

Gender Diversity in Swedish Board Rooms

The 30 % Solution

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Abstract

This study examines the relationship between gender diversity in board rooms and firm governance and performance on Swedish listed companies. The purpose of the thesis is to investigate whether the current underrepresentation of women on corporate boards is motivated. We run several OLS and fixed effects regressions with three different fractions of female directorships as independent variables. As governance measure we use top executives appointment policy, firing policy in times of crisis and leverage. As performance measure we use Tobin's Q and ROA. Our results suggest that women in board rooms can affect firm governance and performance if they represent at least 30 % of the board. However, due to endogeneity problems we do not find enough evidence in support of the argument to include more female board directors in order to enhance firm governance and performance.

Keywords: Gender diversity, Board of directors, 30 % Solution, Firm performance, Corporate governance

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INTRODUCTION

We study gender diversity in Swedish board rooms and find evidence that women can affect corporate governance and performance if they represent at least 30 % of the board.

Women hold few corporate board positions compared to men. Numbers collected from the 334 top companies in Europe, calculated by market capitalization from 2010, show that almost 80 % of the companies have at least one female board member. Almost 50 % of the companies have at least two female board members, however only 23 % of the companies have more than three women on boards (EWPN 2010). The gender diversity in Swedish board rooms is similar and the corresponding numbers for the 231 companies listed on NASDAQ OMX Stockholm Stock Exchange in 2011 are 90 %, 51 % and 30% respectively. The overall female representation on corporate boards for the above mentioned Swedish listed companies is today 24 %. The equivalent number from 2000 is 5 % which show a dramatic change. From 2009 the increase has ceased and the number of female board members has remained at approximately 20 %. Additionally, in 2011 only seven chairmen and seven CEOs were women (Fristedt, Sundqvist and Larsson, 2012). Women tend to have higher level of achievement in college and a higher graduation rate compared to men which implies that the women are still underrepresented in board rooms (SCB). The discussion raises the question if men and women behave differently in corporate settings and whether Swedish listed companies should strive to include more female directors.

In this thesis we therefore find it interesting to ask the following questions. First, does gender diversity on boards affect firm governance (top executive appointment policy, firing policy and leverage)? Secondly, does gender diversity on boards affect firm performance (Tobin's Q and ROA)?

The answers to these questions will shed light on whether the intensified pressure on companies to increase the number of female board members is justified. The British Prime Minister David Cameron claims that gender diverse boards have positive effects on governance and performance and requests change:

“The case is overwhelming that companies are run better if we have men and women alongside each other. [...] Women now make up nearly half the workforce across Europe and the majority of university degrees, but they are still not sufficiently represented at the senior boardroom level.” - The Grindstone

Norway is an example of a country that has implemented a 40 % gender quota to deal with the gender inequality on boards. One argument in favor of gender quotas is that men and women behave differently. A common perception is that women are more focused on relationships, collaborations and have a deeper commitment to both family and work (Tarr-Whelan, 2009). A report by McKinsey

& Company (2010) on female leadership show that firms with higher fraction of female directors on executive boards score higher on both organizational and financial measures of performance. Tarr-Whelan (2009) discuss a phenomenon called the 30% Solution in which she argues that women are able to influence decisions if they represent at least 30 % in a group. In this paper we find evidence of the 30 % Solution and gives support to the hypothesis that female directors can have impact on governance and performance.

We run several OLS and firm fixed effects regressions and control for firm and board characteristics as well as heteroskedasticity. All dependent variables are regressed on three independent variables *fraction of female directors*, *current level* (at least 24 % females on boards), and *30% solution* (at least 30 % females on boards).

First, we find evidence that gender diversity on boards can affect firm governance. To asses firms' top executive appointment policies we run firm fixed effect regressions using lagged independent and control variables on the dummy *Female CEO or Chairman*. We find positive and statistically significant results for the independent variables *fraction of female directors* and *30 % solution* which suggest that women tend to help other women advance in corporate settings. These findings are in line with Matsa and Miller (2011a) who find that women in top executive positions are more likely to be found in companies with high fraction of female directors the previous years. To asses firms' firing policies we run OLS regressions with *percentage fired* as the dependent variable in which we choose to focus on the financial crisis of 2008. If we use *30% solution* as the independent variable we find negative and statistically significant results which are robust. This indicates that women tend to fire less employees if they represent at least 30 % of the board. These results are in line with Matsa and Miller's study (2011b) on the effects of the Norwegian quota. They find that boards with high fraction of female directors have a negative and significant correlation with firms' firing policies in times of crisis. To asses firm's risk-taking we run fixed effect regressions with *leverage* as the dependent variable. We find positive and statistically significant results for the independent variable *30 % Solution*. Our findings suggest that female directors are less risk-averse which contradict common perceptions on women's attitudes towards risk. However, if we control for the variable *fraction of female employee representatives* our results are no longer significant. Our findings are in line with the conclusions reached by Adam and Funk (2008). First, they find that female directors are more positive towards risk-taking than male directors. Secondly, they find that female employee representative are more risk-averse than male directors.

Secondly, we find evidence that gender diversity on boards can affect firm performance. We run fixed effects regressions with *Tobin's Q* and *ROA* as the dependent variables. None of our regressions on *ROA* shows statistically significant results which is supported by Dobbin and Jung (2011). When *Tobin's Q* is regressed on *30 % Solution* we find positive and statistically significant results for

companies listed as Small Cap. Adams, Gray and Nowland (2011) find a positive correlation between newly appointed female board directors and Tobin's Q and their results are especially evident in small and large firms. Their findings partially contradict ours where we find no statistically significant results for companies listed as Large Cap.

When interpreting our results, potential reverse causality must be accounted for. For example, a female CEO or chairman might affect the following year's fraction of female directors. To address this we lead the independent and control variables one year and find no signs of reverse causality. Further, the statistically significant result for *Tobin's Q* might not show that diverse boards cause variations in firm performance but rather that well-managed firms tend to include more women in their board rooms (Adams and Ferreira, 2008). We address this by using a one year lag on *Tobin's Q* and our results show signs of reverse causality for board with over 30 % females. Performance might therefore affect the level of female representation the next year and not the other way around.

Potential endogeneity might arise due to omitted variables. For example, corporate cultures that encourage diverse boards and CSR could in fact be less prone to work force reductions in general. Additionally, marital status and number of children might affect female directors propensity to take risks. Adams, Grey and Nowland (2011) further discuss this issue and claim that the increased pressure on firms to appoint more female board directors makes it harder to determine if companies appoint a female director based on gender or due to avoidance of formal and informal penalties. These informal pressures might be the reason behind the increase of female board members in Sweden the past decade. Our economical interpretation of the results might therefore be partially misleading.

Our thesis contributes to current literature by applying already established methodology for analyzing board characteristics' effect on corporate governance and firm performance. We also present new models inspired by prior studies to answer our thesis questions. Previous research on the subject is exhaustive. However, to our best knowledge, little research has been done on the Swedish market and especially not within the timeframe 2005-2011. We study gender diverse boards' impact on firm governance in the form of top executive appointment and firing policies which is a relatively unexplored topic in existing literature. Furthermore, we investigate how the threshold of 30 % female directors, as suggested by the 30 % Solution, affects firms' governance and performance.

Our main finding is that women are more likely to affect board decisions if they represent at least 30 % of the board of directors. We show that the current Swedish female board representation of 24 % does not seem to be a sufficient level in order to significantly affect either firm governance or performance. Due to problems with endogeneity and results at a fairly high significance level (10%) it is difficult to determine if it is the gender per se that makes the difference. To conclude, we do not find enough evidence in favor of the argument to include more female board directors in order to enhance firm governance and performance.

INSTITUTIONAL BACKGROUND - SWEDISH BOARDS

Sweden use a one-tier governance model with one single board of directors. The Swedish governance system resembles the one-tier system practiced in the US and UK with a few exceptions. First, Sweden shares some features with the two-tier system practiced in Germany in which they have employee representatives as fully recognized members of the board. In Sweden the amount of employee representatives is decided by the size of the firm. If a company has more than 25 employees they have the right to appoint two representatives and if there are more than 1000 employees they have the right to appoint up to three representatives (The Swedish Companies Act). Hafskj r and Lillepuu (2004) discuss the responsibilities and involvement of employment representatives and state that they are more active in matters directly affecting the employees. Secondly, the Swedish governance model differs from other one-tier practicing countries, such as the US, since the CEO in Sweden does not necessarily have to be a director on the board. Regardless, even if the CEO is not a member of the board he still has full access to the boardroom and can thereby influence decisions. Furthermore, a director in publically traded companies cannot hold the CEO and chairman position simultaneously (The Swedish Companies Act).

PREVIOUS LITERATURE

Many previous studies discuss the issue of gender inequality and presents arguments in favor of including more women on boards. Tarr-Whelan (2009) addresses the underrepresentation of female leaders in the US and presents several reasons for why firms should strive to include more women in senior positions. She claims that firms with higher fraction of women in senior positions have higher profits, management styles that encourage teamwork, an increased commitment to both personal and corporate responsibilities and a greater ability to survive financial downturns. Burton and Ryall (1995) study on Australian companies is in line with Tarr-Whelan's reasoning. They also find that firms with gender diverse boards are less likely to succumb to corporate failure. Further, Tarr-Whelan (2009) argues for a phenomenon called the 30 % Solution. It has been proven that if women represent at least one-third of a group they are able to influence decisions. Women's ideas and arguments are more likely to resonate if they are supported and amplified by other women. Erkut, Kramer and Konrad (2008) perform a qualitative study on a few Fortune 1000 companies and reach a similar conclusion. They find that the tipping point in which women influence board decisions is when the board contains at least three women. Women are thus economically beneficial for a firm. Spencer, Steele and Quinn (1999) present yet another argument for including more than one member of a minority group. They argue that when token numbers of members exists in a group they face expectations which puts pressure on those individuals and may lead them to underperform.

The underrepresentation of women in senior positions has been thoroughly discussed in prior literature. Athey, Avery and Zemsky (2000) study how gender diversity in firms evolves over time and state that the female underrepresentation in top executive roles may be due to discrimination by male directors. Matsa and Miller (2011a) study the correlation between the female share of directors one year and the female share among top executives the next year for companies listed on S&P 1500. They argue that women tend to circumvent the discrimination by helping each other and find that female top executives are more likely to be found in companies with high representation of female directors the year before. Farrell and Hersch (2005) study companies on Fortune 500. They find that the likelihood to appoint a woman is negatively correlated to the number of women already on the board.

The topic of women's impact on firms' firing policies has up until recently been fairly unexplored. Matsa and Miller (2011b) have written a paper on the gender quota's impact on Norwegian listed companies and compare policy decisions with other Scandinavian firms unaffected by the law. They find that boards affected by the gender quota undertook less workforce reductions and reduced short-term profits. They argue that female directors view employees as an asset and retain workers in order to improve long-run profit by avoiding potential future recruiting and training costs. The effect is especially evident in firms that were forced to substantially increase the fraction of females on their boards.

Other research focus on gender discrepancies in terms of risk-aversion and different conclusions are reached depending on whether the objects of study are board of directors or the population as a whole. Byrnes, Miller and Schaffer (1999) conducted a meta-analysis and reviewed over 150 studies on the subject and concluded that women are more risk-averse compared to men. Eckel and Grossman's (2008) research, which is based on experiments regarding men and women's valuation of gambles, confirms the findings of Byrnes, Miller and Schaffer. Adams and Funk (2008) use a large survey to examine how male and female directors in Swedish publicly traded companies differs in risk attitudes and core values. Their discoveries differ from prior beliefs about women's risk-aversion. Even though they claim that women in general are more risk-averse they find that female directors tend to be slightly more risk-loving and less security-oriented compared to male directors. However, they argue that female directors' risk-aversion depend highly on whether they are an employee representative or not. They claim that female directors who are not employee representatives are considerably more positive towards risk-taking compared to female employee representatives.

