

Busy Directors and the Performance of Swedish Companies

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Abstract

This study examines the relationship between directors with multiple directorships and firm performance in Sweden. The purpose of the thesis is to test the hypothesis that busy directors cannot fulfill their responsibilities adequately, which in turn impairs firm performance. We run several fixed effects regressions with three different measures of busyness and return on assets and market-to-book ratio as dependent variables. Our results show that there is a negative and statistically significant relationship between busy directors and firm performance. In conclusion, our findings indicate that busy boards are less effective than non-busy boards. This suggests that shareholders should, up to a point, avoid appointing directors with too many directorships to maximize firm value.

Keywords: Busy directors, Board of directors, Firm performance, Swedish companies, Corporate governance

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Contents

1	Introduction.....	2
2	Previous literature on directors and busy boards	4
3	Data and methodology	8
3.1	Sample	8
3.2	Table I Data description	9
3.1	Method.....	9
3.2	Variables	11
3.2.1	Independent variables.....	11
3.2.2	Dependent variables	12
3.2.3	Control variables	12
4	Results.....	14
4.1	Table II Busy directors and Return on assets	15
4.2	Table III Busy directors and Market-to-book ratio	17
5	Robustness tests	18
6	Conclusion	20
7	References.....	22
8	Appendix.....	24
8.1	Table III Variables and definitions	24
8.2	Table IV Busy directors and Return on assets, excluding 2008.....	26
8.3	Table V Busy directors and Market-to-book ratio, excluding 2008.....	27
8.4	Table VI Busy directors and winsorized (1%) Return on assets	28
8.5	Table VII Busy directors and winsorized (1%) Market-to-book.....	29
8.6	Table VIII Busy directors and Return on assets / Market-to-book.....	30
8.7	Table IX Companies (253) in sample.....	31

1 Introduction

The Swedish Corporate Governance Code¹ states that

“Directors are to devote the necessary time and care, and to ensure they have the competence required, to effectively protect and promote the interests of the company and its owners”... “Each director is obliged to acquire the knowledge of the company’s operations, organization, markets etc., required for the assignment.”

In this thesis we examine the effect that busy board directors have on firm performance. The practice of serving on multiple boards, often parallel to other commitments, prompts us to ask whether busy directors are able to carry out their responsibilities as effectively as non-busy directors.

Broadly speaking, the board of directors acts on behalf on the shareholders and has two main assignments. The first is to establish operational and strategic goals and the second is to appoint, monitor, and when necessary discharge the CEO (The Swedish Corporate Governance Code, 2010). The scholarly opinion concerning busy directors is divided. Some scholars claim that busy directors neglect certain aspects of the directorships due to lack of time and commitment. For example, research by Fich and Shivdasani (2005) suggests that busy boards are less likely to discharge a CEO who is not performing well. By failing to monitor the management team adequately, busy boards affect firm performance negatively. Conversely, others claim that the experience, networks and knowledge gained from having several directorships improves firm performance. These two forces work in opposite directions. With the results of previous research in mind, we formulate the following hypothesis:

“Multiple directorships and busyness lead to less adequate monitoring of the management, which in turn is associated with worse firm performance”

Testing this hypothesis in various fixed effect regressions, we show that there is a negative and statistically significant relationship between busy directors and firm performance. In these tests, we proxy busyness with several variables: *Average directorship by outside director*, *Percentage busy directors* and *Busy board*. We individually regress *Return on assets*

¹ The Swedish Corporate Governance Code (2010) targets companies that are listed on either the NASDAQ OMX Stockholm or the NGM Equity. It complements the existing legal framework and standards by setting higher goals for corporate governance. The concerned companies are to apply the concept “comply or explain” and should explain deviations from the code in the annual report.

and *Market-to-book* against these variables, and through a series of tests conclude that these results are robust. Our panel data set consists of governance and financial data for 253 companies over six years (2005-2010). We collect the governance data from Directors and Auditors in Sweden's Listed Companies (vol. 2005 – 2010) and construct a database with board information for all companies listed on NASDAQ OMX Stockholm and NGM Equity. We collect performance data from the databases Retriever and Datastream.

The influence of busy directors on the performance of US companies has been studied by several scholars but there is little previous research on busy directors and Swedish companies. In a Master's thesis from the Stockholm School of Economics, Bernow and Brinkeborn Beselin (2007) study Swedish companies listed on the Stockholm Stock Exchange during 2003 and 2004 with a market capitalization of SEK 1 billion or more, which yields a sample of 176 observations for 88 companies. We study a broader sample which consists of all Swedish companies listed on the Stockholm Stock Exchange and the NGM Equity list during the 6-year period from 2005 to 2010, which yields a sample of 253 companies over six years. Our method resembles that of Fich and Shivdasani (2006), who study companies on the Forbes 500 list during the 7-year period from 1989 to 1995. We use the same measures of firm performance, return on assets and market-to-book, and the same independent variables.

Ferris, Jagannathan and Pritchard (2003) also study the influence of directors with multiple directorships on the performance of US companies. They use cross-sectional data and do not control for fixed effects. Like Fich and Shivdasani, we believe that the use of panel data and fixed-effects regressions should lead to more reliable estimates.

Our results consistently show that there is a negative relation between multiple directorships and firm performance. Unlike Bernow and Brinkeborn Beselin, the majority of our models yield statistically significant coefficients. Our findings are in line with those of Fich and Shivdasani, who also find a negative and significant relation between busy directors and firm performance. They also go on to evaluate the potential endogeneity of directors with multiple directorships with respect to firm performance and do not find that poor firm performance leads to a higher proportion of busy directors.

However, our results differ from those of Ferris et al. who find no evidence that busy boards are less effective at monitoring management than non-busy boards. Using lags, they find that past firm performance has a positive correlation with the number of directorships

subsequently held, but they do not find that multiple directorships impair subsequent firm performance.

In sum, our results suggest that busy directors of Swedish companies tend to be associated with lower returns on assets and lower market-to-book ratios. This supports the view that directors with too many directorships tend to be less effective monitors than non-busy directors. Our study indicates that shareholders should, up to a point, avoid appointing directors with too many directorships to maximize firm value.

2 Previous literature on directors and busy boards

To study the relationship between directors with multiple directorships and firm performance, it is relevant to look at the theoretical role of the board of directors, and how it can influence firm performance. There is a substantial amount of research on corporate governance and the role of the board of directors, and a number of studies on the impact of directors with multiple appointments on firm performance. However, the majority of these studies look at American companies. Besides Bernow and Brinkeborn Beselin (2007), we have not found any research on busy directors in Swedish companies.

According to Fama and Jensen (1983), the role of the board is to deal with the agency problems that derive from the separation of ownership and control. They suggest that the board of directors always has the power to appoint, discharge and compensate managers and to monitor important decisions. Further, they argue that a well-composed board should consist of both inside directors, who are experts in the organization, and outside directors, who can carry out tasks that involve serious agency problems between insiders and residual claimers of the company, such as setting executive compensation and discharging top managers. Fama and Jensen's hypothesis is that outside board directors have incentives to develop a good reputation as experts of decision making. They suggest that multiple board appointments can be a sign of quality in directors since the appointments might be the result of earlier success. Thus, directors should have an incentive to serve on multiple boards.

