

Does Corporate Social Responsibility have an influence on Corporate Financial Performance? Evidence from Germany.

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ABSTRACT

The term corporate social responsibility has received much attention over the last years. Special attention has gained the question if an investment in CSR activities will result in financial benefits for the company. Therefore, this study focus on the debate whether corporate social responsibility has an effect on corporate financial performance, using a sample of German firms. CSR data is based on information gathered from sustainability reports from 2015 of firms, which are included in the GRI report. In order to define CSR, three variables are proposed: age of employees over 50, CO2 emissions and total number of accidents. Financial performance is defined by return on equity, return on assets and Tobin's Q from 2016. 2016 is chosen in order to avoid the possibility of a reverse relationship, namely financial performance influencing corporate social responsibility. Empirical methods are used to test the relationship. The results indicate, that no relationship between corporate social responsibility and corporate financial performance could be proven with this sample.

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Keywords

Corporate Social Responsibility, Corporate Financial Performance, General Reporting Initiative, Disclosure, Germany

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1. INTRODUCTION

The idea of being socially responsible can be dated back to Ghandi's model of trust, in which rights and responsibilities of business owners and stakeholders are integrated to achieve not only economic value, but also an affluent society (Balakrishnan, Malhotra and Falkenberg, 2015). Also the number of firms being held accountable for social affairs next to the goal of maximizing shareholders wealth has increased (Margolis and Walsh 2003). During the last years there was a global growth in investments in socially responsible companies, especially in Europe (Miralles-Quiros, Miralles-Quiros and Arraiano, 2017). However, investors value corporate social responsibility disclosure differently across different countries and markets. Having this development what additional advantages does a firm gain by investing in corporate social responsibility? Should not the goal of a firm be the wish to maximize shareholders value? Spending shareholders money on CSR activities would seem rather contra productive and goal missing, as the primarily goal of a firm should be to maximize shareholders' value (Friedman, 2007). This, however, may be the results in the short run. As focusing on stakeholders' interest before generating profit, will lead to an engaged workforce and thus to outreaching financial results in the long run (Washburn, 2009). Moreover, CSR adds to a firm's reputation, hence to its intangible resources. It is seen as a highly important, as it acts as an insurance when facing a market shock. Furthermore, it enhances consumers' trust in the firm and the general perception of the firm (Mishra, 2015; Orlitzky et. al, 2005). CSR reputation leads also to a perceived higher quality of products or services (Waddock and Graves, 1997).

Therefore, this study append to the current literature by examining the influence of corporate social responsibility on corporate financial performance (CFP) of German firms, where co-determination plays an important role and where a company's objective include a larger combinations of stakeholders' interest, not only of those who own shares. It leads to a broader set of responsibilities a firm has to take into consideration when operating. Employees in the board will represent the responsibilities, as they do not only focus on monetary rewards, as other board members (Allen, Carletti and Marquez, 2009).

Based on that the following research question was formulated:

Is there an effect of Corporate Social Responsibility on Corporate Financial Performance in Germany?

The study is focusing on the potential relationship between corporate social responsibility and corporate financial performance by looking at German firm data from 2015 and 2016. The firms included in this research follow the GRI framework and publish their corporate responsibility data annually in a CSR report. In order to control for the influence of country specific differences, the focus will be on one county.

This thesis has the following structure:

In the second section previous literature focusing on CSR and CFR is covered, special attention is paid to GRI (general reporting initiative). Based on the literature the hypotheses are formulated. The third section is about methodology: the model and its variables will be defined, which will be tested during the fourth part. Furthermore, the results are presented. The sixth and last part is focusing on the conclusion and discussion of the results. Limitations of this research are also stated.

This study contributes whether CSR activities will pay off eventually or should be considered as a waste of resources.

2. LITERATURE REVIEW

This part reviews the previous literature about corporate social responsibility in general and the relation to corporate financial performance. Special attention is paid to GRI (general reporting initiative), as it will be the main focus of this study. Furthermore, a short illustration of CSR in Germany will be given.

2.1 Corporate Social Responsibility

The term corporate social responsibility has no agreed upon definition, as every author uses the one s/he prefers, even though the interest in CSR exist for at least 50 years. According to Mănescu (2010) CSR is defined as "corporations' responsibility to integrate environmental, social and governance (ESG) practices into their business model, beyond mandatory legal requirements". Another possible definition is the one proposed by the European Commission (2011), which make "companies taking responsibility for their impact on society". However, these are two of the possible definitions. In general, the view of CSR follows two extremes. It is rather the acceptance of the Shareholder Theory (Friedman, 2007) or of the Stakeholder Theory (Freeman, 1984).

The theory, which was proposed by Friedman (2007) declines the idea of a company being able to be social responsible, as a company is not alive. He argues that the goal of the agents has to be to earn as much money as possible for the shareholders. Every social responsible action is therefore to be considered not done for the business, but for the individual persons within. Friedman looks at CSR expenditures as spending shareholders' money for a societal interest. Managers act as civil servants, instead as company's employees. As agents spend principals' money, they have to obtain the cost from somewhere else. For instance, increase the costs for the customers or reduce wages for the employees.

Freeman's theory (1984) on the other hand argues that not only shareholders are able to demand actions from a firm, so can stakeholders as well. He defines stakeholders as any individuals who are affected by the firm and its action, as they are considered vital to the firm's survival. According to Freeman companies, who take into account their stakeholders, can achieve their goals faster. However, as managers must keep the company profitable as well, their task is to balance all the different expectations and demands of the various stakeholders, where no stakeholder group is more important than another in terms of moral rights.