Multiple papers have also been written on gender diverse board's effects on firm performance with varying results. Adams and Ferreira (2008) study female directors' impact on board inputs and firm outcomes. They find that women are to a greater extent represented on nomination and monitoring committees and to a smaller extent on compensation committees. Accordingly, more gender diverse

boards hold CEOs responsible for poor stock performance. Women are also found to have better attendance records and a positive correlation is found between male attendance and the degree of gender diversity. They use Tobin's Q and ROA and find a negative relation between diversity and firm performance. Carter, D'Souza, Simkins and Simpson examine the relationship between gender diversity and Tobin's Q for companies listed on Fortune 500. They find a positive correlation between the two, primarily through high female representation on audit committees. Dobbin and Jung (2011) study the relation between female directors and firm performance on the American market. Their findings are partially in line with Adam and Ferreira (2008) where Dobbin and Jung also find evidence of a negative correlation between gender board diversity and Tobin's Q. However, they find no relation between gender diverse boards and ROA. Erhardt, Werbel and Schrader (2003) look at 112 leading US firms and find a positive correlation between ROA and diversity on boards.

Adams, Grey and Nowland (2011) study the difference in market reaction between newly appointed female and male directors in Australia. They find that the market reaction is on average higher for newly appointed women compared to men. Small and large firms with high market-to-book ratios were especially prone to show this correlation. Ahern and Dittmar (2011) study the impact of the Norwegian quota law and show that the stocks for the listed companies in Norway dropped the day of the announcement and that Tobin's Q declined the following years. These results were found to be mostly due to the fact that firms were forced to recruit younger and less experienced women to uphold the new legislation.

DATA AND METHODOLOGY

SAMPLE

Our data sample consists of companies listed on NASDAQ OMX Stockholm Stock Exchange during a seven year period, 2005-2011. The information concerning board characteristics originates from the annually published books "Styrelser och revisorer i Sveriges Börsföretag" (Fristedt and Sundqvist) gathered by SIS Ägarservice. This source contains data on name, gender, age, board positions and information regarding board director independence. An independent director is defined in accordance with The Swedish Corporate Governance Code and is a director with no business relationship with the company. Information concerning board member independence is missing for the years 2005 and 2010 in which we have made the assumption that their status is the same as the previous year. In 2011 additional information regarding classification of Small Cap, Mid Cap and Large Cap is included where we assume that the information is the same for all the previous years.

Data from 2005-2010 includes companies listed on NGM Equity which was excluded in 2011. These companies jointly accounted for 9,5 % of the population but only 0,1% of the total market

capitalization in 2010. Fristedt and Sundqvist claim that the discrepancy distorts the statistics. We therefore decide to exclude these companies from 2005-2010 for comparable purpose and focus only on companies listed on NASDAQ OMX Stockholm Stock Exchange.

Companies have entered and exited the market during this time period and we have decided not to exclude these companies in the sample. Since there is no exogenous given event we have to account for we see no reason to exclude companies that have been delisted during this period. The final number of companies in our sample is 263 (see Alphabetical list of Swedish listed companies).

DataStream is used in order to gather financial statistics on a yearly basis. From this source we collect information on operating profit margin, ROA, market capitalization, booked equity and total assets. We collect industry codes from Retriever and use the Swedish Standard Industry Classification (SNI) codes from 2007 to create eleven industry dummies.

METHOD

OLS REGRESSIONS

In order to study how gender diversity affects corporate firing policy we run several standard OLS regressions for the year 2008. We use three independent variables, *fraction of female directors*, *current level* (boards with at least 24 % females) and *30 % Solution* (boards with at least 30 % females). We include control variables which can be divided in to board and firm characteristics. Board control variables include average age on board, fraction of independent directors, fraction of female employee representatives, female CEO or chairman dummy and board size. Firm control variable include leverage, operating profit margin and average market capitalization as a proxy for firm size. We also include industry dummies and control for potential heteroskedasticity.

FIRM FIXED EFFECTS REGRESSIONS

In order to study how gender diversity affects top executive appointment policy, leverage and performance we run several fixed effects regressions. We use three independent variables, *fraction of female directors*, *current level* (boards with at least 24 % females) and *30 % Solution* (boards with at least 30 % females). We use the same board and firm control variables as in the OLS regressions. The proxy for firm size differ depending on the dependent variable. If the dependent variable is *female CEO or chairman*, *leverage* or *ROA*, we use average market capitalization. If the dependent variable is *Tobin's Q*, we use average assets. We also divide companies into three size segments depending on market capitalization (Small Cap, Mid Cap and Large Cap).

The reason for using firm fixed effect regressions is to obtain unbiased estimates. To illustrate, we use a simplified model with two time periods in which i denote the cross sectional firm and t the time

period. *Tobin's* Q_{it} is the dependent variable whilst *fraction of female directors* is the independent variable.

$$(1) \quad \text{Tobin's } Q_{it} = \beta_0 + \beta_1 \text{Fraction of female directors}_{it} + \delta_0 yd2011_t + a_i + u_{it} \quad t = 2010, 2011$$

The variable $yd2011_t$ is a dummy that equals zero when $t=2010$ and equals one when $t=2011$, but does not change across firms (i). These time dummies control for macroeconomic factors such as recessions, changes in regulatory environment, shifts in aggregated demand and aggregated supply that might differ from year to year but does not vary within firms. The variable a_i captures unobservable time-constant factors that affect *Tobin's* Q_{it} and can also be called a firm fixed effect. These firm fixed effects can for example be different corporate cultures that might differ within firms but does not vary across years.

The variable u_{it} is called the error term and represents unobserved factors that might affect *Tobin's* Q_{it} other than *fraction of female directors*. To address problems with omitted variables hidden in the error term we include appropriate control variables commonly used in previous studies.

Our seven time dummies control for time fixed effects but in order to control for firm fixed effects, a_i , we have to differentiate the data across time periods. We use our simplified model to illustrate this.

$$(2) \quad \text{Tobin's } Q_{i2011} = (\beta_0 + \delta_0) + \beta_1 \text{Fraction of female directors}_{i2} + a_i + u_{i2} \quad (t = 2011)$$

$$(3) \quad \text{Tobin's } Q_{i2010} = \beta_0 + \beta_1 \text{Fraction of female directors}_{i1} + a_i + u_{i1} \quad (t = 2010)$$

If the second equation is subtracted from the first one, we obtain.

$$(4) \quad \Delta \text{Tobin's } Q_i = \delta_0 + \beta_1 \Delta \text{Fraction of female directors}_i + \Delta u_i$$

where Δ denotes the change from $t=2010$ to $t=2011$ and where the firm fixed effect, a_i , now has been eliminated.

As we use firm fixed effects, include time dummies and appropriate control variables we minimize the risk of biased estimates. In all of our fixed effect regressions we also control for potential heteroskedasticity.

VARIABLES

Independent variables

Fraction of female directors (%)

We have calculated this variable by dividing the total number of females by the board size. This gives us one observation per company and year. The variable is commonly used as a measurement in several previous studies on board diversity including Adams and Ferreira (2008).

30 % Solution (0,1)

This variable is a dummy that equals zero if the *fraction of female directors* is below 30 % and one if the *fraction of female directors* is 30 % or above. Tarr-Whelan (2009) argue that the tipping point in which women influence decisions is if they represent at least one-third in a group. We investigate if this is the case on Swedish boards.

Current level (0,1)

This variable is a dummy that equals zero if the *fraction of female directors* is below 24 % and one if the *fraction of female directors* is 24 % or above. The variable is based on the current level of female board representation in Sweden reported by Fristedt and Sundqvist (2012). The equivalent number in our sample is slightly higher (25 %). The motivation behind this variable is to investigate if the current level of female board representation in Sweden is enough to affect board decisions.

Dependent variables

Female CEO or female chairman (0,1)

This variable is a dummy that equals zero if neither the CEO or the chairman of a company is a woman and one if the CEO or the chairman is a woman. In this paper we define top executives as CEO or chairman since they hold senior positions on the board. Matsa and Miller (2011a) show that women tend to help each other in corporate settings in the US and we find it interesting to investigate if this holds true in Sweden as well. We further use this dummy as a control variable for all other regressions. The motivation behind this is that both the CEO (who is not necessarily a member of the board of directors) and the chairman may influence board decisions.

Percentage fired (%)

This variable is defined as the number of employees one year subtracted with the number of employees from the previous year divided by the number of employees from the previous year. This gives us the change in number of employees per company and year. Since this variable can have both positive and negative signs we only include negative observations. We thereby get an estimation of companies' firing policies. Matsa and Miller (2011b) show that companies in Norway were less prone

to fire people after the gender quota had been introduced. This indicate that more gender diverse boards are less prone to fire people.

Leverage

This variable is calculated as average short term debt plus average long term debt divided by average assets. This measure is commonly used in order to asses firm's financial risks by determining the percentage of assets that have been financed through debt (Ahern and Dittmar, 2011). We further include this as a control variable in all other regressions.

Tobin's Q

To estimate a market based measure of performance we use a proxy for *Tobin's Q* by calculating the market-to-book value. The market-to-book value is calculated by the sum of market value of equity and book value of debt divided by the book value of assets. Many previous studies use this as a performance measure. However some studies claim that *Tobin's Q* can be misleading since firms that underinvest will demonstrate high *Tobin's Q* even though performance is low (Fich and Shivdasani, 2006; Dybvig and Warachka, 2010). We therefore include *ROA* as a complementary measure of firm performance.

ROA

To estimate an account based measure of performance we use *ROA*. *ROA* is calculated as net income before extraordinary items and discontinued operations divided by the average of book value of assets. We choose to use the average of book value of assets in order to address potential problems of "window dressing" where companies tend to improve the appearance of performance by altering the balance sheet in the end of the financial year (Nibleaus and Sellman, 2010).

CONTROL VARIABLES

Board characteristics

Average age on boards

Average age on boards is calculated by dividing the total age of all board members by the board size. This variable can be used as a proxy for several other drivers of governance and performance such as tenure and length of service. Previous studies indicate that age have significantly impact on firm policy and performance (Bertrand and Shoar, 2003; Dechow and Sloan, 1991) and many studies also include this as a control variable (Ahern and Dittmar, 2011; Adams and Ferreira, 2008).

Log board size

This variable is calculated by taking the logarithm of board size. Previous studies show that board size can have significant impact on governance decisions (Jensen, 1993; Lipton and Lorch, 1992;

Yermack, 1996) and is therefore important to include. Many studies also include this as a control variable (Ahern and Dittmar, 2011; Adams and Ferreira, 2008).

Fraction of independent directors (%)

This variable is calculated as the number of independent directors on the board divided by board size. An independent director is defined in accordance with The Swedish Corporate Governance Code and is a director with no business relationship with the company. More specifically, an independent director is not employed or has not been within the preceding three years, does not receive significant remuneration for advice, is not managing director or has not been within the preceding five years and does not have any other personal interests in the company. Many studies include this as a control variable (Ahern and Dittmar, 2011; Adams and Ferreira, 2008).

Fraction of female employee representative directors (%)

This variable is defined as the number of female employee representative directors divided by the board size. Employee representatives are proven to be more active in matters regarding employees (Hafskjær & Lillepuu, 2004). Further, female employee representatives are proven to be more risk-averse compared to other directors (Adam and Funk, 2008). In our data females tend to hold a higher fraction of employee representative positions compared to other board positions and we find it viable to include this as a control variable.

