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The moderating role of board characteristics in the impact of corporate social responsibility on the financial performance of Dutch listed firms

Master Thesis

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Abstract

Firms invest high amounts of money in corporate social responsibility (CSR) activities. Previous research found evidence that the implementation of CSR benefits a firm, although it is not guaranteed that CSR investments lead to improved financial performance. Overall agreement misses in the studies concerning the CSR and financial performance impact. This study contributes by investigating the role of CSR on financial performance for a sample of 81 Dutch listed firms during 2014-2017. Secondly the study investigates if board characteristics moderate the impact of CSR on financial performance. An ordinary least squares (OLS) regression is performed to investigate the impact. The results show that the impact of CSR is significantly positive for ROA, but insignificant for ROE, Tobin's Q and RET. Thus, the results indicate that firms who more intensively engage in CSR activities have improved ROA. In addition, evidence is found that board size, gender diversity and age diversity weaken the impact of CSR on ROA. No significant impact is found for board independence.

Keywords: corporate social responsibility (CSR), financial performance, ROA, ROE, Tobin's Q, RET, corporate governance, board characteristics, board size, board independence, gender diversity, age diversity, Dutch listed firms.

Table of contents

1. Introduction

In this section the introduction of the thesis is given. The first section of the chapter contains an introduction of the topic. Secondly, based on the introduction of the topic, the problem statement and the thesis contributions are developed. In the last section of the chapter the structure that was used during the thesis is described.

1.1 Introduction of the topic

The activities of corporations can have enormous damaging effects to the environment. Oil leaks are one of the most known environmental scandals, for example the oil leak from Shell in Nigeria or BP's oil spill in the Gulf of Mexico. In recent years new scandals came to light in the automotive industry. Volkswagen was sued of manipulating the combustion behaviour of their diesel engines, which led to more favourable emission results. Also, non-environmental scandals such as the tax evasive behaviour of large companies received increasing attention. Kadlubek (2015) states that the society expects firms to take responsibility for communities, the environment and that public scandals can have a negative impact on the brands image. When searching for the main goal of firms on the internet, the first three results all mention maximizing profit as a main goal of firms[1][2][3]. Kadlubek (2015) mentions that the objective of firms becomes more about long-term establishments of relationships with their stakeholders. As a consequence, topics as attention to the society and natural environment problems become more important in firms goals. Furthermore, Kadlubek (2015) argues that the focus of firms is not only about maximizing profit but also about social development, healthy lifestyle and the participation in voluntary actions for the quality of environmental projection. Kadlubek (2015) uses this as definition of social responsibility.

In recent years firms have spent high amounts of money on corporate social responsibility, hereafter CSR. Financial Times (2014) reported that the Fortune 500 firms alone spent in total more than $15 billion on CSR activities (Bhardwaja, Chatterjee, Dogerlioglu Demir, & Turut, 2017). The CSR activities vary between different firms. Primark for example is working on the Health Enables Returns Project, which aims to improve the life quality of its employees in Bangladesh. This project involves providing tools for improvement of health, personal hygiene and resistance against diseases. Coca Cola has a partnership with almost 100 countries to support local water conservation. IKEA aims to have a positive impact on individuals and the environment in general with their People + Planet project. (García-Jiménez, Ruiz-de-Maya, & López-López, 2017)

[1] http://financialmanagementinfo.blogspot.nl/2010/01/goal-of-firm.html
[2] http://www.economicsdiscussion.net/business-economics/5-major-goals-of-business-firms/7124
[3] http://www.economicsdiscussion.net/business/objectives-business/7-main-objectives-of-a-business-firm/18721

Although CSR has been implemented since mid-70s, an unequivocally definition remains unclear (Wood, 1991). A popular definition of CSR came from Carroll in 1979, where he argues that CSR has four main catogeries. These catogeries are economic, legal, ethical and philantrophic responsibilities. The European Comission helped firms by making up an own definition of CSR. Previously, the commission defined CSR as: "a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on voluntary basis" (European Commission, 2011, p3). This definition has been updated to: "the responsibility of enterprises for their impacts on society" (European Commission, 2011, p6). Up until today there is still no consensus about what the real definition of CSR is.

Besides the definition of CSR, many authors have tried to examine the outcomes of CSR activities for firms. Berens, Riel, & Bruggen, 2005; Brown & Dacin, 1997; Klein & Dawar, 2004; Luo & Bhattacharya, 2006 and Sen & Bhattacharya, 2001 have shown that CSR activities may give firms commercial benefits. The authors argue that CSR would improve the brand/company evaluations, brand choice, brand recommendations, customer satisfaction and loyalty and customer-firm attribution. Mohr and Webb (2005) state that CSR can change consumers purchase intentions and has an even stronger effect than the price of products and services. Other researchers have tried to find the impact of CSR on the financial performance of firms.

Wang and Sarkis (2017) show that CSR has a positive impact on financial performance for the top 500 green companies in the United States. In addition, Li, Cao, Zhang, Chen, Ren and Zhao (2017) find significant positive effects for Chinese energy-intensive listed firms. Rodriguez (2015) finds that CSR has a positive effect on financial performance and vice versa using a Spanish sample. El Ghoul, Guedhami, Kwok, and Mishra (2011) find that better CSR scores lead to lower cost of capital. Since CSR activities are very costly for firms, as proven by the large amounts of money spent in CSR, the research to capture the impact of CSR is comprehensible. However, not all researches have found positive outcomes of CSR. Schreck (2011) and Nelling and Webb (2009) find no significant impact between CSR and financial performance. The research of Brammer, Brooks and Pavelin (2006) finds a negative impact of CSR on financial performance, using stock returns as measure of financial performance. The difference in outcomes may come from the use of different measurement techniques.

1.2 Problem statement and contributions

The main objective for most firms remains to maximize their value, although one cannot say that this applies for every firm. Since the costs of CSR activities can be very high, it is interesting to find what the consequences of CSR is on the financial performance of firms. Increased financial performance might be a motivation for firms to engage in CSR. Therefore, the studies examining the effects of CSR on financial performance can be important for firms when deciding to increase or decrease their CSR activities. Since the results from previous studies about the impact of CSR on financial performance are mixed, there is still no consensus.