The importance of reputation for directors is further examined in a number of studies which show that the number of directorships held by outside directors is associated with firm performance. Gilson (1990) studies changes in corporate governance when firms default and finds that directors who resign from distressed companies subsequently serve on fewer boards of other companies. Kaplan and Reishus (1990) study the relationship between firm

performance, measured with dividend cuts, and top managers' service on other boards. They find that top managers of companies that cut dividends are approximately 50% less likely to be appointed to other boards than top managers of companies that do not cut dividends. Their conclusion is that the results are in line with the theories of a market for outside directors where reputation is of high importance. Better managers are preferred as directors since they are assumed to monitor the management better.

Other studies point to the fact that directors with multiple directorships may be too busy to monitor management adequately. Fich and Shivdasani (2006) find that firms with busy boards have significantly lower market-to-book ratios than firms with non-busy boards. Their sample consists of 500 American companies from the 1992 Forbes 500 list during the years 1989 to 1995. They label full-time employees 'insider directors', and directors who are former employees or who have family or commercial ties with the company 'grey directors'. Directors that do not fit either description are classified as outsiders. In their sample, the average number of directorships per outside director is 3.11, and the median is 2.89. Outside directors are considered busy if they have three or more directorships and a board is considered busy if 50% or more of the outside directors are busy. Fich and Shivdasani test the correlation between the market-to-book ratio and busy boards with controls for corporate governance and financial characteristics likely to affect firm performance, such as board size, net sales and percentage of outside directors on the board. The test results in a negative and statistically significant coefficient for the busy board dummy. In their second model, they use the percentage of busy outsiders on the board, and in the third model, the interaction term between the first two independent variables. These tests also result in negative and statistically significant coefficients.

Fich and Shivdasani also use return on assets, sales over assets and return on sales as measures of firm performance and dependent variables and find negative and significant coefficients in all tests, which suggests that companies with busy boards show weaker profitability than firms with non-busy boards.

As a robustness check to control for the potential endogeneity problem that busy outside directors are appointed to firms that are already performing poorly, Fich and Shivdasani re-estimate the regressions with 1- and 2-year lagged values of the corporate governance variables, resulting in negative and statistically significant busy-board measures.

Further, Fich and Shivdasani also show that firms with busy boards are less likely to discharge their CEO after sharp drops in firm performance than firms with a non-busy board, and that departures of busy outside directors are associated with positive and statistically significant abnormal returns.

Core, Holthausen and Larcker (1999) find that busy outside directors set excessively high CEO compensation levels, which in turn leads to poorer firm performance. They study large American companies over a three-year period to test the hypothesis that observed board and ownership structures induce optimal CEO contracting and firm performance. Under this hypothesis, it is assumed that shareholders choose a board structure and CEO compensation that maximizes firm value, and that variations in equilibrium CEO compensation should be fully explained by economic determinants such as firm size, performance and risk. However, the study shows that board and ownership structure are both associated with the level of CEO compensation after controlling for these standard economic determinants. Core et al. find that CEO compensation is an increasing function of board size, percentage of outside directors and percentage of busy outside directors (directors with three or more directorships). They also find that the CEO compensation predicted by these variables has a negative correlation with subsequent operating and stock performance of the firm. Further, they establish that these findings are in line with the guidelines for improving corporate governance, that have been proposed by groups such as the National Association of Corporate Directors (1996). These guidelines suggest, among other things, a limit on the number of directorships held by individual directors of public companies.

Shivdasani and Yermack (1999) find that busy directors, defined as directors holding three or more directorships, are more likely to be appointed if the CEO of the firm is involved in the selection process. They also report that stock price reactions to appointments of independent directors are significantly lower when the CEO is involved in the selection process. Shivdasani and Yermack makes the interpretation that CEOs use their influence in the director selection process to restrict the performance pressures that come from aggressive monitoring by the board. They also state that one could make the interpretation from these results that busy directors are less likely to monitor management adequately.

Ferris, Jagannathan and Pritchard (2003) on the other hand, find no evidence that multiple board appointments harm firm performance. Their sample consists of firms with at least \$100 million in total assets at the beginning of 1995, resulting in a final sample of 3,190 firms. In

this sample, 16% of all directors hold two or more directorships and 6% hold three or more. They find that the directorships held by directors with multiple appointments are heavily skewed toward the largest firms in the sample. Ferris et al. test the so called Busyness hypothesis, that directors who serve on multiple boards become so busy that they cannot monitor management properly, with a number of tests.

First, however, Ferris et al. test whether earlier firm performance affects the number of directorships, as suggested by Fama and Jensen (1983). They find significant evidence that supports Fama and Jensen's theory of the reputational effect, i.e. that prior firm performance has a positive effect on the number of directorships held by a director. Then, they test the busyness hypothesis by regressing firm performance, measured as market-to-book, in 1997 against a number of independent variables as of 1995, such as number of directorships per outside board director. The test results in positive coefficients, which is inconsistent with the busyness hypothesis, but the results are not statistically significant. As a robustness test, they also regress annual changes in number of directorships against changes in return on assets with several control variables, but do not find any significant relation.

Ferris et al. also perform an event study of firms announcing the appointment of a busy director. They find that firms that announce the appointment of an already busy director for the first time experience positive abnormal returns, but again, the results are statistically insignificant. Only after dividing the sample into two - (1) firms with busy directors adding an additional busy director and (2) firms without busy directors appointing a busy director for the first time - do they find significant positive abnormal returns for the second subsample. This is also inconsistent with the busyness hypothesis.

To further test the busyness hypothesis, Ferris et al. compare the participation on board committees by directors holding three or more directorships with that of directors with one or two directorships, to find that busy directors serve on more committees and attend more meetings than non-busy directors, and that busy directors receive greater compensation.

In sum, there are many studies regarding corporate governance and a few on the impact of busy directors on firm performance. However, most studies focus on American data and it is evident that the scholarly opinion is divided.

3 Data and methodology

3.1 Sample

Our sample consists of all Swedish companies listed on the Stockholm Stock Exchange and the NGM Equity list during a 6-year period from 2005 to 2010. We have gathered data on the board composition of each firm from the books *Directors and Auditors in Sweden's listed companies* (Sundin and Sundqvist), which are published annually. From these books we obtain the directors' name, position and age. For every year except 2005 and 2010, the books also contain information about which directors are independent of the company and major owners.² Since this information is missing for 2005 and 2010, we have made the assumption that directors that were independent of a certain company in 2006 were independent of that company in 2005 as well. Likewise, it is assumed that independent directors 2009 were also independent 2010. Directors who were appointed in 2010 are assumed to be dependent, since the majority of the directors in the sample are dependent. Similarly, directors who discontinued their directorships in 2005 are assumed to have been dependent. The final sample consists of 253 companies over the six years. We have obtained financial data on these companies from the online databases Retriever and Datastream. From Retriever, we obtain total revenue, EBIT, total assets and equity for all firms and each year. However, the number of observations for year 2010 is small since these numbers have not yet been updated in the database. From Datastream, we get the market capitalization of all companies at the end of each year. Table I shows descriptive characteristics for these companies. We count directorships held by individual directors in the sample firms only. The average number of directorships held by an individual director in our sample is 1.81 (Median: 1.67). We define an inside director as a full-time employee of the firm and other directors are classified as outsiders. With this definition, 80% of the directors are outsiders. We label outside directors as busy if they hold three or more directorships, which is in line with the studies of Fich and Shivdasani (2006), Ferris et al. (2003), Shivdasani and Yermack (1999) and Core et al. (1999). This criterion yields a percentage of busy outside directors of 20.9% in our sample. The proportion of busy outsiders is considerably higher in the study by Fich and Shivdasani since the average number of directorships held is close to three in their sample. We have

² To determine the independence of a director, a collective assessment is made on a number of areas. Broadly, the Swedish Corporate Governance Code rules that directors with extensive commercial or financial relations with a company are labeled 'dependent'. Furthermore, directors that are part of the management team or with a considerable share of the companies stock are labeled 'dependent'.

constructed a dummy variable which takes the value of one if more than half of the outside directors of a board are busy. With this criterion, 13% of the boards in the sample are busy.

