

Corporate Governance Codes, Board Evaluations, and Director Turnover:

A Study on Scandinavian Boards of Directors

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Abstract

In the years of 2001, 2004 and 2005 – Denmark, Norway, and Sweden introduced new corporate governance codes targeting listed companies. In this thesis, we study the characteristics of the Scandinavian codes and the effect of their implementation on director turnover probability. The effect is studied separately for small and large firms. Additionally, we study the guidelines in the codes on board evaluation, and how different evaluation rigorousness affects the board turnover. To measure the effect of the codes, we employ a Cox proportional hazard model and conduct a survey among Swedish chairmen. We find that the implementation of the codes has lowered the probability of director turnover. The effect is larger in small firms than in large firms. This is probably due to lost flexibility when following the guidelines, and that smaller companies have to adapt more in order to comply with the code. Furthermore, we find that a more rigorous board evaluation process increases board turnover. This applies when directors are evaluated individually or when an external evaluator is utilized. However, peer assessment among board members lowers board turnover. This, we argue, shows that board evaluation facilitates the discovery of competency gaps, but that board members are unwilling to share negative feedback.

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1 Introduction

During the last three decades, the world has witnessed several economic downturns and a large number of corporate scandals. As a result, corporate governance has entered the scene of academic, regulatory and investor discussion in today's market economies (e.g. Tirole, 1986; Mallin, 2004; Minichelli, Gabrielsson, and Huse, 2007; Hermalin and Weisbach, 1998, 2003; Adams, Hermalin and Weisbach 2008). They all debate how corporations can govern themselves more effectively. In the center of attention stands the governing body of the companies – the board of directors. Discussions flourish on how to improve the work and proactiveness in the boardroom, and investors are increasingly demanding that the boards show leadership and control (Kiel and Nicholson, 2005). The demands from different stakeholders imply a call for better routines to achieve better performance and greater professionalism among board members (Leblanc and Gillies, 2005).

The increased attention to corporate governance and its documented importance has led to a trend among many countries to develop codes of best practice within corporate governance (Berglöf and Von Thadden, 1999; Liljeblom and Löflund, 2006). In the United States, the Sarbanes-Oxley Act (henceforth, SOX) was introduced in July 2002, legislating new or enhanced standards for all U.S. public company boards, management and public accounting firms. The European breakthrough came already in 1992 with the UK Cadbury Report, which contains guidelines on the board's composition, work and control function. This has evolved into the Combined Code (Financial Reporting Council, 2008), which has been the guiding document for many European countries developing national codes on corporate governance. The trend of introducing codes has also been strong in Scandinavia, where all countries now have developed codes targeting listed companies.

In a typical modern firm, the board of directors functions as a supervisor of the firm. However, one question has long remained unsolved – who supervises the supervisor? Today we can find one answer to this question in the Scandinavian codes, since the codes include guidelines on how to evaluate the board's work and composition. All codes have in common that this should be done on an annual basis, and that the results should be used when assessing who the members of the board should be.

The purpose of this thesis is to examine if the implementations of the codes in Scandinavia have had an effect on the turnover probability of board members, focusing on the codes' guidelines on board

evaluation. This is done in three steps. First, we study the characteristics of Scandinavian corporate governance. Second, we test whether the probability of director turnover has changed after the implementation of the codes, and if this depends on company size. Third, we examine if different evaluation procedures generate different results on the board turnover ratio.

The remainder of our thesis is structured as follows. In section 2, we describe the background for our study. Section 3 presents previous empirical research that lay the foundation for the development of our hypotheses. Section 4 describes our methodology, models, and methods for testing our hypotheses. Section 5 describes our data. In section 6, we present our empirical results, followed by a discussion on validity in Section 7. We end with a final conclusion in Section 8.

2 Background

In this section we describe the Scandinavian corporate governance setting. Following this, we explore the codes' content on board evaluation and nomination procedures. As a concluding remark: our contribution to the field of study.

2.1 The Scandinavian corporate setting

We use the same definition of the Scandinavian countries as Thomsen, Sinani, Stafsudd, Edling, and Randøy (2008), who in turn base their motivation on La Porta, Lopez-de-Silanes, Schleifer, and Vishny (1998): Sweden, Norway and Denmark. The writers compare the legal systems of Scandinavia and conclude that they are similar to each other, but distinct from other systems. Consequently, they define them as a separate legal family in their sample of study. With the Scandinavian codes being a part of each country's legal system, we also define Scandinavia as the three countries of Sweden, Norway and Denmark in our analysis.

Also on a macro-economic level, the Scandinavian countries are fairly similar even in a combined comparison with the traditional market economies of the UK and the US (Thomsen et al., 2008). This is also valid on a corporate governance level, where the Scandinavian countries usually are assumed to be members of a relatively homogeneous group, both in terms of formal as well as informal mechanisms (Coffee, 2001; La Porta et al., 1998). One important mechanism is the board structure, for which all countries prescribe that there must be one or more responsible managers as well as a supervisory board to appoint managers and approve significant decisions. (Thomsen et al., 2008; La Porta et al., 1998)

However, the implementations of corporate governance practises has been somewhat dispersed over time. The Danish *Recommendation for Good Corporate Governance* was put into force in 2001, targeting all listed firms. The *Norwegian Code of Practice for Corporate Governance* also targets all listed firms, and was implemented in 2004. The *Swedish Code of Corporate Governance* was implemented in 2005 targeting large listed firms, and expanded to target all firms listed on Stockholm stock exchange and Nordic Growth Market stock exchange (henceforth, NGM) in 2008.

2.2 The codes' guidelines on boards and board evaluation

The Swedish code stipulates that "the company is to have a nomination committee that represents the company's shareholders" (p. 20) which is to "make recommendations for the chair and other members of the board" (p. 21), i.e. suggest who should be elected as the board's chairman as well as directors. As the basis for its recommendations, the committee is to "assess the extent to which the current board meets the demands that will be made of the board as a consequence of the company's current position and future direction, among other things, by studying the result of the evaluation made of the board" (p. 21). It is the chair's responsibility to "see that the work of the board is evaluated annually and that the nomination committee is informed of the result of the evaluation" (p. 28), which should employ "a systematic and structured process" (p. 24). (Swedish Corporate Governance Board, 2005)

In Norway, the code prescribes that "the board of directors should evaluate its performance and expertise annually" (p. 28), and that the evaluation is to be summarized in a report. Continuing, it states that such a report "will be more comprehensive if it is not intended for publication. However such reports should be made available to the nomination committee." (p. 32). (Norwegian Corporate Governance Board, 2004)

Similarly, the Danish code includes rules for the election of directors and auditors and guidelines for the responsibilities of firm management. More narrowly, the Danish code stipulates that the board of directors should establish and conduct an assessment process, for which the chairman is responsible. This process should continuously and systematically evaluate the work performance and constitution of the board at least once a year. It also states that it will be useful to make the assessment on an individual level, including the chairman, and if necessary with outside help. (Committee on Corporate Governance in Denmark, 2001)

Furthermore, two sections of the codes that are connected to board evaluation are the ones about the size and the composition of the boards. Here, the Swedish code says that "the board should have a size and composition that enable it to embrace the various qualifications and experience needed and to meet the independence criteria required to manage the company's affairs effectively and independently" (p. 25). It also states that "the renewal of the board should be paced with due consideration for the development of the company's operations as well as for the need for continuity

in the work of the board" (p. 25). With respect to this, the board should also "have an appropriate composition, exhibiting diversity and breadth in the directors' qualifications, experience and background. An equal gender distribution on the board is to be an aim." (p. 25) (Swedish Corporate Governance Board, 2005). Similar guidelines can be found in the Norwegian and the Danish codes.

Given these characteristics of the codes, concerning the evaluation of boards, an important feature is that the guidelines are not mandatory. Instead, the codes supplement each country's legislation by adding non-compulsory recommendations. As in the case with most governance codes, the Scandinavian codes are all based on the comply or explain principle. This means that the targeted companies do not formally need to follow any of the guidelines in the codes. However, in the case of diverging practices, they must provide explanations for these in the annual report. Otherwise, they risk being delisted. Such disclosure requirements exert a pressure on companies to comply with the code since it is likely to carry benefits for the company's share price (Mallin, 2001). However, there are indications that investors excuse non-compliance as long as the company can show superior financial performance (MacNeil and Li, 2006).

2.3 Board evaluation procedures

When performing a board evaluation, the chairman will have to answer the question: Who should perform the evaluation and who is the addressee? According to Minichilli et al. (2007), both questions can be answered either by "the board" or "the market", resulting in four potential combinations: board-to-board, board-to-market, market-to-board, and market-to-market, increasing in objectivity as the evaluator is the market and transparency if the addressee is the market. On top of this, an additional dimension is whether the board is evaluated as a whole or if directors are being evaluated as individuals. Also this can be performed in different fashions with increasing objectivity and quality, through for instance self-assessments, peer evaluations or external evaluators. The intent is documented in the Combined Code (Financial Reporting Council, 2008), stating that the chairman of the board should use the results from an evaluation to recognize strengths and address weaknesses of the board, and where appropriate propose new members to be appointed to the board, or seeking the resignation of directors.

The most common and traditional way to conduct the evaluation is through the use of a self-evaluation form (Kazanjian, 2000; Stybel and Peabody, 2005). An evaluation performed in this fashion can be a valuable tool for improving the inner workings of the boards, but it bears the risk of becoming subjective and self-serving. To avoid this, the chairman can consider letting someone outside of the board conduct the evaluation, such as the nomination committee or an external consultancy firm. Kiel and Nicholson (2005) argue that the motivation and increased attention to let an external part perform the evaluation, is either because there is a stronger requirement for transparency, or because the board members do not have the capabilities to carry out the performance themselves.