Therefore, it is still an interesting research topic to contribute on. Secondly, many studies have examined the impact of CSR on financial performance in non-European countries as the United States (e.g. Wang & Sarkis, 2017) and China (e.g. Li et al., 2017). The impact of CSR on financial performance has been less examined for European countries. Although, Rodriguez (2015) used a sample of Spanish firms and Brammer, Brooks and Pavelin (2006) used a sample of firms from the United Kingdom. It is interesting to contribute on the effect of CSR on financial performance for other European firms, since Brammer et al., (2006) found contrary effects. To the best of my knowledge, the impact of CSR on financial performance has not yet been examined in the Dutch context, apart from student theses[4][5].

leaving a gap for further research. This study examined the impact of CSR on financial performance for Dutch firms. This led to the first research question:

Q1. Does corporate social responsibility affect the financial performance of Dutch listed firms?

The impact of corporate governance on firms performance has also been examined. Liu and Zhang (2017) state that corporate governance is about the relationship between a firm and their stakeholders, or between a firm and the society in which it is active. In addition, it is about how a firm is controlled and directed. High levels of corporate governance are considered as a safeguard for the rights of stakeholders and secure social responsibility. Khan, Badrul Muttakin and Siddiqui (2012) add that good corporate governance can stop managers to occupy in activities that are considered bad and that firms are more likely to increase their CSR activities. However, the moderating impact of corporate governance factors and CSR on financial performance has been researched less. Kabir and Thai (2017) examined foreign ownership, board size and board independence as corporate governance factors for a sample of Vietnamese firms. Isidro and Sobral (2015) investigated the moderating impact of gender diversity of the board of directors. However, there are many corporate governance factors, for example additional board characteristics apart from board size and board independence, of which its impact has not yet been examined. Thus, it is still interesting to conduct more research on this context to further understand which factors moderate the impact of CSR on financial performance. Therefore, this study investigated the moderating impact of board characteristics and CSR on financial performance. This led to the following second research question:

Q2. Do board characteristics moderate the impact of CSR on financial performance for Dutch listed firms?

This study used a sample of 81 Dutch listed firms over the period 2014-2017. An OLS regression was performed to measure the impact of CSR on financial performance and what the moderating impact of board characteristics is. Previous research did not find an overall

[4] https://essay.utwente.nl/74393/
[5] https://essay.utwente.nl/71384/

agreement about the impact of CSR on financial performance. The results show a significantly positive impact of CSR on ROA for Dutch listed firms. No significant impacts were found for the other financial proxies of financial performance. The results help Dutch firm to decide about increasing or decreasing there CSR engagements. Secondly, the study contributes by finding evidence that board size, gender diversity and age diversity weaken the impact of CSR on ROA. No significant impact was found for board independence. This gives more understanding about the context of corporate governance factors and its moderating impact on CSR.

1.3 Thesis structure

This thesis report is departed into different chapters. The first chapter describes the introduction of the research and presents the problem statement and contributions. The second chapter contains review of the literature which was performed to gain a better understanding of the CSR concept and board characteristics as corporate governance factor. Afterwards, hypothesises were developed which were tested during this study. Chapter three describes which research method and variables were used in the study. Furthermore, the sample and the collection of the necessary data are described. In the fourth chapter the study results are discussed. First of all the descriptive statistics and correlation matrix are described. Afterwards the study results are discussed, to answer the hypothesises. The final chapter gives the conclusion of the study and discusses the limitations and recommendations for further research.

2. Literature review

In the first section of this chapter the definition of CSR and corporate governance are given. After that, the theories are described that are thought to be coherent to CSR and its impact on financial performance. In the third section previous researches about CSR are reviewed. In the last section, the formulated hypothesises are given that are used to test the research questions of this thesis.

2.1 Background

Since CSR and corporate governance are the central topic of this study, it is essential to understand what the concept of CSR and corporate governance are about. In this section the definition of CSR is described and more knowledge about corporate governance is given.

2.1.1 Definition of CSR

A straightforward definition of CSR does not exist. The reason for this is that the concept may have different definitions, for different people, in different places, at different times. (Campbell, 2007). Because of this, multiple definitions have come up. According to Davis (1973), CSR is about a firms anticipation and response to problems, which go further than economic, technical and legal requirements of a firm. This means that a firm is responsible to make decisions in such a way, that the outcomes of its decisions will not harm the external social system, but fulfil social benefits besides the economic gains of the firm. A note to this is, that a firm is not only socially responsible of it acts within the minimum rules of the law, but goes beyond and seeks for further improvements.

Wartick and Cochran (1985) defined CSR as the development of policies and processes of social responsiveness, to address social responsiveness. Besides a definition, they saw that several perspectives could be integrated into a framework. The competing perspectives of this framework are economic responsibility, public responsibility and social responsiveness. Wood (1991) takes the definition of Wartrick and Cochran one step further, by defining CSR as: “a business organization's configuration of principles of social responsibility, processes of social responsiveness, and policies, programs, and observable outcomes as they relate to the firms societal relationships” (p. 693).

Campbell (2007) views corporations as acting in a socially responsible way if they satisfy two requirements. The first requirement is that the firm must not act in ways that harms their stakeholders. Stakeholders are seen as investors, employees, customers, suppliers or the local community in which the corporation is active. The second requirement is that if a corporation harms one of their stakeholders, they must correct the harm when it is revealed and brought to their attention. McWilliams and Siegel (2011) define CSR as: “any responsible activity that allows a firm to achieve a sustainable competitive advantage, regardless of motive” (p. 1481).

Many researchers have been studying the concept of CSR. Matten and Moon (2008) mentioned that defining CSR is not easy, because it has relatively open rules of application.

Furthermore, it overlaps with other concepts of business- society relations and it is a dynamic phenomenon. Because of this, there is not one specific definition for CSR. Matten and Moon (2008) define CSR as the social imperatives and consequences of firm success. Meaning that CSR is about communicating policies and practices of firms, reflecting the responsibility of firms for a wider societal good. Oh, Chang and Martynov (2011) define CSR as corporate integrated responsibilities including economic, legal, ethical and discretionary expectations of societies about organizations, using the research of Caroll (1979).

These are just a few definitions that have been developed by different researchers in the last decades. Maybe the concept of CSR is so broad that is hardly impossible to define CSR in one sentence. Although the definitions are all different from each other, there seems to be an overall agreement about the perspectives of CSR. Therefore, instead of coming with a new definition of CSR, this paper will conclude and compile the most important mentions by previous researchers. Hence, corporate socially responsible firms will be seen as firms taking their responsibility about their business decisions and activities in such a way, that they do not harm the society or the environment. This means that the main objectives of firms cannot only be about financial benefits, but that the benefits of the society and the environment must be taken into consideration.