Firm characteristics

Operating profit margin

As an income statement based measure we use operating profit margin. Operating profit margin is calculated as EBIT divided by net sales. This variable also takes the operating cost control of companies into account and is used as a control variable in previous studies (Huse, 2010).

Size

As a market based measure we use the logarithm of average market capitalization. However, if the dependent variable is Tobin's Q, we use the logarithm of average assets instead. We also divide companies into three size segments depending on market capitalization (Small Cap, Mid Cap and Large Cap). A control variable for size is essential and several studies show that firm size can affect for example Tobin's Q and ROA (Lang and Stultz, 1994).

Industry dummies

We use the Swedish Standard Industry Classification (SNI) codes from 2007 to create eleven industry dummies. These industry dummies are used in regressions in which we do not control for firm fixed effects.

DATA DESCRIPTION

This data description table shows statistics of our sample. Reported are the 1st percentile, mean, median, 99th percentile, standard deviation and number of observations. See Data Description Definition in appendix for the definitions of the variables.

Data description						
Variables	p1	Mean	p50	p99	SD	N
Board characteristics						
Female directors (%)	0	21.3	20	60	0.1	1524
Independent directors (%)	0	37.3	40	100	0.3	1524
Female employee representatives (%)	0	3.9	0	33.3	0.1	1524
Average age	45.0	54.0	54.0	63.0	3.1	1524
Board size	4.0	8.0	7.0	15.0	3.0	1524
Female CEO (0,1) in percentage	n/a	2.4	n/a	n/a	n/a	1524
Female chairman (0,1) in percentage	n/a	2.3	n/a	n/a	n/a	1524
Firm characteristics						
Assets (SEK k)	23	611 070	1 403	2 122 540	391 620	1523
Equity (SEK k)	1	79 030	63 308	135 372	23 763	1523
Market capitalization (SEK k)	21	147 930	126 600	241 366	43 474	1517
Operating margin	20.0	0.1	0.0	0.2	10.7	1512
Small Cap (0,1) in percentage	n/a	42.6	n/a	n/a	n/a	1524
Mid Cap (0,1) in percentage	n/a	28.8	n/a	n/a	n/a	1524
Large Cap (0,1) in percentage	n/a	20.3	n/a	n/a	n/a	1524

RESULTS

GOVERNANCE

TOP EXECUTIVE APPOINTMENT POLICY

Top executive appointments seem to be positively correlated with the level of gender diversity on boards the previous year.

The results from our regression on the dependent variable *female CEO or chairman* are presented in table 1. We use lagged independent and control variables to investigate whether women tend to help each other advance professionally and if women hold senior positions to a higher extent in companies with high fraction of female directors the previous year. Research by Matsa and Miller (2011a) show that women in corporate America tend to help each other. They find that it is more likely to find female top executives in companies which previous year had a high fraction of female directors. Our result support their findings (2011a). We find positive and statistically significant results at a 5 %

level for the independent variable *fraction of female directors* and at a 10% level for independent variable *30 % Solution* (see regressions 1.1-1.3).

The model used is based on Matsa and Miller's (2011a) study, which is a working paper, and the model and variables are not specified. We have therefore created our own based on our interpretations of their model and the information we hold regarding board positions. Problems with misspecifications of the model might thus arise which can lead us to draw incorrect conclusions.

The CEO in a Swedish company is not necessarily a director on the board, however the CEO and chairman both hold senior positions in which they can wield influence on board decisions. This might indicate that it is not the gender that affects corporate governance and performance but rather the fact that women hold senior positions in these companies. We therefore find it important to include this dummy as a control variable in further regressions.

FIRING POLICY

Firms with a high fraction of female directors seem to be less prone to fire employees in times of crisis but this is only evident in companies with at least 30 % female board members.

The results from our regressions on the dependent variable *percentage fired* are presented in table 2. The regressions are focusing on the year 2008 when the financial crisis occurred which forced many companies to let employees go. Previous literature regarding female behavior indicate that women are more relationship driven and risk-averse compared to men (Tarr-Whelan, 2009; Jianakoplos and Bernasek, 1998). A reasonable hypothesis is therefore that companies with a higher fraction of female board members would fire less people in times of crisis as suggested by Matsa and Miller (2011b).

As suggested by Figure 3, women tend to hold a significantly higher percentage of employee representative roles compared to the overall fraction of female directors. Hafskj r and Lillepuu (2004) find that employee representatives are more likely to be involved in board decisions that affect the employees and an example is layoffs. This might suggest that it is the presence of female employee representatives that affect firms' firing policies and not the higher total fraction of female directors on boards. We thus find it important to control for this variable. The results from regression 2.1 and 2.2 with the independent variables *fraction of female directors* and *current level* give statistically insignificant results. However, the result from regression 2.3 is different where the independent variable *30 % Solution* is negative and statistically significant at a 10 % level. Our findings support Tarr-Whelan's (2009) reasoning in which she argues that women can have impact on decisions if they represent at least 30 % of a group.

The interpretation that female board members affect companies' firing policies may be incorrect due to endogeneity problems. Unobservable factors, for example corporate cultures, that encourage

diverse boards and CSR could in fact be less prone to work force reductions in general. Our model is based on research done by Matsa and Miller (2011b) who study the Norwegian quota's effect on work force reductions and labor costs. Their study is based on an exogenous given event which only took place in Norway and they use a difference-in-difference model which we cannot mimic. We have thus created our own model based on data available in our study. Our model might therefore be subject to misspecifications and lead us to interpret our findings incorrectly. Moreover, our data sample only consists of 69 observations which makes it hard to capture any significant effects. Our interpretation might thus not be as reliable as it could be with more observations.

LEVERAGE

Firms with high fraction of female directors seem to be less risk-averse than male directors and the correlation is most evident for companies with at least 30 % women on boards.

The results from our regressions on the dependent variable *leverage* are presented in table 3. Most existing literature regarding gender difference in risk assessment argue that women are more risk-averse than men (Byrnes, Miller and Schaffer, 1999; Eckel and Grossman, 2008). However, Adam and Funk (2008) claim the opposite and argue that female directors are more risk-loving than male directors. Their study is particularly relevant to our thesis since it is based on a survey of all directors of Swedish publically traded companies in 2006. We investigate if our findings based on financial figures are consistent with their hypothesis. The results from regression 3.1 and 3.2 in table 3 where we use the independent variables *fraction of female directors* and *current level* show statistically insignificant results. However, when we use *30 % Solution* we find positive and significant results at a 10 % level. This result is in line with the conclusion reached by Adam and Funk (2008). Female directors seem to have positive attitudes towards risk. Our findings further support Tarr-Whelan's (2009) argument that 30 % female representation can have impact on group decisions.

Adam and Funk (2008) discuss the fact that female employee representatives seem to have different attitudes towards risk compared to other female directors. They argue that female employee representatives are more risk-averse compared to male directors even though female directors in general are more risk-loving than male directors. We therefore include *fraction of female employee representatives* as yet another control variable to examine if it changes the significance of our coefficient. Our results from regression 3.6 show that the coefficient on the independent variable *30 % Solution* no longer is significant. This finding further support the reasoning of Adam and Funk (2008).

The discussion suggests that female directors can differ considerably in other characteristics and personal traits as well. Potential endogeneity might therefore arise due to omitted variables. For example, if our model controlled for marital status and number of children as Adam and Funk (2008) do, it might reveal that different types of women have different attitudes toward risk.

PERFORMANCE

TOBIN'S Q

High fraction of female directors seem to affect the market based measure Tobin's Q for companies listed as Small Cap but only if it is at least 30 %.

The results from our regressions on the dependent variable Tobin's Q are presented in table 4. Previous studies show varied results regarding gender diversity in boards' impact on the market based performance measure. Regressions 4.1-4.3 in which all companies are included show statistically insignificant results. The results differ if we choose to segment firms according to market capitalization. We run regressions on all independent variables and receive insignificant results for both Large Cap and Mid Cap. However, the variable *30 % Solution* show positive and statistically significant results at a 10 % level for the segment Small Cap. The results from our regressions on Small Cap is shown in table 4, regression 4.4-4.6.

The regression with positive and statistically significant result is in line with the results from Adams and Ferreira's (2008) study. They find that newly appointed female board directors have a positive impact on Tobin's Q and this result is especially significant for small and large firms. Our results suggest that female directors might have an impact on Tobin's Q in companies listed as Small Cap. This implies that market based performance is higher for smaller firms with a high fraction of female directors.

Figure 2 show that the fraction of female directors in 2011 differ depending on which size segment they belong to and is lowest for companies listed as Small Cap (22 %) and increases for Mid Cap (26 %) and Large Cap (28 %). The high fraction of female directors in companies listed as Large Cap might at a first glance seem to contradict our findings. However, larger companies may be exposed to higher media coverage and pressure and therefore choose to include more female directors to avoid public scrutiny. The high fraction of female directors might not be equivalent to high influence on board decisions. Companies listed as Small Cap can represent other firm characteristics than size, for example young companies with innovative firm cultures (Newsmill, 2012) which is omitted in our regressions. Younger, smaller and well performing companies may value women's ideas and inputs to a higher degree than larger and more conservative companies. This reasoning is in line with our findings. Even though we find no statistically significant results for *30 % Solution* on *Tobin's Q* when all companies are included, we do for companies listed as Small Cap.

We have excluded companies listed on NGM Equity which could lead to endogeneity problems due to selection bias. Companies listed on NGM Equity are usually companies in growth and represent a specific category of firms. These companies could influence our findings if they were to be included.

Ahern and Dittmar (2011) find that board gender diversity has a negative impact on Tobin's Q after the gender quota law had been implemented. The reason why our results differ from Ahern and Dittmar's (2011) might be because Swedish listed companies have chosen to voluntarily include female board directors while companies in Norway have been forced to do so. The problems regarding younger and less experience board directors as a result of the quota are therefore not relevant in Sweden.

ROA

High fraction of female directors seem to have no effect on the account based measure ROA.

The results from our regressions on the dependent *ROA* are presented in table 5. Previous studies show varied results regarding the effect gender board diversity has on this account based measure of performance. Adams and Ferreira (2008) show a positive correlation between higher fraction of women on board and ROA while for example Ahern and Dittmar (2011) and Daunfeld and Rudholm (2012) find a negative correlation. The regressions show insignificant results for all independent variables. The results are still insignificant when we segment according to market capitalization. Our results contradict the conclusions from many previous studies that receive significant results. However, our results are supported by a study by Dobbin and Jung (2011) in which they look at 400 leading firms in the US and find no relation between gender diversity and ROA. Our study suggest that female board diversity in Sweden does not have an effect on ROA.

ROBUSTNESS TEST

WINSOR

We have decided to run several robustness tests on selected regressions that give us statistically significant results in order to verify our findings. Our conclusions regarding firing policy and Tobin's Q remain the same, while our conclusion regarding leverage changes. We find positive and statistically significant results for all regressions on leverage when *30 % Solution* is used as independent variable.

As a first robustness test we winsorize the results from our regressions on *percentage fired* and set all outliers at the 90 percentile. The results are shown in table 6. The conclusion reached regarding female directors' tendency to fire people in times of crisis is still robust. The independent variables *fraction of female directors* and *current level* give statistically insignificant results while the independent variable *30 % Solution* still gives negative and statistically significant result at a 10 % level.

