Female directors on German supervisory boards and firms' financial performance

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ABSTRACT

This study examines the relationship between gender diversity on supervisory boards in a two-tier board structure with firms' financial performance. The sample was taken out of the group of companies that are classified as "large corporations" by German law and therefore consists of solely German corporations. The relationship was explored, using financial accounting performance data for the years 2009 and 2013 (return on assets and return on equity), stock performance data and the average percentage of women directors in 108 German "large corporations" over the years 2012 and 2013. The analysis is controlled by several industry, financial, organizational variables and one diversity variable, namely the directors' nationality. Furthermore a robustness check was conducted, using stock price performance as a financial indicator. The correlation and regression analyses did not show enough evidence to indicate a significant relationship between gender diversity and firms' financial performance.

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Keywords
Financial performance, female directors, supervisory board, board diversity, gender diversity, stock-price performance

5th IBA Bachelor Thesis Conference, July 2nd, 2015, Enschede, The Netherlands.

1. INTRODUCTION

During the past decades there was a major growth in women's enrolment numbers in higher education facilities. By the early 1980's women even surpassed male enrolment in Western European and North American countries (Chien, 2014). Following this, one would expect women to fill at least equal positions in companies as their male counterparts, which is not the case. According to the Global Gender Gap Report, Germany is generally seen as a well performing country in terms of gender equality, ranked 12th out of 142 countries worldwide. In one category though, Germany does comparably lack gender equality, which is "Legislators, senior officials and managers". Out of 142 countries, Germany only ranks 63rd (Hausmann et. al, 2014). Therefore it can be said that there is a major need for improvement to reach the same standard of gender equality as in other developed countries. Besides that there was a lot of discussion going on in German society and media, whether to cope with the problem of gender inequality by deciding on a law which would set a minimum quota for female participation in supervisory boards of German corporations (Holst, 2013, p.280). This topic was debated by the German parliament already since the year 1982 (German Parliament, 1992, p.6). On the 2nd of December 2011, the German Parliament refused a proposal to launch a mandatory quota for women in supervisory boards of "large corporations". Instead of that, many leading "large corporations" agreed to fulfill self-set voluntary quotas (German Parliament, 2011). Besides the social and ethical implications of gender inequality, female representation on supervisory boards may have major implications on the firms' performance, given the benefits of gender diversity. With this in mind, this paper is aimed to investigate the impact of a women ratio within supervisory boards on financial performance of companies. To do so the main research question will be "How do female members of supervisory boards affect the firms financial performance?" As there is currently no research made on this topic for German companies, this paper will fill the existing literature gap and evaluate the financial performance of companies, which are considered "large corporations". Due to the fact, that there were companies, which did agree on self-set voluntary quotas and some, which did not, now there is a possibility to compare the financial performance of these companies and come to a meaningful conclusion on the topic of gender diversity effects on firms' financial performance.

2. CONCEPTUAL FRAMEWORK

To analyze the relationship between gender diversity on supervisory boards and firms' financial performance, the following section will focus on the theoretical background of gender diversity and its expected effects on financial performance. Previous research on this topic, as well as several theories and their implications will be discussed to finally come up with a hypothesis.

2.1 Women on boards

The functioning of company boards is considered to be highly related to organizational performance (Zahra & Pearce, 1989; Erhardt et al., 2003, p.104). Boards in general, are considered to be the most influential actors, determining the strategic direction of a firm. Besides that boards monitor managers and react to threats and needs of the company (Finkelstein & Hambrick, 1996; Erhardt et al., 2003, p.104). According to Fondas (2000), who bases her argument on Finkelstein & Hambrick's (1996) research, the presence of women directors helps boards execute its strategic functions better. This can be explained with the following arguments. Women's experiences are often closely aligned with company needs (Erhardt et al., 2003, p.105), therefore creating a solid base for future development. Women are also believed to reduce CEO dominance due to their different style of management (Bradshaw et al., 1992; Burgess & Tharenou, 2002, p. 40) thus allowing the board to effectively fulfill its strategic duties and improve firms' financial performance (Haleblian & Finkelstein, 1993, p.857). From these findings it can be hypothesized that there must be a positive effect on firm performance, through women's presence on company boards.