2.1.1 Corporate governance

As said in section 1.2, Liu and Zhang (2017) state that corporate governance is about the relationship between a firm and their stakeholders, or between a firm and the society in which it is active. In other words, corporate governance is a about leading a firm in responsible way. According to Claessens and Yurtogly (2013), firms with good corporate governance benefit with better access to financing, improved firm performance, reduction of cost of capital and favourable critics of stakeholders. Furthermore, Claessens and Yurtogly (2013) add that corporate governance can be divided in three categories; economic, social and legal. The three categories exist of internal (firm-oriented) and external (market-oriented) mechanisms. Overall firms have more influence over their internal mechanisms. Claessens and Yurtogly (2013) give several examples of mechanisms per category. For economic they mention ownership structure, executive compensation and board diversity. Social mechanisms are audit committees and for legal mechanisms shareholders meetings and work council are mentioned.

Through recent years, prior studies have examined how corporate governance factors can moderate the impact of CSR on financial performance. Peng and Yang (2014) found that ownership concentration moderated the impact of CSR on financial performance. Kabir and Thai (2017) find that foreign ownership, board size and board independence are moderating factors. However, besides board size, less research has been conducted about the moderating impact of other board characteristics. Therefore, this study will examine if board characteristics moderate the impact of CSR on financial performance. Carter, Simkins and Simpson (2003) state that board diversity is a critical mechanism of measuring the impact of

good corporate governance on firm value. Kang, Cheng and Gray (2007) contribute that board characteristics are an increasingly accepted influencer of firm performance. Claessens and Yurtoglu (2013) mention that examining board characteristics as corporate governance mechanism is important since board characteristics can ensure knowledge, legitimacy and personal ties. Secondly, difference in the board can improve the acquirement of critical resources. The board characteristics; board size, board independence, gender diversity and age diversity were found most in previous research.

The first board characteristic is board size. The size of a board refers to the number of members in a board of directors. This number is different for each firm but for Dutch firms the minimum board members must be three[6]. The disadvantage of a large board is that the decision-making progress can be slowed down (Guest, 2009). According to Guest (2009), communication is faster and better in smaller boards which results in quicker issues solving. An advantage of a large board is that there should be more knowledge, expertise and access to resources (Ahmadi, Nakaa, & Abdelfettah, 2017). In the Netherlands a two-tier board is used[7]. A two-tier board model means that there is a difference between the management (management board) and their supervisors (supervisory board). The Dutch translation is raad van bestuur (management board) and raad van commissarissen (supervisory board). The management board runs a firms operations. The supervisory board is independent from the management board and should consider the interests of shareholders. The supervisory board chooses the management board on behalf of the shareholders.

The second board characteristic is board independence. Board independence means that the majority of the board of directors are not affiliated with the top executives of a firm. Carter et al., (2003) mention that board independence is crucial for boards to function in the interest of shareholders. The third board characteristic is gender diversity. This refers to the presence of females on the board of directors. In the last few decades the presence of female members on the board of directors became higher. Hillman, Cannella and Harris (2002) presented that female board members bring characteristics and backgrounds which are unique. The last board characteristic is age diversity. This refers to the variation of age between the different members of the board of directors. Darmadi (2011) mentions that younger board members are less conservative and are more likely to engage in innovative strategies than older board members. It is believed that having a mix of different ages may result in a more effective way of solving issues.

2.2 Theories of CSR

The interest to theorize CSR has increased in the last decade, leading to different theoretical perspectives on CSR. These different theories range from stakeholder theory, resource-based view to the institutional theory. These theories help in the understanding of why firms engage in CSR activities and why it might change the financial performance of firms (Frynas &

[6] https://zakelijk.infonu.nl/zakelijk/104080-inleiding-ondernemingsrecht-raad-van-commissarissen.html
[7] https://www.recht.nl/nieuws/ondernemingsrecht/archief/25066/ondernemingsbestuur-one-tier-vs-two-tier/

Yamahaki, 2016). In this section the different theories are described and explained why they influence the engagement in CSR.

2.2.1 Stakeholder theory

Stakeholders are groups of persons that can either damage or help a firm. Examples of stakeholders are employees, customers, governments or non-government organizations (Frynas & Yamahaki, 2016). Freeman (1984) defines a stakeholder as: a group, or an individual, that can affect or be affected by a company's purpose. In the view of CSR, stakeholder theory means that a firm has the responsibility to consider the interests, of all groups or individuals that can be affected by their actions. This means that not only the interest of the shareholders of a firm must be considered, but also the interests of the stakeholders.

Clarkson (1995) and Helmig, Spraul and Ingenhoff (2016) state that there are two groups of stakeholders, namely primary- and secondary stakeholders. Primary stakeholders are shareholders and investors, employees, customers and government. The primary group has a direct influence on a firm and they are crucial if a firm wants to survive. There are a few examples which demonstrate this statement. A firm with employees, who lack the motivation to give all of their possibilities to improve the firm, is more likely to fail. The same goes up for a firm that takes actions which are bad for the environment or ignores the desires of the locals. Firms that do not enhance value for their shareholders and investors are also more likely to fail. According to the stakeholder theory, each of these shareholders is crucial in the continuity of a firm. This means a firm must separate their available resources in such a way that it desires each stakeholder. The secondary stakeholders are the media, competitors and trade associations. According to Clarkson (1995) and Helmig et al., (2016), the secondary group is less critical for a firm to survive, but can still damage a firm.

Mitchell, Agle and Wood (1997) proposed a model with three factors where the impact of stakeholders depends on. The three factors are: power, legitimacy and urgency. Power is about the capacity of a stakeholder to oblige its desires on others, in spite of his or hers agreement to do something which they normally would not do. Mandate relates to authority of stakeholders to use their power against a firm. Urgency is the degree to which a stakeholder's accusation calls for instant awareness. Based on the stakeholder theory of Freeman (1984), it is suggestible that CSR engagement leads to improved relationships with the stakeholders of a firm, which will generate better financial performance.

The above-mentioned suggestion has been examined a lot by researchers and scholars. The study of Frynas and Yamahaki (2016) has provided a recap of different empirical studies about the relationship between CSR and financial performance, according to the stakeholder theory. The results of empirical studies regarding the impact of CSR on financial performance are further discussed in section 2.3.2. The majority of these studies found a positive impact between CSR engagement and financial performance, assuming that the awareness towards stakeholders concern will be rewarded. Therefore, based on the stakeholder theory, this study expected the relationship between CSR and financial performance to be positive.