3.2 Table I Data description

This table shows descriptive statistics for our sample. It consists of 1,079 annual observations for 253 companies. Reported are the 1st percentile, mean, median, 99th percentile and standard deviation. See table III for definitions of the variables.

Variables	p1	Mean	Median	p99	SD
Board characteristics					
Average age in board (years)	44.50	53.95	53.89	63.00	4.04
Average directorship per outside director	1.00	1.81	1.67	4.00	0.71
Percentage busy outside directors	0.00	20.92	16.67	80.00	20.26
Board size	4.00	8.10	7.00	16.00	3.09
Busy board (0,1) in percentage	n/a	12.98	n/a	n/a	n/a
Percentage inside directors	0.00	20.16	16.67	55.56	17.90
Percentage outside directors	44.44	79.84	83.33	100.00	17.90
Firm characteristics					
Assets (mSEK)	19	66,500	1,246	2,150,000	400,000
Equity (mSEK)	1	2,642	65	86,200	16,600
Total Revenue (mSEK)	0	11,200	1,061	137,000	30,200
Market Capitalization (mSEK)	20	14,600	1,177	247,000	43,600
Market-to-Book	0.88	2.44	1.78	12.60	2.22
Operating Margin	-28.65	-0.62	0.08	2.92	10.69

3.1 Method

We test the relationship between busy directors and firm performance with a set of fixed effects regressions. To determine the effect of busy directors on firm performance, three independent variables are regressed on firm performance: *Average directorships per outsider*, *Percentage of busy outside directors* and *Busy Board*. All independent variables exclude inside directors. Inside directors are full-time employees of the company, e.g. personnel representatives or CEOs. Arguably, insiders serve on the board for other reasons than monitoring of the management team, thus preventing them from having an effect on firm performance. Furthermore, excluding insiders is in line with prior research on this subject, allowing us to make comparisons with the findings of others (Ferris et al., 2003, Fich and Shivdasani, 2006).

We regress the performance measures *Return on Assets* and *Market-to-book* against the independent variables (See section 3.2 for definitions). Control variables differ slightly depending on which dependent variable is tested. The control variables can be divided into subgroups of firm and board characteristics. We control for firm size, profitability and leverage through variables mentioned in section 3.2.3. The composition and size of the board

is also controlled for via variables defined in section 3.2.3. In excess of the variables mentioned in this chapter, we also control for firm- and time- specific effects by running fixed-effects regressions in Stata with time dummies, as opposed to using industry dummies. We argue that controlling for fixed effects is critical considering our large data set of 253 companies over six years. Since our sample includes all companies on the NASDAQ OMX Stockholm Stock Exchange and the NGM Equity list, we minimize the risk of selection bias.

We run the regressions with *Return on assets* as dependent variable without lags and the regressions with *Market-to-book* with a one-year lag. We argue that regressions with *Return on assets* should be run without lags since it is a measure of operating profitability and regressions with *Market-to-book* with a one-year lag since it is a measurement of an opening balance.

The regressions we run have the following specification:

$$ROA = \beta_0 + \beta_1 \times ID_{1/2/3} + \beta_2 \times AA + \beta_3 \times BC + \beta_4 \times BS + \beta_5 \times PI + \beta_6 \times Size_2 + \beta_7 \times OM + \beta_8 \times L + \beta_{9,10,...,14} \times YD,$$

$$Mtb = \beta_0 + \beta_1 \times ID_{1/2} + \beta_2 \times AA + \beta_3 \times BC + \beta_4 \times BS + \beta_5 \times PI + \beta_6 \times Size_{1/2} + \beta_7 \times OM + \beta_8 \times L + \beta_{9,10,...,14} \times YD,$$

where:

ROA = Return on Assets

Mtb = Market-to-book

ID₁ = Average directorships held by outside directors

ID₂ = Percentage busy outside directors

ID₃ = Busy board (0,1)

AA = Average age in board

BC = Board composition (% outside directors)

BS = Log board size

PI = Percentage independent directors

Size₁ = Log of average assets

Size₂ = Log of average market capitalization

OM = Operating margin

L = Leverage

YD = Year dummies

3.2 Variables

3.2.1 Independent variables

Average directorship by outside director

For each director, we calculate the number of directorships in companies on NASDAQ OMX Stockholm and the NGM Equity list (Previously named A-, O- and NGM- list). Consequently, other commitments or directorships in companies listed elsewhere are excluded from this measurement. For each firm, we add up the directorships of all outside directors and calculate the average number of directorships by outside director. This measurement of busyness is consistently used in prior studies (Ferris et al., 2003, Fich and Shivdasani, 2006, Kaplan and Reishus, 1990).

Percentage of busy outside directors

This variable is defined as the fraction of outside directors that are labeled ‘busy’. In line with previous scholars, we label a director ‘busy’ if he or she has three or more directorships (Core et al., 1999, Ferris et al., 2003, Fich and Shivdasani, 2006, Shivdasani and Yermack, 1999). In the studies by Ferris et al and Fich and Shivdasani, the definition of a busy director is related to the mean and median of directorships held by outside director in the sample. Even though our sample yields a considerably lower mean and median (1.81 and 1.67 respectively) we choose the cut-off point at three or more directorships. For one thing, the results become more comparable and, second, the American Council of Institutional Investors (1998) advises directors with full-time jobs not to take on more than three directorships.

Busy board (0,1)

This variable was introduced by Fich and Shivdasani (2006) and captures the effect of busy boards, i.e. boards in which the majority of the outside directors are labeled ‘busy’. Hence, this variable takes the value of one if 50% or more of the outside directors are busy.

3.2.2 Dependent variables

Market-to-book

We regress *Market-to-book* (Mtb) against the independent variables that capture the busyness of a board. *Market-to-book* is calculated as the total assets minus equity plus market capitalization, divided by assets. This variable is a proxy for Tobin's Q (Tobin, 1977). A high ratio of Market-to-book suggests a good management and governance. However, as Fich and Shivdasani (2006) expressed, there is a risk that companies struggling with liquidity issues might be forced to underinvest and therefore have a marginally high market to book ratio. If that is the case, we would, erroneously, treat companies that underinvest as exhibiting signs of strong management and governance. Hence, we complement this measurement with another which is not subject to this potential error, *Return on Assets*. Market-to-book has been used in several other studies to study various effects on firm performance, eg. Yermack (1996), Vafeas (1999).