2.2 Stakeholder theory and firms' financial performance

In the traditional view of a company, the "shareholder view", shareholders are seen as the most important party for a company and managers in turn have the primary duty to maximize shareholder returns, geared at short-term profit (Smith, 2003; p.85), not taking into account the effect of these actions on third parties involved. Opposing to this, stakeholder theory argues that all involved parties have to be taken into consideration, when making managerial decisions (Freeman, 1994; p. 409). As the past shows, corporations have often acted in ethically questionable ways, not taking into account many of their stakeholders. Burgess and Tharenou (2002) state that female representation of company boards improves the whole image of a company with stakeholder groups. Kidwell et al. (1987) conclude that males in managerial positions are more prone to conceal ethical wrongdoing, compared to their female counterparts. Bernardi et al. (2009) also found that companies with a higher female representation have higher levels of corporate social responsibility (CSR), thus taking into account the needs and wants of its stakeholders, compared to companies with none or a low number of females on the board. Whilst researchers have reported inconsistent results, studying the impact of CSR on firms' financial performance (McWilliams & Siegel, 2000; p. 603), it is undoubted that governments, being important stakeholders themselves, more and more acknowledge the importance of CSR and thus transform the need for better CSR into their agendas and legislations (Albareda et al., p.361). Following these findings it can be hypothesized that companies with a high female representation on company boards are considered to be more ethically responsible, have a better reputation and are better prepared for upcoming changes in CSR legislations, which in turn will have a positive effect on companies' financial performance.

2.3 Human Capital Theory and firms' financial performance

To further investigate the hypothesis, the "Human Capital Theory" (Becker, 1964) will be used. According to Terjesen et al. (2009), "Human capital theory examines the role of an individual's cumulative stocks of education, skills and experience in enhancing cognitive and productive capabilities which benefit the individual and his/her organization". Elaborating on this theory, the question arises whether men and women generally possess different assets to benefit their companies. It was found that compared to men, "women are significantly more likely to bring international diversity to their boards and to possess an MBA degree", furthermore "new female appointees are significantly more likely to have experience as directors on boards of smaller firms". (Singh et al., 2008, p.48). Furthermore Shrader et al. (1997) found a positive relationship between gender-diversity in management and firm-performance. This can be explained through the fact that companies were hiring from a larger talent pool and therefore were able to hire more qualified employees regardless of their gender (Erhardt et al., 2003, p.104). This finding is consistent with research by Daily et al. (1993) who found that

the inclusion of women on company boards would give companies the possibility to access a full range of available intellectual capital (Burgess & Tharenou, 2002; p. 43). Besides that women are believed to have a gender distinctive set of skills (Green & Cassell, 1996; p. 169), different to their male counterparts which eventually brings value into the boardroom. From these findings it can be hypothesized that women on the board of directors will enhance board diversity and therefore will benefit the firm, which in conclusion will lead to higher firm performance.

2.4 Agency Theory and firms' financial performance

A main pillar for theory formation of this paper is the "Agency Theory" (Jensen & Meckling, 1979, p.71). The role of the board in an agency framework is to resolve agency problems between managers and shareholders by using compensation techniques and replacing managers, which do not create value for the shareholders of a company (Carter et. al, 2003, p.37). Through effective monitoring, boards are able to reduce agency costs, which arise from conflicts between managers and shareholders (Li, 1994, p.366). This reduction of agency costs, will then lead to an improvement in firms' financial performance (Chrisman et al., 2004, p.341). Erhardt et al., (2003) and Bantel (1993) found that diversity in educational levels and functional background diversity leads to better strategic decision-making. Catalyst (1995) found that women in general, diversify opinions in the board. Furthermore Erhardt et al, (2003) conclude that generally, diversity leads to an increased decision-making capacity. This finding is consistent with the study of Hoffmann and Maier (1961) who concluded that more heterogeneous, or diverse groups are relatively superior to homogenous groups in problem solving ability. This can be attributed to the arising conflict, resulting from different viewpoints, which in turn leads to more complete or well-thought-out solutions. Therefore it can be concluded that a diverse board has a greater ability to make strategically beneficial decisions and thus can monitor managers more effectively. This in turn leads to a decrease in agency costs and to an increase in firms' financial performance.