2.2.2 Institutional theory

The institutional theory suggests that a firms have to adjusts its actions conform the social norms in the business environment in which it operates, since they will not survive without a certain level of social approval (Meyer & Rowan 1977, DiMaggio & Powell 1983). Many firms have come up with schemes, rules, norms and routines as guidelines to behave socially. These practices are not made up because they are obligated to do so by external factors, but because they are taken as "the way we do things". Firms are driven by external demands and accepted forms, if firms do not meet these demands and norms the continuity of the firm is in danger. From this point of view, the pressures from the intuitional theory could drive firms to engage in CSR activities. The institutional theory has three mechanisms which obligate firms to change; this is called the institutional isomorphism (DiMaggio & Powell, 1983).

Isomorphism is the similarity of structures between organizations, as a result of independent development under the same constraints. The three mechanisms of the institutional isomorphism are normative, mimetic and coercive (DiMaggio & Powell, 1983). Normative mechanisms are the changes that came up by pressure on the basis of profession. Mimetic mechanism is about imitation of other firms, that are believed to be successful, when the own firm is living in uncertainty about its activities. Coercive mechanism is related to the pressure from external outsiders who force a firm to change. The normative and coercive mechanisms are driven by external influences while the mimetic mechanism is driven by uncertainty from inside a firm.

Frynas and Ymahaki (2016) mention in their study that there are three approaches to the institutional theory. The first approach is the economic approach, also called the new institutional economics, and refers to the regulatory role of institutions that undergo economic activities. The second approach is the sociological approach, also called the neo-institutionalism, and refers to the legitimacy role of institutions. The third approach has some overlap with the other approaches and is called the comparative institutional approach. This approach includes business systems, variety of capitalism and regulation theory stands, refers to the differences between the institutional arrangements that describe capitalist economies and form economic organization and firm competitiveness.

The impact of the institutional theory on CSR engagement has been studied by researchers. Matten and Moon (2008) investigated the difference in CSR engagement between US firms and European firms. Their results showed that the degree of CSR engagement between the two countries is different. The European firms engage more in implicit CSR while the US firms are more active in explicit CSR. Implicit CSR is seen as a reaction to the institutional environment, while explicit CSR is seen as a voluntary and considered decision. The implicit form of CSR can be found in markets where the national institutions inspire solidarity and collectivism. An explicit form of CSR can be found in more liberal market economies where individualism, liberalism and discretion are encouraged. Campbell (2007) proves with his research that the level of CSR engagement is mediated by a variety of institutional factors.

These came from numerous economic conditions as economic environment and the amount of competition. Furthermore, the institutional conditions are an institutional mediator effect, with regulations, monitoring institutions and community groups as examples.

According to Glover, Champion, Daniels and Dainty (2013) an obvious economic return is missing based on the institutional theory. However, the theory helps understanding why firms engage in CSR, since they try to find legitimate practices in the view of their stakeholders. The different institutional needs such as, environment protection organizations, customers and companies from different industries encourage firms to ensure their legitimateness.

2.2.3 Legitimacy theory

According to Deegan (2002) the legitimacy theory is about a social contract between a firm and the society in which the specific firm operates. Dowling and Pfeffer (1975) define legitimacy as: "a condition or status, which exists when an entity's value system is congruent with the value system of the large social system of which the entity is a part. When a disparity, actual or potential, exists between the two value systems, there is a threat to the entity's legitimacy. The legitimacy theory states that a firm continually seeks to operate within the bounds and norms of the society in which they operate (Dowling & Pfeffer, 1975; Deegan, 2002; and Frynas & Yamahaki, 2016).

There are mainly two perspectives of the legitimacy theory, which are: strategic and intuitional (Suchman, 1995; Chan, Watson & Woodliff, 2014; Panwar, Paul, Nybakk, Hansen & Thompson, 2014; and Frynas & Yamahaki, 2016). As stated by Suchman (1995), strategic legitimacy is assumed to be the degree of managerial control over the legitimating process. Managers can use strategies that give the society, in which the firm operates, the assumption that the firm is attempting to comply with their expectations and desires. Legitimacy is considered by Chan et al., (2014) and Panwar et al., (2014) as a resource that is given by the society. The institutional perspective is in contrast to the strategic perspective, assuming that legitimacy is acquired by factors that do not come from a firms qualities or actions (Chan et al., 2014). This perspectives assumes that firms have limited potential to control for legitimacy, because legitmacy is also dependent from culture and the ideology of evaluators.

The legitimacy theory suggests that firms with more CSR engagement obtain a higher level of legitimacy, benefit through improved corporate governance ratings, better investor appeal and reputational gains. Frynas and Yamahaki (2016) reviewed the literature about the legitimacy theory and found that large and publicly owned firms are more often active in CSR engagement and reporting. The reason for this is that these firms are more visible and open to public scrutiny and hence have more legitimacy needs. Lanis and Richardson (2012) have found evidence for the legitimacy theory. In their research they compared CSR disclosures of firms that are tax aggressive, and which are assumed non-tax aggressive. The results showed that tax aggressive firms disclose significantly more about CSR than non-tax aggressive firms. As an explanation Lanis and Richardson (2012) state that the public considers high tax

aggressiveness as irresponsible or an illegitimate activity. Reporting more CSR disclosure is used as a strategy to repair corporate legitimacy.

Zheng, Luo and Maksimov (2015) found support for the legitimacy theory as well. Their results showed that firms from China use philanthropy and sustainability practices to improve their legitimacy. The philanthropy practices are used to gain legitimacy with their outside stakeholders, while sustainability practices are used to improve legitimacy with insider stakeholders. Bachmann and Ingenhoff (2016) expected that CSR disclosure could strengthen legitimacy, but also weaken firms legitimacy due to scepticism and distrust. However, the results showed that despite a higher degree of stakeholder scepticism and distrust, that more CSR disclosure has a positive effect on the degree of legitimacy. Meaning that firms can regain their trust by increasing their CSR disclosure, even though stakeholders are sceptical. Thus, the advantages of enhanced legitimacy by CSR disclosure outweigh the scepticism of stakeholders.