Return on Assets

Return on assets (ROA) captures the operating performance of a company, and is calculated by dividing EBIT with the average assets. A potential issue is that the EBIT figures, collected from Retriever, include non-recurring items i.e. cost for restructuring or similar. This partially biases the measurement seeing as these costs do not concern the actual operating profitability of a company.

When calculating *Return on Assets*, we use the average of opening and closing balance of the assets. In doing so, we hope to reduce the effect of window dressing. Window dressing is a phenomenon where management, within legal boundaries, make some slight alterations to the balance sheet to present a more positive view to the shareholders and other parties (Musto, 1998). By taking the average of opening and closing balance we hope to achieve a more accurate estimation of operating profitability.

3.2.3 Control variables

Board characteristics

Average age in board

For each firm, the average age in boards is calculated as the total age of the directors divided by the number of directors in the board. This variable acts as a proxy for the gathered

experience in the board. We argue that experience is important to control for in order to capture the actual effect of busy directors, which is in line with Ferris et al. (2003). Bernow and Brinkenhorn Beselin, (2007) regress firm performance against education, as a proxy of experience.

Board composition (% outside directors)

Board composition is calculated as the fraction of outside directors to the board size. This variable is used in several other studies, most notably Ferris et al (2003), Fich Shivdasani (2006) and Yermack (1996).

Log board size

In addition to controlling for the board composition, we control for the logarithm of the board size. Yermack (1996) studies the impact of board size on firm value and finds that small boards are more effective.

Percentage independent directors

This variable acts as a proxy for director ownership. Directors are labeled ‘dependent’ if they own a considerable share of the company or due to other reasons have additional interests in the company. As this information was missing for 2005 and 2010, we have assumed that directors who were independent in 2006 were also independent in 2005. Likewise, we have assumed that directors who are independent in 2009 are also independent in 2010. In his study of board size and firm value, Yermack (1996) suggests that board ownership is inversely related to firm value.

Firm characteristics

Size

To control for size of the company, we use two different measures depending on the dependent variable. When using *Return on assets*, we control for size using the logarithm of Market Capitalization. When the dependent variable is *Market-to-book*, we control for size using the logarithm of average assets and average market capitalization.

Operating Margin

Operating margin is a measurement of profitability. It is calculated as EBIT divided by total revenue. Ferris et al. (2003) show that the operating margin is significantly higher in firms with busy directors than in firms without busy directors.

Leverage

We control for firms taking on a lot of debt and through leverage generating higher returns, thus improving their operating profitability. Therefore we neutralize this effect by controlling for the level of liabilities to assets. *Leverage* is calculated as 1 minus equity divided by assets. $(1 - \text{Equity} / \text{Assets})$. We argue that controlling for debt levels strengthens our results.

4 Results

The results from the regressions are presented in table II and table III below. Models (1) to (3) use *Return on assets* as the dependent variable and, models (4) to (7) use *Market to Book* as the dependent variable. The sample used in the regressions is presented in table I, section 3.2.

The regressions show that busyness is consistently negatively correlated with firm performance, measured in *Return on assets* and *Market-to-book*. Model (1) shows that the coefficient for the average directorships by outside director variable is negative and statistically significant at the 5% level. The coefficient indicates that if the *average number of directorships by outsiders* increases by one, the *Return on assets* decreases with 2.76 percentage points. Model (1) generates an R-square of 16.5% and an adjusted R-square of 15.5%, which is relatively low compared to similar studies. Model (2) shows that the *Percentage busy outside directors* variable has a negative and statistically significant coefficient of -0.0673, which indicates that an increase in the *percentage busy outside directors* of one percentage point yields a decrease in *Return on assets* of 6.73 percentage points. R-squared in Model (2) is 16.4% and the adjusted R-square is 15.4%. In model (3), the coefficient for the *busy board* variable is also negative, although not statistically significant. This result is consistent with model (1) and (2) and indicates that the return on assets is 2.93 percentage points lower in firms with busy boards. Model (3) generates an R-square of 16.3% and an adjusted R-square of 15.3%. It seems that the control variables for board characteristics have no statistically significant effect on the coefficients. However, the control variables for firm characteristics are statistically significant.

4.1 Table II Busy directors and Return on assets

This table closely follows the work by Fich and Shivdasani (2006) and shows regressions of firm performance and busy outside directors, using *Return on assets* as the dependent variable. Model (1) uses the independent variable *average directorships by outside director*, calculated as the total number of directorship held by outsiders serving on the board divided by board size. Model (2) uses the independent variable *percentage busy outside directors*, calculated as number of outside directors with three or more directorships serving on the board divided by board size. Model (3) uses the independent variable *busy board*, which is a dummy variable that equals one if 50% or more of the board's outside directors hold three or more directorships. The following regressions are run with fixed firm- and time- specific effects. In these regressions, board data are contemporaneous with firm performance data. Robust p-values are reported within parenthesis in the second row, beneath the coefficients.

Variables	(1) ROA	(2) ROA	(3) ROA
Board characteristics			
Average directorships by outside director	-0.028** (0.032)		
Percentage busy outside directors		-0.067* (0.060)	
Busy board (0,1)			-0.026 (0.110)
Average age in board	0.001 (0.620)	0.001 (0.604)	0.001 (0.640)
Log of board size	-0.053 (0.262)	-0.052 (0.269)	-0.053 (0.262)
Board composition (% outside directors)	-0.082 (0.159)	-0.079 (0.169)	-0.078 (0.178)
Percentage independent directors	-0.028 (0.287)	-0.026 (0.314)	-0.026 (0.324)
Firm characteristics			
Log of Market Capitalization	0.042*** (0.005)	0.043** (0.004)	0.040** (0.007)
Operating margin	0.002** (0.023)	0.002** (0.023)	0.002** (0.023)
Leverage	0.420*** (0.000)	0.420*** (0.000)	0.421*** (0.000)
Time Fixed Effects			
Yd 2006	-0.001 (0.940)	-0.001 (0.957)	-0.001 (0.950)
Yd 2007	0.021* (0.071)	0.021* (0.080)	0.020* (0.091)
Yd 2008	-0.004 (0.735)	-0.004 (0.757)	-0.006 (0.666)
Yd 2009	-0.003 (0.878)	-0.003 (0.863)	-0.004 (0.787)
Yd 2010	-0.002 (0.934)	-0.003 (0.917)	-0.003 (0.927)
Intercept	-0.805*** (0.004)	-0.854*** (0.002)	-0.822*** (0.003)
N	1079	1079	1079
Groups	253	253	253
R²	16.50%	16.40%	16.80%

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

Models (4) to (7) show the relationship of two independent variables and the dependent variable *Market-to-book*. Furthermore, they differ slightly in terms of the size variable.

Models (4) and (5) show that the coefficients for the *average directorships by outside director* variable are negative and statistically significant at the 5% level. Model (4) is run with the average assets as the size control variable and yields a coefficient of -0.332, which indicates that if the *Average number of directorships by outsiders* increases by one, *Market-to-book* decreases with 0.332 points. Model (4) generates an R-square of 14.4% and an adjusted R-square of 13.0%. Model (5), with market capitalization as the size control variable, shows that the *Average number of directorships* variable has a negative and statistically significant coefficient of -0.343. This implies that an increase in the *percentage busy outside directors* of one point yields a decrease in *Market-to-book* of 0.343 points. R-squared in Model (5) is 14.4% and the adjusted R-square is 12.8%.