2.5 Hypothesis

Summarizing these findings, the following general hypothesis can be made: *Greater gender diversity amongst members of companies' supervisory boards does increase firms' financial performance.*

3. METHODOLOGY AND DATA

3.1 Sample

For the data collection, publicly available data for the 108 German "Large Corporations" was used. This sample size was chosen due to a German law, which classifies corporations into different groups. According to the commercial code of the Federal Republic of Germany, a corporation is classified as a "large corporation", when it fulfills at least two of the following three characteristics: 250 employees or more, turnover more than 38,5 Mio €, total assets more than 19,25 Mio € (Federal Ministry of Justice and Consumer Protection, 2015). Currently, 108 companies in Germany are classified as "large corporations" according to this law. This measure ensures the reliability of the data, as only similar corporations will be tested. Unfortunately it was only possible to gather a full data set from 81 "large corporations", excluding 27 companies out of the sample. This can be attributed to the following reasons. First, not all "large corporations" are required by law to publish financial information, due to the fact that some of the 108 large corporations are not stock-listed. These companies are usually a "GmbH", which stands for a company with limited liability. Most companies dropped out due to this reason, namely 11. The same applies to companies, which did not publish information on board composition. These companies were the second largest group of dropouts, namely 8. Furthermore some of the 108 analyzed companies were subsidiaries of other companies and therefore did not have to publish financial nor board information, due to § 264 Abs. 3 of the Commercial Code of the Federal Republic of Germany. This applied to 7, of the analyzed companies. Besides that, one company changed their legal status to a "Societas Europaea", which gave it the legal right to discontinue the board-duality used in Germany. As this paper analyzes supervisory boards only, this company's data could not be used for further research. Furthermore the sample consisted of a broad variety of 12 industries, of which the largest group, namely "Financial" included 12 companies, whilst the smallest group, namely "Agriculture" included 3 companies. Besides that, companies from the following industries were analyzed: "Automotive" (11 companies), "Energy sector" (10 companies), "High Tech" (10 companies), "Retail" (8 companies), "Chemical" (6 companies), "Service" (5 companies), "Construction" (5 companies), "Logistics" (4 companies), "Pharmaceutical & Medical" (4 companies) & "Media" (3 companies). Table 1 gives an overview over the sample, including all measured variables, their minimum and maximum values, average means and standard deviations.

Table 1. Overview of the full sample

	Min	Max	Mean	Std. deviation
ROE 09(1)	-1,478	0,899	0,034	0,252
ROE 13(1)	-0,572	1,407	0,094	0,206
ROA 09(1)	-0,145	0,131	0,015	0,048
ROA 13(1)	-0,099	0,166	0,034	0,044
Firm age	7	347	86,59	61,87
Industry	3	12	5,77	3,83
Nationality(1)	0,000	0,889	0,143	0,166
Board size	3	22	15,10	5,076
Employees	27	306919	56955,01	73736,84
Turnover(2)	57	122450	21157,72	25525,01
Gender composition	0,000	0,406	0,151	0,093

(1) in %; (2) in million Euro

3.2 Measures

It was assessed if companies, that employ women on their supervisory boards, generally perform differently in terms of Return on Equity and Return on Assets compared to companies, which do not employ women on their supervisory boards. ROE and ROA are seen as appropriate measures for "Financial Performance" as they are commonly used in financial research to evaluate firms' financial performance (Murray, 1989; Shrader et al., 1997, p. 361; Erhardt et al., 2003, p.106).