We winsorize our results from regressions on *leverage* and *Tobin's Q* but set all outliers at the 98 percentile instead. The results for *leverage* are slightly different (see table 7). The independent variables *fraction of female directors* and *current level* still give insignificant results. We find that the regression with *30 % Solution* as the independent variable when the control variable *female employee representatives* is excluded is marginally better, now positive and significant at a 5 % level (see regression 7.3). The regression with *30 % Solution* in which female employee representative have been included now show a statistically significant result at a 10 % level which before the winsorization was insignificant (see regression 7.6). When we winsorize *Tobin's Q* we find that our previous conclusion still hold (see table 8). We still find positive and statistically significant results for companies listed as Small Cap when we use the independent variable *30 % Solution*. Our results improves slightly since the regression were significant at a 10% level while it is significant at a 5 % level after the winsorization.

WINSOR EXCLUDING 2008

As a second robustness test we run winsorized regressions with the difference that we now also exclude the year 2008 from the sample. The financial crisis that occurred in the fall of 2008 might skew the results and we therefore investigate if the first results are robust even after the exclusion of this year.

The results for *leverage* are slightly different. All regressions excluding *fraction of female employee representatives* now show positive and statistically significant results. The variables *fraction of female directors* and *current level* are significant at a 10 % level while *30 % Solution* is at a 5 % level. This suggest that the financial crisis in 2008 might influence and distort the statistics in prior regressions. However, when we include *fraction of female employee representatives* in our regressions, our previous conclusion from winsorized *leverage* remains the same. The only variable that gives statistically significant results is *30 % Solution* which still is significant at a 10 % level. The results are shown in table 9.

The conclusion reached regarding winsorized *Tobin's Q* still hold. When we regress *30 % Solution* on *Tobin's Q* for companies listed as Small Cap we still find statistically significant result at a 10 % level (see table 10).

REVERSE CAUSALITY

As a third robustness test, we run regressions for top executive appointment policy and *Tobin's Q* to address endogeneity problems that might occur due to reverse causality. We find no signs of reverse causality for top executive appointment policy but we do for *Tobin's Q*.

In order to address reverse causality problems for top executive appointment policies we run a regression on *female CEO or chairman* and lead the independent and control variables with one year. The results are now insignificant for all independent variables (see table 11) which is supported by Matsa and Miller (2011a). We find evidence in favor of the argument that the fraction of female directors one year seem to affect the gender of the CEO or chairman the next and not the other way around.

The positive and statistically significant result for *30 % Solution* on *Tobin's Q* might not show that diverse boards is the cause of higher performance but rather that well-managed firms tend to include more female directors (Adams and Ferreira, 2008). We therefore regress our independent variables on a one year lagged *Tobin's Q* which is a commonly used procedure in previous studies (Adams and Ferreira, 2008). We find positive and statistically significant results for *30 % Solution* at a 10 % level. Our results thus show signs of reverse causality for board with over 30 % females. Performance might therefore affect the level of female representation and not the other way around (see table 12).

CONCLUSION

The objective of this thesis is to shed light on whether women in board rooms have any effect on corporate governance and performance. We investigate this by running several OLS and fixed effect regressions on various measures of governance and performance such as top executive appointment policy, firing policy, leverage, Tobin's Q and ROA. Studies show varied results in which some argue that female board representation enhance corporate governance and performance while other claim the opposite. Sweden has for a long time been viewed as one of the leading nations on gender equality but statistics indicate that women are still underrepresented in corporate board rooms. We therefore examine if there is motivation for the companies to change by studying firms listed on NASDAQ OMX Stockholm Stock Exchange during a seven years period, 2005-2011.

We find evidence that gender diversity in board rooms seem to affect corporate governance and performance if the fraction of female directors is at least 30 %. Even though many of our regressions show statistically significant results most of them are only significant at a 10 % level. This is a relative high significance level and might make our interpretation shallow. Furthermore, this study suffers from endogeneity problems with potential omitted variables and reverse causality which can skew the results. We address problems with reverse causality for the variable Tobin's Q and reveal that previous year's performance actually seem to affect gender diversity on boards. This suggest that our other regressions might be subject to endogeneity which can lead us to draw incorrect conclusions.

This paper provides results that support previous findings on gender diversity on boards but also contribute to the debate. Findings from this thesis suggest that women can affect corporate governance and performance but that it is more likely if they represent at least 30 %. Accordingly, this study indicates that the current level of 24 % of female board representation on Swedish listed companies is not sufficient to create significant differences in firm governance and performance. Due to above mentioned issues with endogeneity and high significance levels (usually 10 %) we cannot draw the conclusion that firms should increase board gender diversity in order to improve governance or performance.

FURTHER RESEARCH

In our thesis we have studied whether gender diversity on boards affect firm governance and performance and have chosen to focus on the time period 2005-2011. It has been a change in the number of female directors on listed companies during these years, from 16 % in 2005 to 24% in 2011. However, it has been a dramatic change from 2000 in which the fraction of female directors was merely 5%.¹ A suggestion for further research would thereby be to investigate if the change in fraction of female directors has had impact on firm governance and performance. Furthermore, if the fraction of female board directors increases substantially during the years to come it would be interesting to see if these changes have any impact on the variables. Our suggestions is thereby to extend the time period.

Our study focus on firms' firing policies during the crisis of 2008. It would be interesting to see if other crisis, for example the global recession in 2001 or a crisis within a specific industry show the same results. Furthermore, future research might focus on other forms of firm policies that Bertrand and Schoar (2003) discusses such as investments policies (capital expenditures, investment to Q sensitivity, investment to cash flow sensitivity and acquisition policy) and organizational strategy (R&D expenditures, advertising expenditures, diversification policy and cost-cutting policy). This would result in a more thorough understanding of whether female board directors influence board decisions and in that case how.

Another suggestion is to extend our thesis by including a viable instrument to control for the endogeneity problem that this study suffers from. Adams and Ferreira (2008) discuss this and use the fraction of male directors with connections to other female directors as an instrument. If this or another viable instrument would be used it would help to answer the question whether the significant results from this study is due gender diversity or if it is due to omitted variables.

Our data set had no information regarding the exact timing of newly appointed directors. If this information was available a potential study would be to investigate if the market reaction and returns differed between the announcement of newly appointed male and female directors. Since our study indicates that higher fraction of female directors on boards have positive impact on Tobin's Q for companies listed as Small Cap, it would be reasonable to believe that newly appointed women on boards would have a positive impact on these market based measures.

¹ Statistics collected from Fristedt and Sundqvist which include companies listed on NGM Equity from 2000-2010.

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APPENDIX

DATA DESCRIPTION DEFINITIONS

Variables	Definition
Board characteristics	
Female directors (%)	Fraction of female directors is calculated by dividing the total number of females by the board size.
Independent directors (%)	Fraction of independent directors is calculated by dividing the total number of independent by the board size.
Female employee representatives (%)	Fraction of female employee representatives is calculated by dividing the total number of female employee representatives by the board size.
Average age	The average age is calculated by dividing the total age of the directors by the board size.
Board size	The board size is calculated by the total number of directors on the board.
Female CEO (0,1) in percentage	Female CEO is zero if the CEO is not a women and one if the CEO is a woman.
Female chairman (0,1) in percentage	Female chairman is zero if the chairman is not a women and one if the chairman is a woman.
Firm characteristics	
Operating margin	Operating profit margin is calculated as the EBIT divided by net sales.
Small Cap (0,1) in percentage	Small Cap is zero if the company is not listed as Small Cap and one if the company is listed as Small Cap.
Mid Cap (0,1) in percentage	Mid Cap is zero if the company is not listed as Mid Cap and one if the company is listed as Mid Cap.
Large Cap (0,1) in percentage	Large Cap is zero if the company is not listed as Large Cap and one if the company is listed as Large Cap.

FIGURE 1 – BOARD GENDER DIVERSITY AND YEARLY DEVELOPMENT

This figure shows the yearly development of female board representation in Swedish companies listed on NASDAQ OMX Stockholm Stock Exchange from the years of 2005-2011. The numbers are based on our sample of 263 firms which are specified in the Alphabetical List of Swedish Listed Companies in appendix.

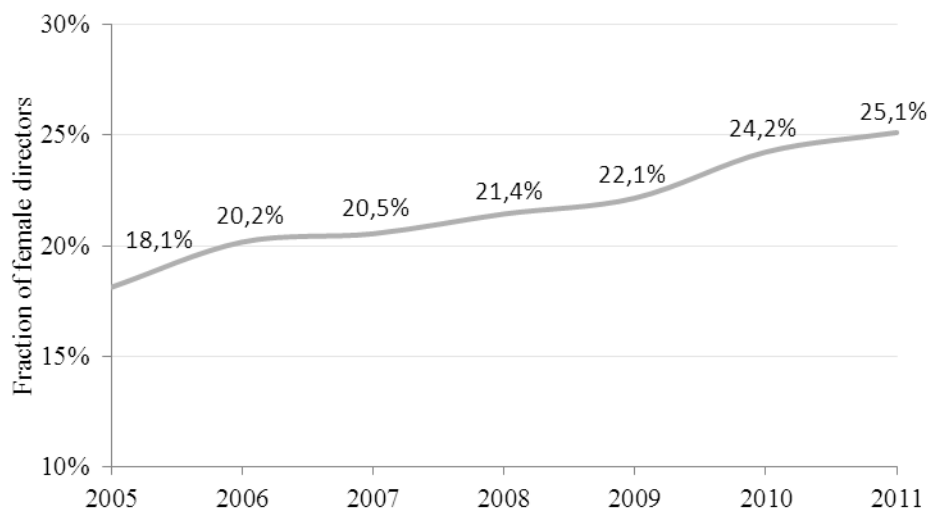


FIGURE 2 – BOARD GENDER DIVERSITY AND YEARLY DEVELOPMENT BY SEGMENT

This figure shows the yearly development of female board representation in Swedish companies listed on NASDAQ OMX Stockholm Stock Exchange by market segment from the years of 2005-2011. The numbers are based on our sample of 263 firms which are specified in the Alphabetical List of Swedish Listed Companies in appendix. Information regarding market segmentation (Small Cap, Mid Cap and Large Cap) is missing for some companies and those companies are therefore not included in the calculations.

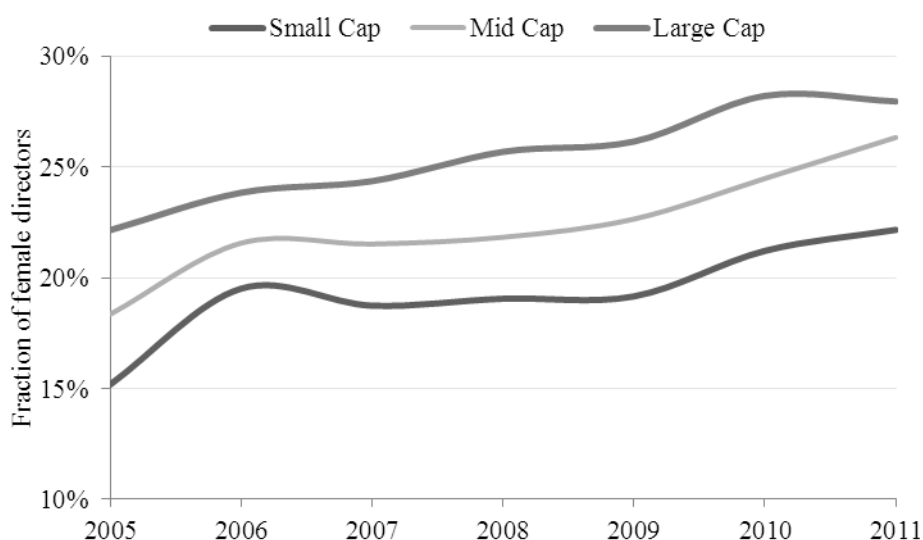


FIGURE 3 – BOARD GENDER DIVERSITY AND YEARLY DEVELOPMENT BY POSITION

This figure shows the yearly development of female board representation in Swedish companies listed on NASDAQ OMX Stockholm Stock Exchange by position from the years of 2005-2011. The numbers are based on our sample of 263 firms which are specified in the Alphabetical List of Swedish Listed Companies in appendix. Information regarding female CEO and chairman representation is missing for the years 2007 and 2008 in which we have estimated an average in order to display the trend. The yearly development of female employee representatives (CEO, Chairman, overall) is relative to the total number of employee representative (CEO, Chairman, overall) for each respective year.