Furthermore, one essential part when evaluating the board is to assess the composition of the board. When doing this, the focus is partly on the board member's external attributes, but should also include the caliber and knowledge base of each member, their learning capabilities and how they interact with each other, with the management, and with other stakeholders (Maharaj, 2009). According to Leblanc and Gillies (2005), the evaluation of board composition is done to match the board members' competences and behavioral characteristics with the company's strategy. By doing this, the companies can design skill-based boards and effectively improve the recruitment of board members. Although, it is important to be aware of the risk with an evaluation aiming to change the composition of the board. Knowing that their answers may be used to remove directors from the board, the respondents may be reluctant to conceal important information about the workings of the board (Heidrick, 1999).

Ultimately, Minichilli et al. (2007) support and summarize this finding in their research with the identification of three areas where board evaluation could lead to improvements. Firstly, the evaluation can identify a board's strengths and weaknesses. Secondly, it can help board members to understand what is required from them on an individual as well as collective level. Lastly, board evaluations could help build trust and reputation among stakeholders, signalling a commitment to fairness and transparency in the work of the board. Conger and Lawlor (2003) have studied small groups of companies that are leaders in boardroom evaluations, and confirm that well managed appraisals can increase a board's effectiveness and accountability.

2.4 Contribution to the field of corporate governance

The contribution of our thesis to the field of study is twofold. First, we extend the literature within corporate governance by studying how new regulation has affected director turnover in Scandinavian boards of directors. To do this, we collect data on Scandinavian boards of directors to examine if the codes have had an impact on director turnover probability by utilizing a survival analysis. Second, we test whether different degrees of implementation of the guidelines on board evaluation explains the impact in Swedish firms.

3 Previous research and hypotheses development

In this section we examine empirical results in previous research related to the field of our study. Based on this, we develop and argue for our testable hypotheses.

3.1 Director turnover and corporate governance codes

So far, researchers (e.g. Chhaochharia and Grinstein, 2007) have documented effects of corporate governance regulations in the United States. As described earlier, the SOX can be seen as an exogenous factor imposed by law on all firms at the same time. Hence, Chhaochharia and Grinstein argue that it serves as a good opportunity to study the implementation effects of corporate governance rules, since different effects on firms with different characteristics can be observed.

Van der Zee and Swagerman (2009) examine if the introduction of the SOX has led to a shift in the composition of the board of directors, mainly looking at the three measures age, tenure (measured as time in company), and specialization, arguing that these personal characteristics play an important part in decision making and hence in the degree of ethical behavior. They find that the average age and specialization, but not average tenure, of directors increase after the introduction of SOX.

Dalton and Dalton (2007) look at the board turnover rates after the introduction of the SOX, and conclude that there has been a marked increase in the turnover rate for directors. The data they examine includes independent board members who resign or otherwise relinquish their board positions. In 2001, one year pre-SOX, this turnover rate was 5.0%. After three years with SOX, in 2005, this rate had risen to 11.3%, and reached 35.7% annually in 2007. They also find that the average number of inside directors in Fortune 500 companies decreased from 3.1 in 2001 to 1.65 inside director per board in 2007, including the CEO.

Many researchers have examined the correlation between corporate performance and board turnover, a few with significant results. Waelchli (2008) studies board turnover in Switzerland and confirms the findings of Yermack (2004) that board turnover is sensitive to firm performance with a negative correlation. Studying U.S. IPOs, also Crutchley, Garner, and Marshall (2002) find that poorly performing firms are more likely to change the composition of their boards. In a

Scandinavian setting, Maury (2006) documents an increase in Finnish board turnover in response to poor stock price performance and operating losses. However, historically, the existing literature does not give any strong support to this correlation (Hermalin and Weisbach, 2003). This is confirmed on a Swedish setting by Engvall and Holmberg (2007), who find that the correlation is insignificant.

Also the workings and effects of the nomination committees have been studied, showing that they do have a real impact on the dismissal and appointment of directors. Shivdasani and Yermack (1999) examine how the CEO influences the board by using information about the nomination committee. They find that if the CEO serves on the nomination committee, or if no such committee exists, fewer outside directors are appointed and the stock price reaction to appointing an outside director is lower than if the CEO is not serving on the nomination committee. Engvall and Holmberg (2007) examine the impact that pension funds on the nomination committee have on board turnover, and find that it has a positive correlation in small firms. These examples show that an introduction or enforcement of nomination committees should have an impact on board composition.

As we see it, there are three prominent features of the Scandinavian codes relevant to our study: The guidelines on (i) board composition, (ii) nomination procedures, and (iii) board evaluation. We believe that the guidelines on nomination procedures and the systematic and regular board evaluation should have a measurable impact on the probability of director turnover. The formal nomination procedures create a platform where investors can exercise power in the appointment of board directors. The systematic and regular board assessment enlightens gaps between the competence needs of the company and the current competence in the board, as well as individual competence shortcomings and lack of commitment. This, together with the U.S. findings on board turnover after the introduction of the SOX, makes us believe that director turnover probability should have increased in Scandinavian companies when complying with a new corporate governance code. Our first testable hypothesis is therefore:

H1: The director turnover probability in Scandinavian companies is positively correlated to compliance with the country's corporate governance code.

3.2 Director turnover, corporate governance codes, and company size

It is reasonable to believe that there is a difference in governance practices correlated with the size of the company. It is although not always clear in what way size affects. One example is the turnover

probability of CEOs. Cosh and Hughes (1997) perform a study on American firms and get a significantly lower probability of CEO turnover in large firms, indicating that larger firms have lower CEO turnover rates. On the contrary, when studying Danish firms, Lausten (2002), finds that size has a positive impact on the likelihood of CEO turnover. There may also be inherent differences in the structure of the boards. Just as one example, Lehn, Patro, and Zhao (2004) show in an extensive study that smaller firms choose to have a larger portion of non-independent board members than larger firms. Since the code stipulates guidelines on board composition, there might be reason to believe that small firms have to carry through more changes in order to comply. Assuming that there is a correlation between director turnover and compliance with the code, this makes it interesting for us to analyze if the codes have had different impact on firms depending on their size.

There is much evidence showing that the standards of corporate governance are different in firms of different sizes. Studying Korean firms, Kim, Black and Jang (2006) find that firm size is correlated with corporate governance in the sense that large-sized firms tend to be better governed. Klapper and Love (2004) study firms in the United States, and conclude that firms that are listed on a major exchange have relatively higher corporate governance standards. Small firms, on the other hand, often choose milder internal control mechanisms (Holmstrom and Kaplan, 2003).

This leads us to believe that the change required to comply with a code is larger in small firms than in large firms. Studying the effects of the implementation of SOX in 2002, Chhaochharia and Grinstein (2007) find evidence for this, as small firms have a higher cost than large firms from implementing new internal control provisions. Also, Holmstrom and Kaplan (2003) argue that new rules might entail large fixed costs for small firms that are required to enhance internal control mechanisms.

We therefore want to test the difference in impact of the code separately across large and small firms. In line with the previous findings and arguments presented, we define our second testable hypothesis:

H2: The size of the effect of new corporate governance codes is negatively correlated with the size of the targeted companies.

3.3 Board turnover ratio and board evaluation rigorousness

Little is yet known about what effect the implementation of the code has had on the boards of listed Scandinavian companies. Little is also known about the true impact of regular and systematic board evaluation, despite the fact that the quality of a board of directors is a significant factor for many large investors. According to Conger and Lawlor (2003), US investors are starting to demand information on individual directors' track records and their contributions to the board through careful assessments of board performance. Even in a country such as Sweden, where investor protection generally is high, investors with little power are reluctant to invest in firms with weak corporate governance systems (Giannetti and Simonov, 2006). The codes do not stipulate in what way the board evaluation should be conducted, and it is therefore left to the chairmen to decide on the rigorousness of the board evaluation.

Most international codes now include requirements for board evaluations. As a result, the prevalence of evaluations is constantly increasing, but not without some resistance against their introduction (Conger, Lawler, and Finegold, 2001). One example of this is companies listed on the Toronto stock exchange in 2000, for which guidelines for corporate governance were introduced in 1995. Kazanjian (2000) finds that guideline 5, which provides that the board should implement a process for assessing the effectiveness of the board as a whole, the committees of the board and the contribution of the individual directors, lagged all other guidelines. In year 2000, fewer than 20 percent had a formal process on assessing individual directors. As one explanation, he concludes that individual assessments could open a Pandora's Box and release matters that could no longer be avoided. Examples are under-performing directors who are friends or relatives of a significant shareholder or directors who are highly respected but too busy with other things to be prepared. This explanation is confirmed in a study made by Stybel and Peabody (2005). They use a case study to describe how board evaluations can reveal low performance and bad attendance habits for individual directors because they are busy with other things, lack commitment or just, as in their case, serve as "trophy directors" because of their status.

