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The Effects of Internationalization on CEO Compensation

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Abstract:

This study examines the relation between the internationalization of firms and CEO compensation. Starting from a sample of Norwegian and Swedish listed firms we analyze the effects of internationalization as manifest in the capital market (international cross-listing), the market for corporate control (foreign board membership), and the product and service market (export and foreign sales). We conclude that all three markets contribute positively to the compensation level of CEOs. We argue that part of the higher CEO compensation in internationally oriented firms - as compared to less internationalized firms within the same country - reflects a risk premium for reduction in job security.

Keywords: CEO compensation, internationalization, corporate governance, CEO tenure, cross-listing, foreign board membership

JEL-codes: G34, K12, M10, M12

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Introduction

During the 1990s CEO compensation increased substantially (Economist, 2000) as did the degree of internationalization (UNCTAD, 2000). Is there a causal link between the internationalization of the firm and CEO compensation? Whereas earlier studies have identified a positive relationship between the product and service market internationalization of the firm and CEO pay (Sanders and Carpenter, 1998), the present study contributes to theory by explaining the impact of the internationalization of the firm as manifest in the capital market (international cross-listing) and the market for corporate control (foreign board membership). We argue that such international influence does enhance CEO compensation and explain differences in levels of CEO compensation *within* countries.

A number of studies have suggested that internationalization enhances a firm's financial performance in the product and service market (e.g., Grant, 1987; Tallman and Li, 1996; Morck and Young, 1991; for a review see Contractor et al., 2003). It is often claimed that the higher level of a firm's performance compensates for the higher risks in international business (e.g., Reeb, Kwok, and Baek, 1998). We propose that the higher risks (and rewards) associated with the international firm can also be expected to affect CEO compensation. These are risks for which the CEO would most likely demand a pay premium. Product and service market internationalization implies that the CEO might be held responsible for market fluctuations clearly beyond his or her control. Furthermore, the existence of an independent Anglo-American board member and/or a listing on an Anglo-American stock exchange weakens the CEO's control. Again, the rational CEO would demand compensation for being exposed to this kind of risk.

The study recognizes three components of CEO compensation: non-performance-contingent compensation, performance-contingent compensation, and a risk premium. We argue that a special international risk premium is required by CEOs to counteract their exposure to performance fluctuations that lie beyond their control. We claim that a CEO knows a priori that he or she may be penalized for poor firm performance and that compensation is needed for exposure to an uncertain international environment. The higher level of pay reflects reduced job security, the likelihood of shorter tenure, and a potentially negative impact on the reputation of the incumbent in case of dismissal.

This study suggests that CEO compensation is an internationalization cost that has been neglected. Countries with a relatively low level of CEO compensation can expect to see higher compensation levels as their firms go international and become integrated into the global market for top executives. The cost implications of this integration could be considerable, as can be seen from the significantly lower earnings of the typical Continental European CEOs relative to their US peers (*Economist*: September 28, 2000). Starting from this fact we argue that firms could potentially incur substantial costs if they have to narrow the current pay gap between countries where CEO compensation is low and those where it is high. In a broader perspective the study is an attempt to address the lack of research on the issue of internationalization and corporate governance (Melin, 1992; Miller, Wiseman, and Gomez-Mejia, 2002).

The underlying assumption of the study is the existence of a highly segmented labor market for CEOs across countries. Although institutionally speaking there is legally *one* labor market for CEOs among EU/EAA-countries (post-1992), there is still a strong home-country bias when CEOs are being appointed. This assumption is supported by the fact that in 1998 less than ten non-Scandinavians were CEOs in publicly traded firms in Norway and Sweden. Thus it seems appropriate to study the effect of the internationalization of firms on CEO compensation *within* the individual country or region. We consider Scandinavia to be one such region. However, according to other dimensions Scandinavian firms are highly integrated into the world market. Many Scandinavian firms are listed in the largest and - according to the general perception - the most prestigious capital markets (the Anglo-American), and/or have Anglo-American board members. We suggest that this may cause institutional contagion from the Anglo-American market system, which in turn is likely to have a strong effect on important dimensions of corporate governance such as CEO compensation.

The rest of the paper is organized in five sections. In the first section we review past studies on CEO compensation. We pay special attention to the relevance of microeconomic theory, human capital theory, agency theory, managerial discretion theory, and organizational theory on CEO power. In the section thereafter we propose three relevant research hypotheses to be tested. This is followed by a section describing the Norwegian and Swedish data and the methodology applied here. Next, we test the hypothesized relationships in a multivariate setting. In the closing section, we summarize the key findings and discuss managerial and policy implications.