Another view on CSR was proposed by Russo and Fouts (1997). They advocate the resource-based view on corporate social responsibility by suggesting to use it as a competitive advantage. This is suggested because a firm focus explicitly on performance and on intangible resources, which could be reputation, culture, etc Furthermore, they were arguing that stakeholders interest may conflict with each other and a firm should focus on satisfying unique and global interest, for instance the environmental. The change might lead to internal improvements, such as efficient operations, but it has to be supported by culture and management team. However, by promoting such a way of doing, positive reputation might be gained, which would also act as a competitive advantage.

2.1.1 General Reporting Initiative

One way to demonstrate the degree of involvement in corporate social responsible activities is to disclose the information about it for everyone to access. A common approach is to follow the general reporting initiative framework (GRI)

General reporting initiative is an American organization, which was founded 1997 by Coalition for Environmentally Responsible Economies (CERES, a non-profit organization), the Tellus institute and the United Nations Environment Programme (UNEP). A sustainability reporting framework was proposed, in order to have an accountability system. It consists of specified principles in order to have a global reporting scheme, which is accepted in every country. General reporting initiative (n.a.) calls themselves the "world's most trusted and widely used standards", who "advise governments, stock exchanges and market regulators in their policy development". It is, therefore, a reliable source from which to gather information from, as other researchers did before (Gallego, 2005; Tschopp, 2005; Miralles-Quiros et al, 2017). The GRI framework is very similar to Elkington's (1994) triple bottom line approach, which consist of the interrelated environmental, economical and societal part. A business is to be called sustainable if it satisfy all the parts required. The GRI framework has all the three major areas defined which ought to be explained when using the framework (Gallego, 2005). Disclosure of CSR can create new opportunities through changes in the internal process, for instance new technology (Bansal, 2005). Orlitzky et. al (2005) has also noted that focusing on CSR activities may add to the firm's ability to develop new capabilities, which in turn might lead to the firm being able to use the resources more efficiently. Furthermore, he noted that disclosure of corporate social responsible activities may lead to a better image in the eyes of the stakeholder. A positive image should help consumers making decision about the purchase of products or goods. However, further analysis has to be made, as there are differences among segments (Alvarado-Herrera, Bigne, Aldas-Manzano and Curras-Perez, 2015). CSR disclosure may also lead to the reduction of asymmetry of information. Asymmetry of information is part of the agency problem, which occurs when ownership and management are separated. Agents should act on behalf of the principles as shareholder leave financial resources and assets for custody with the managers. But managers know more about the everyday activities of the firm and can abuse this knowledge for selfish interest. This asymmetry of information is a crucial part of the agency problem (Thomson and Conyon, 2012). Since asymmetry of information is defined what is known internally and externally, disclosure can be used as information signals and communication tools to reduce it. Disclosure has also an influence on the perception of possible future investors, as it gives them more information on which to judge a firm (Branco and Rodrigues, 2006; Alvarado-Herrera, Bigne, Aldas-Manzano and Curras-Perez, 2015). Therefore, disclosure is seen as important because external stakeholders rank and benchmark sustainable performance, increasing the pressure for firms (Jeurissen, 1997).

2.1.2 Corporate Social Responsibility in Germany

Differences in corporate social responsibility should be present among different countries, as every nation differ among regulatory actions. Furthermore every country differs in CSR disclosure, as well as in voluntary adapting of CSR actions (Tschopp, 2005). The CSR concept differs in every country because culture has an effect on CSR behavior (Miras-Rodriguez et al 2015).

As mentioned above German firms have to include stakeholders' interest in their objectives (Allen, Carletti and Marquez, 2009). Nevertheless, Germany was one of the countries in the European Union resisting the law, which required companies making CSR reports. The reason is that the majority of companies in Germany are small and medium-sized (SMEs) and often do not have the financial resources to employ third-parties for authentication of the CSR statements. Even though there is the resistance in Germany, a lot of large German corporations are internationally recognized for their CSR activities and Germany is still a leader in corporate social responsibility disclosure (Beier, 2012; Miralles-Quiros, Miralles-Quiros and Arraiano, 2017). But starting from 2017, large publicly-traded corporations have to publish CSR reports, which include standardized and measurable information about the impact the firm has on environment and society (the Sustainability Code, 2017).

2.2 Corporate Social Responsibility and Corporate Financial Performance

Interest in the effect of corporate social responsibility on corporate financial performance exist since 1972 (Miras-Rodriguez, Carrasco-Gallego and Escobar-Perez, 2015). Since then the researches conducted were showing different results. Some results showed that CSR has no influence on CFP, but other determinants, for instance R&D investment as the main influence (McWilliams and Siegel, 2000). Some suggested a positive correlation between those two (Waddock and Graves, 1997; Callan and Thomas, 2009; Marti, Rovira-Val and Drescher, 2015). Previous research results have shown that 68% found a positive relationship between corporate social responsibility and corporate financial performance, 26% found no significant relationship and only 6% found a negative relationship (Beurden and Gössling, 2008). However one has to note that cost occur in the short-term, for instance for auditing and profit from CSR is only visible in the long-term. Next to the image benefits mentioned above, corporate social responsibility can also be used as a cost strategy, as a firm can lower their taxable income by donating money to charities or charging premium fees for their products or services. Furthermore, one has a better starting position when negotiating contracts. In order to achieve this kind of advantages key stakeholders support is required (Branco and Rodrigues, 2006).