In Sweden, a number of Master's and Bachelor's theses have examined the implementation of the code and board evaluation in Swedish companies. Juhlin (2008) performs a quantitative study on 113 Swedish listed firms in order to investigate if and how they diverge from guidelines in the code. She

concludes that 9 percent of the companies diverge from more than 3 out of the code's 71 guidelines, but that only one of the divergences is from board evaluation. However, in the same study, she finds that the most common diverging practice (26 out of the 113 firms) is to have the chairman of the board on the nomination committee. This is most often due to him/her being a majority shareholder. Lindström (2005) examines the evaluation procedures of Swedish companies before the code was implemented, and finds that companies do perform evaluations to a large degree, but that many are conducted in an informal and non-systematic manner. Through a survey, Philip and Wikström (2006) notice that the code was the triggering factor for board evaluations in Swedish companies, but that the companies now conduct evaluations out of their own interest.

We argue that the quality and rigorousness of the board evaluation is the key factor to find a potential lack of competencies or other board dysfunctionalities hindering the board to reach its fullest potential. With objectivity being the hardest part to obtain without leaving the comfortable ground of self-assessments, there are easy and measurable ways to make improvements. Quality should be higher if individuals are assessed rather than only the board as a whole (Conger and Lawlor, 2003). Also, objectivity should be higher if evaluations is made through peer assessments, by the nomination committee or by an external party, in an ascending order. We therefore conclude that it would be interesting to study how different rigorousness of board evaluations affects the probability of finding a potential gap or mismatch within the board. As a result, this will give us an indication on how well different evaluation methods fulfills their purpose by studying the effect on the board turnover ratio. Our third hypothesis that we test is therefore:

H3: The board turnover ratio is positively correlated with the rigorousness of board evaluations.

We summarize our hypothesis in Table 3.1 below.

Hypothesis 1	The director turnover probability in Scandinavian companies is positively correlated to compliance with the country's corporate governance code.
Hypothesis 2	The size of the effect of new corporate governance codes is negatively correlated with the size of the targeted companies.
Hypothesis 3	The board turnover ratio is positively correlated with the rigorousness of board evaluations.

Table 3.1 Summary of hypotheses

4 Research methodology and methods

Up until this point, we have presented the background and empirical evidence from which we derive our hypotheses. In this section, we first present our general methodology on how to test our three hypotheses. Second, we show an awareness of the challenges that we have to handle with respect to our methodology and present our models of choice. To conclude, we combine our methodology with the awareness to present our detailed methods.

4.1 General methodology

In hypothesis 1, we argue that compliance with the codes has an impact on the director turnover probability in Scandinavian boards. Given our assumption that the Scandinavian countries are similar in most aspects relevant to our study, we will use at least two out of the three countries when testing our hypothesis. We then compare the probability of a director leaving the board at any day before and after the implementation of the codes in each country, to see if there is any observable difference before and after. Compliance is analyzed in a binary fashion, assuming compliance with all guidelines if a company is targeted by the code.

Our hypothesis 2 states that there is a difference in the impact of the codes depending on the size of a targeted company. Just like when testing hypothesis 1, we compare the probability of a director leaving the board at any day before and after the implementation. This time we divide our sample to first look at the effect for large firms and then compare it to the effect for small firms.

In hypothesis 3, we want to examine the impact of different rigorousness in board evaluation. We therefore need to know the evaluation procedures on specific boards. We perform a survey among Swedish board chairmen to ask them about board evaluation procedures in their respective companies. We then analyze if there is any link between the way an evaluation is performed and the number of directors leaving the board.

4.2 The endogeneity problem

In econometrical terms, the endogeneity problem arises if there is a correlation between an explanatory variable and the error term. This can be a result of, among other things, omitted

variables that would have explanatory power if included, or a sample selection error by choosing the wrong sample to study. Endogeneity is a common problem in a study like ours, and therefore important to address.

Challenges regarding identification and estimation of policy effects are fairly well understood (Imbens and Wooldridge, 2009). Adams et al. (2008) state that almost every model on governance shows that the equilibrium outcome is sensitive to its exogenous parameters, and inevitably the heterogeneity in those parameters will lead to heterogeneity in solutions. To make this comprehensible, it means that if we compare the effects of a regulation that was imposed on all Scandinavian countries in the same year at once, we cannot know if the effect from the year after implementation was due to the effect of the regulation or if it was due to any other trend specific for that year.

This type of problem also arises when comparing different companies or groups over time. There may be, and most probably is, an underlying trend in each company or group for any characteristics observed. In our case, some companies may have a generally higher propensity to replace directors on a regular basis, while other companies may seldom or never replace theirs. In the same fashion, there might be a general difference between countries or companies of different sizes in the pace of director replacement.

We also face a problem with joint endogeneity, meaning that one factor affects another, which in turn affects the first. Adams et al. (2008) argue that the composition of a board affects what the board does, and concurrently, the actions of the board affect the composition itself. In our third hypothesis, we want to examine how an action on the board affects the change in composition of the board. We must therefore be careful when interpreting the results, since causality is almost impossible to determine. The result of our study could just as well, as Adams et al. (2008) conclude, solely be a general equilibrium. This is a hard problem to solve, and many researchers are studying how to decide and include optimal parameters to adjust for endogeneity and maintain causality in treatment effects (Shumway, 2001).

When implementing codes, most countries state a distinct delimitation for which companies are to be affected by the rules of the code. Some include only listed companies, some draw the line by a certain size of a company. However, there are strong reasons to believe that we may see different

levels of implementation of the code in companies affected by the code, partly due to the choice to comply or explain. Also, we might just as well observe companies not mandated to follow the code but following the code either because they are to be included at a later point, or because they enforce the rules in their company by own will. This creates a selection bias, and is a typical challenge when estimating casual effects, essential to take into consideration.

We have now described our general methodology and shown awareness of the econometric challenges we face. Following this, we now give a more detailed presentation of our methods that we will use.

4.3 Fixed effects

Many theoretical studies during the last decades have focused on econometric methods for dealing with the endogeneity problem. One of these methods is fixed effects, which we will incorporate in this study. The major attraction of using fixed effects methods is the ability to control for all stable characteristics of a sample in a study, and thereby eliminate potentially large sources of bias in estimated coefficients (Imbens and Wooldridge, 2009). The method allows us to control for both firm fixed and time fixed effects. The firm fixed effects can control for permanent differences between different firms, whilst time fixed effects can control for impacts common to all firms at any given point in time.

When using fixed effects, it is important to be aware of some fallacies appertained to the method. The inference for fixed effects is based on their asymptotic distributions,³ which is known to be inadequate for many small-sample problems (Kenward and Roger, 1997). This means that the precision and validity of the fixed effects decrease as the sample becomes smaller.

4.4 The Cox proportional hazard model

Traditionally used in the field of medical analysis, the function of a survival analysis is to take the survival times of a group of subjects, often with some preexisting medical condition, and generate a survival curve showing how many of the subjects remain alive over time. The survival time is the length of the interval between an event (e.g. diagnosis, surgery, medication) and death. Implementing

³ An asymptotic function gradually approaches a constant value until it is arbitrarily close to the constant

this on our field of study, we will be able to analyze the impact of the code and other covariates on the probability of director turnover, with survival time measured as board tenure.

Since we normally have to analyze this kind of data while some subjects are still alive (in our study, it means that the directors are still on the board), a mathematical complication occurs. The fact that some subjects may have moved away or been lost to follow-up also causes problems. In both cases, we know that the subject has survived for some amount of time, until the latest registration, but not how much longer they eventually will survive. This gives us information that they have survived "at least this long", information hard to use in a standard regression model.

In the survival analysis, we want to know whether the probability of survival is influenced by one or more factors, also known as predictors or covariates. These factors may be categorical, e.g. the kind of treatment given to a patient, or continuous, e.g. the age or weight of the patient. For situations where we have several covariates, we need an advanced regression type that takes into consideration the effect of each covariate on the shape of the survival curve.

In order to understand the concept proportional hazards, start by thinking of a "baseline" survival curve. This can be interpreted as the survival curve of a completely average subject, for whom all the covariates have the average value for each of the whole set of subjects' covariates. At time zero, the baseline starts at 1.0, and descends with increasing survival time until it eventually reaches 0. However, it does not have any special formula representation and can have any shape as long as it goes from 1.0 to 0.

The different covariates then cause the survival curve to systematically flex up or down, while its general shape is maintained. Cox (1972) has developed models on this, and observed that it is possible to estimate the effect of the covariates without any consideration of the hazard function as long as the proportional hazards assumptions hold, i.e. that covariates multiply hazard. The Cox proportional hazard model computes the impact of each coefficient, indicating the direction and degree of impact hazard for each covariate. A value of 1.0 indicates that it does not have any effect on the survival curve. A value of 1.4 indicates that hazard, the probability of death with each unit increase in time, has increased by 40 percent and a value of 0.4 indicates that hazard has decreased by 60 percent.

Using the Cox proportional hazard model, it is possible to implement a fixed effects-approach. This is done through a process of stratification, an easily employed method which results in very little bias (Allison, 1996).

4.5 Methods for testing hypotheses

We have now decided on the general methodology for testing the three hypotheses and described the specific problems we face and models that we will use. We combine this into our methods of choice for each of our three hypotheses.

4.5.1 Director turnover and corporate governance codes

As discussed above, the corporate setting is similar in all of the Scandinavian countries. When choosing the countries to use in our study, we must however take into account the potential endogeneity effect that can occur if the codes are implemented at a similar or adjacent time period. In other words, we need to choose at least two countries where the implementation of the code took place in distinctly different time periods. For this, Sweden and Denmark serve as good choices, given that Denmark implemented the code in 2001 and Sweden implemented the code in 2005.

The model of choice is the Cox proportional hazard model. This gives us the possibility to take advantage of more data, by including information about directors currently active on their respective boards.