3.2.1 Dependent Variable

The dependent variable "Financial Performance" was measured using ROE and ROA. Each, the ROE and ROA of the years 2009 (which are used as control variable) and 2013 (which are used as dependent variable) were calculated. ROE was calculated by dividing net income by total equity attributed to shareholders. ROA was calculated by dividing net profit by total assets.

$$ROE = \frac{Net\ profit}{Total\ equity\ attributed\ to\ shareholders}$$

$$ROA = \frac{Net\ profit}{Total\ Assets}$$

A five-year interval was chosen, due to the assumption, that the impact of strategic-changes needs years to be observed and a period of five years accounts for diverse candidates' contribution on decision making (Erhardt et al., 2003, p.106). The needed data for the dependent variable "Financial Performance" was gathered by analyzing the publicly available financial statements of the 81 available "large corporations", using the respective companies' own publications found on their websites or the financial data published by the "Federal Ministry of Justice and Consumer Protection". Furthermore available data on ROE was collected from "ORBIS", which is a database by Bureau van Dijk, containing numerical and factual data on companies all around the world.

3.2.2 Independent Variable

The independent variable "Gender composition on supervisory boards" was calculated using the mean of gender composition for the years 2012 and 2013. The gender composition of each year was calculated by dividing the number of females on the supervisory board by the total number of supervisory board members. The purpose of using the average of two years, was to better control for changes in gender composition and therefore increase reliability (Erhardt et al., 2003, p.106). The necessary gender and board data was gathered, using the companies' own publications and information, published by the "Federal Ministry of Justice and Consumer Protection".

3.2.3 Control Variables

In addition to the dependent and independent variables, six control variables were used. The data for the first control variable, board size was collected over the years 2012 and 2013 from the annual reports of the analyzed companies and other official documents provided by the respective company. Furthermore, a mean average was calculated and included into the analysis. The board size ranged from 3 to 21 members, with an average of 15,1 members (see Table 2). Board size was chosen as a control variable, as previous studies provided no consensus of the direction of the relationship between board size and firms' performance (Dalton et al., 1999; p. 674). Besides that board size is believed to have a negative effect on the variability of corporate performance, due to less extreme decision making, evolving from a longer, more thorough decision making process, which is taking more compromises (Cheng, 2008; p. 175). These findings make it crucial to include board size as a control variable to check for interdependence with the dependent variables. Analyzing the main spheres of work of the respective companies, created the second control variable "Industry". 12 different industries were identified, with 12 companies in the largest group (Financial) and 3 in the smallest (Agriculture), averaging to 5,77 companies per respective industry. Industry was chosen as a control variable due to previous research by Carter et al. (2003) and Erhardt et al. (2003), who found a correlation between industry and firms' financial performance. Therefore it deemed necessary to include "Industry" as a second control variable. The data was gathered from the firms' own publications. The third control variable in this analysis was firm age. Smith et al. (2006), describes a correlation between firm age and financial performance. Therefore it was necessary to control for firm age when conducting this analysis. The firm age in this sample ranged from 7 up to 347 years, with an average of 86,59 years. The data on firm age was collected from firms' publications and available data on ORBIS. Based on the studies of Carter et al. (2003), Randøy et al. (2006) and Ruigrok et al. (2007), who found mixed results on the effect of nationality of board members on firm performance, a board diversity measure, namely "Composition by nationality" was chosen as the fourth control variable. The data was gathered over the years 2012 and 2013 from the annual reports of the respective companies, available biographies and CV's of the board members. The number of non-German nationals was divided by the total number of board members to calculate the ratio of non-Germans on the board. The ratios of 2012 and 2013 were then averaged to increase reliability. According to Hofer (1975), Smith et al. (1989) and Chen & Hambrick (1995) firm size has an influence on financial performance of a firm. Therefore to check for firm size, the number of employees and the turnover were added as fifth and sixth control variables respectively. The data was calculated from the years 2012 and 2013 and then a mean average was calculated and included into the analysis. According to Acs & Audretsch (1987) and Axtell (2001), the number of employees acts as a good determinant of firm size. The same applies to turnover according to Shefer & Frenkel (2005). Finally ROE 09 and ROA 09 were used as further control variables in the hierarchical regression analysis. This is consistent with previous research conducted by Erhardt et al. (2003), who used ROI and ROA at time 1 to control for the relationship of board diversity on ROI and ROE at time 2.