Positive influence might result from an increase in reputation and therefore, consumer trust. Companies might increase the price for their products or services. (Mishra, 2015; Orlitzky et. al, 2005). Companies also might get a competitive advantage when focusing on CSR activities, for instance when a firm wants to be more environmentally friendly and is restructuring its waste management in a more efficient way (Russo and Fouts, 1997). Furthermore, stakeholders are vital for a firm's survival and therefore, should not be ignored (Freeman, 1984). Based on that the following hypothesis is stated:

H1: CSR has a positive influence on financial performance.

Other researchers have identified a negative relationship between CSR and CFP. Henderson (1997) argues that CSR cannot be generalized for every situation because there might be interpretation differences of what should be achieved. Furthermore, when CSR activities are in force and competitors follow, it might decrease the overall performance of the industry. A study by Patten (2002) found that firms who disclosure information about their environmental activities on a regular basis, are usually less environmentally friendly, as firms

who do disclosure less information about their environmental activities. Therefore, the second hypothesis is:

H2: CSR has a negative influence on financial performance.

However, some researchers did not find a relationship at all. The relationship between corporate social responsibility and corporate financial performance could be explained by other variables. R&D investment of a firm could be the linking variable between CSR and CFP. Furthermore, investors could be a link between this relationship, as their decision to invest or not invest drive prices up/down (McWilliams and Siegel, 2000; Hamilton, Jo and Statman, 1997). Therefore, the last hypothesis is:

H3: CSR has no influence on financial performance.

3. METHODOLOGY

This part will focus on the methods part of this research. It will start with the research model, followed by a description of the variables (independent, dependent and control) and the way to measure these concepts.

3.1 Research Model

In order to test the direction and strength of the relationship between corporate social responsibility and corporate financial performance a multiple regression model is applied

$$\text{Financial Performance (ROE, ROA, Tobin's Q)}_i = \alpha_0 + \beta_1 * \text{CSR_AGE}_i + \beta_2 * \text{CSR_CO2}_i + \beta_3 * \text{CSR_ACC}_i + \beta_4 * \text{NumEmp}_i + \beta_5 * \text{TS}_i + \beta_6 * \text{TA}_i + \beta_7 * \text{IndustryDummies}_i + \beta * \text{G4 Dummies}_i + \varepsilon_i$$

where i is used to distinguish between the different firms in this sample. Callan and Thomas (2009) looked into the relationship between CSR and CFP. To define financial performance return on equity (ROE), return on assets (ROA) and Tobin's Q is taken. This financial measures are also utilized in this model. Gellert and de Graaf (2012) analyzed whether aging workforce management is a part of CSR. As their study found a significant positive relationship, the percentage of employees over 50 (the oldest group in sustainability reports and the one used in their research) is used in this research. The study by Busch and Hoffmann (2011) focused on firms' CO2 emissions and the strategy to manage them and whether there is an influence on financial performance. As they could prove that there is indeed an influence, total CO2 emissions are chosen as a part of the model. Gopang et al. (2016) focused in their research whether health and safety activities have an influence on firm performance. Different arrangements were listed as independent variables in order to reduce the possibility of work related accidents and look whether they influence firm performance. Therefore, total number of accidents was chosen as a measure for the independent variable, as it was proven that health and safety activities have an influence on firm performance. Total number of employees, total sales and total assets were used as a size measure by Callan and Thomas (2009) and Waddock and Graves (1997). In their research the different industries were also considered. The three size measures, as well as the industry effect are also considered in this model.

The advantage of this model is that it covers not only one aspect of corporate social responsibility, but focus on the environmental, societal and economical parts of it. Nevertheless, only three quantitative variables are used to

define such a complicated concept, which is still too abstract to have an agreed upon definition. The same applies for the financial measures. For instance, return on sales and return on investment could also be possible financial measures. Still the variables used in this model can be represented quantitatively, hence individual firms can be compared with each other.

In order to test the model a Pearson correlation will be conducted to get an overview if there is a correlation between the variables. To test if there is a statistically significant relationship between CSR and CFP ordinary least square regression has to be performed. Three different analysis are needed in order to test the influence on ROE, ROA and Tobin's Q. Furthermore, robustness checks have to be conducted. For instance, removal of outliers multicollinearity, and normality. If the sample does not fulfill the requirements, it has to be re-expressed. Otherwise the sample might not be considered as representative (Krivogorsky, 2006).

3.2 Variables

3.2.1 Independent Variable: Corporate Social Responsibility

In order to find out how corporate social responsibility and corporate financial performance are connected, one has to identify the right measurement for CSR. Some researches focus on only one factor in order to measure CSR, such as donations to charities or CO2 emissions. Another possibility would be the use of indices, such as the KLD (Kinder, Lydenberg and Domini) index or the Fortune data (Callan and Thomas, 2009). In some other cases researchers focus on corporate disclosure documents, as the annual report to stakeholders or CSR reports (Tsoutsoura, 2004). For this study a CSR report is chosen, namely GRI (general reporting initiative). GRI has a globally accepted framework in order to achieve a standardized reporting scheme. However, the framework leaves room for personalization, as it is presented in a document, namely in a qualitative form. Therefore three variables are defined, which can be illustrated quantitatively from the corporate social responsibility reports.

In their sustainability reports firms usually provide a percentual distribution of the workforce employed, as well as the total number of employees. The percentual distribution can therefore be taken out from the report. Total number of accidents are usually also mentioned in the reports. However, sometimes firms even specify the origin of the accidents and the total number can be gathered by adding them together. The same applies for CO2 emissions. Either the total number is given in the report or it is split into scope 1, 2 and 3. Scope 1 is defined as all direct emissions related to the firm. All indirect emissions, which can be classified into energy consumption, belong to scope 2. All emissions, which are neither controlled nor owned by the firm, but can be attributed to it are to be put into scope 3 (EPA, 2017).