Conceptual framework

The research on CEO compensation is rich, and the subject has been tackled within economics (e.g., Becker, 1975), finance (e.g., Jensen and Murphy, 1990), accounting (e.g., Murphy, 2000), and management (e.g., Finkelstein and Boyd, 1998; Gomez-Mejia and Wiseman, 1997). However, one common drawback is that the relationship between firm internationalization and CEO compensation is rarely addressed. Sanders and Carpenter (1998) and Miller, Wiseman and Gomez-Mejia (2002) are the exceptions. However, both these studies, which are based on US firms, are limited to the internationalization of the firm in the product and service market.

We argue that the incremental effect of internationalization on CEO compensation reflects the demand and supply for internationally competent top executives. We also suggest that the compensation level in internationally oriented firms reflects a risk premium justified by the harsher monitoring conducted by international owners and board members, i.e., less tolerance for poor performance than in the absence of such monitoring. This stricter monitoring is introduced into our study by way of the internationalization of firms as manifest in the capital market and the market for corporate control.

Human capital theory suggests that any job requirements that limit the supply of CEO candidates would *enhance* CEO pay (e.g., Agarwal, 1981; Harris and Helfat, 1997). This suggests in turn that internationalization affects the domestic labor markets for CEOs. The skills and competencies necessary to manage an international firm are more scarce than the skills required for a domestically focused business – i.e., the supply of capable internationally oriented CEOs is limited. Specifically, we argue that firms with a high export and foreign sales intensity renders the CEO more exposed to outcomes beyond his or her control. Moreover, a firm's international expansion exposes the CEO to more exogenous variables than does mere domestic diversification. We expect to see a risk premium charged by CEOs for being exposed to a greater number of such risk factors (e.g., in terms of macro-economic fluctuations; see Oxelheim and Wihlborg, 1997). Similarly, we suggest that CEOs require a risk premium for being evaluated by Anglo-American board members and regulatory authorities.

In terms of managerial discretion theory, internationalization provides a complex task environment for the CEO (Finkelstein and Boyd, 1998; Sanders and Carpenter, 1998). Whereas human capital theory emphasizes the effect of internationalization on the supply of competent CEOs, managerial discretion theory focuses on the demand-side effect, i.e., international firms are probably willing to pay a higher salary for the services of an internationally competent CEO. The firm can then benefit from having an internationally oriented CEO who can deal successfully with both domestic *and* foreign customers and suppliers. Furthermore, the successful internationally oriented CEO is also able to cope with domestic *and* foreign board members, domestic *and* foreign regulators, and domestic *and* foreign investors.

Agency theory provides a normative approach to the compensation issue, and focuses on the way the compensation package (including options) should bridge the incentive gap between managers and owners (e.g., Fama, 1980; Fama and Jensen, 1983). The focus of agency theory is not on the starting salary but on the way incentives can affect managerial behavior. The implication is that companies should be paying CEOs more than the CEO labor market would suggest (e.g., Jensen and Murphy, 1990), and the focus is rather on how incentives can induce managers to create shareholder value (Hall and Liebmann, 1998). However, in general empirical research on performance-contingent compensation has produced weak results. For example, Jensen and Murphy (1990) and Sloan (1993) find a small but significant relationship between profitability and CEO compensation. A meta-analysis reported by Tosi et al. (2000), based largely on US data, found that only 5 percent of the variance in CEO pay can be linked to performance. Furthermore, we expect to see even smaller effects in countries where stock option programs are less common, as they were in the Scandinavian countries during the period under study (1996-1998). A recent study of Scandinavian firms thus failed to identify any significant relationship between performance and CEO pay (Randøy and Nielsen, 2002). In light of these indications, we have used the pay-performance sensitivity as a control variable.

Organizational power theory argues that the labor market for CEOs can deviate from competitive labor markets on several accounts. That is to say, CEO compensation can increase above the level that supply-side factors (human capital theory) and demand-side factors (managerial discretion theory) would suggest. US-based research indicates that some CEOs – typically these with long tenure - have been "successful" in building an in-house power base (Boyd, 1994; Zajac and Westphal, 1996). Specifically, past research indicates that large boards, or boards with few independent members, may be lax monitors of their CEOs (e.g., Weisbach, 1988; Core et al., 1999). However, these factors may be of less importance in Scandinavia due to the strong egalitarian culture there (Randøy and Nielsen, 2002). We include board size and board independence as control variables.

Hypotheses

In our analysis of the three modes of internationalization we emphasize four sources of international influence that affect CEO compensation. The first source of international influence is an institutional spillover effect. We recognize that CEO compensation is far higher in the US than in any other country (Economist, September 20, 2000). Likewise, the CEO compensation level in the UK is higher than that in the rest of Europe. This leads us to suggest that any Anglo-American influence in the internationalization process of the firm will also affect the compensation schemes. This effect is likely to be particularly important in Scandinavia, as Norwegian and Swedish CEOs are among the lowest paid of their kind in Europe. Existing compensation plans in Anglo-American firms involved in M&As with Norwegian or Swedish firms may act as catalysts in the catching-up process. Over time this effect may grow weaker if the labor market for CEOs becomes globally integrated.