3.2.4 Robustness check

To check whether the original results of the analysis of the 81 companies would hold, a so-called robustness check was conducted. To do so another dependent variable "Stock price performance" was introduced. This was done due to the fact that stock price performance is believed to be a good measure to evaluate firms' financial performance (Boschen et al., 2003, p.147), besides the accounting measures ROE and ROA used in the analysis of the full sample. Needed historical stock price data over the time of 5 years could only be collected for 48 of the 81 companies, using various Internet based stock brokerage services. Needed information on dividends was published by the "Federal Ministry of Justice and Consumer Protection". The stock price performance was calculated using the stock price of the end of the fiscal year 2013 as "Ending Stock Price" and the stock price of the end of the fiscal year 2009 as "Initial Stock Price".

$$Total\ Stock\ Return = \frac{(Ending\ Stock\ Price - Initial\ Stock\ Price) + Dividends}{Initial\ Stock\ Price}$$

3.3 Analysis

Inspired by the papers of Erhardt et al. (2003), Richard (2000) and Simons et al. (1999), first the correlation between the variables: "Gender composition of the supervisory board", ROE09, ROE13, ROA09, ROA13 and the control variables was determined (see Table 2). Secondly a hierarchical regression analysis was used, to check on the specific effects of "Gender composition of the company board" on the dependent variables, whilst controlling for ROE 09, ROA 09 and the six control variables (see Table 3). It is assumed that the relationship between gender diversity and firms' financial performance behaves in a linear way, which is consistent with the research of Erhardt et al. (2003), therefore the relationship was measured using the following regression equation:

$$\textit{FINANCIAL PERFORMANCE}_i = \beta_1\ \textit{GENDER COMPOSITION}_i + \beta_2\ \textit{FIRM AGE}_i + \beta_3\ \textit{COMPOSITION BY NATIONALITY}_i + \beta_4\ \textit{BOARD SIZE}_i + \beta_5\ \textit{NUMBER OF EMPLOYEES}_i + \beta_6\ \textit{INDUSTRYi} + \beta_7\ \textit{TURNOVER IN MIO €}_i + \varepsilon_i$$

With FINANCIAL PERFORMANCE$_i$ being the firms financial performance of a company $_i$, GENDER COMPOSITION$_i$, being the percentage of women on a firm's $_i$ supervisory board, FIRM AGE$_i$, being the age of existence of a firm since its foundation, COMPOSITION BY NATIONALITY$_i$, being the percentage of foreign nationals on a supervisory board of a firm $_i$, BOARD SIZE$_i$, being the total number of members of a supervisory board, NUMBER OF EMPLOYEES$_i$, being the total number of people employed by a firm $_i$, INDUSTRY$_i$, being the respective industry to which firm $_i$ belongs to and lastly the TURNOVER IN MIO €$_i$, which is the total turnover of a firm made in one year. The control variables were entered in the first step and the independent variable was entered in the second step. To determine the significance of the relationship between gender diversity and firms' financial performance, the changes in the explained variance (ΔR^2) were observed. This is consistent with previous studies on the effect of diversity measures on firms' financial performance, as used by Erhardt et al. (2003) & Cohen et al. (2013). Furthermore the changes in the F-Values and β-Coefficients were observed, to conclude whether there is a significant relationship between the independent and dependent variables. For the robustness test with the reduced sample of 48 companies, a correlation analysis was performed, using "Stock price performance", "Gender composition" and six control variables, after which a hierarchical regression analysis was performed to check on the specific effects of "Gender composition" on "Stock price performance", whilst controlling for the six control variables. Consequently the same regression equation applies for the robustness test, as FINANCIAL PERFORMANCE$_i$, is measured by "Stock price performance", whilst checking for the same control variables like in the previous analysis. The resulted ΔR^2, changes in the F-Value and β-Coefficients, were observed to conclude whether there is a significant relationship between the independent and dependent variable.