3.2.2 Dependent Variable: Corporate Financial Performance

In order to measure the financial performance three variables, will be used: return on assets, return on equity and Tobin's Q.

ROA can be calculated by taking the net income (total revenue minus business expenses, operation cost and tax) and divide it by total assets. It represents how profitable the assets are utilized (Callan and Thomas, 2009; Marti, Rovira-Val and Drescher, 2015; Waddock and Graves, 1997; Tsoutsoura, 2004; Mănescu, 2010). ROE represents the financial performance and the way to measure it is taking net income and divide it by

shareholder equity. It shows how efficiently the debt managed is utilized (Callan et al, 2009; Marti et al, 2015; Waddock et al, 1997; Tsoutsoura, 2004). Tobin's Q is not as frequently used as the other two measures and can be calculated by the taking the market value of a firm and divide it by the replacement value of the assets (Callan et al, 2009; Marti et al, 2015 ; Mănescu, 2010). ROE and ROA are both accounting-based measures and focus on short-term profitability, whereas Tobin's Q is a market-based measure with the focus on expected long-term profitability (Marti et al, 2015). Therefore, the research focus on the short- and long-term profitability of the firms, in order to achieve a true financial representation.

3.2.3 Control Variables: Firm Size and Industry

Researchers suggested that industry might affect firm performance because different CSR criteria are applied to different industries. For instance, the importance of the environmental criteria is less important for consumer service industries than they are for heavy industries (Mănescu, 2010). Return on assets also differ for every industry, depending on how asset dependent the industry is. Furthermore, stakeholders have, depending on the industry, different goals and interests (Marti et al, 2015).

Through different researches, it was established that companies size is not only related to firm profitability, but also to corporate social responsibility. The effect might come from bigger firms having extra resources to spend in order to achieve economies of scope and scale (Mănescu, 2010; Marti et al, 2015).

As proposed by previous researches differences might be industry specific, as stakeholders in each industry might have different goals and different expectations of corporate social responsibility. Additionally, different industries face a different competition intensity and therefore, the need to distinguish themselves may be contrasting (Callan et al, 2009; Marti et al, 2015; Waddock et al, 1997; Tsoutsoura, 2004; Mănescu, 2010). Dummies for industries are used in order to control for the different types of industries used. Another proposed control variable is size. Size matters because large firms usually have more resources to spend and therefore exploit economies of scope, and scale. Due to more attention from stakeholders, there is a stronger pressure for larger firms to keep their competitive advantage and therefore, focus more on meeting their social obligations by improving their reputation. Thus, large firms, compared to small ones tend, to adopt corporate social responsibilities principles more. (Callan et al, 2009; Marti et al, 2015; Tsoutsoura, 2004; Mănescu, 2010; Bansal 2005). In former researches size was defined as the total number of employees, total sales and total assets, which will be also adopt into this research. The reason to focus on these three variables is because each firm has individualistic characteristics (one firm might have a lot of employees, but not as much assets and another might have a lot of assets, but not employees), therefore by using all three variables a better representation of firm size can be achieved. Differences for countries were also found, due to different regulations. Furthermore every country differs in CSR disclosure, as well as voluntary adapting of CSR actions. Culture has also an effect on CSR behavior. But as the focus is

only on Germany, it is not relevant for this research. (Miralles-Quiros, et al, 2017; Callan et al, 2009; Marti et al, 2015; Waddock et al, 1997; Tsoutsoura, 2004; Mănescu, 2010; Tschopp, 2005; Miras-Rodriguez et al, 2015). The last control variable is the dummy G4. It indicates whether a firm follows the framework proposed by general reporting initiative. Hence, investing time and resources to fulfill all the requirements needed to get one.

3.3 Data

The research is focusing on German listed firms, which appeared on the GRI report of 2015. The choice for this year was based on the fact that firms publish their corporate social responsibilities reports throughout the year and therefore, the current latest available year is 2015. Germany was chosen as until 2017 no regulation of disclosure was effective and firms could do it voluntarily. In order to gather the information all 182 German firms (all German firms from the GRI reports) had to reduced to 89 listed firms and looked through to find the relevant information. Out of this 89 companies, a sample of 43 firms emerged, which had the information about employees older than 50 years, CO2 emissions and the total number of accidents. Employees over 50 are chosen due to the steadily aging workforce and therefore, the need for integrating and managing older employees in order for them to unfold the potential they have to offer (Wisse, van Eijbergen, Rietzschel and Scheibe, 2015; Gellert and de Graaf, 2012; Crow, 2006). Total CO2 is chosen because over the past years awareness about the environment has grown with customers paying attention to the effect firms have on the environment. Nowadays, more and more firms disclosure their environmental performance, among others CO2 emissions, in order cope with this expectations (Busch and Hoffmann, 2011; Callan and Thomas, 2009; Alberici and Querci, 2016). Total number of accidents is used because governmental pressure make firms worry about health and safety, but also committee member focus on the improvement of the workplace. Therefore, firms try to reduce the number of accidents related to them, in order to avoid negative publicity (Jagd, 2014; Cowen, Ferreri and Parker, 1987). After studying the data, the dominant industry identified is manufacturing with 27 companies present. All the other industries had a sample of three firms the most. Therefore, the industry dummy was changed to manufacturing dummy, as three firms in a dummy would not give significant results. Financial and control data for all firms was collected from Orbis.

