals with international experience and international board members. Since we only have data on international experience for the 2007 directors, our estimates in model (6) assume that the proportion of directors with international experience does not vary over time, while model (7) and model (7a) are only estimated for the year 2007. In all the three models, we find a positive and significant association between `INTEXPERIENCE` and `PercentINT`; the more internationally experienced are the national directors, the higher is the percentage of international directors. This suggests that domestic directors with international experience represent an important alternative source of international expertise. Firms that are more internationalized tend to use both more international directors and more domestic directors with international expertise. It may also indicate that companies with internationally experienced domestic directors find it easier to approach networks of international directors and attract foreigners onto their board.

Place Table 5 about here

We also investigate how the international experience of nationals correlates with the commercial and financial internationalization of the firm (model (7), Table 5). We find that it increases with commercial internationalization and foreign listing, while the correlation with foreign ownership is only marginally significant. Furthermore, the size of the coefficients for foreign listing and foreign ownership variables are substantially lower in comparison to model (7a), where the percentage of international directors on board is regressed on the same right-hand-side variables in year 2007. The opposite holds for the foreign sales coefficient, which is higher and significant in model (7) but much smaller and not statistically significant for the share of international directors in model (7). These results suggest that the role of domestic directors with international experience is more to provide advice or resources to the board, rather than to monitor firms on behalf of foreign owners. Further research is needed to validate this interpretation, but at a minimum our results provide evidence that both the share of international directors and the share of home-country-based directors with international experience should be taken into account when evaluating the internationalization of corporate boards.

In summary, the results presented above show a positive association between board internationalization, commercial internationalization and financial internationalization. The results are robust to different definitions of international directors and the inclusion of various controls. A higher share of international investors is also observed in larger firms. While we find some indication of a positive association between research-intensive firms (and industries) and the proportion of international directors, this relation is not robust to the inclusion of firm fixed effects; the same applies to the negative association observed between domestic directors' ages and firm's operating performance. Finally, we observe a positive association between the international experience of home-country-based directors and the proportion of international

directors on boards. We interpret this as indicating a complementary relation between these two types of directors. We conclude that both types of board internationalization should be considered when analyzing firms' boardrooms.

### **Robustness tests**

We conducted a number of robustness tests to verify the empirical evidence presented above. First, to control for the effects of the Norwegian quota law<sup>xiii</sup> we re-estimated our main regressions by including the share of shareholder-elected female directors among our explanatory variables. The coefficient for this new variable was not statistically significant, while the other results (not reported here) are consistent with our conclusions from above. The results are also robust to the inclusion of additional control variables, such as board size, firm's debt, alternative measures of firm size, and when we estimate the regressions for different sub-periods.

Second, we re-estimated our fixed effect regression from Model (2a) by lagging all of our right-hand-side variables by one year. We cannot eliminate concerns over reverse causality due to the fact that most of the right-hand-side variables are rather persistent over time. However, these estimates (not reported) should at least provide us with an indication of the drivers of board internationalization, and support the estimates presented above. We observed a positive and significant coefficient for foreign ownership and listing on foreign stock exchanges (both FEX and FEX1), a positive and significant coefficient for firm size, and a positive and marginally significant coefficient for the percentage of employee-elected directors on the board. The coefficients for the other explanatory variables (including percentage of foreign sales) were not significant at standard levels of significance.

Finally, we re-estimated our models from Table 5 using the share of domestic directors with either international board experience or international education (i.e. excluding international work

experience for the reasons discussed earlier). The results (not reported) supported the conclusions presented above.

## **DISCUSSION AND CONCLUDING REMARKS**

In this paper, we study the internationalization of corporate boards. Based on past research about the monitoring, advisory and resource functions of boards, we posit a positive association between commercial and financial internationalization and board internationalization. We analyze these associations using an eight-year panel of 346 non-financial publicly-listed corporations from the Nordic region.

Research on the issue of board internationalization is undeveloped. We make a theoretical distinction between commercially and financially-motivated internationalization and show that board internationalization is related and complementary to international business activity, particularly financial internationalization. We find a higher fraction of international board members in firms with a higher percentage of foreign sales, more foreign ownership and whose shares are traded on foreign exchanges. As expected, we also find more international directors in larger firms. However, the share of firms with international directors still lags behind the share with international sales or ownership, reflecting that there may be real and perceived costs in hiring international directors. We propose that, to avoid these costs, firms may recruit national directors with international work or board experience or education, as an additional means to internationalize their boards. In support to this argument, we find a significant positive association between international experience of domestic directors on board and, in particular, its commercial internationalization.

Overall, our findings suggest that, first, the structure of the board relates to all three of its functions. Like other aspects of a board's makeup, its internationalization can be explained via agency, strategic and resource-dependency views of board operations. Secondly, both types of internationalization, international directors and the international experience of domestic directors, should be taken into account when evaluating board internationalization.