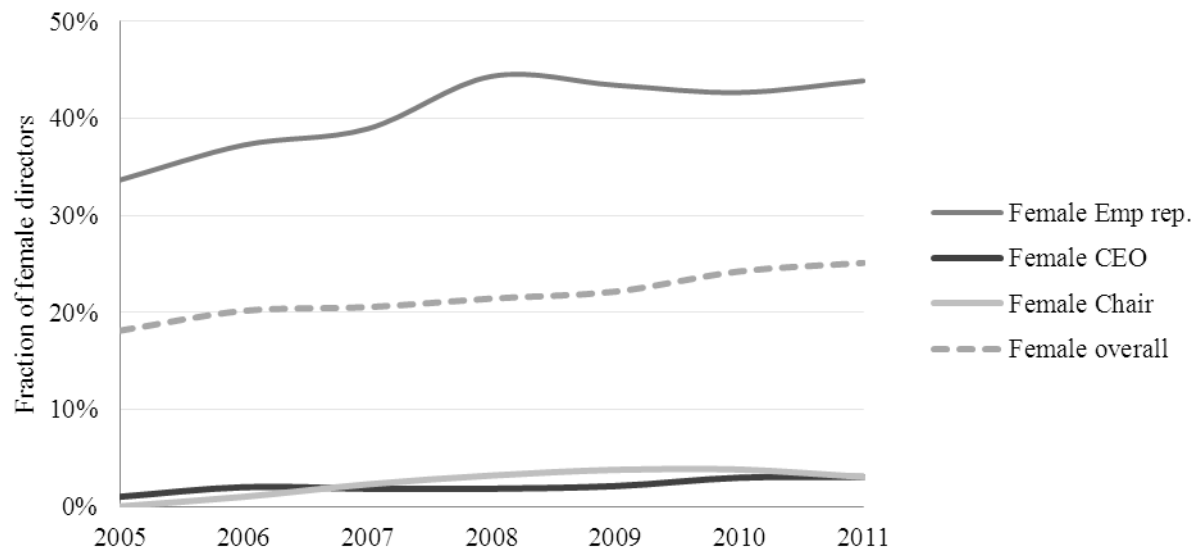


TABLE 1 – BOARD GENDER DIVERSITY AND TOP EXECUTIVE APPOINTMENT POLICY

This table shows fixed effects regressions on the dummy variable *female CEO or chairman* that equals zero if neither the CEO or the chairman of a company is a female and one if the CEO or the chairman is a female. The three independent variables are *fraction of female directors*, *current level* (at least 23 % female directors on the board) and *30 % Solution* (at least 30 % female directors on boards). The regressions use lagged independent and control variables. The numbers in the first row for every variable show the coefficient while the numbers in the second row in brackets show the p-value. The data sample consists of 254 companies from the years of 2005-2011 which result in 1238 observations. Seven time dummies are included, one for each year from 2005-2011. Numbers and ratios collected from balance sheets are all reported in average. The regressions are also controlled for heteroskedasticity. Asterisks indicate significance at 0.01 (***), 0.05 (**), and 0.10 (*) levels, and ^ indicates that coefficients are multiplied by ten thousand.

Variables	(1.1) CEO & Chairman	(1.2) CEO & Chairman	(1.3) CEO & Chairman
Board characteristics			
Fraction female directors	0.243** [0.044]		
Current level (1,0)		0.0203 [0.152]	
30 % Solution (1,0)			0.041* [0.073]
Fraction independent directors	0.021 [0.538]	0.022 [0.538]	0.020 [0.561]
Average age in board	0.002 [0.115]	0.002 [0.250]	0.002 [0.188]
Log of board size	0.055 [0.342]	0.061 [0.320]	0.057 [0.346]
Firm characteristics			
Operating margin	0.204^ [0.296]	0.204^ [0.298]	0.198^ [0.312]
Leverage	0.050** [0.044]	0.056** [0.043]	0.053** [0.042]
Log Average Market Cap.	0.007 [0.402]	0.008 [0.346]	0.008 [0.322]
Year dummies	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes
Time effect	Lag	Lag	Lag
Intercept	0.196 [0.258]	0.108 [0.556]	0.132 [0.469]
N	1238	1238	1238
Groups	254	254	254
R2	0.051	0.036	0.039

* < 0. 10, ** < 0.05, *** < 0.01

TABLE 2 – BOARD GENDER DIVERSITY AND FIRING POLICY

This table shows OLS regressions on the dependent variable *percentage fired* calculated as the number of employees one year subtracted with the number of employees from the previous year divided by the number of employees from the previous year. Only observations with a negative sign are included. The three independent variables are *fraction of female directors*, *current level* (at least 23 % female directors on the board) and *30 % Solution* (at least 30 % female directors on boards). The numbers in the first row for every variable show the coefficient while the numbers in the second row in parenthesis show the p-value. The data sample consists of 69 companies from the year of 2008 which result in 69 observations. Eleven industry dummies are included based on Statistics Sweden's SNI Swedish Standard Industry Classification codes from 2007. Numbers and ratios collected from balance sheets are all reported in average. The regressions are also controlled for heteroskedasticity. Asterisks indicate significance at 0.01 (***), 0.05 (**), and 0.10 (*) levels, and ^ indicates that coefficients are multiplied by ten thousand.

Variables	(2.1) Percentage fired	(2.2) Percentage fired	(2.3) Percentage fired
Board characteristics			
Fraction female directors	0.201 [0.473]		
Current level (1, 0)		0.026 [0.627]	
30 % Solution (1,0)			0.194* [0.057]
Fraction Independent director (%)	0.216* [0.066]	0.218* [0.059]	0.219* [0.056]
Female employee rep. (%)	0.912 [0.146]	0.610 [0.271]	1.088* [0.067]
Female CEO or Chaiman (1, 0)	0.220* [0.092]	0.243* [0.069]	0.201* [0.065]
Average age in board	0.011 [0.157]	0.010 [0.210]	0.012* [0.086]
Log of board size	0.188* [0.067]	0.164* [0.088]	0.229** [0.026]
Firm characteristics			
Operating margin	1.586^ [0.120]	1.784^* [0.072]	1.667^* [0.076]
Log Average Market Cap.	0.021 [0.121]	0.025 [0.064]	0.018 [0.141]
Leverage	0.275* [0.064]	0.272* [0.064]	0.244* [0.089]
Industry dummies	Yes	Yes	Yes
Winsorized 10 %	No	No	No
Intercept	1.286*** [0.005]	1.482*** [0.006]	1.358*** [0.002]
N	69	69	69
R2	0.417	0.412	0.452

* < 0. 10, ** < 0.05, *** < 0.01

TABLE 3 – BOARD GENDER DIVERSITY AND LEVERAGE

This table shows fixed effects regressions on the dependent variable *leverage* calculated as average short term debt plus average long term debt divided by average assets. The three independent variables are *fraction of female directors*, *current level* (at least 23 % female directors on the board) and *30 % Solution* (at least 30 % female directors on boards). Regressions 3.1-3.3 do not include *fraction of female employee representatives* as a control variable while regressions 3.4-3.6 do. The numbers in the first row for every variable show the coefficient while the numbers in the second row in brackets show the p-value. The data sample consists of 262 companies from the years of 2005-2011 which result in 1499 observations. Seven time dummies are included, one for each year from 2005-2011. Numbers and ratios collected from balance sheets are all reported in average. The regressions are also controlled for heteroskedasticity. Asterisks indicate significance at 0.01 (***), 0.05 (**), and 0.10 (*) levels, and ^ indicates that coefficients are multiplied by ten thousand.

	(3.1)	(3.2)	(3.3)	(3.4)	(3.5)	(3.6)
Variables	Leverage	Leverage	Leverage	Leverage	Leverage	Leverage
Board characteristics						
Fraction female directors	0.043			0.028		
	[0.349]			[0.564]		
Current level (1,0)		0.005			.002	
		[0.461]			[0.723]	
30% Solution (1,0)			0.019*			0.016
			[0.058]			[0.138]
Independent director (%)	0.019	0.020	0.020	0.020	.021	0.020
	[0.183]	[0.161]	[0.174]	[0.168]	[0.149]	[0.162]
Female employee rep. (%)	-	-	-	0.095	0.110	0.078
				[0.295]	[0.207]	[0.385]
Female CEO or Chairman (1,0)	0.034	0.038	0.036	0.037	0.040	0.037
	[0.221]	[0.168]	[0.191]	[0.188]	[0.149]	[0.174]
Average age in board	0.005***	0.005***	0.005***	0.005***	0.005***	0.005***
	[0.007]	[0.007]	[0.006]	[0.007]	[0.007]	[0.005]
Log of board size	.0493188	.04907818	.05096761	0.046**	0.046**	0.048**
	[0.025]	[0.028]	[0.021]	[0.035]	[0.040]	[0.029]
Firm characteristics						
Operating margin	0.062^**	0.063^**	0.063^**	0.063^**	0.063^**	0.063^**
	[0.034]	[0.032]	[0.034]	[0.034]	[0.033]	[0.034]
Log Average Market Cap.	0.003	0.003	0.003	0.003	0.003	0.003
	[0.765]	[0.760]	[0.754]	[0.796]	[0.798]	[0.785]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	0.043	0.056	0.042	0.056	0.066	0.050
	[0.824]	[0.776]	[0.829]	[0.777]	[0.741]	[0.799]
N	1499	1499	1499	1499	1499	1499
Groups	262	262	262	262	262	262
R2	0.052	0.052	0.053	0.053	0.053	0.054

* < 0. 10, ** < 0.05, *** < 0.01

TABLE 4 – BOARD GENDER DIVERSITY AND TOBIN'S Q

This table shows fixed effects regressions on the dependent variable *Tobin's Q* calculated by the sum of market value of equity and book value of debt divided by the book value of assets. The three independent variables are *fraction of female directors*, *current level* (at least 23 % female directors on the board) and *30 % Solution* (at least 30 % female directors on boards). Regressions 4.1-4.3 include all listed companies in the sample while regressions 4.4-4.6 only include companies listed as Small Cap. The numbers in the first row for every variable show the coefficient while the numbers in the second row in brackets show the p-value. The data sample on regressions 4.1-4.3 (4.4-4.6) consists of 262 (111) companies from the years of 2005-2011 which result in 1506 (637) observations. Seven time dummies are included, one for each year from 2005-2011. Numbers and ratios collected from balance sheets are all reported in average except for booked equity used in Tobin's Q. The regressions are also controlled for heteroskedasticity. Asterisks indicate significance at 0.01 (***), 0.05 (**), and 0.10 (*) levels, and ^ indicates that coefficients are multiplied by ten thousand.