Because a firm with more resources can invest in social responsibility, there might be the question whether corporate financial performance has an influence on corporate social responsibility and not vice versa (Preston and O'Bannon 1997; Gomez 2007). In order to control for endogeneity financial performance is taken from the year 2016. As future financial performance cannot have an influence on past corporate social responsibility actions

Table 1: Descriptive Statistics

	G4	Age %	CO2	Acc.	Empl.	Total sales	Total assets	ROA	ROE	Tobin's Q
N	37	37	37	37	37	37	37	37	37	37
Mean	0,73	0,24	5mln,64	262,62	61759,35	15mln,49	19mln,70	0,05	0,16	0,66
Median	1,00	0,25	768477,20	153,00	13529,00	4mln,00	6mln,00	0,05	0,16	0,64
Std. Deviation	0,45	0,09	10mln,77	316,69	102320,03	20mln,82	28mln,18	0,05	0,11	0,16
Minimum	0,00	0,07	11794,00	1,00	31,00	58169,00	256293,00	-0,13	-0,11	0,29
Maximum	1,00	0,46	53mln	1576	446800	70mln	143mln	0,24	0,42	0,98

4. RESULTS

In this part the results of the research will be presented. It will start with the descriptive statistics. The second part will focus on the robustness check of the data in order to validate the use of the sample and will be followed by the regression results of this research. The definition of the variables used in the research, as well as their coding and origin can be found in Appendix (A1).

4.1 Descriptive Statistics

An overview of the descriptive statistics is presented in Table 1. The independent variables CO2 emissions and number of accidents, as well as the three variables for size show a slight skewness because there is difference in the mean and median. The difference in CO2 is around 54mln, in number of accidents around 110, in the variables for size around 48230, 11mln and 13mln, which indicates that there is a skewness present. There is no skewness in age of employees over 50 because the difference in mean and median is only 0,01. As well as, there is no skewness in the dependent variables, as the only difference is in Tobin's Q of 0,02. The median has to be taken into account as much as the mean, as the median is not as sensitive to outliers as the mean. The percentual number of employees over 50 years in German firms varies from 7% the least to 46% the most. However most of the firms have around 25% (24%) employees over 50 years. In previous studies it was found that older employees tend to support CSR activities more than their younger co-workers. This would support the argument why firms with a higher percentage of older employees provide more information about corporate social responsibility actions (Wisse, et al, 2015). The results identified for the independent variable CO2 emissions have a diversified range in this research from 11794 tons to 53.900.000 tons, with a mean of 5.543.481,64 (768.477,20) tons. With majority of the firms surrounding the median, one can assume that most German firms included in this sample have CO2 emissions around 750.000 tons. Looking at number of accidents of 2015, the range also shows differences. Starting with 1 accident to 1576 accidents. However, the firm with only one accident has also only 31 employees (3,2%), whether the firm with 1576 accidents has a total of 225.200 employees (0,7%). Even though the mean and median display different results, the majority of accidents are around 110 and 350 accidents, so both measures show a true representation. Total sales varies evenly between 58.169 and 70.449.000. The median (4.435.300) in this sample is not representative, but the mean of 15.105.754,49, which is in this sample a better representer of the overall sample. As with total sales, total assets has a big range from 256.293 to 143.920.000. The mean (19.099.478,7) and median

(6.036.657) are showing different results with the mean being again a better representer of the total sample. Firms' ROA fluctuate from a minimum of -13% to a maximum of 24%. The mean and the median have a value of 5% meaning, that the average firms are profitable compares to their assets. ROE is, in this sample, similar to ROA, as the scope is also from -11% to 42%, with the mean and median being 16%. It indicates that the average of the firms are efficient at producing profit. Tobin's Q on the other hand does not exceed a value of 1 (outliers were removed), leaving a range from 0,29 to 0,98 in the present 37 firms. The mean of 0,66 (0,64) indicates that the average firms in this sample are undervalued.

Looking at former research, one can see that the average ROA was around 5%, ROE ranging from 10% to 19% and Tobin's Q of 3,3 and 1,4 (Callan and Thomas, 2009; Waddock and Graves, 1997; Tsoutsoura, 2004; Busch and Hoffmann, 2011). ROA of 5% found in this research is the same as found by other researches and ROE of 16% also falls in the range set by previous studies. Only Tobin's Q of 0,66 seems small compared to Tobin's Q of 3,3 and 1,4 found before. Number of employees (61760), total sales (15mln) and total assets (19mln) seems rather large compared to the findings of Callan and Thomas (2009), where the number of employees was 19500, total sales and assets were 4mln and Waddock and Graves (1997), where the number of employees was 39646, total sales were 6mln and total assets 14mln. Gellert and de Graaf (2012) have looked into the aging workforce. They found that on average 5,85% of employees are over 50 years. The number seems small compared to the 24% finding of this research. However, one has to note that the researches focused on two different countries. CO2 emissions were the main focus of Busch and Hoffmann (2011). Their finding of 5,6mln tons of CO2 emission is similar to the one found in this research (5mln tons).

4.2 Robustness Check

In order to identify whether corporate social responsibility has an influence on corporate financial performance an ordinary least square regression model has to be applied. However, as proposed by Hair et al (1987) and Stevens (1984) assumptions of a statistical relationship have to be tested in order to insure that the data is representative.