3.4 Results

3.4.1 Full Sample

The means, standard deviations, correlations and correlation coefficients can be extracted from Table 2. As shown in Table 2, "Gender composition" has a relatively low mean (m = 0,151). As previously expected ROE13 and ROA 13 are highly correlated (r = 0,548), ROE 09 and ROA 09 show a high correlation (r =0,646) and ROE 09 and ROE 13 are highly correlated (r =0,290). Opposing the expected outcome, ROE 13 and ROA 13 have only a marginal, non-significant correlation with "Gender composition". "Gender composition" is highly correlated with "Board size" (r = 0,293). Furthermore "Board size" is correlated with "Composition by nationality" (r = -0,252) and is also highly correlated with "Number of employees" (r = 0,364). The control variable "Industry" shows a high negative correlation with ROA 13 (r = -0,301). Turnover in Million €, which is one of the determinants of firm size is correlated with "Board size" (r = 0,280), "Gender composition" (r = 0,268) and highly correlated with the "number of employees" (r = 0,628). The hypothesis was tested, by using a hierarchical regression analysis (Table 3). The results show that the control variable "industry" has a significant impact on ROA 13 in the regression analysis (t = -3,130; p < 0,01). ROE 09 has a significant impact on ROE 13 (t = 2,973; p < 0,01). Opposed to the expectation the independent variable "gender composition" does not have a significant impact on ROA 13 and ROE 13, whilst controlling for ROA 09 and ROE 09. These results do not support the originally stated hypothesis, that greater gender diversity does in fact increase firms' financial performance.

3.4.2 Reduced Sample

The means, standard deviations, correlations and correlation coefficients can be extracted from Table 4. For the reduced sample, "Gender composition" had a slightly higher, but still relatively low mean (m = 0,160), compared to the full sample. Furthermore, the reduced sample also showed a high correlation between "Board size" and "Gender composition" (r = 0,331). Furthermore, as in the full sample, "Turnover" and "Number of employees" were highly correlated (r = 0,619). Opposing to the expected outcome, "Stock price performance", only had a marginal, non-significant and negative correlation with "Gender composition". After conducting the regression analysis (see Table 5), no significant impacts could be observed between the variables. As no correlation and no significant impact was found between "Stock price performance" and Gender composition, no evidence was discovered to support the initially stated hypothesis, that greater gender diversity does in fact increase firms' financial performance.

Table 2. Mean standard deviations correlation matrix for full sample

	M	SD	1	2	3	4	5	6	7	8	9	10
1: ROE 09[(1)]	0,033	0,253	-									
2: ROA 09[(1)]	0,015	0,048	0,646 **	-								
3: ROA 13[(1)]	0,034	0,044	0,150	0,080	-							
4: ROE 13[(1)]	0,094	0,206	0,290 **	0,063	0,548 **	-						
5: Firm Age	86,54	61,88	-0,136	-0,176	-0,088	-0,071	-					
6: Nationality[(1)]	0,143	0,166	0,009	0,113	-0,201	-0,080	-0,010	-				
7: Board size	15,10	5,076	-0,012	-0,148	0,046	-0,065	0,124	-0,252*	-			
8: Gender composition[(1)]	0,151	0,093	0,149	0,148	0,066	-0,107	0,078	0,089	0,293 **	-		
9: Industry	5,77	3,828	0,213	0,200	-0,301 **	-0,111	-0,021	0,125	-0,155	0,128	-	
10: Employees	56955 ,01	73736 ,841	-0,076	-0,177	-0,104	-0,071	0,035	-0,022	0,364 **	0,145	-0,122	-
11: Turnover[(2)]	21157 ,72	25525 ,01	0,015	-0,040	-0,107	-0,063	0,060	0,166	0,280 *	0,268 *	-0,146	0,628 **

** $p < 0,01$; * $p < 0,05$; [(1)] in %; [(2)] in million Euro

Table 3. Regression results for predicting ROA and ROE for full sample

	ROA 13				ROE 13		
	β	**ΔR^2**	**F**		**β**	**ΔR^2**	**F**
Control Variables		0,165	2,067			0,134	1,610
ROA09	0,112				-		
ROE09	-				0,341**		
Firm Age	-0,079				-0,011		
Composition by nationality	-0,171				-0,062		
Board size	0,013				-0,060		
Industry	-0,352**				-0,179		
Employees	-0,076				-0,010		
Turnover	-0,113				-0,033		
Independent variable							
Gender composition	0,161	0,021	2,059		-0,100	0,008	1,488