We control for time fixed effects through yearly time dummies, and firm fixed effects through stratifying the sample on a firm level. We also assume that there may be other correlations within the data, and therefore calculate our standard errors on a clustered basis. Otherwise, each observation would be considered completely independent. This could potentially underestimate the standard errors, rendering the significance tests invalid. This treatment of standard errors is applied to all regressions.

4.5.2 Director turnover, corporate governance codes, and company size

In order to test if the effect of complying with the codes is correlated with the size of the company, we once again look at Sweden and Denmark. This time, we divide the sample to get the possibility of

examining if the effects of the codes differ between large and small firms. Once again, the reason for our choice is the fact that the codes were implemented in different time periods: on December 7 2001 for listed Danish firms, on July 1 2005 for listed Swedish firms with a market cap above SEK 3 billion, and on July 1 2008 for all Swedish firms listed on the Stockholm stock exchange or on the NGM. We define size in terms of market capitalization, and proxy for this through Swedish compliance delimitations for Swedish firms. For Danish firms, we use the NASDAQ OMX Nordic listing criteria. This will not provide us with exact boundaries for the two groups, but will still give us two inherently different groups in terms of size.

We divide the Swedish sample into two groups. The first group consists of companies complying with the code from July 2005 and onwards. The other group consists of companies complying with the code from 2008 and onwards, but not before that. We exclude all other Swedish companies, since our data does not include information on their size. Since the first group comprises large companies, we include Danish companies listed on the Mid and Large Cap lists of Copenhagen stock exchange, representing firms with a market cap above EUR 150 million. The second group consist of smaller companies, and we therefore include Danish firms listed on the Small Cap list of Copenhagen stock exchange, representing firms with a market cap below EUR 150 million (similar approaches can be seen in e.g. Beaupain, Giot, and Petitjean, 2010).

Also in this case, we utilize the Cox proportional hazard model. We include controls for time fixed effects through yearly time dummies, and firm fixed effects by stratifying the sample on a firm level.

4.5.3 Board turnover ratio and board evaluation rigorousness

For the third hypothesis, we use the responses from the survey conducted on Swedish chairmen about their board evaluation procedures. Now, we want to compare the characteristics of the board evaluation with the quantity of board turnover at that specific year. To do this, the best approach is to calculate a board turnover ratio, the percentage of the board members leaving the board during a specific year. We then regress this, using an ordinary least square regression, on the different type of evaluation procedures using dummies presented in the next section.

The reason for not using the Cox proportional hazard model in this analysis is that we then would have to assume that an evaluation made at any year affects the director for all years to come. Instead,

we want to look on how the most recently conducted evaluation impacts the turnover of board members. With this approach, we acknowledge the fact that a director, and thereby the evaluation results, may change from year to year.

As previously discussed, the fixed effects method has some limitations when it comes to small samples. Since we will only have a few, sometimes only one, observation for each company, the result of the fixed effects on a firm level may therefore be questionable. We therefore perform the regression with and without fixed effects on a firm level, to ensure that we capture the effects from the evaluation procedures. We control for yearly fixed effects using time dummies.

5. Data

In this section we describe the characteristics of the firm sample we study and present relevant definitions. We will also give an explanation of the conducted survey.

5.1 Constructing the sample

We choose to look at Swedish limited liability companies (*aktiebolag*), joint-stock banking companies (*bankaktiebolag*), and insurance companies (*försäkringsaktiebolag*) reporting changes in board members to the registers kept by the Swedish Companies Registration Office (*Bolagsverket*). This gives us a total of 632 limited liability companies, 5 joint-stock banking companies, and 2 insurance companies. The rationale behind our selection is to get a wide selection of companies, including companies that are required to comply with the code as well as companies that never are required to do so. The sample includes both companies still active, "stayers", and companies that are discontinued⁴ in the register. Out of these companies, 248 are currently listed on the Stockholm stock exchange or NGM (50 firms on Large Cap, 64 firms on Mid Cap, 110 firms on Small Cap, 24 firms on NGM) and therefore obliged to follow the code after July 1 2008. In the period between July 1 2005 and June 30 2008, all companies that at any time during that period achieved a market cap above SEK 3 billion were obliged to follow the code from that point and onwards. In our sample, this results in 71 companies obliged to follow the code in the second half of 2005, 76 in 2006, 78 in 2007, and 80 in the first half of 2008. The first registrations are from November 11 1992, and the latest from April 20 2010, giving us a 14703 observations possible to use in the Cox proportional hazard regression model.

We choose to use Danish firms reporting to the Central Business Register (*Det centrale virksomhedsregister*), that are listed on Copenhagen stock exchange at any time during the period 2001-2010. The reason for this is that the code implemented in 2001 is targeting all Danish listed firms, and that the high cost of data from *Det centrale virksomhedsregister* forces us to limit our number of companies. In this sample, all companies are "stayers". This implies an endogeneity problem in the dataset, which however partly will be corrected for through the fixed effects method.

⁴ Due to bankruptcy, mergers etc. Special treatment is given to Nordea AB becoming Nordea Bank AB when the parent company, Nordea AB, was granted a bank charter and thus changed its name to Nordea Bank AB as of 30 January 2004. The two legal entities are regarded as one single company.

In total, our Danish sample consists of 159 firms (22 firms on Large Cap, 35 firms on Mid Cap, 90 firms on Small Cap, and 12 companies currently delisted from Copenhagen stock exchange). The first registrations are from May 07 1987, and the latest from May 7 2010, giving us 4320 observations possible to use in the Cox proportional hazard regression model.

5.2 Board turnover

When defining board turnover, researchers studying changes in board composition are compelled to use a definition based on the data they intend to investigate (Yermack, 2004; Maury, 2006; Dalton and Dalton 2007; Van der Zee and Swagerman 2009). Thus, we define *director turnover* as a board member leaving the board, regardless of the reason. Consequently, we define *board turnover ratio* as the number of directors leaving the board, over the total number of directors on the board, for each specific calendar year. This implies that the ratio will be affected when a director is replaced or when the board is reduced in size, but not when the number of directors is increased.

We do not exclude board members due to having reached retirement age, since their turnover probability also might be affected by the codes. If not, their impact on turnover should be fairly constant over time. We do however exclude members of the working force appointed by the staff of the company, since they are not included in the regular process of appointment and dismissal of board members.

For Swedish firms, the number of board members is simply calculated as the numbers of registered board members in the beginning of each year. For Danish firms, where the data is listed by individuals rather than by companies, we calculate the number of board members as the sum of all persons registered as active on the board at the beginning of each year. This implies that we occasionally get very large Danish boards. However, there is no other way to interpret the data and we therefore acknowledge these board sizes as correct. One possible explanation could be a large number of deputies.

Average board turnover ratio per year and per size of board is presented in Figure A.1 and Figure A.2, respectively.

5.3 Tenure of board members

To estimate how the code has affected the probability that a single board member leaves a particular board, we utilize a longitudinal dataset of board members' positions in Swedish and Danish firms. As described, we have obtained the data for Swedish firms from *Bolagsverket* and for Danish firms from *Det centrale virksomhedsregister*. The two datasets are constructed differently, and we therefore treat them in different fashions. The Swedish data lists the board composition for each firm at any time there has been a change registered to *Bolagsverket*. The date of appointment is therefore assumed to be when a person first is registered on a board, without being included in the previous board registration. In a similar fashion, the date of departure is assumed to be the date of the first board registration not including a board member after having been included in the previous board registration. In the Danish data, each appointment of a board member to a specific firm is listed with the date of appointment and the date of departure. The tenure is then defined in the same way for directors in both countries as the number of days between appointment and departure. If the observation is right-hand censored, i.e. the director is still active on the board, tenure is the number of days from appointment on the board to the date on which the data was extracted.

It is important to note that many of our cases are left-censored, i.e. the board appointment begins before our data includes any registrations. That implies that we cannot exactly observe the correct length of tenure in the beginning of our sample. This is relevant for Swedish board members appointed before 1992 and Danish board members appointed before 1995 (with some exceptions when the earlier appointment date has been registered retroactively). In these cases, we will treat these left-censored observations as though they had begun at the beginning of 1992 and 1995 respectively. This practice is similar to the one used by Clotfelter, Glennie, Ladd and Vigdor (2008) when studying how higher salaries affect the spell of employment among teachers.

The unit of observation in our analysis is tenure on the board, defined as number of days a director works continuously on a single board, with the outcome of interest an indicator for whether the appointment ended during the time period under observation. There are many instances where a person leaves a board and comes back at a later time, with the pause ranging from days to years. This could be due to longer vacations, parental leave or other reasons for a temporary time off. For our purposes however, we treat any departure from the board, whether permanent or temporary, equivalently, because there is no way to distinguish the reasons behind the departure in our data.

5.4 Compliance with the code

Using *Thomson Reuters Datastream*, we gather data on market capitalizations for the listed Swedish firms. The code stipulates that after July 1 2005, firms should follow the code if they have, or from the date they attain, a market cap above SEK 3 billion. We therefore gather monthly data on market capitalization and create dummy variables with the value 1 from the date that a company attains a market cap above SEK 3 billion after July 1 2005. For all dates before that, and for all companies with a lower market cap than SEK 3 billion, the value is 0. After July 1 2008, the dummy equals 1 for all companies listed on the Stockholm stock exchange or NGM, as they are all obliged to follow the code after that date. For Danish firms, the code was implemented on December 7 2001. The dummy therefore equals 1 for all Danish firms from December 7 2001, and 0 before that.