The first condition to check is the normality of errors. To insure that the data has been gathered from a normal distributed group the histograms of the samples are assessed. The histograms have shown that the sample is normally distributed with a slight skewness to the right, which satisfies the assumption. The data was furthermore, tested for multicollinearity in order to look if the predictor variables correlate among each other and therefore, distort the results of the regression. Multicollinearity was tested by looking at VIF (variance inflation factor). It was

Table 2: Correlation matrix

	Man.	G4	Age	CO2	Acc.	Empl.	Sales	Assets	ROA	ROE	Tobins Q
Man.	1,00	-0,16	0,08	0,08	-0,14	0,05	-0,11	-0,10	,35*	0,26	-0,27
G4		1,00	0,09	0,00	0,16	0,15	-0,10	0,02	-,36*	-0,25	0,18
Age			1,00	0,01	-0,20	-0,26	-0,30	-0,23	-0,11	-0,06	-0,09
CO2				1,00	0,08	0,18	0,29	0,22	-0,08	-0,01	-0,09
Acc.					1,00	0,53	0,56	0,73	-0,18	-0,11	,38*
Empl.						1,00	0,60	0,59	-0,04	0,05	0,32
Sales							1,00	0,84	-0,10	0,06	0,16
Assets								1,00	-0,11	0,01	0,15
ROA									1,00	0,65	-0,43
ROE										1,00	-0,20
Tobin's Q											1,00

Note: * p < 0,05

highest for total sales with a value of 5,5, which is below 10. This demonstrates that no multicollinearity is present in this sample. Another condition which has to be tested is the linearity or straight enough condition. A scatter plot has to be composed, which has to follow a linear regression and the sample used does so. Outlier condition was also checked using Cook's Distance. After identifying outliers, six influential firms were removed leaving a sample of 37 firms. It is important to remove the outliers, as they might alter the results of the regression. Independence of errors has to be checked using the Durbin-Watson statistic. Vinod (1972) wrote in his article that the Durbin-Watson statistic looks at the correlation among residuals (the difference between the predicted and observed value of the depended variable) in a regression, which should be independent of each other. The sample does satisfy this condition as the results of ROA, ROE and Tobin's Q fall in the range between 1,5 and 2,5. Another test, which one has to test for is homoscedasticity or equal error variance. The variance of the values around the regression line has to stay the same for all values in order to satisfy this condition. After looking at the scatter plot the condition was fulfilled. After the six outliers have been removed, all the above mentioned conditions were performed again to ensure that a linear regression can be performed. All the condition were satisfied and the only striking changes were in multicollinearity and independence of errors. Total assets has the highest VIF with 5,1 and Tobin's Q has shown a Durbin-Watson result of 2,6. This is considered as a little bit too high, as ideally it should fall in the scope between 1,5 and 2,5. However, as long as the range for the Durbin-Watson statistics lies between 0 and 4, the condition is considered as fulfilled.

4.3 Bivariate Test

In Table 2 the Pearson correlation results among the variables used in this study are presented. Very high correlations (significant at $p < 0,01$) are marked bold. There is a high correlation among number of employees, total sales and total assets (0,60; 0,59; 0,84). This could be expected as these three variables measure the same concept, namely firm size. The correlation among the three variables of firm size show, furthermore, a strong correlation with number of accidents (0,53 ; 0,56; 0,73). As the correlation is positive for all three

variables, it could indicate that number of accidents increases when a firm increases in size. This is expected, as the chance of having more accidents when employing more employees is high. The high intercorrelation among the size variables and hence the size variables and number of accidents could explain why the highest VIFs (5,1 total assets, 4,2 total sales, 1,8 number of employees and 2,3 number of accidents) were found there. As size is represented by three variables, it is expected that they should correlate, as well as that all three should correlate with the same variables. In addition, ROA and ROE are highly correlated (0,65) as a result of financial similarity because both measures are focusing on short term profitability. Nevertheless, as both variables are tested independently, there are no impacts on the regression results. A negative strong correlation is found between ROA and Tobin's Q (-0,43), which indicates that this short term measure and long term profitability are negatively related. This is surprising, however it could indicate that a firm truly focusing on short-term profitability might lose the focus on long-term profitability. By trying to maximize the short-term profit, a trade off, for instance with quality, may be made, which might have consequences in the future. Correlations with a significance level of 0,05 can be found among ROA and the two dummies. A positive correlation is present with the manufacturing dummy (0,35). However, there is a negative correlation with the G4 dummy (-0,36), indicating that companies belonging to the industry of manufacturing are profitable relative to the controlled assets, but are less profitable when having the G4 status. Furthermore, a correlation is evident between Tobin's Q and the number of accidents (0,38), which can be interpreted as a firm performing financially better when having less accidents. It might indicate that when a firm is trying to reduce accidents by better safety instructions or improving the workplace, making it safer to work for the company, employees are more motivated and perform better in the long-run.

Previous research support the idea of a positive correlation between ROA and ROE (Waddock and Graves, 1997; Tsoutsoura, 2004; Gellert and de Graaf, 2012; Busch and Hoffmann, 2011). However, ROA should be negatively correlated with total assets and total sales (Waddock and Graves, 1997; Tsoutsoura, 2004). In this research the correlation has the same sign, but is not significant. Busch and Hoffmann (2011) proposed a positive correlation between

Table 3: Regression analysis of ROA, ROE and Tobin's Q			
	ROA	ROE	Tobin's Q
(Constant)	8,12 (0,03)	17,51 (0,04)	0,65 (0,00)
Man.	3,19 (0,10)	5,23 (0,23)	-0,08 (0,15)
G4 dummy	-3,61 (0,09)	-4,62 (0,33)	0,01 (0,83)
Age over 50	-0,08 (0,42)	-0,05 (0,82)	0,00 (0,89)
CO2 waste in t	0,00 (0,65)	0,00 (0,75)	0,00 (0,55)
# of accidents	0,00 (0,55)	-0,01 (0,51)	0,00 (0,07)
employees	0,00 (0,70)	0,00 (0,73)	0,00 (0,18)
total sales	0,00 (0,55)	0,00 (0,88)	0,00 (0,75)
total assets	0,00 (0,69)	0,00 (0,85)	0,00 (0,23)
Adj R Squared	0,051	-0,109	0,096
F	1,243	0,558	1,479
Anova	0,312	0,803	0,209
N	37	37	37
Note: * p< 0,05			

Tobin's Q and ROA/ ROE. However, in this research a negative one between Tobin's Q and ROA was found.