Although the share of international directors on board covaries with international business activity in general, the association with financial internationalization is particularly strong and robust. For example, it persists under controls for unobserved firm-specific time-invariant characteristics. This resonates with the stylized fact that historically most companies have internationalized and become multinationals without significant board internationalization. However, our data suggest that the recent increase in board internationalization accompanies a period of financial internationalization, particularly the growth of international ownership and listings on foreign stock markets.

Future research on board internationalization should investigate our suggested set of relationships, particularly by extending the matching of geographic sales (markets) to director nationality. For example, is a firm whose major market is China more likely to have a Chinese director? Further research should also focus on the time-specificity and historical context of firm (board) internationalization. Will the relative impacts of commercial and financial internationalization prevail in different time periods, or change over time?

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**Table 1**  
**Descriptive statistics and partial correlation coefficients**

N		Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1	PercentINT	11.9	18.6	1.00											
2	D_StrictlyInternational	0.20	-	0.68*	1.00										
3	INTEXPERIENCE	40.4	24.4	0.23*	0.25*	1.00									
4	EMPLDIR	13.0	15.2	0.08*	-0.02	-0.18*	1.00								
5	BOARD AGE	54.1	5.3	0.01	0.03	0.06*	-0.08*	1.00							
6	FOR.SALES_TS	54.0	29.9	0.13*	0.13*	0.24*	0.07*	0.05*	1.00						
7	Foreign_ShBlocks	19.2	25.9	0.36*	0.24*	0.20*	-0.00	-0.03	0.07*	1.00					
8	Non-Nordic_ShBlocks	15.2	24.00	0.29*	0.38*	0.20*	0.01	-0.01	0.07*	0.89*	1.00				
9	FEX	0.06	-	0.29*	0.18*	0.22*	0.04	0.04	0.11*	0.21*	0.16*	1.00			
10	FEX1	0.05	-	0.17*	0.19*	0.22*	0.00	0.02	0.13*	0.16*	0.20*	0.83*	1.00		
11	ROA	5.5	19.6	-0.05*	-0.05*	-0.15*	0.09*	0.12*	-0.03	0.01	0.02	-0.00	0.03	1.00	
12	TOBIN'S Q	1.8	1.2	0.25*	0.23*	0.15*	0.21*	0.26*	0.14*	0.21*	0.21*	0.28*	0.24*	0.25*	1.00
13	SIZE	1862.1	4615.2	-0.01	0.03	0.02	0.02	-0.12*	0.08*	0.04	0.07*	0.06	0.03	0.19*	-0.1
14	RD	6.9	34.5	0.09*	0.11*	0.15*	-0.05*	-0.02	0.01	0.05*	0.06*	0.02	-0.00	-0.31*	-0.1

*Note: The numbers are calculated over the sample of 2,106 firm-year observations (346 firms) for which complete information is available.*

*\* denotes statistical significance at the 5 percent level.*

**Table 2**  
**Percentage of international directors on the board (Tobit regression)**

Dependent variable	PercentINT					
	Model (1)		Model (2)		Model (3)	
	Coefficient (t-stat)	Marginal effect	Coefficient (t-stat)	Marginal effect	Coefficient (t-stat)	Marginal effect
FOREIGNSALES_TS	0.116*** [3.53]	0.04	0.122*** [3.68]	0.04	0.120** [2.27]	0.03
Foreign_ShBlocks	0.358*** [10.43]	0.11	0.344*** [9.96]	0.11		
Foreign ownership (total)					0.333*** [4.100]	0.09
FEX	16.93*** [5.22]	6.02	16.89*** [5.21]	5.98	15.976*** [3.25]	5.00
ROA	-0.131** [-2.20]	-0.04	-0.115* [-1.90]	-0.04	-0.181*** [-2.79]	-0.05
SIZE	4.269*** [7.67]	1.33	4.490*** [7.48]	1.40	5.795*** [5.72]	1.50
TOBIN's Q	-0.573 [-0.64]	-0.18	-0.695 [-0.77]	-0.21	1.333 [1.12]	0.34
RD	0.071*** [2.80]	0.02	0.079*** [3.11]	0.02	0.010 [0.31]	0.00
EMPLDIR			0.06 [0.75]	0.02	-0.202 [-1.57]	-0.05
BOARD AGE			-0.40** [-2.04]	-0.12	-0.115 [-0.33]	-0.03
R-squared	0.25		0.26		0.56	
#firms	346		346		109	
#firm-year observations	2,106		2,099		523	