Models (6) and (7) show that the coefficients for the average directorships by outside director variable are negative, although failing to be statistically significant. Model (6) is run with the average assets and yields a coefficient of -0.509, which indicates that if the *Percentage busy outsider* increases by one percentage point, *Market-to-book* decreases with 0.509 points. Model (6) generates an R-square of 14.1% and an adjusted R-square of 12.7%. Model (7), with the same set-up as (6) besides for using market capitalization as the size variable, shows that the *Percentage busy outside directors* variable has a negative coefficient of -0.561. This indicates that an increase in the *Percentage busy outside directors* of one point yields a decrease in *Market-to-book* of 0.561 points. R-squared in Model (5) is 14.1% and the adjusted R-square is 12.7%.

Again, it seems that the control variables for board characteristics have no statistically significant effect on the coefficients. Unlike regressions (1) to (3), the control variables for firm characteristics are, in most cases, not statistically significant.

4.2 Table III Busy directors and Market-to-book ratio

This table shows fixed effects regressions of firm performance and busy directors, using *Market-to-book* as the dependent variable. Model (4) uses *Average directorships by outside director* as independent variable, and *Log of Assets* to control for firm size. *Log of assets* is calculated as the logarithm of the average of opening and closing balance. Model (5) also uses the *Average directorships by outside director* as independent variable, and *Log of Market Capitalization* to control for firm size. *Log of Market Capitalization* is calculated as the logarithm of the average of opening and closing balance. Model (6) and (7) use *Percentage busy outside directors* as independent variable. Model (6) uses *Log of Assets* and Model (7) uses *Log of Market Capitalization* to control for firm size. Robust p-values are reported within parenthesis in the second row, beneath the coefficients. In these regressions, independent and control variables are lagged one year. When using the third independent variable, *Busy board*, we fail to find significant results and thus we do not report this separately.

Variables	(4) Mtb	(5) Mtb	(6) Mtb	(7) Mtb
Board characteristics				
Average directorships by outside director	-0.332** (0.024)	-0.343** (0.023)		
Percentage busy outside directors			-0.509 (0.267)	-0.561 (0.244)
Average age in board	0.039 (0.124)	0.036 (0.174)	0.041 (0.109)	0.038 (0.153)
Log of board size	0.227 (0.618)	0.175 (0.707)	0.211 (0.644)	0.158 (0.734)
Board composition (% outside directors)	0.863 (0.393)	0.86 (0.391)	0.903 (0.371)	0.903 (0.368)
Percentage independent directors	-0.585 (0.291)	-0.635 (0.235)	-0.564 (0.308)	-0.614 (0.250)
Firm characteristics				
Log of Market Capitalization		0.056 (0.796)		0.062 (0.780)
Log of Assets	-0.283 (0.413)		-0.285 (0.415)	
Operating margin	0.003 (0.601)	0.003 (0.663)	0.004 (0.581)	0.003 (0.644)
Leverage	-0.713 (0.420)	-1.192* (0.086)	-0.732 (0.412)	-1.219* (0.085)
Time Fixed Effects				
Yd 2007	-0.211 (0.134)	-0.237 (0.114)	-0.206 (0.146)	-0.233 (0.122)
Yd 2008	-0.950*** (0.000)	-1.012*** (0.000)	-0.965*** (0.000)	-1.027*** (0.000)
Yd 2009	-0.430*** (0.007)	-0.501*** (0.000)	-0.428*** (0.007)	-0.498*** (0.000)
Yd 2010	0.051 (0.879)	-0.007 (0.985)	0.042 (0.900)	-0.014 (0.968)
Intercept	4.968 (0.368)	0.863 (0.786)	4.417 (0.428)	0.194 (0.954)
N	816	816	816	816
Groups	238	238	238	238
R²	14.40%	14.20%	14.10%	14.10%

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

5 Robustness tests

To verify our results, we run three sets of robustness tests. Our results are shown in the appendix, section 8.

First, we exclude data from the year 2008 to see if the extreme events of the financial crisis have biased our results. It could be that the time fixed effects of the models cannot completely and accurately capture the effects of the extreme and irregular fluctuations of 2008. We find that Model (1) and (2) yield coefficients for the independent variables that are still negative and statistically significant at the 10% and 5% levels respectively. Model (3) yields a negative coefficient of -0.02 for the *busy board* variable, but it is still statistically insignificant. Models (4) and (5) still yield negative coefficients for the independent variables which are significant at the 10% level. Model (6) and (7) generate negative coefficients which are still statistically insignificant. This indicates that our previous regressions are robust to the influence of the financial crisis in 2008.

Second, we winsorize the *Return on assets* and *Market-to-book* variables to control for any heavy influence from outliers. It is possible that a few extremely high or low values have too large an impact on the coefficients. We use a 98% winsorization which means that the bottom 1% of the values are set equal to the value corresponding to the 1st percentile and the top 1% of the values are set equal to the value corresponding to the 99th percentile. Without the influence of outliers, we still observe the same trend. The coefficients are negative and previously significant regressions still hold. Hence, it seems that there is no heavy influence from extreme values in our previous tests.

Third, we re-run the regressions in model (2), (3), (6) and (7), labeling directors with two or more directorships as busy. The results are shown in table VIII. The mean and median number of directorships in our sample is close to 2.0. Hence, we test the models with the new definition of busy to get a roughly even split of the sample. Even though the coefficient in model (2) is no longer statistically significant, we see that the negative relation between busy directors and firm performance withstands. Model (3), (6) and (7) now, as apposed to in earlier tests, show significant coefficients. A possible explanation to this is that more directors now are labeled ‘busy’, providing enough observations to yield significant coefficients.

On another note, there is potentially a large problem of endogeneity when examining the correlation between busy board directors and subsequent firm performance. Several scholars argue that past firm performance has an impact on the number of directorships held by outside

directors. Fama and Jensen (1983) argue that board directors have an incentive to serve on several boards since it signals decision-making quality. The appointment to numerous boards might be the result of earlier success by the firms for which the individual served as a director or manager. Similarly, Gilson (1990) as well as Kaplan and Reishus (1990) find that directors and managers of poorly performing companies are less likely to be appointed to more boards than managers and directors of well performing companies. Ferris, Jagannathan and Pritchard (2003) also test the influence of firm performance on the number of directorships through a series of regressions and find that prior firm performance has a positive and strongly significant coefficient as a determinant of number of directorships.

Fich and Shivdasani (2006) also acknowledge this potential endogeneity problem and test whether poorly performing firms tend to appoint busy directors and if busy directors tend to leave firms that perform well. They find that poorly performing firms are not more likely to appoint busy directors. On the contrary, they find that busy directors are more likely than non-busy directors to leave the board of poorly performing firms.

Since we find a negative relation between busy directors and firm performance, a possible endogeneity problem would be that poorly performing firms tend to appoint directors with multiple directorships to benefit from the directors' previous experiences.