4.4 Regression Results

The results of the regression are reported in Table 3. Hypothesis 1 stated that CSR has a positive influence on CFP. The expected outcome should be a positive coefficient for the independent variables. However, looking at Table 4, the results do not support this relationship, as age of employees over 50 shows a coefficient of -0,08, -0,05 and smaller than 0,001, CO2 emissions has a coefficient of smaller than -0,001 for all three dependent measures and number of accidents -0,0024, -0,01 and smaller than 0,001. Furthermore, as the p-values are not significant with age over 50 having a p-value of 0,42, 0,82 and 0,89, CO2 emissions 0,65, 0,75 and 0,55 and number of accidents 0,55, 0,51 and 0,07 Hypothesis 1 has to be rejected. It could not be confirmed that corporate social responsibility has a positive influence on corporate financial performance. Whether the significance nor the sign of the relationship could be confirmed. This contradicts the findings of Mishra (2015), Orlitzky et. al (2005) and Russo and Fouts (1997).

Hypothesis 2 stated that CSR has a negative influence on CFP. Again, looking at the results, the relationship cannot be confirmed. As with Hypothesis 1, the p-values of the independent variables are not showing any significance.

Therefore, Hypothesis 2 has to be rejected showing that no significant negative relationship exist in this sample. The results are not consistent with the proposed relationship by Henderson (1997), as no significance could be proven.

Hypothesis 3 claims that corporate social responsibility has no influence on corporate social performance. As all p-value are higher than 0,05, no relationship between corporate social responsibility and corporate financial performance can be proven. Therefore, Hypothesis 3 is accepted. This results are consistent with the observation made by McWilliams and Siegel (2000) and Hamilton, Jo and Statman, (1997), who also identified no relationship between corporate social responsibility and corporate financial performance.

The adjusted R square can be used in order to represent how much of the variation is explained by the regression model. The variation in ROA is explained by 5,1 % and in Tobin's Q by 9,6%. The negative value of -10,9% in ROE can be interpreted as 0%. The small percentages indicate that the model is not able to express a lot of the variation in the dependent variables.

Moreover, Anova values were taken into consideration. The assumption of the Anova is that the model used in the regression has no explanatory power. In order to reject this assumption and proof that the model is able to predict the outcome, the p-values (Anova) of the dependent variables have to be less than 0,05. In this research the p-values of the

individual components are 0,312 (ROA), 0,803 (ROE) and 0,209 (Tobin's Q). As all three values are greater than 0,05 the assumption cannot be rejected, meaning the regression does not accurately predict the data.

As Hypothesis 1 and 2 could not be proven, no relationship between corporate social responsibility and financial performance could be demonstrated. In order to testify if a significant relationship could have been found, three additional regression analyses were made. The first one only included the independent variables. In the second regression, the independent variables and the three size variables (employees, total sales and total assets) were included. In the third, the independent and dummy variables (manufacturing and G4) were included. Nevertheless, no regression has shown a significant relationship, indicating that no relationship between CSR and CFP could have been found, leading to an acceptance of Hypothesis 3.

5. CONCLUSION AND DISCUSSION

For years researchers from a variety of countries have tried to identify the relationship between corporate social responsibility and corporate financial performance. Even today, no comprehension could be reached. Therefore, the aim of this research was to answer the research question, whether there is a relationship between corporate social responsibility and financial performance in German firms. In order to answer the question three hypothesis were termed, namely one which focused on a positive relationship, another one on a negative relationship and the last one on no relationship between CSR and CFP. In order to measure corporate social responsibility, three variables were used, which cover the triple bottom approach. Age of employees over 50 - economical part, CO2 emissions - environmental part and number of accidents - societal part. Return on assets, return on equity and Tobin's Q were used to cover the short- and long-term financial part of the research, which were also used in the researchers before. Control variables, which were suggested by previous researchers were country (which is covered by only focusing on Germany), industry (which could not really be controlled for, as the majority of the companies were from manufacturing) and size (which was measured by total number of employees, total sales and total assets).

The majority of the literature under investigation has found a positive relationship between CSR and CFP. It is argued that the more a firm is focusing on CSR activities, the better the financial situation of the firm should become. As it was argued that the positive relationship results from the positive image a firm obtains when focusing on CSR activities, which enhances the trust of the consumers in the firm. More trust will result in more customers, which in turn will result in more profit. Furthermore, focusing on corporate social responsibility activities may result in a firm truly improving its way of working (Orlitzky et. al, 2005; Mishra, 2015; Russo and Fouts 1997). Another, possibility would be a negative relationship because focusing on corporate social responsible a firm is neglecting its true purpose - generating profit for shareholders. A company should not waste shareholders' resources for stakeholders. Furthermore, as no consensus for corporate social responsibility is defined, it brings some difficulties in defining this concept and also the measurement of it (Friedman, 2007; Henderson, 1997).