The second source is the supply effect (human capital theory), connected with the smaller pool of CEOs who are fit for the more challenging task of doing business internationally rather than just domestically. The third source is the demand effect as postulated in managerial discretion theory. The fourth source of international influence is related to the harsher monitoring of international corporate governance, and the risk of dismissal this implies for the CEO. We suggest that this risk effect is heightened when one or more board members are representatives of a more demanding corporate governance system.

We claim that from the CEO's point of view the Anglo-American corporate governance system is the most demanding system in the world. We base our view on factors such as a high risk of dismissal, a focus on short-term (quarterly) results, and a high degree of transparency vis-à-vis investors. The conventional wisdom is that the more demanding the system the less the degree of freedom for the CEO (see e.g., *Economist*, 2001: 32). The form of corporate governance within the Scandinavian capital markets, and indeed in most countries in Continental Europe, is the so-called insider or control-oriented system (Berglöf, 2000; La Porta, Lopez-de-Silanes, and Shleifer, 1999). In this corporate governance system the emphasis is on the ability of large shareholders to monitor corporate behavior (Angblad, Berglöf, Högfeldt, and Svancar, 2001), whereas the Anglo-American system puts more emphasis on monitoring by way of board independence, a competitive market for corporate control, and institutional monitoring (e.g., SEC, and stock exchanges). On a basis of the above arguments we suggest that firms in non-Anglo-

American countries which attempt to move toward the Anglo-American system of corporate governance would need to change their CEO compensation schemes.

We point out two specific firm activities that signal compliance with an Anglo-American standard of corporate governance monitoring to the international investor community, and that open the way for an institutional spill-over effect. Signals of this kind imply an upgrading of the corporate governance monitoring provided solely by the domestic system. These activities are 1) the undertaking of an international cross-listing, that is to say a listing on a foreign stock exchange, and 2) the recruiting of at least one independent board member representing a more demanding corporate governance system, i.e. primarily the Anglo-American system.

International cross-listing is a generally recognized way of breaking away from a domestic capital market (e.g., Howe and Madura, 1990; Sundaram and Logue, 1996; Foerster and Karolyi, 1999; Miller, 1999; Doidge, Karolyi and Stulz, 2004). The cross-listing implies that the firm will be scrutinized by a new international investor clientele, it will be exposed to new regulatory authorities, and it will need to comply with new standards as regards disclosure and accounting. We argue that an international cross-listing exposes the CEO to higher career risks and rewards, involving all the four sources of influence mentioned above. For most firms from semi-segmented capital markets, not counting the few companies that already enjoy an international cost of capital, an Anglo-American stock exchange listing is a big step, for which the firms concerned are rewarded in terms of a higher market value (Stulz, 1999). For the Scandinavian countries this effect has been documented (Modén and Oxelheim, 1997; Randøy, et al., 2001). We claim that part of the value creation arising from such an international cross-listing is captured by the CEO (rent-seeking) who possesses the scarce set of skills necessary for the cross-listing. Furthermore, we suggest that due to the more demanding work requirements (limiting the supply of competent CEOs) and the greater risk of dismissal (risk premium), the CEOs of firms with an Anglo-American exchange listing are rewarded with higher pay.

Hypothesis 1: There is a positive relationship between Anglo-American exchange listing and CEO compensation.

Corporate governance research recognizes the essential role of the board of directors in sustaining an effective organization (OECD, 1999; Jensen, 1993). Furthermore, CEO compensation research indicates that the structure of the board (e.g., its size and independence) can potentially affect CEO compensation (Conyon and Peck, 1998; Dalton, Daily, Johnson, and Ellstrand, 1999; Yermack, 1996). The firm can thus signal its compliance with a more demanding corporate governance system (the Anglo-American) by recruiting an outsider Anglo-American board member.

We argue that independent outsider Anglo-American board members bring with them the corporate governance culture of their home country. This suggests that an Anglo-American board member, as a representative of a *foreign* corporate governance system, could boost the incentive structure of top management – which in small or emerging economies is usually less highly developed. Consequently, CEOs in such a position will be exposed to a clash between two corporate governance cultures, and the reconciliation of the two systems will pose new challenges and tasks for them. Among other things this may call for a new corporate language (Oxelheim, et al., 1998), new internal reporting requirements, and new investor-relation activities (Useem, 1998).

Oxelheim and Randøy (2003) have recently shown that Anglo-American board membership enhances firm value among Scandinavian firms. We argue that part of the value created by the inclusion of an outsider Anglo American board member is captured by the CEO (rent seeking). Furthermore, we argue that the CEOs of firms with Anglo-American board members demand a risk premium relative to other firms lacking such membership. Since the members on a typical Scandinavian board are also the people who are in charge of setting compensation levels (no separate compensation committee), we expect Anglo-American board membership to have a direct effect on compensation. Finally, the new job requirements serve to limit the pool of capable CEOs. We hypothesize that taken together these four sources of influence will increase CEO compensation in firms with Anglo-American board members.