Table A.1 summarizes our sample selection, variables of interest and descriptive statistics for sample firms.

5.5 Test of the proportional hazards assumption

In order to test if the proportional hazards assumption holds for our data sample, we perform three tests. First, we create a so called "log-log plot" on the compliance variable versus the logarithm of analysis time. The proportional-hazards assumption is not violated when the curves are parallel. Second, we plot Kaplan-Meier observed survival curves and compare them with the Cox predicted curves for the same variable. If the observed values are close to the predicted values, it is less likely that the proportional hazard assumption is violated. Third, we perform a proportional hazard test developed by Grambsch and Therneau (1994). This tests the proportional-hazards assumption on the basis of Schoenfeld residuals. A non-zero slope is an indication of a violation of the proportional hazard assumption.

The results of the tests are shown in Figure A.3, Figure A.4, and Figure A.5, respectively. Our first test shows primarily parallel curves. Our second test show similar curves for observed and predicted values. Our third test indicates a zero slope. We therefore conclude that the proportional hazard assumption holds.

5.6 Survey

In order to collect data on the evaluation procedures of Swedish boards, we conduct a survey targeting the chairmen of Swedish companies listed on Stockholm stock exchange since at least 2001. The reason for our selection is twofold. Firstly, we want to ensure that the companies studied can show changes over time in the way the evaluation has been performed. Secondly, we want the boards of the companies to have been fully functional at the time when the code was first published in December 2004. A total of 179 companies were identified to fulfill our criteria. The e-mail addresses to the chairmen were collected by mailing the information departments and by later calling those companies who had not replied. If the chairmen did not have the possibility to participate, we asked if there was someone with the same knowledge about the company's board evaluation procedures. 13 companies refused participation, giving us a total sample of 166 companies. Among these, we received the e-mail addresses to 109 chairmen directly, 48 chairman assistants, and 9 others with knowledge on evaluation procedures. The survey was sent on April 16, and a reminder was sent out on April 27. In total, we received 98 responses, representing 59.0% of our sample. This is considered satisfactory and in line with, or slightly above, common research standards (Baruch and Holtom, 2008).

The survey comprised six questions on board evaluation procedures, which were asked in Swedish to Swedish speaking chairmen and in English to those who do not speak Swedish. Each question had a set of answers designed to make answers applicable in a quantitative setting, but was also accompanied by a possibility to comment. It is important that the respondents understand the purpose of the questions, that the questions are in a correct order and that the alternative answers are exhaustive (Holme and Solvang, 1997). Great effort was put in to ensure this by gathering input from board members, students and one professor in Marketing and Strategy before sending it. The survey as a whole can be seen in Exhibit A.1.

When performing a survey, the potential of endogeneity problems arises. Depending on the subject and the type of questions, individuals may choose to refuse participation or ignore the survey for instance due to unwillingness to reveal lacking evaluation procedures. To avoid this, we have tested the political sensitivity of our question with several board members before being sent out, who confirmed that it should pose no threat. We have also analyzed companies refusing participation as

well as non-responding companies, finding that they are equally distributed within Small-, Mid-, and Large Cap companies and share no other obvious common denominator.⁵

Out of respect to the companies participating in the survey, sharing information about their evaluation procedures, no individual company providing answers will be revealed in the thesis. We will only use the survey for a general description and analysis of the evaluation processes and their effects. The purpose of the thesis does not require disclosure about the situation in specific boards or companies.

To be able to use the survey answers in a quantitative method, we create dummy variables based on the respondents choices. For the first question, if board evaluation was performed, the dummy equals 1 if the response was "Yes", 0 if the response was "No" and ".", i.e. missing, if the response was "Don't know". For the second question, if it was conducted internally or with the help of an external party, the dummy equals 1 if the answer was "External party" or "Combination", and 0 otherwise. For the third question, if individual directors were evaluated, the dummy equals 1 if the answer was "Individual" or "Combination", and 0 otherwise. For question four and five, who evaluated the directors and chairman respectively, a dummy equal to 1 was created for each of the three answers "Peer evaluations", "Nomination committee", and "External evaluation" in each question. Question six is not used in regressions because respondents having made different interpretations. Table A.2 provides an overview of the responses to the survey.

We present a summary of our survey dummies in Table 5.1 below.

⁵ Refused: 4 Large Cap, 4 Mid Cap, 5 Small Cap.

Survey dummy	<i>At the year of the observation, the company...</i>
Q1yes	...performed a board evaluation
Q2extern	...used an external party to evaluate the board
Q3individ	...evaluated directors as individuals
Q4peer	...evaluated individuals through peer evaluations
Q4nomination	...evaluated individuals through the nom. committee
Q4extern	...evaluated individuals through an external party
Q5peer	...evaluated the chairman through peer evaluation
Q5nomination	...evaluated the chairman through the nom. committee
Q5extern	...evaluated the chairman through an external party

Table 5.1 Summary of survey dummies

6 Empirical Results

We have now presented our methods and data. In this section we present the empirical results and discuss our findings.

6.1 Director turnover and corporate governance codes

As discussed in section 4, we use a Cox proportional hazard model to analyze if the probability of director turnover is positively correlated with compliance with the codes. We assume that all targeted companies follow all guidelines in the codes. The Cox proportional hazard model allows us, among other things, to make use of data on the still active directors, not only on those who already have left the board. We control for year fixed effects by using year specific dummies,⁶ and control for firm fixed effects by stratifying the sample on a firm level. By stratifying, we control for the baseline hazard of each firm. We also control for the difference between Swedish and Danish firms through a dummy, although this difference should be captured by the stratification. Table A.3 presents our results, showing that the probability of director turnover is lower when a firm is complying with the code. The hazard rate is 0.761 and significant on a 1 percent level. This finding is a surprise to us, and evince that the effect of the codes is the opposite to what our first hypothesis predicted.

6.2 Director turnover, corporate governance codes, and company size

This far, our results show that compliance has a negative correlation with director turnover probability. However, the general differences in corporate governance standards in large and small firms makes it reasonable to test the impact of the codes on companies of different sizes. This section focuses on the potential differences in impact of the codes depending on firm size, measured as market capitalization.

To assess the impact of the code on companies of different sizes, we study the impact of the code on the turnover probability of any individual director, once again utilizing the Cox proportional hazard model. We divide the sample into two, with large firms on one group and small firms into one group.

⁶ The year fixed effects in this regression, and in later regressions, should not necessarily be interpreted as the implied hazard rates for that particular year. Year fixed effects are incorporated in these specifications to introduce the flexibility traditionally associated with difference-in-difference models. The operationalization of hazard models, however, implies that coefficients on these fixed effects should not be taken as evidence of trends in turnover rates. This concern does not apply to estimates of the codes' impact. For a more profound discussion, see Clotfelter et al. (2008).

This gives us a sample of 4039 observations for the group of large firms and 5924 observations for the group of small firms. Also in this case, we control for year fixed effects by using year specific dummies. We also control for the difference between Swedish and Danish firms, and control for firm fixed effects by stratifying the sample on a firm level.

Table A.4 presents our results for the large companies and for the small companies. The hazard rate for complying with the code for large companies is 0.701 and significant on a 1 percent level. The hazard rate for complying with the code for small companies is 0.653 and significant on a 1 percent level. The fact that they both are lower than when testing for the whole sample can be explained by our exclusion of the not listed Swedish firms on the Stockholm stock exchange or NGM, due to the lack of information about their size. Our results show that the change in probability of director turnover is larger in small companies complying with the code than in large companies complying with the code. This is in line with our second hypothesis, and in line with the previous finding, implying that the direction of the impact is reversed compared to our prediction in hypothesis 1.

6.3 Board turnover ratio and board evaluation rigorousness

Up to this point, we have found that compliance with the code affects the probability of leaving the board as an individual director in a complying firm, and that the size of the effect is larger in small firms. To examine if this can be a result of different board evaluation processes, we utilize the answers to our survey.

We start by calculating the board turnover ratio for all firms in all years. As a result of this, we find that the board turnover ratio appears to be depending on the size of the companies. For companies in our sample listed on Small Cap, the average board turnover ratio is 18.7 percent. For companies on Mid Cap it is 15.7 percent and Large Cap companies have an average of 15.0 percent.

In order to examine the impact of different rigorousness in board evaluation procedures, we use the dummies that we created based on the survey-answers given by chairmen of 98 boards on Stockholm stock exchange. We address one question at a time, once again using the annual board turnover ratios as our variable to be explained by the different procedures. We control for yearly fixed effects and cluster standard errors on a firm level. The regressions are performed with and without

controlling for firm fixed effects. The reason for this is that the number of observations per company is low, sometimes only comprising one year, which creates a small-sample problem that can affect the precision of the fixed effect controls (Kenward and Roger, 1997).

For question one, whether board evaluation is performed or not, there is no significant coefficient on a 10 percent level. We can therefore not conclude that there is any correlation between a company chair claiming to perform a regular and systematic board evaluation and board turnover. Some comments on this questions point out that the chairmen have performed informal evaluations during the years they answered "no" on this question, which is one potential explanation to the low significance for the results.