Due to the limited extent of this thesis, we are unable to control for this potential endogeneity here. However, since the majority of previous research shows that firm success rather than firm failure leads to multiple directorships, we argue that the negative relation between busy directors and firm performance that we have found is strengthened.

6 Conclusion

This thesis examines the relationship between board directors with multiple directorships and firm performance. We test the hypothesis that directors with multiple directorships become so busy that they cannot fulfill their responsibilities adequately, which in turn is associated with poorer firm performance. Previous research on the subject of busy boards is focused on American companies. Some of these studies show a negative relationship between busy boards and firm performance while others find no significant correlation or even a positive one. We study all Swedish companies listed on the Stockholm Stock Exchange and the NGM Equity list to test the hypothesis, which has never been done before. We run a number of fixed effects regressions with different measures of busy directors and firm performance.

Our results indicate that there is a negative and statistically significant relationship between busyness and firm performance. Regressions (1) to (3) with *Return on assets* as the dependent variable all render negative coefficients. The magnitude of the coefficients indicates that the effect is economically meaningful. Also, regressions (4) to (7) with *Market-to-book* as the dependent variable render negative and economically meaningful coefficients, although regressions (6) and (7) are not statistically significant. This estimated effect is substantially larger than in similar, previous studies, and we cannot conclude with certainty that it is plausible.

Even though we can conclude that a negative relationship between busyness and firm performance exists, we are not able to point to which aspect of the directorship that is neglected. As discussed earlier, the main assignments of the board include deciding on strategic matters and monitoring the management team. Mishandling either of these responsibilities may consequently impair firm performance.

The extent of this thesis is limited, which leaves room for further research on this topic. A potential extension is to test the possible endogeneity of poorly performing firms and busy directors. This could be examined by event studies of poorly performing firms to see if they tend to appoint busy directors. Another limitation with this thesis is that the dataset does not include detailed data on the ownership of individual board members. Such data have been included in some previous studies as a control variable. Instead, we control for board ownership by using a proxy variable. Also, our measure of busyness could possibly be extended to include not only directorships in the sample companies but also other appointments.

In essence, our findings implicate that profit maximizing shareholders should keep the busyness of their directors in mind, knowing that a very busy board may impair firm performance, as measured in Return on assets or Market-to-book. In line with the Swedish Corporate Governance Code, our results indicate that shareholders should make sure that their directors devote the necessary time and care to handle all their responsibilities.

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8 Appendix

8.1 Table III Variables and definitions

Abbreviation	Variable	Definition	Source(s)
-	Busy director	A director is labeled 'busy' if he or she holds three or more directorships in companies listed on NASDAQ OMX Stockholm and NGM Equity	Directors and Auditors in Sweden's Listed Companies
-	EBIT	Earnings Before Interest & Taxes is a measurement of the operating profitability	Retriever
-	Independent / dependent director	In broad terms, a director with extensive commercial or financial relations with a company is labeled 'dependent'. Furthermore, directors that are part of the management team or owners of a considerable share of the companies stock are to be labeled 'dependent'.	Directors and Auditors in Sweden's Listed Companies
-	Inside /outside directors	A director that is employed by the company in addition to the directorship, e.g. a full-time employee is labeled 'insider'. For example, personnel representative or the CEO are considered to be 'insiders'. Directors who do not fit this description are instead labeled 'outsiders'.	Directors and Auditors in Sweden's Listed Companies
<i>ROA</i>	Return on Assets	$\frac{EBIT_t}{Average\ Assets_t}$	Retriever
<i>Mtb</i>	Market to book ratio	$\frac{Assets_t + Market\ Cap_t - Equity_t}{Assets_t}$	Retriever & Datastream
<i>ID₁</i>	Average directorships by outside director	Average directorships by outside director is calculated as the total number of directorships in each firm, divided by the number of outside directors.	Directors and Auditors in Sweden's Listed Companies
<i>ID₂</i>	Percentage busy outside directors	For each firm, percentage busy outside directors is calculated as the fraction of busy directors to the total number of outside directors.	Directors and Auditors in Sweden's Listed Companies
<i>ID₃</i>	Busy board (0,1)	A board in which 50 % or more of the directors are labeled 'busy'.	Directors and Auditors in Sweden's Listed Companies
<i>AA</i>	Average age of directors	Average age of directors is calculated as the total age of the directors divided by the board size.	Directors and Auditors in Sweden's Listed Companies
<i>BC</i>	Board Composition (% outside directors)	Board composition is the fraction of outside directors to the total board size for each firm.	Directors and Auditors in Sweden's Listed Companies

BS	Log of board size	Log of board size is calculated as the logarithm of the total number of directors in each board.	Directors and Auditors in Sweden's Listed Companies
PI	Percentage independent directors	Percentage of independent directors is calculated as the fraction of directors labeled 'independent' to the board size.	Directors and Auditors in Sweden's Listed Companies
$Size_1$	Log of Average Assets	$\log \left(\frac{Assets_t + Assets_{t-1}}{2} \right)$	Retriever
$Size_2$	Log of Average Market Capitalization	$\log \left(\frac{Market\ Cap_t + Market\ Cap_{t-1}}{2} \right)$	Datastream
OM	Operating Margin	$\frac{EBIT_t}{Total\ Revenue_t}$	Retriever
L	Leverage	$1 - \left(\frac{Equity_t}{Assets_t} \right)$	Retriever

8.2 Table IV Busy directors and Return on assets, excluding 2008

This table shows fixed effects regressions of firm performance and busy directors, using *Return on assets* as the dependent variable. The following regressions are tested without the influence of 2008, i.e. excluding observations from 2008 from the sample. In these regressions, board data are contemporaneous with firm performance data. Robust p-values are reported within parenthesis in the second row, beneath the coefficients.

Variables	(1) ROA	(2) ROA	(3) ROA
Board characteristics			
Average directorships by outside director	-0.025* (0.071)		
Percentage busy outside directors		-0.098** (0.021)	
Busy board (0,1)			-0.026 (0.122)
Average age in board	0.003 (0.348)	0.003 (0.307)	0.003 (0.364)
Log of board size	-0.054 (0.339)	-0.053 (0.350)	-0.054 (0.340)
Board composition (% outside directors)	-0.058 (0.377)	-0.055 (0.401)	-0.055 (0.404)
Percentage independent directors	-0.027 (0.388)	-0.026 (0.403)	-0.026 (0.410)
Firm characteristics			
Log of Market Capitalization	0.036** (0.028)	0.038** (0.022)	0.034** (0.040)
Operating margin	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)
Leverage	0.389*** (0.003)	0.388*** (0.003)	0.392*** (0.003)
Time Fixed Effects			
Yd 2006	0.002 (0.895)	0.002 (0.880)	0.002 (0.882)
Yd 2007	0.023* (0.067)	0.023* (0.066)	0.022* (0.083)
Yd 2009	-0.005 (0.793)	-0.005 (0.797)	-0.006 (0.734)
Yd 2010	0.003 (0.905)	0.002 (0.923)	0.003 (0.903)
Intercept	-0.807** (0.011)	-0.874*** (0.006)	-0.819*** (0.010)
N	852	852	852
Groups	253	253	253
R²	16.90%	16.50%	16.90%

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

8.3 Table V Busy directors and Market-to-book ratio, excluding 2008

This table shows fixed effects regressions of firm performance and busy directors, using *Market-to-book* as the dependent variable. The following regressions are tested without the influence of 2008, i.e. excluding observations from 2008 from the sample. Robust p-values are reported within parenthesis in the second row, beneath the coefficients. Independent- and control variables are lagged one year.