Hypothesis 2: There is a positive relationship between Anglo-American board membership and CEO compensation.

In hypotheses 1 and 2 we have argued that the effect of foreign listing and foreign board membership is associated with prestigious capital markets where CEO pay is high (the Anglo-American markets in particular). Next, we suggest that there is a product and service market effect on CEO compensation that stems from export and foreign sales. We claim that more product and service market internationalization relating to *any* foreign country can be expected to affect CEO supply (fewer qualified candidates) and CEO demand (enhanced benefits accruing to firms with highly capable CEOs).

An export-dominated business faces a more complex customer environment than a domestic firm. A common requirement is that potential CEOs should be genuinely bi-lingual and multi-cultural. Another qualification expected of the CEO candidates is substantial work experience abroad, or an international educational background. In line with human capital theory, we suggest that the complexity of managing an export intensive and foreign-sales intensive firm is likely to reduce significantly the supply of CEOs potentially qualified for the businesses concerned. In addition, the competence required to manage the greater macroeconomic and political risks accompanying international business (Oxelheim and Wihlborg, 1997) will further limit the supply of potential CEO candidates.

Because of the higher requirements of the job, firms can be expected to be more willing to pay for a highly competent CEO. In line with the US-based study reported in Sanders and Carpenter (1998), we expect the CEOs of export and foreign-sales intensive firms to receive higher compensation than those working for domestically focused firms. We expect such a pay premium on the grounds that export and foreign-sales intensive firms call for greater managerial discretion, and/or higher compensation on account of the greater potential for rent seeking (since internationalization enhances profitability).

Finally, we argue that a risk premium may be included in the compensation package paid by firms that are highly intensive on the export and foreign-sales side. This premium compensates for the fact that the CEO of such firms is evaluated in terms of a greater number of outcomes over which he or she can exert very little influence, for example exogenous changes in the economic and political environment of the firm (Oxelheim and Wihlborg, 2004). However, this increase in risk may be offset by the firms' diversification, such that the net effect of product-market internationalization on CEO pay remains uncertain.

Thus, the demand and supply of CEO candidates who have been educated for the international business task, taken together with the rent-seeking argument, suggest that firms with a high percentage of export and foreign sales are likely to be paying higher compensation to their CEOs.

Hypothesis 3: *There is a positive relationship between a firm's level of export and foreign sales and CEO compensation.*

Data and Methodology

Data

In 1998 there were 194 Norwegian and 304 Swedish firms listed on their countries' respective exchanges. These numbers include the secondary exchange but exclude foreign companies not headquartered in Norway or Sweden. For the present study we collected information from a random sample of 132 Norwegian and 120 Swedish firms. As a result of incomplete data, the withdrawal of some firms from the population (delisting etc.), the exclusion of companies listed in 1998 only (9 cases), and a few non-responses (15 cases with no systematic relation to size or industry), we ended up with full information for 90 Norwegian and 97 Swedish companies. Our sample includes companies from all industries apart from banking and insurance. We exclude firms in these two industries because they are subject to special regulations as regards board composition and foreign acquisitions.

Our study has had access to a unique set of primary data, supplemented by data from secondary sources (annual reports, Sundqvist, 1999). Specifically we had to collect firm-level data on the nationality of board members, CEO tenure, and board independence. We conducted telephone interviews with fax follow-ups to collect data on these variables.

Measures

The dependent variable – the average *CEO compensation* in 1997 and 1998 – includes all the major components of CEO remuneration: salary, bonuses (cash and stock), and stock option grants. Norwegian and Swedish firms generally disclose specific information with regard to both bonuses and stock options. Firm-level observations reveal that 42 percent of the Swedish sample companies paid a bonus to their CEOs in 1998 accounting for 23 percent of the recipients' total compensation.

For tax reasons, the inclusion of stock options in CEO compensation packages was almost non-existent during the period under investigation. For example, before July 1998 in Sweden and

January 1999 in Norway employees' stock options were taxed when vested. In Sweden this implied full marginal tax (up to the 56 percent rate). In addition employers were responsible for social security tax (7 percent rate). Our data does not suggest that the change in the Swedish law in July 1998 had any immediate impact on the use of stock options in the sample firms. Between the date of the tax change and the end of the period of investigation, only one option program was introduced (valued according to Black-Scholes pricing model) as part of a compensation scheme. Thus, we have a clear-cut situation regarding the relation between CEO compensation and the internationalization of the firm, without having to consider the role of CEO stock option grants. In many companies CEOs had options in their own company, but these stock options were acquired at market rates and were not part of a compensation package. Admittedly, the role of the stock option grants is something that will have to be addressed in future studies, since stock options – as a part of compensation schemes - have become common in Scandinavia and elsewhere.