Question two examines if the board uses the help of an external party when performing board evaluation. When not controlling for firm fixed effects, we get a positive coefficient of 0.0436, significant on a 10 percent level. When controlling for firm fixed effects, the coefficient takes on a congruous value, but is not significant on a 10 percent level. The direction of the coefficient is in line with our hypothesis that more a rigorous evaluation, in this case by increasing objectivity, leads to a higher rate of board turnover. However, since we cannot confirm this when controlling for firm fixed effects, it only provides weak support, and we cannot confirm that it supports our hypothesis. Comments on this questions indicate that a few chairmen consider their nomination committee to be an "external party" when answering this question, potentially lowering the stringency of our objectivity definition in the responses.

In question three we ask if the evaluation is done on an individual level. Without controlling for firm fixed effects, the coefficient is small and not significant on a 10 percent level. However, when controlling for firm fixed effects, the coefficient is positive with a value of 0.0898 and significant on a 5 percent level. This result implies that a board conducting an evaluation where the board members are being evaluated as individuals show a higher rate of board turnover, which is in line with our hypothesis. One of the comments on this indicates that individual assessments were performed because the board was to reduce the number of directors. If this is true for more firms, it could imply an causality issue since the individual evaluations is a result of a decision to decrease the board. However, none of the other comments indicate this. Noteworthy is that some comments stress that it is only the chairman who is evaluated on an individual level.

Question four and question five examine the procedures of individual evaluations more thoroughly, by looking at the way they were performed. As usual, we control for yearly fixed effects and cluster standard errors on a firm level. The coefficients in these regressions show a general level of low t-statistics. This might partly be a result of the small sample that we are working with since these questions can only be compared between companies performing individual evaluations. However, after controlling for fixed effects, we see that the coefficient for peer evaluation of the board members is negative with a value of -0.157 and significant on a 5 percent level. This is surprising, as it indicates that a process where the directors evaluate each other, potentially increasing objectivity, is negatively correlated with board turnover. This finding does not support our hypothesis. One comment states that "peer assessments (*kamratutvärdering* in Swedish) sounds negative [...]". This can be interpreted as an indication of the issue discussed in section 2.3, that participants may be reluctant to share information on each other if the outcome is perceived to be threatening. The same reasoning is supported by the fact that many anonymize the evaluator, indicating that there is a barrier for board members to openly discuss each other's contribution.

Table A.5 presents the results of the regression without firm fixed effects for the dummies from the survey.

Table A.6 presents the results of the firm fixed effects regression for for the dummies from the survey.

7 Discussion

In this section, we discuss the methodology and validity of our research, as well as implications of our choices and methods.

We have chosen to perform the analysis on a Scandinavian level, including Denmark, Sweden, and Norway. However, we only use Danish and Swedish data on board members, excluding any possible divergent practices related to the impact of the code in Norway. This causes a potential sample bias as our research findings and conclusions are conducted on a sample population. The extent to which the results can be applied to the population at large is therefore questionable.

Apart from a sample bias, there is also a prevalent risk of selection bias. This problem originates from the unintentional differences or similarities found in the sample at hand based on our selection. This causes implications for our internal validity. We have however addressed this by making a selection covering as many companies and as many years possible, given the restrictions of database registration, research time, and budget.

We also have to be aware of the choices we have made regarding the implementation of the data. Using the same approach as Clotfelter et al. (2008) to handle left-censored data, some of the observations in the beginning of the dataset get very low tenure values. This could especially affect the Danish data, where the years before implementation of the code are relatively few (1995-2001, compared to 1992-2005 for Swedish firms). Following the same line of reasoning, we can also observe that there are members in our dataset who are active during the whole period of measurement. Since they are branded as complying, even though their company only complied for a year or two before the end of the measurement period, their influence on the hazard rate may be somewhat misleading. Altogether, we regard our results as valid but are aware of the fact that the impact of the codes may be magnified due to these circumstances.

An important issue in survey based research concerns generalizability (Patel and Davidson, 1991). In our case, we have tried to avoid this by using a wide selection, covering a majority of Swedish companies targeted by the code. However, it is uncertain whether our results are also valid for the companies that have chosen not to answer the questionnaire because we know too little about this

loss. The results of the survey are thus only valid for those companies that actually responded and can not be directly generalized to apply to other companies.

Even within the sample of answers, the result of this type of survey should be interpreted with caution. For example, it is easy to interpret more in the collected data than there is basis for. There is also a possibility, as earlier described, that the respondent is trying to influence the outcome of the investigation in a certain direction or perhaps give answers they think that the researchers are looking for. This means that there is some uncertainty associated with quantitative methods based on a survey. Being aware of the reliability of the responses in the survey therefore becomes important.

8 Conclusions

Based on our empirical findings and the following discussion, we now present our conclusions. To sum up, we also present proposals for future research topics.

The purpose of this thesis was to study the effects of the implementation of corporate governance codes in Scandinavia on the turnover probability of board members and to look at the effects of board evaluations. The Cox proportional hazard model was utilized to measure probability of director turnover before and after the implementation. A survey was conducted to investigate firms' different levels of rigorousness in board evaluation and how that has affected the board turnover ratio.

Our results suggest that the implementation of corporate governance codes in Scandinavia have had an impact on the turnover of boards of directors. We find that the turnover probability for a director in a Scandinavian firm has decreased in firms complying with the code. There are several possible explanations for this, however not proven in our analysis. Given our previous discussion, it could be that the implementation of codes causes a short term rise in director turnover probability, while the long term effect is lower turnover probability. The reason for this would be that once properly evaluated, the board members still left on the board are well suited for the companies' strategy and challenges. A second, perhaps more viable explanation, could be that compliance with the codes actually make it harder to quickly dismiss an underperforming director. By following the rules on nomination procedures, firms may have lost some of their flexibility in the appointment and dismissal of directors. This would be in line with the findings of Juhlin (2008), observing that firms are reluctant to detach the chairman from the nomination committee. Keeping the chairman on the committee, in the capacity of owner, lowers transparency and thereby increases the flexibility of the committee. Firms complying with the rules code should therefore become less flexible. By exerting greater pressure to motivate why a director has to go, the code might make it more difficult to take action.

We find indications that the effects of complying with the code are larger in small firms compared to large firms. A probable explanation for this is that the corporate governance standards generally are lower in small firms, implying that the changes required in order to comply with the code are more substantial. Evidence of this can be seen in the generally low average levels of board turnover in large

firms. Given that high corporate governance standards imply lower director turnover probability, as discussed above, this implies that large companies already may have a rigid director appointment and assessment process before the implementation of the code. It may also be that board of directors in large listed companies put more prestige in their board members, indirectly suggested by their generally low turnover rates.

Studying board evaluation procedures, we find that there is a correlation between some evaluation characteristics and the evaluated board's turnover ratio. When performing the evaluation on an individual level, the board turnover ratio goes up. However, when these individual assessments are performed through peer reviews, the board turnover ratio goes down among the boards performing individual evaluations. These indications suggest that increased rigorousness, through individual evaluations, implies a higher turnover rate. This could be because individual evaluations facilitate the discovery of discrepancies between the board's composition and its desired mix of competences. Peer assessments, however, result in the opposite trend. This illustrates the conflicting interests that occur when members know that their answers may lead to dismissal of board colleagues. They might then avoid sharing important, but negative, thoughts on the other board members, which confirms the reasoning of Heidrick (1999). We also find indications of a positive correlation between usage of an external evaluator and board turnover, strengthening our finding that higher rigorousness leads to a higher board turnover.

We see two interesting areas for further research. Our analysis shows that compliance with the codes can affect the board turnover in Scandinavia. Juhlin (2008) observes that a large share of Swedish companies diverge from the code on nomination committees by having the chairman of the board on the nomination committee or by not having one at all. Shivdasani and Yermack (1999) find that if the CEO serves on the nomination committee, or if no such committee exists, fewer outside directors are appointed. Therefore, we believe it would be interesting to study the effect of having the chairman of the board serving on the nomination committee in Swedish firms. Also, we have only studied the effects on board turnover. However, the long term effects of code compliance should hopefully have an effect on companies' bottom line. It would therefore be interesting to study the effect of national corporate governance codes on long term profitability.

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Appendix

Table A.1
Variables and descriptive statistics for sample firms and survey

Variable	Full sample					Swedish sample					Danish sample				
N of companies	791					632					159				
N of unique company + individual combinations	39205					34124					5081				
Observed years	1992-2010					1992-2010					1995-2010				
Cox model	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	Obs
Maturitydays	1384.15	1288.43	1.00	7516.00	19021	1332.41	1237.45	1.00	6735.00	14701	1560.24	1434.76	1.00	7516.00	4320
tenure	1384.15	1288.43	1.00	7516.00	19021	1332.41	1237.45	1.00	6735.00	14701	1560.24	1434.76	1.00	7516.00	4320
sc	0.24	0.43	0.00	1.00	19021	0.16	0.37	0.00	1.00	14701	0.51	0.50	0.00	1.00	4320
mc	0.12	0.33	0.00	1.00	19021	0.09	0.29	0.00	1.00	14701	0.23	0.42	0.00	1.00	4320
lc	0.11	0.32	0.00	1.00	19021	0.09	0.29	0.00	1.00	14701	0.20	0.40	0.00	1.00	4320
compliance	0.28	0.45	0.00	1.00	19021	0.14	0.35	0.00	1.00	14701	0.74	0.44	0.00	1.00	4320
swedish	0.77	0.42	0.00	1.00	19021	1.00	0.00	1.00	1.00	14701	0.00	0.00	0.00	0.00	4320
danish	0.23	0.42	0.00	1.00	19021	0.00	0.00	0.00	0.00	14701	1.00	0.00	1.00	1.00	4320
Yearly data	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max	Obs
Board size	6.01	2.48	1	32	8976	5.64	2.06	1	20	7182	7.52	3.32	1	32	1794
Turnover ratio	0.24	0.27	0	1	8976	0.26	0.28	0	1	7182	0.17	0.22	0	1	1794
Survey						Mean	Std. Dev.	Min	Max	Obs					
Q1yes						0.86	0.34	0.00	1.00	281					
Q2extern						0.25	0.43	0.00	1.00	257					
Q3individ						0.59	0.49	0.00	1.00	256					
Q4peer						0.39	0.49	0.00	1.00	147					
Q4nomination						0.14	0.35	0.00	1.00	147					
Q4extern						0.47	0.50	0.00	1.00	147					
Q5peer						0.59	0.49	0.00	1.00	189					
Q5nomination						0.13	0.33	0.00	1.00	189					
Q5extern						0.44	0.50	0.00	1.00	189					