2.2.4 Resource dependence theory

The resource dependence theory of Pfeffer and Salancik (1978) suggests that the external resources of firms affect the activities and the decisions made by a firm. Frynas and Yamahaki (2016) add that firms depend on their surroundings to assure the flow of critical resources for a firms survival. Mellahi, Frynas, Sun and Siegel (2016) come with a somewhat similar statement that the growth and survival of a firm depends on it's a capability to gain resources and manage uncertainties and demands from external factors. Overall it is important for a firms survival to gain enough resources, and implement a strategy to divide these resources among different uncertainties and demands.

Frynas and Yamahaki (2016) found in their review of the literature that firms are depended on many different factors, which have different conflicting social demands. A firm cannot always satisfy all these demands. According to the resource dependence theory, firms will use more of their available resources to social actors who control critical resources (Pfeffer & Salancik, 1978). Frynas and Yamahaki (2016) argue that this explains why firms with a high degree of female staff pay considerably more attention to work-life balance issues. Or firms which use a high amount of natural resources invest in extensive local development initiatives in health and education. Hendry (2001) states that activists pressure groups, for example environmental NGOs, choose different types of CSR practices to influence the firm depending on their relative power.

According to the resource dependent theory, the board of directors of a firm plays an important role in the flow of critical resources. Several resource dependent theory studies have focussed on the role of the board of directors and how this affects CSR. Ortiz-de-Mandojana, Aragón-Correa, Delgado-Ceballos and Ferrón-Vílchez (2012) have found in their research that directors that interlock with firms providing knowledge-intensive business services have a higher engagement in proactive environmental strategies. Hafsi and Turgut (2013) state that firms with a more diverse board of directors have higher social performance

scores. Furthermore, Villiers, Naiker and van Staden (2011) find that firms with more members in the board of directors, larger representation of active CEOs on the board of directors, and more legal experts in the board of directors, score higher on environmental performance. Kassinis Vafeas (2006) found that external groups can help improving the environmental performance of a firm. Their study found that communities with higher income, strong environmental preferences and a high population density had a positive effect on the environmental performance of their sample firms.

It can be discussed that the resource dependence theory can be linked with the institutional and the stakeholder theory. This because the pressures from a firms stakeholders or institutional leads can influence a firms CSR behaviour. However, Frynas and Yamahaki (2016) state that the main difference between the theories is, that the resource dependence theory allows for strategic decision making. Managers of a firm have the availability to take their own strategic decisions to acquire the resources on which the firm depends.

2.2.5 Agency theory

According to Frynas and Yamahaki (2016) the agency theory is about the relationship between 'principals' and 'agents' in a firm. In this theory, the principal delegates work to the agent who will perform the task. The most common example of an agency relationship in finance is the relationship between firms shareholders (principal) and firms managers (agents). The agency problem is a common topic of the agency theory. The agency problem is the conflict of interest between the principal and the agents of a firm. Eisenhardt (1989) addresses two problems that come up within the agency theory. The first problem is that the goals of the principal and the agent of a firm are in conflict and that the solutions for these conflicts are difficult and expensive. A simple example is managers (agents) that act purely in their own interest and not in the interest of the shareholders (principal). The second problem Eisenhardt (1989) mentions' is that the principal and agent have different opinions about the risks of a firm. A manager is likely to take less risk because his or her own job is at risk, while a shareholder will want to take more risk to increase the value of the firm.

Friedman (1962) investigated that the agency theory has impact on CSR. He argued that CSR represents self-serving behaviour of managers (agents). These social and environmental goals will hurt the shareholder (principal) of a firm because it will lead to lower profits. More recently Brammer and Millington (2005) stated that managers use CSR to increase their own social reputation while these CSR activities are very costly for a firm. Support for these arguments has been found by different authors. Atkionson and Galaskiewicz (1988) found that the amount of financial resources paid to charity decreases, when the CEO or another individual of a firm owns a significant amount of the company shares. Barnea and Rubin (2010) found support more recently. They argued that managers, or other large block holders of a firm, overinvest in CSR activities for their own reputation.

Other studies, based on the agency theory and CSR, found that CSR leads to improved financial and non-financial performance. For instance, Oh et al., (2011) found in their research that

large institutional shareholders and foreign investors with long term orientations are supportive to firms CSR activities. This indicates that these investors prefer firms to invest in CSR. Berrone and Gomez-Mejia (2010) state that CEO's of firms will gain advantages when their firms engage in environment friendly ways. The reason for this is that it will improve the social legitimacy and firms survival capabilities. Bear, Rahman and Post (2010) contribute that the presence of women on the board of directors of a firm is related to a firm's reputation and that this mediates a firms CSR rating. In other words, if a firm has women on the board of directors, the CSR ratings will increase. This will lead to better reputation and improve financial performance eventually.

The agency theory alone cannot explain why firms engage in CSR activities and what the outcomes are. According to Eisenhardt (1989), the agency theory can only partially explain a view of the world, although it may be valid, it does not account for the whole complexity of firms. So, although the agency theory is useful, it is still important to identify other theories concerning CSR. Therefore, this study has examined multiple theories explaining CSR and its outcomes.

2.3 Previous research on CSR

A lot of research has been executed about CSR. These studies include topics as the determinants of CSR, the relation between CSR and financial performance and the other way around. In this section the abstract of these topics is described.

2.3.1 Determinants of CSR

Different empirical evidence has been done showing the determinants of CSR. Park and Ghauri (2014) investigated the key drivers that motivate CSR engagement for small and medium sized multinational enterprises subsidiaries. First Park and Ghauri (2014) found that consumers determine why firms engage in CSR, since CSR influences the thoughts, feelings and purchasing patterns of consumers. Secondly, Park and Ghauri (2014) found evidence that internal managers and employees determine CSR activities, since managers and employees orientate and decide particular firm behaviours towards CSR. De Villiers et al., (2011) found that the size of the board positively impacts the level of CSR disclosure. Furthermore, board independence positively influences a firms CSR disclosure (Harjoto & Jo, 2011). Board members that are more independent tend to be less focused on the short-term financial performance but more in long-term sustainability (De Villiers et al., 2011).