The data on CEO compensation does not include severance pay for outgoing CEOs, due to the incompleteness of the data. However, we have been able to collect data on the size of Swedish CEOs' "golden parachutes". We found no difference between "domestic" and internationalized firms as regards this form of potential risk premiums. Among Swedish firms with an Anglo-American board member, for instance, the severance pay was equal to 20.4 months salary, whereas for firms without such board membership the figure was 20.6 months salary. Hence, the entire risk premium is expected to show up in the dependent variable.

The dependent variable is lagged one year with respect to the independent variables, which means that our independent variables refer to 1996 and 1997. In view of the fact that CEO compensation levels are not being constantly evaluated (as stock prices are), we suggest that using a one-year time lag provides a more accurate description of CEO pay practices. Compensation is adjusted in accordance with the previous year's level of export and foreign sales intensity, corporate governance variables, etc. This is also consistent with earlier studies of CEO compensation, which have commonly applied a one-year time lag for the effect of performance (e.g., Kerr and Bettis, 1987).

Foreign exchange listing is assigned a value of 1 if the firm is listed on an official stock exchange in an Anglo-American capital market, 0 otherwise. Eleven percent of the sample firms have an Anglo-American foreign exchange listing. The explanatory variable *foreign board membership* is measured as 1 if one (or more than one) "outsider" board member is a citizen of either Canada, the US or the UK; 0, otherwise. A director is considered an "insider" director if he or she is or has been directly or indirectly employed by the firm. We choose not to use the *share* of outsider Anglo-American board members, since the signaling effect of Anglo-American corporate-governance influence would be achieved by the inclusion of even one Anglo-American board member. This argument has previously been used by Oxelheim and Randøy (2003). Furthermore, the Scandinavian sample contains very few boards with two or more Anglo-American members. Thirteen percent of the sample firms have one or more Anglo-American board members. *Export and foreign sales intensity* refers to the percentage of the firm's total revenues generated by export and sales from foreign affiliates. On average 50 percent of the total revenues of the sample firms come from export and foreign sales.

Control variables

In testing our hypotheses we control for general firm characteristics, corporate governance variables, industry and country specific factors. In the first-mentioned category we control for *firm size* since earlier research has shown that size has a significant effect on CEO compensation (e.g., Baumol, 1967). Firm size is measured by taking the natural logarithm of total market capitalization. We also include *performance,* as suggested by agency theory (e.g., Tosi et al., 2000). Performance is measured by the firm's stock performance the previous year (1996), as well as by accounting performance the same year. We use these two measures since it is common that compensation packages have elements of both financial and accounting performance. Moreover, we control for *value effects* using Tobin's Q. When tenure is tested we also use *firm age* as control variable. Firm age is measured by the logarithm of the number of years between the observation year and the firm's founding year. Due to the frequent appearance of zero value for some control variables, we have not used the natural logarithm for the entire equation - something that would otherwise have facilitated comparisons of elasticity.

In line with earlier CEO compensation research we also control for corporate governance effects. Here we include *board size* (e.g., Core, Holthausen, and Larcker, 1999) measured as the number of directors on the board. Following organizational power theory and allowing for general corporate governance considerations (e.g., Dalton, Daily, Ellstrand, and Johnson, 1998; OECD, 1999), we also control for *board independence*, *blockholders,* and *multiple share classes.* Board independence is the percentage of independent outside directors on the board. A director is considered to be an inside director if he or she is or has been directly or indirectly employed by the firm. Blockholder ownership is measured as the percentage of A-shares (i.e., main shares) owned by the firm's three larges shareholders. The existence of multiple class shares is captured by a dummy variable.

Finally, we control for one-digit industry effects using dummy variables and for country effects using a dummy variable in which Swedish firms are assigned a value of 1 and Norwegian firms a value of 0.

Method

Theoretically, we argue that CEOs of international firms are exposed to a greater risk of dismissal than the CEOs of domestically focused firms. Empirically, we look at the effect of internationalization on the risk of dismissal. CEO tenure is used here as a proxy for such a risk factor. Our argument is that the likelihood of CEO dismissal is affected by the contingencies of the firm (age and performance), and by the corporate control mechanisms of blockholder ownership and multiple share classes. For our exploratory analysis of CEO tenure (Equation 1), we also control for board size and firm performance (stock return in 1997). To assess the specific international risk premium we run the following regression:

$$(1)\ \text{CEO Tenure (ln)}_{\mathbf{t}} = \alpha + \beta_1 * \text{ Anglo-American Exchange Listing}_{t-1} + \beta_2 * \text{ Anglo-American Board Membership}_{t-1} + \beta_3 * \text{ Export and Foreign Sales Intensity}_{t-1} + \beta_4 * \text{ Firm Age}_{t-1} + \beta_5 * \text{ Board Size}_{t-1} + \beta_6 * \text{ Firm Performance}_{t-1} + \beta_7 * \text{ Blockholder Ownership}_{t-1} + \beta_8 * \text{ Multiple Share Classes}_{t-1}$$

We then turn to the testing of our hypotheses. We use a cross-sectional ordinary least-squares (OLS) regression model to test the three hypotheses presented in the preceding section. In addition to the hypothesized internationalization effects, we also apply a variety of control variables to minimize specification bias in the hypothesis testing, drawing on previous research on CEO compensation. Specifically, we control in this testing for general firm characteristics (firm size, performance), relevant corporate governance variables (blockholder ownership, multiple share classes, board independence, and board size) and for industry (using single-digit industry dummies) and country effects.