Table A.2
Responses to the survey by dummy variable, year, and listing

Dummy	Year	Small Cap	Mid Cap	Large Cap	Total	Responses
Q1yes	2005	44.44%	78.95%	73.68%	68.33%	73
	2006	48.28%	90.00%	100.00%	72.13%	79
	2007	84.21%	100.00%	100.00%	93.02%	79
	2008	89.55%	96.30%	100.00%	92.45%	82
	2009	91.49%	96.20%	100.00%	93.90%	92
Q2extern	2005	25.00%	40.00%	14.29%	32.65%	44
	2006	16.67%	38.89%	45.45%	31.91%	60
	2007	32.35%	25.00%	42.86%	32.14%	66
	2008	29.03%	11.11%	8.33%	21.78%	79
	2009	26.05%	23.72%	32.91%	26.82%	90
Q3individ	2005	31.25%	53.33%	50.00%	40.82%	44
	2006	27.78%	44.44%	72.73%	44.68%	60
	2007	51.52%	82.14%	80.95%	68.67%	65
	2008	50.00%	44.44%	41.67%	47.52%	79
	2009	49.58%	57.05%	63.29%	54.53%	90
Q4peer	2005	60.00%	33.33%	36.36%	40.00%	46
	2006	40.00%	55.56%	87.50%	59.26%	59
	2007	15.00%	60.87%	60.00%	44.83%	67
	2008	40.54%	64.29%	28.57%	44.83%	78
	2009	39.66%	27.17%	52.17%	41.46%	89
Q4nomination	2005	20.00%	33.33%	54.55%	40.00%	46
	2006	30.00%	55.56%	50.00%	44.44%	59
	2007	65.00%	60.87%	60.00%	62.07%	67
	2008	54.05%	64.29%	28.57%	53.45%	78
	2009	56.90%	26.09%	41.74%	42.07%	89
Q4extern	2005	0.00%	44.44%	9.09%	20.00%	46
	2006	10.00%	22.22%	0.00%	11.11%	59
	2007	5.00%	30.43%	0.00%	13.79%	67
	2008	5.41%	14.29%	14.29%	8.62%	78
	2009	13.79%	25.00%	15.65%	17.38%	89
Q5peer	2005	84.62%	71.43%	62.50%	72.09%	50
	2006	61.54%	83.33%	88.89%	76.47%	64
	2007	40.91%	92.00%	82.35%	71.88%	70
	2008	78.95%	84.21%	62.50%	78.46%	81
	2009	50.00%	59.09%	70.23%	59.80%	95
Q5nomination	2005	7.69%	28.57%	43.75%	27.91%	50
	2006	23.08%	58.33%	44.44%	41.18%	64
	2007	50.00%	44.00%	52.94%	48.44%	70
	2008	28.95%	31.58%	25.00%	29.23%	81
	2009	53.95%	47.27%	36.64%	46.98%	95
Q5extern	2005	0.00%	21.43%	6.25%	9.30%	50
	2006	7.69%	8.33%	0.00%	5.88%	64
	2007	9.09%	20.00%	0.00%	10.94%	70
	2008	2.63%	0.00%	12.50%	3.08%	81
	2009	15.13%	13.64%	19.08%	15.83%	95

Table A.3
Effects on the probability of director turnover from complying with the code

Cox proportional hazard regression. The dependent variable is director turnover. Results are reported as hazard rates and controlled for firm fixed effects. Clustered and robust standard errors are reported between brackets. *, **, and *** denote significance at the 10, 5, and 1 percent level, respectively.

	(1)
Swedish company	1
	(0)
Compliance with the code	0.592*** (0.0357)
y1992	0.795 (0.209)
y1993	0.441*** (0.110)
y1994	0.455*** (0.137)
y1995	0.350*** (0.0858)
y1996	0.199*** (0.0500)
y1997	0.161*** (0.0409)
y1998	0.125*** (0.0314)
y1999	0.101*** (0.0253)
y2000	0.0983*** (0.0248)
y2001	0.112*** (0.0280)
y2002	0.103*** (0.0255)
y2003	0.0789*** (0.0195)
y2004	0.0883*** (0.0219)
y2005	0.0830*** (0.0207)
y2006	0.0809*** (0.0203)
y2007	0.0809*** (0.0203)
y2008	0.0776*** (0.0192)
y2009	0.0769*** (0.0194)
y2010	0.00209*** (0.000599)
Observations	18,961

Table A.4
Effects on the probability of director turnover from complying with the code for large (1) and small (2) firms

Cox proportional hazard regression. The dependent variable is director turnover. Results are reported as hazard rates and controlled for firm fixed effects. Clustered and robust standard errors are reported between brackets. *, **, and *** denote significance at the 10, 5, and 1 percent level, respectively.

	(1) Large companies	(2) Small companies
swedish	1 (0)	1 (0)
compliance	0.701*** (0.0797)	0.653*** (0.0551)
y1992	3.031 (2.852)	1.134 (0.714)
y1993	1.044 (0.935)	0.544 (0.324)
y1994	0.596 (0.535)	0.514 (0.299)
y1995	0.665 (0.607)	0.475 (0.277)
y1996	0.385 (0.348)	0.335* (0.190)
y1997	0.315 (0.287)	0.260** (0.151)
y1998	0.201* (0.183)	0.218*** (0.128)
y1999	0.159** (0.144)	0.163*** (0.0952)
y2000	0.164** (0.149)	0.184*** (0.107)
y2001	0.150** (0.135)	0.158*** (0.0911)
y2002	0.129** (0.117)	0.127*** (0.0734)
y2003	0.0979** (0.0884)	0.115*** (0.0659)
y2004	0.0982** (0.0891)	0.120*** (0.0693)
y2005	0.121** (0.110)	0.129*** (0.0742)
y2006	0.102** (0.0918)	0.111*** (0.0639)
y2007	0.0837*** (0.0769)	0.105*** (0.0603)
y2008	0.0664*** (0.0606)	0.111*** (0.0644)
y2009	0.0753*** (0.0692)	0.107*** (0.0635)
y2010	0.00294*** (0.00279)	0.00294*** (0.00187)
Observations	4,039	5,924

Table A.5
Effects on the board turnover ratio from answers on question (1), (2), (3), (4), and (5) without firm fixed effects.

OLS regression. The dependent variable is board turnover ratio. Standard errors are clustered and robust and t-statistics are reported between brackets. *, **, and *** denote significance at the 10, 5, and 1 percent level, respectively.

	(1)	(2)	(3)	(4)	(5)
Q1yes	-0.0347 (-0.63)				
Q2extern		0.0436 (1.94)			
Q3individ			-0.0190 (-0.98)		
Q4peer				0.0216 (0.76)	
Q4extern				0.0154 (0.45)	
Q4nomination				0.0202 (0.80)	
Q5peer					-0.00280 (-0.13)
Q5extern					0.0232 (0.58)
Q5nomination					-0.00533 (-0.23)
y2005	-0.267 (-1.22)	-0.452*** (-8.00)	-0.463*** (-8.27)	0 (.)	-0.439*** (-6.23)
y2006	-0.307 (-1.55)	-0.511*** (-23.26)	-0.508*** (-22.99)	-0.166*** (-7.04)	-0.508*** (-18.24)
y2007	-0.303 (-1.57)	-0.538*** (-28.67)	-0.534*** (-28.58)	-0.166*** (-5.19)	-0.535*** (-22.04)
y2008	-0.300 (-1.53)	-0.533*** (-29.06)	-0.529*** (-25.29)	-0.147*** (-3.92)	-0.512*** (-16.65)
y2009	-0.308 (-1.52)	-0.532*** (-25.28)	-0.531*** (-24.27)	-0.163*** (-4.55)	-0.526*** (-15.64)
_cons	0.484* (2.34)	0.667 (.)	0.686*** (35.44)	0.288*** (10.41)	0.667*** (78103227.49)
N	288	258	257	150	189

Table A.6
Effects on the board turnover ratio from answers on question (1), (2), (3), (4), and (5) with firm fixed effects.

OLS regression. The dependent variable is board turnover ratio. Standard errors are clustered and robust and t-statistics are reported between brackets. *, **, and *** denote significance at the 10, 5, and 1 percent level, respectively.