However, some researches including this one, found no relationship between corporate social responsibility and

corporate financial performance. This can be explained taking into account reasons how other researchers have explained it. More reasons why there might be no relationship will be stated in the limitation part. McWilliams and Siegel (2000) one of the most cited researches, which found no relationship proposed a reason why there should be no relationship between CSR and CFP. Their main argument, which was tested in their research is that a third variable, namely R&D investment is the main influence of the relationship because they argue that CSR and R&D investment are highly correlated. Therefore, the positive relationship between corporate social responsibility and corporate financial performance is usually present when R&D investment is excluded. However, when included, the relationship is no longer existent, as R&D investment is influencing CFP.

Nevertheless, even though no relationship was found it does not mean firms should follow a non-investment attitude towards corporate social responsibility activities. Even though the influence is not significant, different authors stress out the importance in investing in corporate social responsibility. Pressure to invest in socially responsible firms has grown over the last years by a growth in investment in socially responsible funds. Investors drive the prices up or down depending on the degree of social responsibility of firms. For instance, if a firm experience a crisis like BP with the oil spill, it is immediately visible in their stock price. Furthermore, CSR is seen as a value creating mechanism as it provides new perspectives to the clients and shapes the reputation of the firm by promoting reliability and honesty. It supports the changes in societal values, which include the consequences of businesses on the external environment. Firms, nowadays have to pay attention to those changes. Therefore, firms should include CSR activities into their marketing by promoting being different than their competitors. Furthermore, even if no effect of CSR on the financial aspect of firms could be proven, investing in corporate social responsibility does not bear any losses for investors (McWilliams and Siegel, 2000; Hamilton, Jo and Statman, 1993; Madorran and Garcia, 2014).

However, a firm should not exaggerate the degree of investment in corporate social responsible activities, as it might lead to an overall poorer financial performance in the long-run (Allen and Carletti, 2009).

6. LIMITATIONS AND FURTHER RESEARCH

This study has limitations, which could be reduced in further research focusing on the topic of corporate social responsibility and its connection to financial performance. All the companies included in this study were from Germany and as mentioned before Germany is one of the leading countries about CSR disclosure (Miralles-Quiros, Miralles-Quiros and Arraiano, 2017). Nevertheless, disclosure does not result in portraying a true picture of the situation. For instance, Volkswagen changing the software in their diesel engines in order to show a better emission level. Therefore, companies included in general reporting initiative's reports could still display better results than it might be. Meaning GRI reports might be biased. Some companies claim to not care about gender, age and ethical background of their employees. However, no one can truly proof that. Furthermore, if firms want to be included in the GRI reports, they need a third party evaluating their sustainability report (for example KPMG, PwC, etc). However, not all companies have the required resources to pay for an evaluation

of their CSR activities. Which means, firms with fewer resources are not included in the GRI reports, even though they might be active in CSR activities.

Another point limiting the validity of the research is the inclusion of firms only providing the full information about the percentage of employees over 50 years, CO2 emissions and the number of accidents for the year 2015. As Mănescu (2010) mentioned the term corporate social responsibility has no universal definition making it difficult to fully measure it. Therefore, the three independent variables chosen are evidently a small piece of corporate social responsibility. Other variables could be gender ratio, child labor, fair wage, etc. The same also applies for financial performance, as return on assets, return on equity and Tobin's Q are not the only variables which could be used to measure this concept. Even though there are the most frequent one, other measures such as return on sales, return on investment, earnings per share could have been used. This research also did not take into account other variables, which might have an influence on this relationship. Management quality or research and development investment might explain the relationship between CSR and CFP.

The small sample size of 43 firms, of which only 37 were taken for the research are definitely not representative. Furthermore, corporate social responsibility data was gathered for 2015 only, however as mentioned above CSR is a long-term investment. The research has not taken into account the point in time in which the individual firms started investing in CSR activities. Therefore, no general assumption can be made.

Further research should focus on long-term studies. When solely focusing on Germany 2017 should be a good starting point as since this year large firms are required to provide CSR information by law. A wide range of variables should be used in order to measure corporate social responsibility and financial performance. This study should focus on a few years in order to estimate whether CSR has an influence on CFP. Nevertheless, more control variables should be included in order to reduce the chance of a third influential variable.

However, as long as no consensus for the definition of corporate social responsibility can be achieved, further researches will produce different results.

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9. APPENDIX

Appendix A: Definition of variables				
Variable		Definition	Coding/ calculation	Origin of data
Manufacturing (Man.)	Dummy	Denotes if a firm belongs to the industry: manufacturing	1 = manufacturing 0 = not manufacturing	2015 - Orbis
G4 dummy (G4)		Denotes if a firm has followed the GRI framework	1 = G4 status 0 = no G4 status	2015 - GRI reports
Age over 50 (Age)		Denotes the employees over 50 years old	% of total employees over 50 years	2015 - CSR reports
CO2 emissions in t (CO2)		Denotes the total number of CO2 emissions in tones	Total CO2 emissions	2015 - CSR reports
# of accidents (acc.)		Denotes the total number of accidents	Total number of accidents	2015 - CSR reports
Employees (empl.)		Denotes the total number of employees	Total number of employees	2015 - CSR reports/ Orbis
Total sales (sales)		Denotes a firm's total sales	Total number of total sales	2015 - Orbis
Total assets (assets)		Denotes a firm's total assets	Total number of total assets	2015 - Orbis
ROA		Denotes a firm's return on assets	Net income/ average total assets	2015 - Orbis
ROE		Denotes a firm's return on equity	Net income/ total assets	2015 - Orbis
Tobin's Q		Denotes a firm's Tobin's Q	(1/ book value per share) + (total liabilities and debts / total assets)	2015 - Orbis