Since the three internationalization factors are correlated to some extent (as high as .42), we perform separate tests for each factor (Models 1-3) and use one model in which all the international factors are combined (Model 4). Equation (2) describes the relationships expressed in Model 4.

$$\text{(2) Average CEO Compensation year t \& t}_{t+1} = \alpha + \beta_1\text{* Anglo-American Exchange Listing}_{t-1} + \beta_2\text{* Anglo-American Board Membership}_{t-1} + \beta_3\text{* Export and Foreign Sales Intensity}_{t-1} + \beta_4\text{*Firm Size}_{t-1} + \beta_5\text{*Firm Performance}_{t-1} + \beta_6\text{*Tobin's Q}_{t-1} + \beta_7\text{*Board Size}_{t-1} + \beta_8\text{*Board Independence}_{t-1} + \beta_9\text{*Multiple Share Classes}_{t-1} + \beta_{10}\text{*Blockholder Ownership}_{t-1} + \beta_{11}\text{*Country} + \beta_i\text{*Industry Dummies}$$

Analysis and results

Analysis of the regression residuals indicates no problems of either heteroscedasticity or non-normal distributions. With the possible exception of the board size/firm size correlation (.62), the correlation coefficients indicate no problems of multicollinearity. In order to address this potential problem separate tests were performed with the board size variable and without it (not reported). The results were robust to this specification and we therefore report only the model that includes both variables. Finally, the Variance Inflation Factor (VIF) statistics (<10) did not indicate any multicollinearity problems.

We argue that internationalization *causes* firms to pay higher CEO compensation. On the other hand, reversed causality would imply that by offering CEOs higher compensation a firm might be able to enhance internationalization. In this study we have run several regressions to analyze whether compensation *leads* internationalization. Specifically, we explored whether CEO compensation in 1996 (as well as control variables from Equation 1) affected internationalization in 1998 (unreported). We found no indication of such a reversed causality. Moreover, recent studies on the related issue of internationalization and performance do not indicate reversed causality of this kind (e.g., Oxelheim and Randøy, 2003). The result of these studies tends to suggest that internationalization leads performance. Furthermore, our use of lagged variables helps to mitigate a potential problem of endogeneity.

Table 1 presents the descriptive statistics and correlations between the various constructs in the study. We find a significant (0.1%-level) positive correlation between CEO compensation and foreign exchange listing (.55), as well as between CEO compensation and foreign board membership (.45). Finally, the correlation between export and foreign sales intensity on the one hand and CEO compensation on the other (.17) is significant at the 1%-level.

[Insert Table 1 about here]

The results reported in Table 2 support the presence of a CEO pay package risk premium related to internationalization. After controlling for firm size, firm age, firm performance, board size, blockholder ownership, and multiple share classes, we find that firms with Anglo-American board membership "penalize" their CEOs in terms of significantly shorter tenure. We also find a negative relationship between Anglo-American listing and CEO tenure, albeit significant at p=.096 (two-tailed) only. Hence, we believe that a risk premium is embedded in the compensation package paid to the CEO of a firm with Anglo-American board membership. We claim that the effect of board composition is stronger than the effect of exchange listing, as board membership of this kind can directly influence the level of CEO pay.

[Insert Table 2 about here]

The multivariate model (Equation 2) shows that the three aspects of internationalization (product and service market, capital market, and corporate control market) help both collectively and individually to explain the CEO pay level (Table 3). Whereas the control factors explain 53.3 percent of the variation in CEO compensation, this rises to 61.3 percent when all three internationalization variables are included (the incremental contribution significant at the .001-level).

As suggested in Hypothesis 1, we find a significant and positive relationship between foreign exchange listing and CEO compensation (Table 3); and significance is found for both the full model ($p<.01$) and for the model including foreign exchange listing only ($p<.001$). We performed additional tests (not reported here) to find out whether this effect was stable across sample years and countries. We found that the effect was significant at the .001-level for Sweden, but significant only at p=.145 (two-tailed) for Norway. The effect of listing was significant at the .001-level for 1998 but only at p=.074 (two-tailed) for 1997.

We also find a significant and positive relationship between Anglo-American board membership and CEO compensation (Hypothesis 2); significance is found both for the full model (p<.01) and for the model including Anglo-American board membership only (p<.001). In addition, we found (not reported here) that this effect was significant at the .05-level for both Norway and Sweden, and across the sample years.