	(4.1)	(4.2)	(4.3)	(4.4)	(4.5)	(4.6)
Variables	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q
Board characteristics						
Fraction female directors	0.328			1.716		
	[0.728]			[0.171]		
Current level (1,0)		0.206			0.311	
		[0.367]			[0.227]	
30% Solution (1,0)			0.234			0.590*
			[0.423]			[0.095]
Independent director (%)	0.179	0.186	0.195	0.639	0.592	0.578
	[0.823]	[0.818]	[0.810]	[0.468]	[0.508]	[0.520]
Female employee rep. (%)	4.262	3.939	5.085	6.543	7.094	6.432
	[0.230]	[0.284]	[0.163]	[0.243]	[0.212]	[0.287]
Female CEO or Chairman (1,0)	0.894	0.881	0.992*	0.323	0.134	0.240
	[0.132]	[0.121]	[0.099]	[0.660]	[0.849]	[0.714]
Average age in board	0.082	0.083	0.078	0.120	0.114	0.117
	[0.502]	[0.493]	[0.520]	[0.597]	[0.613]	[0.601]
Log of board size	0.278	0.297	0.224	0.392	0.390	0.334
	[0.750]	[0.736]	[0.797]	[0.755]	[0.757]	[0.798]
Firm characteristics						
Operating margin	0.867^*	0.861^*	0.869^*	1.038^***	1.046^***	1.049^***
	[0.051]	[0.054]	[0.052]	[0.000]	[0.000]	[0.000]
Leverage	5.931**	5.932**	5.957**	5.649**	5.679**	5.602**
	[0.041]	[0.041]	[0.041]	[0.027]	[0.027]	[0.030]
Log Average Assets	1.443***	1.447***	1.445***	2.516**	2.523**	2.506**
	[0.008]	[0.008]	[0.008]	[0.032]	[0.032]	[0.032]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	16.021**	15.995**	16.400**	27.695**	28.270**	27.830**
	[0.034]	[0.034]	[0.030]	[0.012]	[0.010]	[0.012]
N	1506	1506	1506	637	637	637
Groups	262	262	262	111	111	111
R2	0.073	0.073	0.073	0.184	0.183	0.184

* < 0.10, ** < 0.05, *** < 0.01

TABLE 5 – BOARD GENDER DIVERSITY AND ROA

This table shows fixed effects regressions on the dependent variable *ROA* calculated as net income before extraordinary items and discontinued operations divided by the book value of assets. The three independent variables are *fraction of female directors*, *current level* (at least 23 % female directors on the board) and *30 % Solution* (at least 30 % female directors on boards). Regressions 5.1-5.3 include all listed companies in the sample while regressions 5.4-5.6 only include companies listed as Small Cap. The numbers in the first row for every variable show the coefficient while the numbers in the second row in brackets show the p-value. The data sample on regressions 5.1-5.3 (5.4-5.6) consists of 260 (111) companies from the years of 2005-2011 which result in 1479 (628) observations. Seven time dummies are included, one for each year from 2005-2011. Numbers and ratios collected from balance sheets are all reported in average. The regressions are also controlled for heteroskedasticity. Asterisks indicate significance at 0.01 (***), 0.05 (**), and 0.10 (*) levels, and ^ indicates that coefficients are multiplied by ten thousand.

1. All	(5.1)	(5.2)	(5.3)	(5.4)	(5.5)	(5.6)
Variables	ROA	ROA	ROA	ROA	ROA	ROA
Board characteristics						
Percentage female directors	4.224			0.706		
	[0.444]			[0.919]		
Todays precentage (1, 0)		0.542			0.542	
		[0.575]			[0.736]	
One third (1, 0)			0.492			3.533
			[0.736]			[0.218]
Independent director (%)	0.595	0.493	0.469	0.074	0.135	0.016
	[0.842]	[0.869]	[0.876]	[0.987]	[0.976]	[0.997]
Female employee rep. (%)	15.779	17.636	20.347*	36.943*	34.473*	46.299**
	[0.183]	[0.137]	[0.090]	[0.064]	[0.083]	[0.028]
Female CEO or Chairman (1, 0)	8.352**	8.798**	9.054**	5.448	5.222	6.374
	[0.038]	[0.030]	[0.024]	[0.341]	[0.359]	[0.258]
Average age in board	0.294	0.280	0.269	0.242	0.236	0.270
	[0.534]	[0.546]	[0.563]	[0.776]	[0.778]	[0.748]
Log of board size	4.193	4.279	4.451	6.532	6.206	7.820
	[0.296]	[0.281]	[0.259]	[0.496]	[0.516]	[0.413]
Firm characteristics						
Operating margin	11.120^*	11.106^*	11.085^*	0.000***	0.000***	0.000***
	[0.082]	[0.082]	[0.083]	[0.000]	[0.000]	[0.000]
Leverage	42.319***	42.365***	42.426***	61.848***	61.821***	62.361***
	[0.002]	[0.002]	[0.002]	[0.000]	[0.000]	[0.000]
Log Average Market Capital	6.440***	6.447***	6.443***	5.976***	5.997***	5.920***
	[0.001]	[0.001]	[0.001]	[0.003]	[0.003]	[0.002]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	58.215***	59.667***	60.628***	74.427*	73.659*	77.227*
	[0.071]	[0.062]	[0.058]	[0.086]	[0.082]	[0.067]
N	1479	1479	1479	628	628	628
Groups	260	260	260	111	111	111
R2	0.161	0.161	0.161	0.236	0.236	0.238

* < 0. 10, ** < 0.05, *** < 0.01

TABLE 6 – BOARD GENDER DIVERSITY AND WINSORIZED (5%) FIRING POLICY

This table shows OLS regressions on the dependent variable *percentage fired* winsorized at the 5 % -level. The variable is calculated as the number of employees one year subtracted with the number of employees from the previous year divided by the number of employees from the previous year. Only observations with a negative sign are included. The three independent variables are *fraction of female directors*, *current level* (at least 23 % female directors on the board) and *30 % Solution* (at least 30 % female directors on boards). The numbers in the first row for every variable show the coefficient while the numbers in the second row in parenthesis show the p-value. The data sample consists of 69 companies from the year of 2008 which result in 69 observations. Eleven industry dummies are included based on Statistics Sweden's SNI Swedish Standard Industry Classification codes from 2007. Numbers and ratios collected from balance sheets are all reported in average. The regressions are also controlled for heteroskedasticity. Asterisks indicate significance at 0.01 (***), 0.05 (**), and 0.10 (*) levels, and ^ indicates that coefficients are multiplied by ten thousand.

Variables	(6.1) Percentage fired	(6.2) Percentage fired	(6.3) Percentage fired
Board characteristics			
Fraction female directors	0.201 [0.473]		
Current level (1,0)		0.026 [0.627]	
30 % Solution (1,0)			0.194* [0.057]
Fraction Independent director (%)	0.216* [0.066]	0.218* [0.059]	0.219* [0.056]
Female employee rep. (%)	0.912 [0.146]	0.610 [0.271]	1.088 [0.067]
Female CEO or Chaiman (1,0)	0.220* [0.092]	0.243* [0.069]	0.201* [0.065]
Average age in board	0.011 [0.157]	0.010 [0.210]	0.012* [0.086]
Log of board size	0.188* [0.067]	0.164** [0.088]	0.229** [0.026]
Firm characteristics			
Operating margin	1.586^ [0.120]	1.784^* [0.072]	1.667^* [0.076]
Log Average Market Cap.	0.021 [0.121]	0.025* [0.064]	0.0189 [0.141]
Leverage	0.275* [0.064]	0.272* [0.064]	0.244* [0.089]
Industry dummies	Yes	Yes	Yes
Winsorized 10 %	Yes	Yes	Yes
Intercept	1.286*** [0.005]	1.482*** [0.006]	1.358*** [0.002]
N	69	69	69
R2	0.417	0.412	0.452

* < 0. 10, ** < 0.05, *** < 0.01

TABLE 7 – BOARD GENDER DIVERSITY AND WINSORIZED (1%) LEVERAGE

This table shows fixed effects regressions on the dependent variable *leverage* winsorized at the 1 % -level. This variable is calculated as average short term debt plus average long term debt divided by average assets. The three independent variables are *fraction of female directors*, *current level* (at least 23 % female directors on the board) and *30 % Solution* (at least 30 % female directors on boards). Regressions 7.1-7.3 do not include *fraction of female employee representatives* as a control variable while regressions 7.4-7.6 do. The numbers in the first row for every variable show the coefficient while the numbers in the second row in brackets show the p-value. The data sample consists of 262 companies from the years of 2005-2011 which result in 1499 observations. Seven time dummies are included, one for each year from 2005-2011. Numbers and ratios collected from balance sheets are all reported in average. The regressions are also controlled for heteroskedasticity. Asterisks indicate significance at 0.01 (***), 0.05 (**), and 0.10 (*) levels, and ^ indicates that coefficients are multiplied by ten thousand.

	(7.1)	(7.2)	(7.3)	(7.4)	(7.5)	(7.6)
Variables	Leverage	Leverage	Leverage	Leverage	Leverage	Leverage
Board characteristics						
Fraction female directors	0.046			0.031		
	[0.298]			[0.507]		
Current level (1,0)		0.006			0.003	
		[0.400]			[0.654]	
30% Solution (1,0)			0.021**			0.017*
			[0.031]			[0.086]
Independent director (%)	0.021	0.022	0.021	0.021	0.022	0.022
	[0.139]	[0.118]	[0.129]	[0.126]	[0.108]	[0.120]
Female employee rep. (%)	-	-	-	0.096	0.112	0.079
				[0.290]	[0.201]	[0.379]
Female CEO or Chairman (1,0)	0.023	0.027	0.025	0.025	0.029	0.026
	[0.391]	[0.312]	[0.353]	[0.338]	[0.283]	[0.328]
Average age in board	0.004**	0.003**	0.004**	0.004**	0.004**	0.004**
	[0.014]	[0.015]	[0.011]	[0.014]	[0.013]	[0.010]
Log of board size	0.050**	0.050**	0.052**	0.047**	0.047**	0.049**
	[0.020]	[0.022]	[0.016]	[0.027]	[0.033]	[0.022]
Firm characteristics						
Operating margin	0.062^**	0.062^**	0.062^**	0.062^**	0.062^**	0.062^**
	[0.032]	[0.031]	[0.033]	[0.032]	[0.031]	[0.033]
Log Average Market Cap.	0.002	0.002	0.002	0.001	0.001	0.001
	[0.854]	[0.850]	[0.843]	[0.887]	[0.889]	[0.874]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	0.120	0.134	0.119	0.132	0.143	0.127
	[0.525]	[0.484]	[0.530]	[0.484]	[0.452]	[0.504]
N	1499	1499	1499	1499	1499	1499
Groups	262	262	262	262	262	262
R2	0.052	0.052	0.054	0.053	0.053	0.055

* < 0. 10, ** < 0.05, *** < 0.01

TABLE 8 – BOARD GENDER DIVERSITY AND WINSORIZED (1%) TOBIN'S Q

This table shows fixed effects regressions on the dependent variable *Tobin's Q* winsorized at the 1 % -level. This variable is calculated by the sum of market value of equity and book value of debt divided by the book value of assets. The three independent variables are *fraction of female directors*, *current level* (at least 23 % female directors on the board) and *30 % Solution* (at least 30 % female directors on boards). Regressions 8.1-8.3 include all listed companies in the sample while regressions 8.4-8.6 only include companies listed as Small Cap. The numbers in the first row for every variable show the coefficient while the numbers in the second row in brackets show the p-value. The data sample on regressions 8.1-8.3 (8.4-8.6) consists of 262 (111) companies from the years of 2005-2011 which result in 1506 (637) observations. Seven time dummies are included, one for each year from 2005-2011. Numbers and ratios collected from balance sheets are all reported in average except for booked equity used in Tobin's Q. The regressions are also controlled for heteroskedasticity. Asterisks indicate significance at 0.01 (***), 0.05 (**), and 0.10 (*) levels, and ^ indicates that coefficients are multiplied by ten thousand.