*Notes: Model (3) is estimated on the sample of Swedish firms during 2001-2006. Constant not reported. t-statistics are reported in brackets. The R-squared for the Tobit regression is the R-squared from a corresponding OLS regression. All regressions include country dummies, and common time and industry effects. \*\*\*, \*\* and \* denote statistical significance at the 1, 5 and 10 percent levels, respectively.*

**Table 3**  
**Percentage of international directors on the board (FE linear regression)**

Dependent variable	PercentINT		
	Model (2a) Coefficient (t-stat)		Model (3a) Coefficient (t-stat)
FOREIGNSALES_TS	0.000 [0.006]	0.001 [0.028]	0.020 [0.769]
Foreign_ShBlocks	0.050* [1.710]	0.050* [1.713]	
Foreign ownership (total)			0.238*** [3.120]
FEX	6.816 [1.269]		
FEX1		13.455*** [11.853]	9.787*** [9.480]
ROA	0.022 [0.859]	0.022 [0.855]	0.029 [1.229]
SIZE	2.115** [1.986]	2.173** [2.047]	2.643* [1.854]
TOBIN's Q	-0.220 [-0.431]	-0.210 [-0.411]	0.638 [0.991]
RD	-0.001 [-0.058]	-0.001 [-0.060]	-0.033 [-1.157]
BOARD AGE	-0.152 [-1.023]	-0.149 [-1.000]	-0.048 [-0.243]
EMPLDIR	0.165* [1.933]	0.166* [1.949]	0.230* [1.706]
R-squared	0.078	0.077	0.159
# firms	346	346	109
# firm-year observations	2,099	2,099	523

*Notes: Model (3a) is estimated on the sample of Swedish firms during 2001-2006. Constant not reported. t-statistics are reported in brackets. All regressions include common time effects and firm fixed effects. \*\*\*, \*\* and \* denote statistical significance at the 1, 5 and 10 percent levels, respectively.*

**Table 4**  
**Non-Nordic directors and firm internationalization (Probit regression)**

Dependent variable	D_StrictlyInternational				D_USUK	
	Model (4)		Model (4a)		Model (5)	
	Coefficient (z-stat)	Marginal effects	Coefficient (z-stat)	Marginal effects	Coefficient (z-stat)	Marginal effects
FOREIGNSALES_TS	0.004*** [3.286]	0.001	0.004*** [3.194]	0.001	0.003** [2.23]	0.001
Foreign_ShBlocks	0.007*** [5.437]	0.002				
Non-Nordic_ShBlocks			0.010*** [6.641]	0.020		
USUK_ShBlocks					0.01*** [5.020]	0.002
FEX	0.157 [1.200]	0.047				
FEX1			0.325** [2.126]	0.101		
FEX <sub>USUK</sub>					0.635** [3.900]	0.150
Board size	0.146*** [5.000]	0.041	0.149*** [5.108]	0.042	0.173*** [4.90]	0.029
EMPLOYEEEDIR	-0.004 [-1.503]	-0.001	-0.004 [-1.409]	-0.001	-0.002 [-0.59]	-0.000
BOARDAGE	-0.003 [-0.382]	-0.001	-0.003 [-0.347]	-0.001	-0.037** [-3.83]	-0.006
ROA	-0.006*** [-2.755]	-0.001	-0.006*** [-2.739]	-0.002	-0.005** [-2.42]	-0.001
FIRM SIZE	0.132*** [4.750]	0.037	0.121*** [4.387]	0.034	0.122*** [3.56]	0.020
Tobin's	0.063* [1.951]	0.018	0.054* [1.666]	0.015	0.028 [-0.69]	0.005
RD	0.003*** [2.930]	0.001	0.003*** [2.911]	0.001	0.004*** [4.01]	0.001
R - squared	0.21		0.20		0.19	
#firms	331		331		320	
#firm-year observations	2,022		2,022		1,945	

*Notes: Constant not reported. Robust z-statistics are reported in brackets. The R-squared is the R-squared from a corresponding OLS regression. All regressions include country dummies, and common time and industry effects. \*\*\*, \*\* and \* denote statistical significance at the 1, 5 and 10 percent levels, respectively.*