Thirdly, competitors determine firms CSR engagements (Park & Ghauri, 2014). An example is given in which a CEO admitted to engage in CSR because his competitor started CSR activities and this would help their company survive in the competitive market. Fourth, evidence is found for the factor local communities. Local communities, in combination with social activists, are forcing firms to focus on CSR efforts (Park & Ghauri, 2014). Firms meet the demands of the local communities to benefit from being recognized as a part of the community in which they operate. Gamerschlag et al., (2011) add that especially firms with

high visibility are influenced and Brammer and Millington (2006) found that firms with more media exposure are associated with higher CSR disclosure. Last, NGO's (non-governmental organizations) determine why firms undertake CSR activities, since they are seen as a social guard and are able to influence customers.

Many researchers have tried to examine if particular firm characteristics determine a firms CSR disclosure. First, Udayasankar (2008) and Darnall, Henriques and Sadorsky (2010) argue that larger firms engage in more CSR because larger firms face more public scrunity in case of bad behaviour. Artiach, Lee, Nelson and Walker (2010) add that larger firms receive more attention from external stakeholders. Darnall et al., (2010) discussed that these stakeholders bring a higher level of pressure to behave in an appropriate level of social and environmental performance. Contrary, smaller firms receive less pressure from stakeholders and are therefore less likely to engage in CSR activities (Etzion, 2007).

Previous empirical evidence supports the impact between firm size and CSR disclosure (Artiach et al., 2010; Brammer & Millington, 2010; Brammer & Pavelin, 2006; Darnall et al, 2010; Waris et al., 2010). Secondly, Artiach et al., (2010), McGuire, Sundgren and Schneeweis (1988) and Waris, Frynas and Mahmood (2017) argue that financial performance influences a firms level of CSR engagement. CSR activities are argued to be sensitive to the existence of slack recourses and firms that are less profitable may be less willingly to undergo CSR activities. Brammer and Millington (2004) state that if a firm has lower financial performance managers seek to satisfy creditors and shareholders' before social stakeholders. Leverage is suggested as a determinant of CSR by Reverte (2009) and Purshothaman, Tower, Hancock and Taplin (2000). Firms that have a higher level of debt are argued to be more likely to adhere to the demands of financial stakeholders instead of social stakeholders.

The study of Waris et al., (2017) state that the industry in which a firm operates, impacts the level of CSR engagement. Reverte (2009) states that firms that engage in more CSR belong to more environmentally sensitive firms compared to firms with lower CSR ratios. Environmentally sensitive firms are for example active in the mining, oil and chemical industry. Gamerschlag, Möller and Verbeeten (2011) add that stakeholder pressures are influenced by the industry in which a company is active. The results of the research also show that the amount of CSR disclosure is influenced by the industry in which a firm is active. According to Waris et al., (2017), the amount of CSR disclosure is different between developed and developing (for example India) countries. In developed countries, specific stakeholders like shareholders, creditors, investors, environmentalists and the media are more important determinants. In developing countries, the concerns of external forces such as international customers, foreign investors and international media are considered more important.

2.3.2 The impact of CSR on financial performance

Multiple studies have tried to examine the effect of CSR on financial performance. Li et al., (2017) used data of Chinese energy intensive listed companies between 2012 and 2014, to find what the impact is of CSR on financial performance. Their empirical results showed that

CSR significantly influences financial performance in a positive way. Nollet, Filis and Mitrokostas (2016) examine in their paper the relationship between CSR and financial performance, using accounting-based (ROA and ROC) and market based (Excess Stock Returns) indicators. The data used in the paper comes from the Bloomberg's Environmental Social Governance (ESG) scores from the period 2007-2011. The first result was that there is a significant negative relation between CSR and ROC. However, the accounting-based measures showed different results. The accounting-based measures of financial performance suggested that over a longer period, CSR positively influences financial performance. Waddock and Graves (1997) find that CSR has a positive impact on financial performance and future financial performance.

Inoue and Lee (2011) tested the impact of CSR on financial performance by dividing CSR in five dimensions and using ROA and Tobin's Q. The overall results concluded that CSR improved a firms financial performance. Wu and Shen (2013) tested the impact of CSR on financial performance for a total of 162 banks in 22 countries. The data covered observations from 2003-2009. The study showed a positive impact of CSR on financial performance. Rodriguez (2015) examined CSR and financial performance in two ways, first of all the impact of CSR on financial performance was researched. Secondly, he tried to see if better financial performance leads to more CSR. For this research a sample of Spanish listed firms was used. The results showed that better CSR, results in higher financial performance, and vice versa. Meaning that firms with better financial performance are more likely to engage in CSR activities. Karagiorgos (2010) examined if the impact of CSR results in higher stock returns. The empirical findings showed a positive correlation between CSR and stock returns.

Ahamed, Almsafir and Al-Smadi (2014) tested the impact for Malaysian firms using accounting-based measures of financial performance. They conclude that CSR is positively associated with ROA and ROE. Moneva and Ortas (2010) analysed environmental performance and its impact on financial performance for a sample of 230 European firms. The results showed support for the positive impact of CSR on financial performance. El Ghoul, Guedhami, Kwok, and Mishra (2011) investigated the impact of CSR on the cost of capital for a large sample of US firms. Their findings showed that firms with higher CSR scores were rewarded with lower cost of capital. The findings suggest that firms who invest in the improvement of responsible employee relations, environmental policies and product strategies reduce the cost of equity in a significant way.

Nelling and Webb (2009) investigated the "virtuous circle" of CSR and financial performance. This "virtuous circle" suggests that higher financial performance leads to more CSR participation, and that more CSR participation leads to higher financial performance. When using an OLS regression, the results showed that higher financial performance leads to more participation in CSR. Secondly, it suggests that more participation in CSR leads to better financial performance. However, when using a fixed effects regression model, to control for independent variables such as corporate culture or managerial influence, no statistical

evidence was found. Barnett and Solomon (2012) investigated the U-shaped relationship between CSR and financial performance. There results found that firms with low CSR scores have higher financial performance than firms with moderate CSR scores, but firms with the highest CSR scores have the highest financial performance.

Not all studies did find positive outcomes for the impact of CSR on financial performance. Schreck (2011) found no significant effects for the impact of CSR on financial performance using Tobin's Q and ROE as dependent measurable. However, when testing the particular effects of higher corporate governance and environmental management scores, the results showed significant improvements of Tobin's Q. As an explanation, Schreck (2011) discusses that the overall measurement of CSR is influenced by different constructs. The possibility that all constructs show significant improvements of financial performance is lower than that of one individual construct.