** $p < 0,01$.

Table 4. Mean standard deviations correlation matrix for reduced sample

	M	SD	1	2	3	4	5	6	7
1: Firm Age	88,98	0,101	-						
2: Employees	16,27	4,316	-0,013	-					
3: Turnover[(2)]	6,10	3,937	0,023	0,619**	-				
4: Nationality[(1)]	0,799	0,982	-0,139	0,098	0,254	-			
5: Board size	16,27	4,316	0,225	0,275	0,210	-0,248	-		
6: Gender composition[(1)]	0,160	0,101	0,013	0,216	0,265	-0,050	0,331*	-	
7: Industry	6,10	3,937	0,076	-0,224	-0,245	0,176	-0,277	0,080	-
8: Stock price performance[(1)]	0,799	0,982	-0,046	0,140	-0,016	0,112	-0,193	-0,175	-0,133

* $p < 0,05$. [(1)] in %; [(2)] in million Euro

Table 5. Regression results for predicting Stock price performance for reduced sample

	Stock price performance		
	β	**ΔR^2**	**F**
Control Variables		0,138	1,092
Firm Age	0,049		
Turnover	0,296		
Nationality	-0,206		
Board size	0,113		
Industry	-0,243		
Independent Variable			
Gender composition	-0,083	0,005	0,995ß

4. DISCUSSION

This study investigated the relationship between gender composition on supervisory boards and the firms' financial performance of 81 German "Large Corporations". Opposite to the expectation, the results of the analysis for the full sample, using ROE and ROA as financial performance indicators (*3.4.1*) did not support the hypothesis, which stated that higher gender diversity between the members of supervisory boards in two-tier board systems does increase firms' financial performance. This finding is not consistent with previous research made to address the relationship between gender diversity and firms' financial performance (Erhardt et al., 2003; Carter et al., 2007). Whilst conducting a robustness check (*3.4.2*), using stock price performance as financial performance indicator instead of ROI and ROA, also no evidence could be gathered to support the hypothesis. This finding is consistent with the research of Dobbin & Jung (2011), who state that stock price performance does not directly reflect the financial performance of companies with a gender diverse board, due to a biased view of the mostly male institutional investors, which tend to underestimate the performance of these companies. Therefore this finding does not necessarily de-validate the initially stated hypothesis, as the results are expected to be biased. This finding is supported by other research, namely Dahlquist & Robertsson (2001), who found that investors in general often tend to have a biased view towards certain investments, and Lee & James (2003), who claim that companies, lead by a females are usually undervalued by investors.

5. LIMITATIONS

This study has several important limitations, which need to be considered. Firstly the sample is taken from only German large corporations, which questions the generalizability to non-German or small corporations. Therefore separate research has to be made, to analyze the relationship of gender diversity on supervisory boards on the financial performance of small and of Non-German corporations. The results could differ due to more noticeable effects of gender diversity in smaller corporations and different cultural, structural and working backgrounds in other countries. Secondly there was made no distinction in this research, whether the female board members were part of the shareholder representatives or the employee representatives. As German law dictates, half of the members of the supervisory board have to be elected by the companies' employees. Therefore it is suggested to further analyze the relationship of gender diversity in the groups of shareholder representatives and employee representatives on firms' financial performance. Additionally, as this study was conducted only with German companies, which are required by law to have a two-tier company board, the results of this study are not generalizable to countries, which have a one-tier company board structure. Another limitation, which questions the representativeness of the sample, is the relatively low number of companies with a high gender diversity (See Figure 1) and consequently the low resulting mean of gender diversity (m = 0,151), which means that the expected effects, suggested by the literature could be more apparent with a higher number of females on the board, as it can be assumed that the impact of gender diversity will be more noticeable with a higher level of it. As shown in Figure 1, in this sample, 74% of the sample companies had a gender diversity measure under 20%, whilst only 1% of all companies had a gender diversity measure of above 40%. Therefore, to gather a deeper, more meaningful insight into the relationship of gender diversity on firms' financial performance, further research could be conducted with another sample or larger sample size.