Variables	(4) Mtb	(5) Mtb	(6) Mtb	(7) Mtb
Board characteristics				
Average directorships by outside director	-0.309* (0.096)	-0.343* (0.076)		
Percentage busy outside directors			-0.559 (0.357)	-0.664 (0.288)
Average age in board	0.045 (0.220)	0.037 (0.351)	0.049 (0.182)	0.040 (0.300)
Log of board size	0.031 (0.957)	-0.064 (0.915)	0.035 (0.951)	-0.062 (0.917)
Board composition (% outside directors)	0.641 (0.634)	0.623 (0.645)	0.678 (0.611)	0.660 (0.621)
Percentage independent directors	-0.801 (0.355)	-0.914 (0.262)	-0.793 (0.360)	-0.908 (0.265)
Firm characteristics				
Log of Market Capitalization		0.124 (0.609)		0.127 (0.606)
Log of Assets	-0.480 (0.256)		-0.489 (0.252)	
Operating margin	-0.002 (0.559)	-0.004 (0.314)	-0.002 (0.590)	-0.004 (0.331)
Leverage	-0.307 (0.796)	-1.171 (0.163)	-0.315 (0.793)	-1.198 (0.161)
Time Fixed Effects				
Yd 2007	-0.200 (0.557)	-0.115 (0.747)	-0.198 (0.562)	-0.111 (0.755)
Yd 2008	-0.371 (0.247)	-0.331 (0.355)	-0.363 (0.259)	-0.322 (0.370)
Yd 2009	-0.557 (0.111)	-0.585 (0.098)	-0.551 (0.116)	-0.579 (0.102)
Intercept	7.872 (0.266)	0.655 (0.858)	7.342 (0.303)	-0.074 (0.985)
N	610	610	610	610
Groups	236	236	236	236
R²	10.00%	4.40%	10.10%	3.00%

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

8.4 Table VI Busy directors and winsorized (1%) Return on assets

This table shows fixed effects regressions of firm performance and busy directors, using *Return on assets* as the dependent variable. The dependent variable, *Return on assets* is winsorized at the 1% - level. In these regressions, board data are contemporaneous with firm performance data. Robust p-values are reported within parenthesis in the second row, beneath the coefficients.

Variables	(1) ROA	(2) ROA	(3) ROA
Board characteristics			
Average directorships by outside director	-0.023* (0.059)		
Percentage busy outside directors		-0.051 (0.102)	
Busy board (0,1)			-0.023 (0.128)
Average age in board	0.001 (0.782)	0.001 (0.768)	0.001 (0.802)
Log of board size	-0.033 (0.397)	-0.032 (0.406)	-0.033 (0.394)
Board composition (% outside directors)	-0.077 (0.165)	-0.075 (0.174)	-0.073 (0.183)
Percentage independent directors	-0.017 (0.447)	-0.015 (0.482)	-0.015 (0.496)
Firm characteristics			
Log of Market Capitalization	0.045*** (0.002)	0.045*** (0.002)	0.043*** (0.002)
Operating margin	0.002** (0.017)	0.002** (0.017)	0.002** (0.017)
Leverage	0.301*** (0.000)	0.301*** (0.000)	0.302*** (0.000)
Time Fixed Effects			
Yd 2006	0.003 (0.811)	0.003 (0.794)	0.003 (0.803)
Yd 2007	0.019* (0.083)	0.019* (0.092)	0.018 (0.101)
Yd 2008	-0.005 (0.667)	-0.005 (0.683)	-0.006 (0.606)
Yd 2009	-0.007 (0.659)	-0.007 (0.644)	-0.008 (0.578)
Yd 2010	-0.001 (0.969)	-0.001 (0.955)	-0.001 (0.962)
Intercept	-0.747*** (0.004)	-0.785*** (0.003)	-0.761*** (0.004)
N	1079	1079	1079
Groups	253	253	253
R²	22.77%	22.50%	22.74%

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

8.5 Table VII Busy directors and winsorized (1%) Market-to-book

This table shows fixed effects regressions of firm performance and busy directors, using *Market-to-book* as the dependent variable. The dependent variable, *Market-to-book* is winsorized at the 1% - level. Robust p-values are reported within parenthesis in the second row, beneath the coefficients. Independent- and control variables are lagged one year.

Variables	(4) Mtb	(5) Mtb	(6) Mtb	(7) Mtb
Board characteristics				
Average directorships by outside director	-0.262** (0.044)	-0.284** (0.032)		
Percentage busy outside directors			-0.297 (0.493)	-0.401 (0.365)
Average age in board	0.024 (0.216)	0.018 (0.349)	0.025 (0.196)	0.019 (0.316)
Log of board size	0.131 (0.765)	0.030 (0.947)	0.115 (0.794)	0.014 (0.975)
Board composition (% outside directors)	0.103 (0.855)	0.116 (0.834)	0.139 (0.802)	0.153 (0.780)
Percentage independent directors	-0.304 (0.414)	-0.391 (0.291)	-0.285 (0.445)	-0.372 (0.315)
Firm characteristics				
Log of Market Capitalization		0.170 (0.352)		0.173 (0.353)
Log of Assets	-0.484 (0.102)		-0.490 (0.103)	
Operating margin	0.004 (0.501)	0.003 (0.623)	0.004 (0.484)	0.004 (0.607)
Leverage	-0.288 (0.699)	-1.167* (0.061)	-0.298 (0.693)	-1.188* (0.061)
Time Fixed Effects				
Yd 2006	-0.053 (0.853)	0.027 (0.924)	-0.046 (0.873)	0.035 (0.904)
Yd 2007	-0.307 (0.260)	-0.282 (0.341)	-0.296 (0.278)	-0.271 (0.361)
Yd 2008	-0.822*** (0.002)	-0.858*** (0.004)	-0.827*** (0.002)	-0.864*** (0.004)
Yd 2009	-0.350 (0.198)	-0.379 (0.169)	-0.341 (0.209)	-0.370 (0.179)
Intercept	8.876** (0.048)	0.788 (0.769)	8.479* (0.063)	0.255 (0.927)
N	816	816	816	816
Groups	238	238	238	238
R²	9.95%	3.26%	10.15%	1.92%

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

8.6 Table VIII Busy directors and Return on assets / Market-to-book

This table shows fixed effects regressions of firm performance and busy directors, using *Return on assets* and *Market-to-book* as the dependent variables. Directors are now labeled ‘busy’ if they hold two or more directorships. In regressions (2) and (3), board data are contemporaneous with firm performance data. In regressions (6) and (7), independent and control variables are lagged one year. Robust p-values are reported within parenthesis in the second row, beneath the coefficients.