	(8.1)	(8.2)	(8.3)	(8.4)	(8.5)	(8.6)
Variables	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q
Board characteristics						
Fraction female directors	0.494 [0.563]			1.991* [0.097]		
Current level (1,0)		0.126 [0.365]			0.290 [0.161]	
30% Solution (1,0)			0.047 [0.858]			0.628** [0.035]
Independent director (%)	0.238 [0.566]	0.227 [0.585]	0.224 [0.588]	0.531 [0.291]	0.472 [0.352]	0.459 [0.366]
Female employee rep. (%)	2.263 [0.320]	2.300 [0.325]	2.776 [0.250]	2.999 [0.367]	3.876 [0.256]	3.035 [0.413]
Female CEO or Chairman (1,0)	0.700 [0.223]	0.733 [0.189]	0.780 [0.163]	0.086 [0.901]	0.150 [0.831]	0.027 [0.966]
Average age in board	0.017 [0.784]	0.017 [0.789]	0.015 [0.813]	0.025 [0.808]	0.018 [0.859]	0.022 [0.828]
Log of board size	0.138 [0.781]	0.140 [0.779]	0.112 [0.825]	0.284 [0.745]	0.252 [0.772]	0.331 [0.713]
Firm characteristics						
Operating margin	0.925^*** [0.029]	0.924^*** [0.030]	0.929^*** [0.028]	1.295^**** [0.000]	1.305^**** [0.000]	1.308^**** [0.000]
Leverage	4.837*** [0.002]	4.843*** [0.002]	4.850*** [0.002]	3.677** [0.021]	3.711** [0.022]	3.629** [0.026]
Log Average Assets	1.127*** [0.002]	1.130*** [0.002]	1.129*** [0.002]	1.561** [0.016]	1.566** [0.016]	1.550** [0.016]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	15.913*** [0.004]	16.039*** [0.0042]	16.197*** [0.004]	20.138*** [0.003]	20.852*** [0.002]	20.357*** [0.003]
N	1506	1506	1506	637	637	637
Groups	262	262	262	111	111	111
R2	0.206	0.206	0.206	0.278	0.275	0.277

* < 0. 10, ** < 0.05, *** < 0.01

TABLE 9 – BOARD GENDER DIVERSITY AND WINSORIZED (1%) LEVERAGE, EXCLUDING 2008

This table shows fixed effects regressions on the dependent variable *leverage* winsorized at the 1 % -level excluding observations from the year of 2008. This variable is calculated as average short term debt plus average long term debt divided by average assets. The three independent variables are *fraction of female directors*, *current level* (at least 23 % female directors on the board) and *30 % Solution* (at least 30 % female directors on boards). Regressions 9.1-9.3 do not include *fraction of female employee representatives* as a control variable while regressions 9.4-9.6 do. The numbers in the first row for every variable show the coefficient while the numbers in the second row in brackets show the p-value. The data sample consists of 261 companies from the years of 2005-2011 which result in 1273 observations. Seven time dummies are included, one for each year from 2005-2011. Numbers and ratios collected from balance sheets are all reported in average. The regressions are also controlled for heteroskedasticity. Asterisks indicate significance at 0.01 (***), 0.05 (**), and 0.10 (*) levels, and ^ indicates that coefficients are multiplied by ten thousand.

	(9.1)	(9.2)	(9.3)	(9.4)	(9.5)	(9.6)
Variables	Leverage	Leverage	Leverage	Leverage	Leverage	Leverage
Board characteristics						
Fraction female directors	0.077*			0.061		
	[0.092]			[0.204]		
Current level (1,0)		0.013*			0.010	
		[0.089]			[0.207]	
30% Solution (1,0)			0.025**			0.020*
			[0.015]			[0.055]
Independent director (%)	0.014	0.015	0.014	0.015	0.016	0.015
	[0.384]	[0.342]	[0.364]	[0.355]	[0.315]	[0.337]
Female employee rep. (%)	-	-	-	0.099	0.121	0.099
				[0.311]	[0.207]	[0.314]
Female CEO or Chairman (1,0)	0.018	0.025	0.023	0.021	0.027	0.025
	[0.517]	[0.372]	[0.399]	[0.447]	[0.330]	[0.361]
Average age in board	0.004**	0.003**	0.004**	0.004**	0.003**	0.004**
	[0.022]	[0.027]	[0.022]	[0.023]	[0.025]	[0.021]
Log of board size	0.039*	0.040*	0.041*	0.037	0.036	0.038
	[0.084]	[0.091]	[0.078]	[0.109]	[0.123]	[0.104]
Firm characteristics						
Operating margin	0.057^***	0.057^***	0.058^***	0.057^***	0.058^***	0.0583^***
	[0.016]	[0.015]	[0.017]	[0.016]	[0.016]	[0.017]
Log Average Market Cap.	0.001	0.001	0.001	0.001	0.001	0.001
	[0.870]	[0.887]	[0.860]	[0.914]	[0.936]	[0.906]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	0.091	0.114	0.101	0.105	0.126	0.113
	[0.629]	[0.548]	[0.592]	[0.580]	[0.511]	[0.554]
N	1273	1273	1273	1273	1273	1273
Groups	261	261	261	261	261	261
R2	0.033	0.032	0.033	0.034	0.033	0.034

* < 0. 10, ** < 0.05, *** < 0.01

TABLE 10 – BOARD GENDER DIVERSITY AND WINSORIZED (1%) TOBIN’S Q, EXCLUDING 2008

This table shows fixed effects regressions on the dependent variable *Tobin’s Q* winsorized at the 1 % -level excluding observations from the year of 2008. This variable is calculated by the sum of market value of equity and book value of debt divided by the book value of assets. The three independent variables are *fraction of female directors*, *current level* (at least 23 % female directors on the board) and *30 % Solution* (at least 30 % female directors on boards). Regressions 10.1-10.3 include all listed companies in the sample while regression 10.4-10.6 only include companies listed as Small Cap. The numbers in the first row for every variable show the coefficient while the numbers in the second row in brackets show the p-value. The data sample on regressions 10.1-10.3 (10.4-10.6) consists of 261 (111) companies from the years of 2005-2011 which result in 1280 (546) observations. Seven time dummies are included, one for each year from 2005-2011. Numbers and ratios collected from balance sheets are all reported in average except for booked equity used in Tobin’s Q. The regressions are also controlled for heteroskedasticity. Asterisks indicate significance at 0.01 (***), 0.05 (**), and 0.10 (*) levels, and ^ indicates that coefficients are multiplied by ten thousand.

Variables	(10.1)	(10.2)	(10.3)	(10.4)	(10.5)	(10.6)
	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q
Board characteristics						
Fraction female directors	0.310			1.371		
	[0.757]			[0.288]		
Current level (1,0)		0.045			0.222	
		[0.788]			[0.307]	
30% Solution (1,0)			0.155			0.582*
			[0.605]			[0.093]
Independent director (%)	0.294	0.301	0.296	0.698	0.672	0.642
	[0.526]	[0.517]	[0.524]	[0.227]	[0.250]	[0.274]
Female employee rep. (%)	3.199	2.820	3.321	4.309	4.914	3.926
	[0.245]	[0.318]	[0.252]	[0.340]	[0.274]	[0.422]
Female CEO or Chairman (1,0)	0.866	0.811	0.856	0.104	0.061	0.061
	[0.179]	[0.194]	[0.170]	[0.887]	[0.934]	[0.929]
Average age in board	0.023	0.025	0.023	0.037	0.031	0.035
	[0.754]	[0.727]	[0.753]	[0.739]	[0.770]	[0.742]
Log of board size	0.004	0.012	0.017	0.061	0.049	0.114
	[0.994]	[0.982]	[0.974]	[0.953]	[0.962]	[0.917]
Firm characteristics						
Operating margin	0.810^***	0.807^***	0.808^***	1.140^***	1.145^***	1.148^***
	[0.048]	[0.050]	[0.051]	[0.000]	[0.000]	[0.000]
Leverage	6.230***	6.214***	6.236***	5.428***	5.464***	5.375***
	[0.001]	[0.001]	[0.001]	[0.019]	[0.019]	[0.022]
Log Average Assets	1.187***	1.186***	1.187***	1.711***	1.719***	1.697***
	[0.001]	[0.001]	[0.001]	[0.008]	[0.008]	[0.009]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	16.212***	16.010***	16.212***	21.184***	21.733***	21.201***
	[0.007]	[0.008]	[0.007]	[0.006]	[0.004]	[0.005]
N	1280	1280	1280	546	546	546
Groups	261	261	261	111	111	111
R2	0.195	0.195	0.195	0.282	0.280	0.283

* < 0. 10, ** < 0.05, *** < 0.01

**TABLE 11 – BOARD GENDER DIVERSITY AND TOP EXECUTIVE APPOINTMENT POLICY
(LEAD)**

This table shows fixed effects regressions on the dummy variable *female CEO or chairman* that equals zero if neither the CEO or the chairman of a company is a female and one if the CEO or the chairman is a female. The three independent variables are *fraction of female directors*, *current level* (at least 23 % female directors on the board) and *30 % Solution* (at least 30 % female directors on boards). The regressions use lead independent and control variables. The numbers in the first row for every variable show the coefficient while the numbers in the second row in brackets show the p-value. The data sample consists of 255 companies from the years of 2005-2011 which result in 1245 observations. Seven time dummies are included, one for each year from 2005-2011. Numbers and ratios collected from balance sheets are all reported in average. The regressions are also controlled for heteroskedasticity.. Asterisks indicate significance at 0.01 (***), 0.05 (**), and 0.10 (*) levels, and ^ indicates that coefficients are multiplied by ten thousand.

Variables	(11.1) CEO & Chairman	(11.2) CEO & Chairman	(11.3) CEO & Chairman
Board characteristics			
Fraction female directors	0.273 [0.111]		
Current level (1,0)		0.025 [0.121]	
30 % Solution(1,0)			0.021 [0.324]
Fraction independent directors	0.038 [0.117]	0.033 [0.167]	0.035 [0.154]
Average age in board	0.001 [0.659]	0.000 [0.932]	0.000 [0.896]
Log of board size	0.040 [0.434]	0.052 [0.333]	0.050 [0.340]
Firm characteristics			
Operating margin	0.006^ [0.689]	0.006^ [0.672]	0.007^ [0.632]
Leverage	0.070 [0.326]	0.080 [0.252]	0.080 [0.257]
Log Average Market Capital	0.007 [0.381]	0.010 [0.246]	0.011 [0.211]
Year dummies	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes
Time effect	Lead	Lead	Lead
Intercept	0.148 [0.388]	0.058 [0.729]	0.060 [0.715]
N	1245	1245	1245
Groups	255	255	255
R2	0.056	0.035	0.033

* < 0. 10, ** < 0.05, *** < 0.01

TABLE 12 – BOARD GENDER DIVERSITY AND LAGGED TOBIN'S Q

This table shows fixed effects regressions on the one year lagged dependent variable *Tobin's Q* calculated by the sum of market value of equity and book value of debt divided by the book value of assets. The three independent variables are *fraction of female directors*, *current level* (at least 23 % female directors on the board) and *30 % Solution* (at least 30 % female directors on boards). Regressions 12.1-12.3 include all listed companies in the sample while regressions 12.4-12.6 only include companies listed as Small Cap. The numbers in the first row for every variable show the coefficient while the numbers in the second row in brackets show the p-value. The data sample on regressions 12.1-12.3 (12.4-12.6) consists of 255 (109) companies from the years of 2005-2011 which result in 1245 (527) observations. Seven time dummies are included, one for each year from 2005-2011. Numbers and ratios collected from balance sheets are all reported in average except for booked equity used in Tobin's Q. The regressions are also controlled for heteroskedasticity. Asterisks indicate significance at 0.01 (***), 0.05 (**), and 0.10 (*) levels, and ^ indicates that coefficients are multiplied by ten thousand.