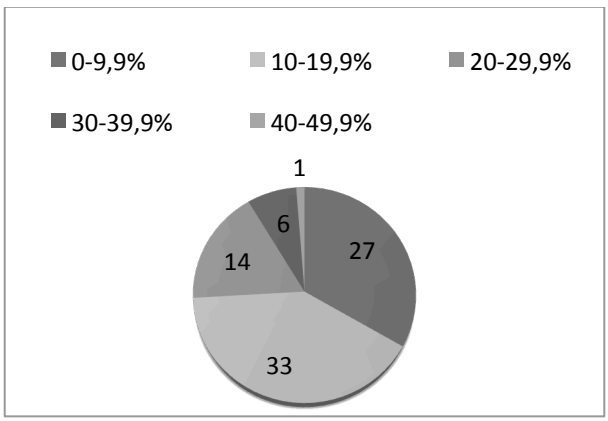

Figure 1: Gender diversity in percent

Furthermore, it is not clear whether female board members do differ in their behavior, compared to their male counterparts. This study does not check for the assumed behavioral differences of females and males in the boardroom. To gather a more meaningful insight it would be beneficial to gather behavioral data, using qualitative research methods such as ethnography and participant observation (Erhardt et. al., 2003, p. 108).

An important statistical limitation of this study is the assumption of linearity. This excludes the possibility of a curvilinear relationship or non-linear relationship, which could occur if more data was available or if the gender diversity would be higher. Possibly the effect gained from gender diversity would increase with a decreasing rate, or even disappear (Erhardt et al., 2003, p.108). Another limitation of this research could be reverse causality. In this study it was assumed that a gender diverse board would have a positive impact on firms' financial performance, due to its better decision-making capabilities. What has to be taken into account is the possibility of a financially successful company to employ more women on the board, due to public image reasons or a higher propensity towards experimentation, caused by the more financially secure stance of the company.

6. CONCLUSIONS

Despite the various limitations, this study has contributed a further insight related to the effects of gender diversity on firms' financial performance, especially in Germany. This study contributes from a theoretical, practical and empirical perspective to the existing literature. Firstly from a theoretical perspective, this paper examined the effect of gender diversity on firms' financial performance and the reasons that lie behind the expected positive relation. From a theoretical perspective a more gender diverse board is believed to better fulfill its strategic duties, whilst reducing CEO dominance. Furthermore this paper made a previously unknown theoretical link between the ethical benefits of a gender diverse board and the possible financial benefits resulting from it, due to better alignment of interests between management and stakeholders. Another unknown link between theory and practice was made, using Human Capital Theory, elaborating on the higher intellectual capabilities of a gender diverse board and the resulting benefits to financial performance. Finally based on Agency Theory, it was discovered that a gender diverse board is more capable to resolve agency problems and the associated costs, due to the better problem solving capability, caused by the conflict arising in heterogeneous (gender diverse) boards, leading to more complete or well-thought-out solutions. From a practical perspective this paper largely contributed to the existing literature, by excluding "Stock price performance" as reliable indicator of firms' financial performance, linking the research of Dobbin & Jung (2011) to this study and conducting a robustness check, using "Stock price performance" as indicator of firm performance. "Stock price performance", should not be used as financial performance indicator, whilst analyzing for boards' gender diversity, as the results could be biased towards lower stock-price performance, as result of underestimation by institutional investors. From an empirical perspective, this study did not find a meaningful impact of gender diversity on firms' financial performance. Still it is encouraged to expand the analysis to a broader range of years, more countries, whilst also including smaller companies and additionally using qualitative research methods such as ethnography, to acquire a more meaningful insight into the relationship between gender diversity and firms' financial performance. Lastly this study should serve as guidance tool for large companies to enhance the gender diversity in their company boards, keeping in mind the ethical, CSR and possibly financial benefits emerging from such action.

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