The study of Moore (2001) studied the impact of CSR on financial performance in the supermarket industry in the United Kingdom. The outcomes of the study showed a negative impact of CSR on financial performance. However, this study only examines firms from the supermarket industry. Lopez, Garcia and Rodriguez (2007) studied a sample of 55 European firms between 1998 and 2004. The sample group was split in two, in which one group used CSR practices and the other group did not. The results of Lopez et al., (2007) showed that engaging in CSR leads to a negative impact on the short-term business performance. However, the negative impact seems to reduce over the long-term.

Last of all, Brammer et al, (2006) find a negative impact of CSR on financial performance, using a sample of UK firms. These results imply that engaging in CSR will lower the financial performance of a firm. The research used only stock returns as measurement for financial performance, instead of using both stock returns and previously used accounting-based measurements like ROA or Tobin's Q. Therefore, it is not possible to find if CSR would have a possible positive effect on firms ROA or Tobin's Q. A possible explanation for the divergent results could come from multiple reasons. As said before, there can be a difference between the financial performance indicators of stock returns and accounting-based measurements. Secondly, the difference can come from different CSR measurements. This study used three indicators: environmental, employment and community. The environmental and employment indicators showed negative correlation for financial performances whilst the community indicator showed a small positive result.

2.4 Hypothesis development

In this section the hypothesis are described that were tested during this research. The first hypothesis relates to the impact of CSR on financial performance. The other four hypotheses are related to the investigation of the moderating impact of board characteristics on CSR and its impact on financial performance.

2.4.1 CSR and financial performance

The first objective of this study is to find if CSR affects the financial performance of Dutch listed firms. Section 2.2 of this study described which theories determine why firms engage, or do not engage, in CSR. Some of these studies also expect a particular relationship between CSR performance and financial performance. The study of Frynas and Yamahaki (2016) state that based on the stakeholder theory, the relationship between CSR and financial performance is positive. Glover et al., (2013) argue that the institutional theory misses a direct link between CSR and economic return. Based on the legitimacy theory, it is believed that if firms engage in more CSR practices, this would improve their legitimacy to the society, which will lead to improved economics. The resource-based theory also expects higher financial performance for firms with good CSR scores. Particular environmental policies can improve to competitive advantages, for example improved innovation, human resources or firms reputation. Based on the agency theory, both a positive and negative influence of CSR on financial performance can be expected. First of all, the agency theory argues that managers engage in expensive CSR activities purely for self-interest instead of shareholders wealth. However, some authors find that CSR activities can give non-financial advantages that will lead to improved financial performance over the long therm. Overall; most of the theories expect a positive relationship between CSR and financial performance.

Section 2.1.2 of this study reviewed previous literature about the effect of CSR on financial performance. The researchers used different methods to measure the CSR and financial performance of firms. Also, the samples that were used in these studies differ from each other. Most studies found the relationship between CSR and financial performance to be positive. Meaning that if firms have a higher CSR score, their financial performance is more likely to be higher. Only a few find no significant relationship or even a negative relationship. This negative relationship might come from the use of only stock returns as measurement for financial performance. Based on the expectations from the different theories and previous research about the relationship of CSR and financial performance, this study expects the relationship between CSR and financial performance to be positive. This leads to the following first hypothesis:

Hypothesis 1. The impact of corporate social responsibility on financial performance is positive.

2.4.2 Board size

First the moderating effect of board size is investigated. Board size refers to the number of members in the board of directors. As discussed, the board of directors can acquire critical resources for a firm. An advantage of a large board is that there should be more knowledge, expertise and access to resources (Ahmadi, et al., 2017). Villiers et al., (2011) adds that larger boards have a higher possibility to include experts on issues as CSR performance. These board members may have experience to challenges related to CSR performance and are therefore more likely to make good decisions about it. However, Guest (2009) states that the decision-

making progress can be slowed down in larger boards. This could lead to delay in engaging in CSR activities.

Multiple studies have investigated the impact of board size on CSR performance. Villiers et al., (2011) found that firms with a larger board of directors achieve higher environmental performance. Jizi, Salama, Dixon and Stratling (2014) also find a positive impact between board size and CSR engagement. The study of Kabir and Thai (2017) found evidence that board size moderates the impact of CSR on financial performance in a positive way. Based on the arguments above and the empirical evidence about the moderating impact of board size on CSR, the following hypothesis was developed:

Hypothesis 2. Larger boards strengthen the positive impact of CSR on financial performance.

2.4.3 Board independence

The second moderating effect that is investigated is board independence. Outside directors are less focused on short-term financial goals, but instead are interested in long-term sustainability for example the engagement in CSR activities (Jizi et al., 2014; Post et al., 2011). Villiers et al., (2011) add that outside directors are more freely in their decision making and are likely to engage in long-term investments. It is believed that this can increase a firms credibility and reputation (Villiers et al., 2011). Kabir and Thai (2017) argue that outside directors are not involved in the day-to-day management of a firm, and are therefore more objective in their recommendations. Multiple studies have found evidence for the moderating effect of board independence (Jizi et al., 2013; Harjoto & Jo, 2011; Post et al., 2014; Kabir & Thai, 2017). The arguments above and the results from emperical evidence suspect that independence of the board of directors strenghtens the impact of CSR on financial performance. This leads to the following hypothesis:

Hypothesis 3. Independent boards strengthen the positive impact of CSR on financial performance.

2.4.4 Gender diversity

The third moderating effect that is investigated is gender diversity. Gender diversity refers to the presence of females on the board of directors. This is interesting, since female board members bring unique backgrounds and characteristics (Hillman et al., 2002). Pelled, Eisenhardt and Xin (1999) suggest that females have different norms, attitudes, beliefs and perspectives than men. Bear et al., (2010) mention that increasing gender diversity in the board of directors is correlated with increased attention to ethical issues and the environment. The representation of females on the board of directors may have social consequences as well. Women are more favourable of ethical matters than men and are more sensitive to corporate social responsible performance (Hafsi & Turgut, 2013). The empirical evidence of the study of Hafsi and Turgut (2013) showed that there is a positive and significant impact of gender on the board of directors and CSR performance. Based on the arguments above the following hypothesis is developed:

Hypothesis 4. Gender diversity strengthens the positive impact of CSR on financial performance

2.4.5 Age diversity

Age diversity is the last moderating effect that is investigated. Age diversity refers to the distribution of age between the different members of the board of directors. Darmadi (2011) stated that to engage in innovative strategies it is important to have younger members in the board of directors. Although more diversity in age is believed to have more experience, different backgrounds and social networks. Hafsi and Turgut (2013) argue that younger generations of directors are more sensitive to environmental and ethical issues which lead to social responsible friendly behaviour. However, Post (2011) mentions that the capacity to reason in a moral way is developed over time. Furthermore, age explains the variance in moral judgement whereas older individuals have higher moral reasoning. Based on this it is believed that more age diversity in the board of directors is optimal. This leads to the following hypothesis:

Hypothesis 5. Age diversity strengthens the positive impact of CSR on financial performance.