	(12.1)	(12.2)	(12.3)	(12.4)	(12.5)	(12.6)
Variables	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q
Board characteristics						
Fraction female directors	1.619			0.904		
	[0.556]			[0.624]		
Current level (1,0)		0.045			0.302	
		[0.876]			[0.333]	
30% Solution (1,0)			1.720			0.715*
			[0.377]			[0.055]
Independent director (%)	0.335	0.379	0.301	1.559*	1.578*	1.635*
	[0.856]	[0.842]	[0.867]	[0.067]	[0.067]	[0.061]
Female employee rep. (%)	0.463	1.088	3.693	3.321	3.137	6.247
	[0.917]	[0.743]	[0.604]	[0.452]	[0.418]	[0.156]
Female CEO or Chairman (1,0)	1.229**	1.480**	1.191**	2.136**	2.055**	1.809**
	[0.023]	[0.019]	[0.019]	[0.018]	[0.018]	[0.018]
Average age in board	0.167*	0.177**	0.152*	0.288**	0.285**	0.277**
	[0.053]	[0.038]	[0.078]	[0.019]	[0.018]	[0.021]
Log of board size	0.615	0.706	0.283	1.960	2.038	1.579
	[0.716]	[0.660]	[0.884]	[0.141]	[0.123]	[0.220]
Firm characteristics						
Operating margin	1.320^**	1.337^**	1.344^**	1.937^***	1.932^***	1.931^***
	[0.029]	[0.026]	[0.022]	[0.000]	[0.000]	[0.000]
Leverage	7.270**	7.218**	7.461**	4.418	4.417	4.614
	[0.043]	[0.042]	[0.043]	[0.236]	[0.239]	[0.218]
Log Average Assets	0.837	0.838	0.844	2.033	2.042*	2.016
	[0.167]	[0.169]	[0.163]	[0.100]	[0.099]	[0.102]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	3.869	4.897	2.459	0.818	0.992	1.963
	[0.693]	[0.591]	[0.812]	[0.949]	[0.937]	[0.877]
N	1245	1245	1245	527	527	527
Groups	255	255	255	109	109	109
R2	0.058	0.058	0.064	0.153	0.153	0.155

* < 0. 10, ** < 0.05, *** < 0.01

ALPHABETICAL LIST OF SWEDISH LISTED COMPANIES

Company (3L-BUR)	Id number	Company (BYG-FAS)	Id number
3L System AB	5563212546	Byggmax Group AB	5566563531
A-Com AB	5562912807	Capona AB	5565476073
AarhusKarlshamn AB	5566692850	Castellum AB	5564755550
AcadeMedia AB	5560572850	Catech AB	5562474386
Acando AB	5562725092	Catena AB	5562941715
Active Biotech AB	5562239227	CDON Group AB	5560356940
Active Capital AB	5560877838	CellaVision AB	5565000998
AddNode AB	5562913185	CF Berg AB	5560522798
Addtech AB	5563029726	Cherryföretagen AB	5560904251
Aerocrine AB	5565491056	Clas Ohlson AB	5560358672
Affärsstrategerna AB	5563214096	Cloetta AB	5563088144
Alfa Laval AB	5565878054	Concordia Maritime AB	5560685819
AllTele AB	5566262407	Connecta AB	5566105705
Anoto Group AB	5565323929	Consilium AB	5564803327
Arise Windpower AB	5562746726	Corem Property Group AB	5564639440
Artimplant AB	5564048394	CTT Systems AB	5564307741
Aspiro AB	5565199998	Cybercom Group Europa AB	5565446522
Assa Abloy AB	5560593575	Dagon AB	5564310067
Atlas Copco AB	5560142720	Dedicare AB	5565161501
Avanza AB	5562748458	DGC One AB	5566241732
Avega Group AB	5566011887	Diamyd Medical AB	5565301420
Axfood AB	5565420824	Digital Vision AB	5563194041
Axis AB	5562411065	Displayit AB	5565425856
BE Group AB	5565784724	Diös AB	5565011771
Beijer Alma AB	5562297480	Doro AB	5561619429
Beijer Electronics AB	5560251851	Duni AB	5565367488
Bergman & Beving AB	5560348590	Duroc AB	5564464286
Bilia AB	5561125690	East Capital Explorer AB	5566937404
Billerud AB	5560255001	Elanders AB	5560081621
BioGaia AB	5563808723	Electra Gruppen AB	5560654054
BioInvent International AB	5565377263	Electrolux AB	5560094178
Biolin AB	5562494293	Elekta AB	5561704015
BioPhausia AB	5564850153	ElektronikGruppen BK AB	5560722547
Biotage AB	5565393138	Elos AB	5560219650
Biovitrum AB	5560389321	Enea AB	5562097146
Björn Borg AB	5566580683	Eniro AB	5565880936
Boliden AB	5560514142	Enlight AB	5565256905
Bong Ljungdahl AB	5560341579	Ericsson AB	5560160680
Borås Wäfveri AB	5561089052	eWork Scandinavia AB	5565878708
Brinova AB	5565949566	Expanda AB	5565412094
Broström AB	5560051467	Fabege AB	5560491523
BTS Group AB	5565667119	Fagerhult AB	5561106203
Bure Equity AB	5564548781	Fast Partner AB	5562307867

Company (FEE-KAR)	Id number	Company (KAR-NOR)	Id number
Feelgood AB	5565112058	Karolinska Development AB	5567075048
Fenix Outdoor AB	5561106310	Kinnevik AB	5560479742
Fingerprint Cards AB	5561542381	Klövern AB	5564825833
FinnvedenBulten AB	5566682141	Know IT AB	5563910354
Firefly AB	5561086892	Kungsleden AB	5565451217
FormPipe Software AB	5566686605	Lagercrantz Group AB	5562824556
Forum SQL AB	5563472926	Latour AB	5560263237
FöreningsSparbanken AB	5020177753	Ledstiernan AB	5561222158
G & L Beijer AB	5560408113	LightLab AB	5565858981
Gant AB	5566004486	Lindab International AB	5566065446
Generic Sweden AB	5564723632	LinkMed AB	5565436127
Getinge AB	5564085032	LjungbergGruppen AB	5561757047
Geveko AB	5560246844	Loomis AB	5566208095
Global Health Partner AB	5567571103	Lundbergs AB	5560568817
Gunnebo AB	5564382629	Lundin Petroleum AB	5566108055
Gunnebo Industrier AB	5563249183	Malmbergs Elektriska AB	5565562781
Hagströmer & Qviberg AB	5565735650	Meda AB	5564272812
Hakon Invest AB	5560482837	Medivir AB	5562384361
Haldex AB	5560101155	Mekonomen AB	5563921971
Havsfrun AB	5563115939	Melker Schörling AB	5565605309
Heba AB	5560573981	Micronic Laser Systems AB	5563512374
Hemtex AB	5561327056	Midsona AB	5562415322
Hennes & Mauritz AB	5560427220	Midway Holding AB	5563232536
Hexagon AB	5561904771	Mobyson AB	5562947845
Hexpol AB	5561089631	Morphic Technologies AB	5565802526
HiQ International AB	5565293205	MQ Holding AB	5566972211
HMS Networks AB	5566618954	MSC AB	5563135309
Holmen AB	5560013301	MTG AB	5563099158
Hufvudstaden AB	5560128240	MultiQ International AB	5564586948
Human Care AB	5564946332	Munters AB	5560410606
Husqvarna AB	5560005331	NAXS AB	5567122972
Höganäs AB	5560050121	NCC AB	5560345174
IBS AB	5561987289	Nederman Holding AB	5565764205
IFS AB	5561220996	NeoNet AB	5565301263
Industrivärden AB	5560434200	Net Entertainment AB	5565326443
Indutrade AB	5560179367	Net Insight AB	5565334397
Intellecta AB	5560565151	NetOnNet AB	5565204137
Intrum Justitia AB	5566077581	New Wave Group AB	5563500916
Investor AB	5560138298	Nexus AB	5564109758
ITAB Shop Concept AB	5562921089	Nibe Industrier AB	5563748309
Jeeves AB	5563434215	Nilörngruppen AB	5563223782
JM AB	5560452103	Nobia AB	5565282752
Kabe AB	5560972233	Nocom AB	5564007200
KappAhl AB	5566612312	Nolato AB	5560804592
Karo Bio AB	5563093359	Nordea Bank AB	5164060120

Company (NOR-SEN)	Id number	Company (SHB-ÖRE)	Id number
Nordic Mines AB	5566791215	Sensys Traffic AB	5562154459
Nordic Service Partners Holding AB	5565341970	SHB AB	5020077862
Nordnet AB	5562491687	Sigma	5563475440
NOTE AB	5564088770	SinterCast AB	5562336494
NovaCast Technologies AB	5562110790	Skanska AB	5560004615
Novestra AB	5565397709	SKF AB	5560073495
Novotek AB	5560609447	SkiStar AB	5560936949
Oasmia Pharmaceutical AB	5563326676	Softronic AB	5562490192
Odd Molly International AB	5566276241	SSAB	5560163429
OEM International AB	5561846691	Stille AB	5562494848
Opcon AB	5562748623	Studsvik AB	5565010997
Orc Software AB	5563134583	Sweco AB	5565429841
Orexo AB	5565000600	Svedbergs AB	5560524984
Ortivus AB	5562591205	Swedish Match AB	5560150756
PA Resources AB	5564882180	Swedol AB	5561276188
PanAlarm AB AB	5566204144	Svolder AB	5564692019
PartnerTech AB AB	5562513308	Systemair AB	5561604108
Peab AB AB	5560614330	Säki AB	5560128547
Pergo AB	5560776006	Tele2 AB	5564108917
Poolia AB	5564479912	Teleca AB	5562503515
Precise Biometrics AB	5565456596	TeliaSonera AB	5561034249
Prevas AB	5562521384	Ticket Travel Group AB	5564454170
Pricer AB	5564277993	Tilgin AB	5565375812
Proact IT Group AB	5564943446	Traction AB	5560298654
Probi AB	5564177540	TradeDoubler AB	5565757423
Proffice AB	5560896572	Transmode Holding AB	5565889101
ProfilGruppen AB	5562778943	Trelleborg AB	5560063421
Ratos AB	5560083585	Tretti AB	5566657606
RaySearch Laboratories AB	5563226157	Tricorona AB	5563320240
ReadSoft AB	5563981066	TV4 AB	5562427152
Rederi AB Translantic	5561610113	Uniflex AB	5564620887
Rejlerkoncernern AB	5563498426	Wallenstam AB	5560721523
Retail and Brands AB	5564954682	VBG Group AB	5560690751
Rezidor Hotel Group AB	5566740964	Venue Retail Group AB	5565401493
Rottneros AB	5560135872	Wihlborgs AB	5563670230
Rörvik Timber AB	5565412086	Viking Telecom AB	5563303055
Sandvik AB	5560003468	Wise Group AB	5566863576
SAS AB	5566068499	Vitrolife AB	5563543452
SCA AB	5560126293	Volvo AB	5560125790
Scania AB	5561848564	XANO Industri AB	5560762055
SEB AB	5020329081	Zodiak Television AB	5563334662
Sectra AB	5560648304	Ångpanneföreningen AB	5561206474
Securitas AB	5563027241	Öresund AB	5560639147
Semcon AB	5565399549		