Finally, we also identified a significant and positive relationship between export and foreign sales intensity on the one hand, and CEO compensation on the other (Hypothesis 3); significance (p<.01) is found both for the full model and for the model including export and foreign sales intensity only. In addition, we found that the effect was significant at the .05-level for both Norway and Sweden, and across the sample years (not reported here).

In Model 4 – the full model – three control variables were found to be significant: firm size, blockholder ownership and the country dummy. Blockholders have – as expected – a significant negative influence on CEO compensation reflecting the fact that large owners are better monitors of CEO pay than firms with more dispersed ownership. Firm size, also as expected, indicates a higher compensation in larger firms. Further, following the approach developed in Oxelheim (1990) for studies of financial markets integration, the significant country dummy (Sweden) may be interpreted as an expression of a higher degree of segmentation in the Norwegian labor market for CEOs as compared to its Swedish counterpart.

[Insert Table 3 about here]

Discussion and conclusion

This study emphasizes three modes of firm internationalization and suggests four ways whereby such internationalization may increase CEO compensation. First, we argue that CEO compensation is affected by the way corporate governance practices migrate from one economic system (with high CEO compensation) to another (with low CEO compensation). We explore the effect of an influence stemming from the Anglo-American economic system on the pay practices of Scandinavian firms. Second, we suggest that internationalization alters the demand situation regarding potential CEO candidates, with implications for CEO compensation. Third, we make the same claim for the CEO supply situation, with corresponding implications for CEO compensation. Fourth, we claim that a risk premium is charged by the CEOs to compensate for their exposure to control by more demanding international regulators and board members.

After controlling for factors specific to the firm, the corporate governance structure, the industry and the country, we find that Norwegian and Swedish firms with an Anglo-American cross-listing pay their CEOs between SEK 0.9 and 1.3 million (approximately $110,000-160,000) more than firms without such listings. We suggest that the shortage of internationally competent CEOs (i.e., a supply shortage in human capital) and the greater willingness of firms to pay for the managing of the complexities entailed (i.e., a managerial discretion effect) can explain the (statistically and economically) significant positive effect of foreign listing on CEO pay. Anglo-American cross-listing also imposes additional pressure on the firm to perform well, which explains the negative relationship between Anglo-American cross-listing and CEO tenure. Part of the higher compensation may thus represent a risk premium.

Our multivariate analysis suggests that Anglo-American board membership has a (statistically and economically) significant positive effect on the CEO compensation level. The magnitude of this effect lies between SEK 0.9 and 1.2 million (approximately $110,000-150,000). We posit, first, that Anglo-American board members are likely to be more willing to pay a higher salary consistent with the common pay practices in Anglo-American markets. Second, we suggest that Anglo-American board members can be expected to reinforce the focus on corporate performance, implying higher pay for CEOs but, also, a greater probability of their being dismissed. Hence, part of the higher compensation should be interpreted as a risk premium.

The results of this study, based on Norwegian and Swedish data, indicate that firms with 50 percent of their total sales going to export pay their CEOs between SEK 350,000 and 430,000 (approximately $45,000-55,000) more than firms without any export and foreign sales pay to theirs. The same kind of effect has previously been found among US firms (Sanders and Carpenter, 1998; Carpenter et al, 2002). This (statistically and economically) significant effect can be attributed to two sources. First, firms with high export and foreign sales intensity allow their CEOs greater managerial discretion, which also makes them willing to offer greater compensation to highly competent CEOs (Finkelstein and Boyd, 1998). Second, we attribute this effect to the limited supply of competent and internationally oriented CEOs, which in turn serves to boost the pay level of those who are available.

We argue that Norway and Sweden are particularly suitable for studies on the issue of internationalization and CEO pay, since Scandinavia hosts some of the world's most highly internationalized firms (UNCTAD, 2000). The results are appealing and robust. However, further research is needed, concentrating on a broader spectrum of countries and seeking validity for a generalization of the results. In this context, the role of stock option grants should be addressed for periods following the one studied here. In addition, further research efforts should be made to identify the relative weight of supply-and-demand conditions and the risk-premium element in the overall picture. More thorough knowledge of the relative significance of these aspects would help boards and/or compensation committees to design appropriate compensation schemes.