Variables	(2)	(3)	(6)	(7)
	ROA	ROA	Mtb	Mtb
Board characteristics				
Percentage busy outside directors	-0.03 (0.255)		-0.738** (0.011)	-0.777*** (0.009)
Busy board (0,1)		-0.023** (0.026)		
Average age in board	0.001 (0.587)	0.001 (0.626)	0.043 (0.094)	0.034 (0.131)
Log of board size	-0.053 (0.262)	-0.053 (0.262)	0.287 (0.527)	0.237 (0.608)
Board composition (% outside directors)	-0.074 (0.197)	-0.073 (0.203)	0.799 (0.423)	0.811 (0.409)
Percentage independent directors	-0.026 (0.312)	-0.026 (0.322)	-0.619 (0.269)	-0.663 (0.220)
Firm characteristics				
Log of Market Capitalization	0.041*** (0.006)	0.041*** (0.006)		0.065 (0.763)
Log of Assets			-0.261 (0.449)	
Operating margin	0.002** (0.023)	0.002** (0.022)	0.003 (0.578)	0.003 (0.637)
Leverage	0.422*** (0.000)	0.421*** (0.000)	-0.725 (0.407)	-1.174 (0.085)
Time Fixed Effects				
Yd 2006	-0.001 (0.946)	-0.000 (0.972)	-0.213 (0.131)	-0.239 (0.111)
Yd 2007	0.019 (0.103)	0.019* (0.100)	-0.982*** (0.000)	-1.042*** (0.000)
Yd 2008	-0.006 (0.648)	-0.006 (0.675)	-0.460*** (0.004)	-0.525*** (0.000)
Yd 2009	-0.004 (0.800)	-0.004 (0.824)	0.001 (0.977)	-0.043 (0.900)
Yd 2010	-0.002 (0.930)	-0.002 (0.932)	- (-)	- (-)
Intercept	-0.845*** (0.002)	-0.843*** (0.002)	4.101 (0.456)	0.120 (0.971)
N	1079	1079	816	816
Groups	253	253	238	238
R ²	16.60%	16.60%	10.50%	4.90%

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

8.7 Table IX Companies (253) in sample

Company (3L-GEN)	Company (GET-NOV)	Company (OAS-XAN)
3L System AB	Getinge AB	Oasmia Pharmaceutica
A-Com AB	Getupdated Internet	Obducat AB
Aarhuskarlshamn AB	Ginger Oil AB	Oem International AB
Acando AB	Global Health Part	Opcon AB
Acap Invest AB	Glycorex Transplant	Orc Software AB
Active Biotech AB	Guideline Tec	Öresund Investment
Addnode AB	Gunnebo AB	Orexo AB
Addtech AB	Hakon Invest AB	Ortivus AB
Aerocrine AB	Haldex AB	PA Resources AB
AF AB	Havsfrun AB	Panaxia Security AB
AIK Fotboll AB	Heba Fastighets AB	Paradox
Alfa Laval AB	Hemtex AB	Partnertech AB
Anoto Group AB	Hennes & Mauritz AB	Paynova AB
Arcam AB	Hexagon AB	Peab AB
Artimplant AB	Hexpol AB	Phonera AB
Aspiro AB	Hiq International AB	Polyplank AB
Assa ABloy AB	Hms Networks AB.	Poolia AB
Atlas Copco AB	Hoganas AB	Precio Systemutveck
Atrium Ljungberg AB	Holmen AB	Precise Biometrics
Avanza AB	HQ AB	Prevas AB
Axfood AB	Hufvudstaden AB	Pricer AB
Axis AB	Human Care AB	Proact It Group AB
B&B Tools AB	Husqvarna	Probi AB
BE Group AB	Ibs AB	Proffice AB
Beijer Alma AB	Ige Resources	Profilgruppen AB
Beijer Electronics	Ind & Fin Systems	Ratos AB
Bergs Timber AB	Industrivarden AB	Raysearch LAB
Betsson AB	Indutrade AB	Readsoft AB
Betting Promotion	Intellecta AB	Rederi AB Trans
Bilia AB	Intoi AB	Rejlerkoncernen AB
Billerud AB	Intrum Justitia AB	Rezidor Hotel Group
Biogaia AB	Invest AB Kinnevik	Rnb Retail
Bioinvent Intl	Investment AB Latour	Rörvik Timber AB
Biophausia AB	Investor AB	Rottneros AB
Biotage AB	Itab Shop Concept	Saab AB
Björn Borg AB	Jeeves Information	Sandvik AB
Boliden AB	Jm AB	SAS AB
Bong Ljungdahl AB	Kabe Husvagnar AB	Scandinavian Clinica
Brinova Fastigheter	Kappahl AB	Scania AB
Brio AB	Karo Bio AB	Seco Tools AB
Bts Group AB	Kloven AB	Sectra AB
Bure Equity AB	Know It AB	Securitas AB
C2SAT Holding AB	Kungsleden AB	Semcon AB
Castellum AB	Lagercrantz Group AB	Sensys Traffic AB
Catella AB	Lammhults	Servage
Catena AB	Lifeassays AB	Sharpview
Central Asia	LindAB Inter	Sigma AB
Cision AB	Linkmed AB	Sintercast AB
Clas Ohlson AB	Lm Ericsson Tele	SEB
Cloetta AB	Loomis AB	Skanska AB
Concordia Maritime	Lundbergforetagen AB	SKF AB

Confidence Intl	Lundin Petroleum AB	Skistar AB
Connecta AB	Malmbergs Elektriska	Softronic AB
Consilium AB	Meda AB	Sotkamo Silver AB
Corem Property	Medirox AB	SRAB Shipping AB
CTT Systems AB	Medivir AB	SSAB
Cybercom Group AB	Mekonomen AB	Stille AB
Dagon AB	Melker Schörling AB	Studsvik AB
DGC One AB	Micro Systemation AB	Sv. Handelsbanken AB
Diamyd Medical AB	Micronic Mydata AB	Svedbergs I Dalstorp
Digital Vision AB	Midsona	Svenska Cellulosa AB
Dios Fastigheter	Midway Holding AB	Sveriges Bostad
Doro AB	Mobyson AB	Svolder AB
Duni AB	Modern Times GRP MTG	Sweco AB
Duroc AB	Morphic Tech	Swedbank AB
East Capital	MQ Holding AB	Swedish Match AB
Elanders AB	MSC Konsult AB	Swedish Orphan
Electra Gruppen AB	Multiq Intl AB	Swedol AB
Electrolux AB	NCC AB	Switchcore AB
Elekta AB	Nederman Holding AB	Systemair AB
Elektronikgruppen Bk	Net Entertainment	Tele2 AB
Elos AB	Net Insight AB	Teliasonera AB
Enea AB	New Wave Group AB	Tilgin AB
Eniro AB	NGS Next Generation	Traction AB
Fabege AB	Nibe Industrier AB	Tradedoubler AB
Fagerhult AB	Niscayah	Trelleborg AB
Fastighets AB Balder	Nobia AB	Tretti AB
Fastpartner AB	Nolato AB	Uniflex AB
Feelgood Svenska AB	Nordea Bank	VBG Group AB
Fenix Outdoor AB	Nordic Mines AB	Venue Retail Group
Fingerprint Cards AB	Nordic Service	Volvo AB
Firefly AB	Nordnet Securities	Vitrolife AB
G & Beijer AB	Note AB	Wallenstam AB
Geveko AB	Novestra AB	Wihlborg Fastigheter
Generic Sweden AB	Novotek AB	Xano Industri AB