**Table 5**  
**International expertise on boards (Tobit regression)**

Dependent Variable	PercentINT		INTEXPERIENCE		PercentINT	
	Model (6) Coefficient (t-stat)	Marginal effect	Model (7) Coefficient (t-stat)	Marginal effect	Model 7(a) Coefficient (t-stat)	Marginal effect
INTEXPERIENCE	0.164*** [3.97]	0.05			0.300*** [2.89]	0.10
PercentINT			0.167** [2.23]	0.14		
FOREIGNSALES_TS	0.092*** [2.72]	0.03	0.164*** [3.15]	0.14	0.05 [0.47]	0.01
Foreign_ShBlocks	0.333*** [9.65]	0.10	0.09* [1.72]	0.07	0.308*** [3.65]	0.10
FEX	14.99*** [4.95]	5.23	10.477* [4.44]	9.07	13.852* [1.60]	5.18
ROA	-0.093 [-1.52]	-0.03	-0.068 [-0.54]	-0.06	-0.09 [-0.44]	-0.03
FIRM SIZE	4.055*** [6.69]	1.25	2.353** [2.47]	1.94	3.60** [2.30]	1.20
Tobin's Q	-0.712 [-0.79]	-0.22	-0.977 [-0.79]	-0.80	-2.794 [-1.27]	-0.93
RD	0.069*** [2.71]	0.02	0.110** [2.28]	0.09	0.070 [0.95]	0.02
EMPLOYEEEDIR	0.126* [1.60]	0.04	-0.475*** [-4.13]	-0.39	0.311 [1.50]	0.10
BOARD AGE	-0.417 [-2.19]	-0.13	-0.165 [-0.57]	-0.14	-0.364 [-0.76]	-0.12
R-squared	0.25		0.28			0.26
#firms	309		309		309	
#firm-year observations	2,094		309		309	

*Notes: Constant not reported. t-statistics are reported in brackets. The R-squared is the R-squared from a corresponding OLS regression. All regressions include country dummies, and common time and industry effects. \*\*\*, \*\* and \* denote statistical significance at the 1, 5 and 10 percent levels, respectively.*



## Notes:

<sup>i</sup> The percentages refer to the final sample of 346 non-financial corporations used in the empirical analysis. The numbers are similar when we consider a larger sample consisting of all non-financial corporations for which at least the board data were available; the share of firms with at least one international director increased from 27 percent in 2001 to 40 percent in 2008; the share of firms with at least one non-Nordic director increased from 17 percent in 2001 to 27 percent in 2008.

<sup>ii</sup> 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 system can be classified as either 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.

<sup>iii</sup> Not all firms have been listed on the stock exchange since 2001 and so they were included in the sample from the first year of listing onwards. Equally, firms that delisted during the sample period were included until they delisted. Furthermore, information on directors’ ages and tenures was not equally rich across all the years of our analysis, so we operate with an unbalanced panel. In particular, we could not obtain much information on directors of firms that delisted before 2005. Thus, we adopt a conservative stand and state that our sample relates to the population of Nordic firm that were listed on the stock exchanges at the end of 2006.

<sup>iv</sup> BoardEx contains in-depth profiles of approximately 500,000 global business leaders, detailing their employment, non-profit, and educational affiliations. Networks of directors are mapped out based on the time spent at particular organizations. Unfortunately, information on directors’ nationalities is not always available; meaning alternative sources of data had to be used.

<sup>v</sup> This increase is in part due to the introduction of the “quota law” in Norway in 2006, which required Norwegian public companies to have at least 40 percent female directors by 2008. Consequently, the share of shareholder-elected female directors in Norway jumped from 6.2 percent to 39.5 percent during our sample period, while the increase in other Nordic countries was much lower, from 4.87 percent in 2001 to 13.4 percent in 2008.

<sup>vi</sup> The construction of this proxy was driven by the availability of the ownership data. We only have detailed information on the shares, identities and nationalities of the five largest owners in each firm, and therefore use this to construct our foreign ownership variables. Moreover, due to constraints on access to the databases, we could only collect ownership data for 2001-2007. For the purpose of this study, the share of foreign ownership in 2008 is therefore assumed to be the same as in 2007.

<sup>vii</sup> 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 countries of origin of the foreign directors correspond to the importance of these countries in terms of firm exports. However, Thomson Financials only provides such information for a few of the firms in our sample.

<sup>viii</sup> 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. Intensity of research and development is measured as the percentage of the firm’s total sales that are allocated to research and development. Following other studies (Faleye, Mehrotra & Morck, 2006), we set this to zero whenever financial information is available for the firm but no information on research and development expenditure is reported.

<sup>ix</sup> We thank the reviewer for pointing this out.

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<sup>xi</sup> The fixed-effects estimators 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 shown by Zhou (2001), when a firm’s contractual environment and governance arrangements change slowly over time and when its structure reflects a “stable” or long-term relation with firm-specific characteristics, the fixed-effects estimator based on within-firm, year-to-year changes will not detect a relationship even if one exists.

<sup>xii</sup> The introduction of “quota law” in Norway was expected to cause a significant increase in foreign directors, as the Norwegian firms were expected to overcome the limited supply of experienced females by importing them from abroad. As stated by a senior executive of a Norwegian firm (Economist, March 11, 2010), “if we hadn’t had the Swedish pool to draw from, the law would have been far more difficult for

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us". Notwithstanding this general perception, the increase in foreign female directors following the quota was lower than expected.