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Table 1: Pearson Correlation Matrix and Descriptive Statistics

Variables	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1. CEO compensation – average compensation 1997 & 1998 (000 SEK)	1937	1454														
2. Anglo-American exchange listing (dummy)	.112	.31	.55***													
3. Anglo-American board membership (dummy)	.128	.34	.45***	.42***												
4. Export and foreign sales intensity (%)	50.00	36.05	.19*	.23**	.12											
5. Firm size (sales ln)	7.052	1.96	.66***	.46***	.29***	.13										
6. Performance I (ROE)	.119	.23	.20**	.10	.05	-.20**	.32***									
7. Performance II (annual stock return)	1.12	.64	.06	.08	.09	-.15*	.12	.40***								
8. Tobin's Q	1.81	1.55	-.01	.15	.19**	.10	-.09	.21**	.15*							
9. Board size	7.37	2.04	.55***	.33***	.21**	.00	.62***	.27***	.06	-.08						
10. Board independence	.63	.17	.08	-.03	.00	-.19**	.04	.15**	-.01	-.07	.10					
11. Multiple share classes	.47	.50	.36***	.18*	.12	-.09	.32***	.16*	.20**	-.12	.34***	.01				
12. Blockholder ownership (%)	43.98	21.01	-.22**	-.19*	-.09	-.20**	-.02	.11	-.04	-.19**	-.06	.08	-.12			
13. Country (Sweden =1)	.52	.50	.35***	.14	.11	-.26***	.22**	.17*	.23**	-.07	.37***	.07	.64***	-.10		
14. Firm age (years ln)	3.77	.93	.21***	.15*	.13	.04	.45***	-.04	-.04	-.20**	.45***	-.02	.15*	.03	.10	
15. CEO tenure (years ln)	1.64	.92	-.11	-.10	-.06	.03	-.12	-.10	.03	-.00	-.12	.03	.02	.09	-.05	.03

One US $ was equal to SEK 8.04 at the end of December 1998.
* p<.05 (two-tailed)
** p<.01 (two-tailed)
*** p<.001 (two-tailed)

Table 2: OLS Estimates of the Association between CEO Tenure (ln) in 1998 and Internationalization

	Expected effects	Full model
Anglo-American exchange listing	-	-.179 (-2.44)*
Anglo-American board membership	-	-.136 (-1.67)†
Export and foreign sales intensity (%)		.145 (1.53)
Firm age		.194 (2.41)*
Board size		-.180 (-2.15)*
Performance (stock return in 1997)		.150 (2.08)*
Blockholder ownership		.083 (1.17)
Multiple share classes		.124 (1.64)
# of firms		200
R-square		.150
F-Statistic		2.53**

One-digit industry controls are not reported. Standardized beta values reported, and t-statistics in parentheses.
† p<.10 (two-tailed)
* p<.05 (two-tailed)
** p<.01 (two-tailed)
*** p<.001 (two-tailed)

Table 3: OLS Estimates of the Association between Internationalization and CEO Compensation

	Dependent variable: Average total CEO Compensation 1997 and 1998				
Independent variables – lagged one year	Control variables only	Model 1	Model 2	Model 3	Model 4: Full model
Constant	-1537.72 (-2.91)**	-935.38 (-1.83)	-1000.78 (-1.99)*	-1970.40 (-3.72)***	-1052.14 (-2.09)*
H1: Anglo-American exchange listing		1310.00 (4.93)***			900.03 (3.43)**
H2: Anglo-American board membership			1182.26 (5.17)***		924.60 (4.11)**
H3: Export and foreign sales intensity (%)				8.67 (3.33)**	6.95 (2.91)**
Control variables					
Firm size (ln)	389.75 (7.47)***	302.30 (5.80)***	331.33 (6.63)***	360.52 (7.01)***	260.56 (5.26)***
Performance I (ROE)	-.78.38 (-.19)	90.95 (.24)	166.35 (.44)	84.52 (.21)	359.84 (.99)
Performance II (stock)	-134.93 (-.06)	-148.18 (-1.16)	-177.95 (-1.41)	-110.72 (-.84)	-158.27 (-1.32)
Tobin's Q	41.53 (.04)	-12.35 (-.24)	-22.25 (-43)	15.90 (.30)	-65.90 (-1.31)
Board size	113.32 (2.17)*	91.27 (1.85)	100.96 (2.05)*	105.51 (2.08)*	81.49 (1.77)
Board independence	344.61 (.78)	393.59 (.96)	305.90 (.75)	516.10 (1.20)	485.36 (1.25)
Multiple share classes	113.27 (.55)	95.97 (.49)	100.94 (.52)	102.81 (.51)	83.38 (.46)
Blockholder ownership	-12.29 (-3.72)***	-10.38 (-2.86)**	-12.25 (-3.41)**	-10.33 (-2.73)**	-9.39 (-2.75)**
Country (Sweden=1)	413.95 (1.94)	404.60 (2.02)*	379.07 (1.90)	531.15 (2.53)*	474.12 (2.49)*
# of firms	187	187	187	187	187
R-square	.533	.591	.596	.561	.613
Change R-square (over control variables only)		.058	.063	.028	.112
F-Statistic	16.46***	19.46***	19.52***	16.93***	20.56***
Change F-Statistic (over control variables only)		24.33***	26.77***	11.06**	17.78***

Single-digit industry controls are not reported. Beta values reported with t-statistics in parentheses.

* p<.05 (two-tailed)
** p<.01 (two-tailed)
*** p<.001 (two-tailed)