	(1)	(2)	(3)	(4)	(5)
Q1yes	0.0753 (1.12)				
Q2extern		0.0448 (1.39)			
Q3individ			0.0898* (2.36)		
Q4peer				-0.157** (-3.24)	
Q4extern				-0.0717 (-1.42)	
Q4nomination				-0.0631 (-0.68)	
Q5peer					-0.0227 (-0.31)
Q5extern					0.0387 (0.58)
Q5nomination					0.0391 (0.41)
y2005	-0.266 (-1.20)	-0.458*** (-9.64)	-0.445*** (-9.81)	0.205*** (4.16)	-0.441*** (-5.34)
y2006	-0.301 (-1.52)	-0.523*** (-27.21)	-0.521*** (-26.40)	0 (.)	-0.548*** (-15.55)
y2007	-0.311 (-1.62)	-0.556*** (-29.34)	-0.558*** (-29.63)	-0.0129 (-0.38)	-0.588*** (-17.88)
y2008	-0.315 (-1.63)	-0.556*** (-23.66)	-0.564*** (-24.38)	0.00116 (0.03)	-0.570*** (-12.02)
y2009	-0.330 (-1.66)	-0.573*** (-25.41)	-0.578*** (-25.86)	-0.00884 (-0.19)	-0.598*** (-11.67)
_cons	0.400 (1.78)	0.692*** (53.57)	0.654*** (29.34)	0.250*** (5.31)	0.715*** (14.21)
N	288	258	257	150	189

Figure A.1
Average board turnover ratio per year

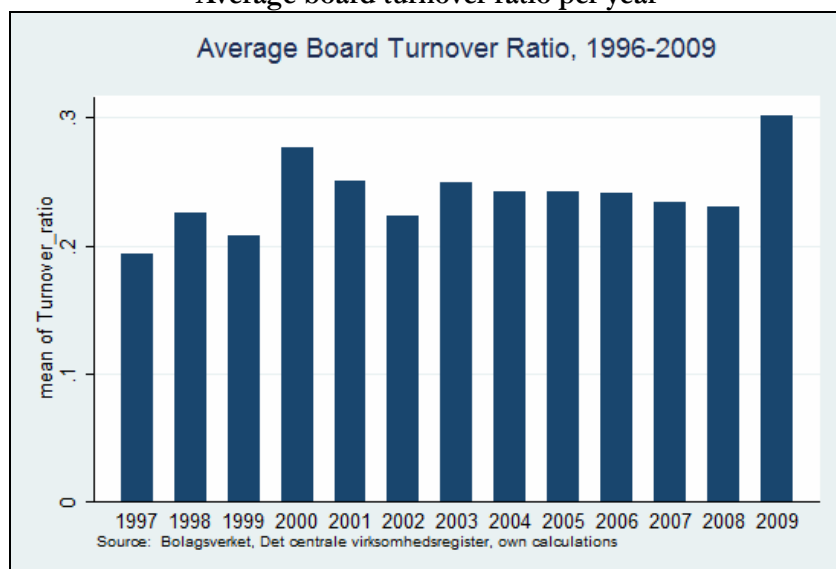


Figure A.2
Average board turnover per size of board

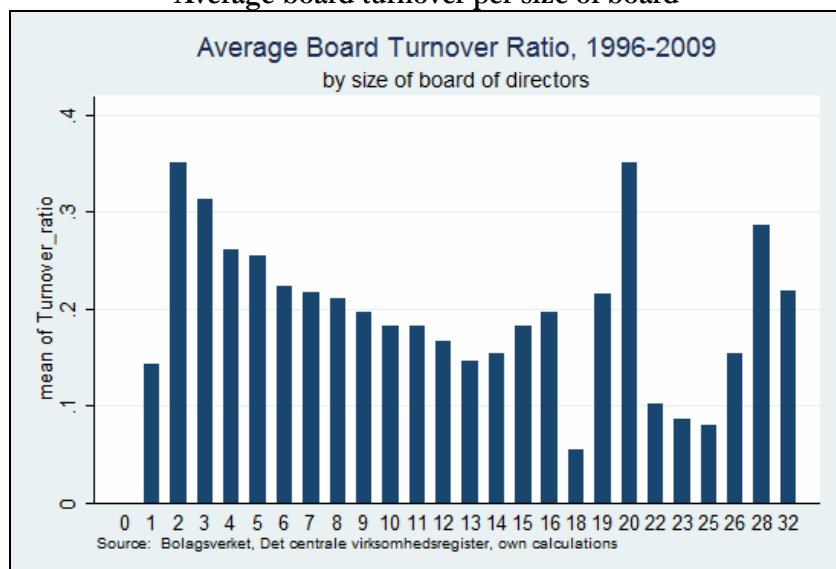


Figure A.3
Test using Log-log plot of survival

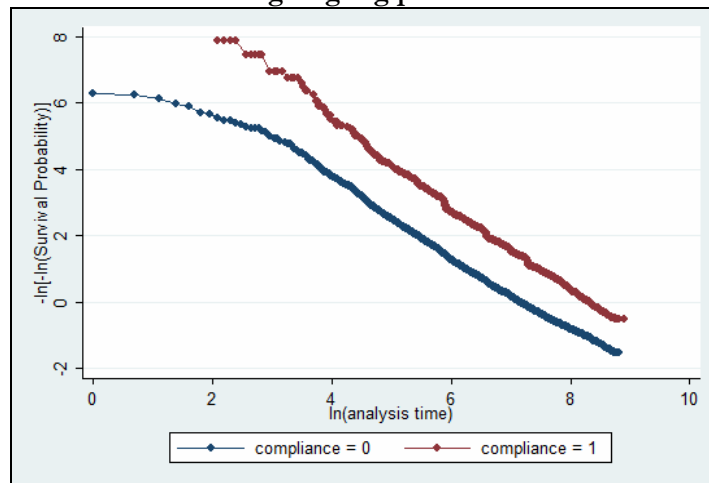


Figure A.4
Test using Kaplan-Meier and predicted survival plot

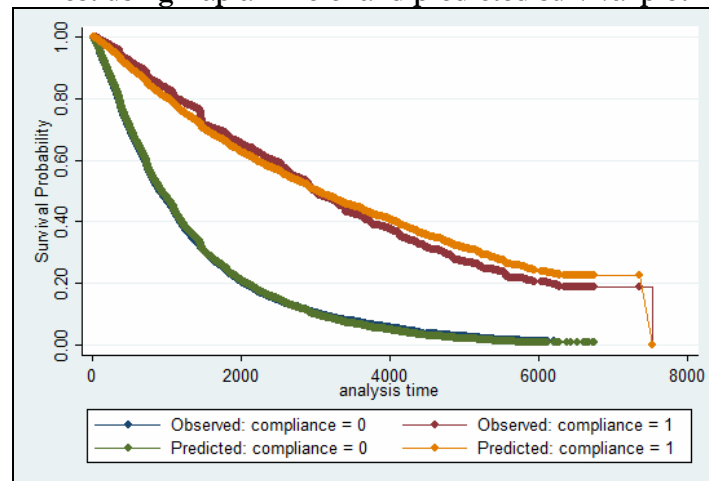


Figure A.5
Test using Schoenfeld residuals

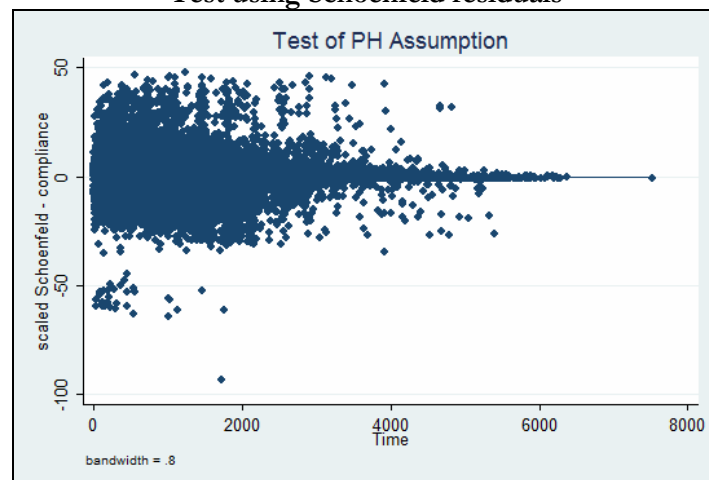


Exhibit A.1 Survey

1. Have you performed any regular and systematic board evaluation during the last five years, and if so, when?

Answers: Yes, No, Don't know

Years: Before 2005, 2005, 2006, 2007, 2008, 2009

Comments to question 1

Please answer the following questions for the years when a board evaluation was performed:
Please also provide a short explanation if your answer is "combination" or "other".

2. Was this evaluation conducted internally or with the help of an external party, or both?

Answers: Internally, External party, Combination

Years: 2005, 2006, 2007, 2008, 2009

Comments to question 2

3. Was the board evaluated as a whole or did you also perform evaluations of individual board members, or both?

Answers: Whole board, Individuals, Combination

Years: 2005, 2006, 2007, 2008, 2009

Comments to question 3

4. If individual evaluations have been performed, were they self assessments, peer evaluations, external evaluations, evaluations by the nomination committee or other? (please select all that apply)

Answers: Self assessments, Peer evaluations, External evaluation, Nomination committee, Other

Years: 2005, 2006, 2007, 2008, 2009

Comments to question 4

5. If individual evaluations have been performed, who evaluated the chairman of the board?

Answers: Self assessment, Peer evaluation, External evaluation, Nomination committee, Other

Years: 2005, 2006, 2007, 2008, 2009

Comments to question 5

6. Who is responsible for the evaluation of the board?

Answers: Chairman, Other board member, Nomination committee, Owner, Other

Years: 2005, 2006, 2007, 2008, 2009

Comments to question 6

If you have any other comments or thoughts to share on board evaluation, feel free to do so in the box below.