3. Research methodology

In this chapter a description is given of the research method, used in the research. The first paragraph explains which research method was used to test the hypothesises. After that a description is given of the variables that were used in the research method and how they were measured. The variables were divided into dependent, independent and control variables. The last section describes which sample was used and how the necessary data was required.

3.1 Research method

This section describes which research model was used during the study. Secondly it discusses how the endogeneity problem was controlled.

3.1.1 Research model

Past research about the effect of CSR on financial performance has been reviewed to find out which research methods have been used in the past. Wang and Sarkis (2017) used a regression model to test the impact of CSR on financial performance and the moderating effect of corporate governance. Li et al., (2017) used a multiple regression to test the moderating effect of government regulations on CSR and financial performance. Nollet et al., (2016) also used a multiple regression to test the impact of CSR on financial performance. The advantage of a regression model is that it determines the influence of one or more predictor variables on a dependent variable (Hair & Black, 2013). Secondly, Hair and Black (2013) add that it is a simple and straithforward technique that provides prediction and explanation. As disadvantage they mention that it assumes a straight-line relationship between the dependent- and independent variable which can be incorrect. However, since the succesful usage of regression analysis in past research about the impact of CSR on financial performance, this research also used a regression analysis to test the impact of CSR on financial performance.

An ordinary least squares (OLS) regression is a commonly used form of regression. Most previous studies that have been reviewed have used this type of regression when examining the impact of CSR on financial performance (Waddock and Graves, 1997; Barnett and Solomon, 2012; Oh et al., 2011; Nelling and Webb, 2009). This technique predicts the dependent variable by minimizing the sum of the squared differences between the predicted value and the actual dependent variables. Other studies, for example Harjoto and Jo (2011), used a two-stage least squares regression to control for the endogeneity problem. Following the study of Waddock and Graves, 1997; Barnett and Solomon, 2012; Oh et al., 2011; Nelling and Webb, 2009, the following OLS regression model is selected to test hypothesis one (*The impact of corporate social responsibility on financial performance is positive.*):

$$FP_{i,t} = \alpha_0 + \beta_1 CSR_{i,t-1} + \beta_x Controls_{i,t} + \varepsilon_{i,t}$$

$FP_{i,t}$ = Financial performance of firm i in year t;

$CSR_{i,t-1}$ = CSR performance in year $t-1$

$Controls_{i,t}$ = Firm size, leverage, sales growth, year effects, and industry effects;

$\varepsilon_{i,t}$ = Firm-specific errors.

Where i denotes a specific firm and t denotes the year

To test if board characteristics influence the impact of CSR on financial performance, the second OLS regression model has come up, following the study of Peng and Yang (2014) and Kabir and Thai (2017):

$$FP_{i,t} = \alpha_0 + \beta_1 CSR_{i,t-1} + \beta_2 Board_{i,t-1} + \beta_3 CSR_{i,t-1} Board_{i,t-1} + \beta_x Controls_{i,t} + \varepsilon_{i,t}$$

$FP_{i,t}$ = Financial performance of firm i in year t;

$CSR_{i,t-1}$ = CSR performance in year $t-1$;

$Board_{i,t-1}$ = Board characteristics in year $t-1$;

$CSR_{i,t-1} Board_{i,t-1}$ = Moderating effect of CSR and board characteristics in year $t-1$;

$Controls_{i,t}$ = Firm size, leverage, sales growth, year effects, and industry effects;

$\varepsilon_{i,t}$ = Firm-specific errors.

Section 3.2.3 gives further explanation about the measurement of the variables and why these control variables are included.

3.1.2 Endogeneity problem

When examining the effect of CSR on the financial performance of firms, a problem that needs to be addressed is the endogeneity problem. It is possible, that firms who score high in CSR have better financial performance than firms who score low on CSR, because firms with high financial performance engage more in CSR. This is the problem of reverse causality. This means that an unobservable variable or firm specific characteristic is correlated with the independent variable and the independent variable with the error term. Harjoto and Jo (2011) control for the endogeneity problem by using a two-stage least squares regression. This kind of regression corrects for the bias because an instrumental variable is included. Harjoto and Jo (2011) chose to use a firms age as instrumental variable because of its high correlation with CSR activities, but uncorrelated with the dependent variables. Other studies that used a linear regression model used a one-year lag of the independent variable to control for endogeneity (Barnett & Solomon, 2012; Li et al., 2017).

3.2 Measurement of variables

In this section the variables are described which were used to test the two hypotheses. First an explanation is given about how CSR was measured. Secondly the measurement of financial performance is described. Thirdly the measurement methods of board characteristics are

given. Last of all the control variables that were used are described. The definitions of variables can be found in table 3.1.

3.2.1 Corporate social responsibility

Measuring CSR is one of the main concepts of this research. Past researches have used different techniques to measure the level of CSR of firms. Waddock and Graves (1997) argue that it is hard to deal with the multi-facets of CSR, and that one needs a multidimensional measurement method. The KLD index[8] has been used by different researches to measure CSR. This index rates the CSR of firms based on various characteristics and is used by Barnett and Solomon (2012) and Villiers de et al., (2011). Also, other databases have been used by prior researchers, for example the Bloomberg Environment, Social and Governance (ESG)[9] database used by Wang and Sarkis (2017).

The usage of content analysis has been used by various researchers, for example Khan et al., (2012) and Liu and Zhang (2017). Content analysis consists of analysing a firm's annual reports, website, press releases etc. and determining the times a specific word (e.g. corporate social responsibility) has been mentioned. While using this method, one assumes that the more a specific word is mentioned, the higher the CSR performance of the firm is. One might expect this research method to be less reliable than using a database. However, Holder-Webb, Cohen, Nath and Wood (2009) argue that it is assumable that when a firm is aware of a certain issue, in this case CSR, and discloses information about it, it is more likely that the firm will take activities in it. However, the amount of times a specific word is mentioned does not say anything about the quality of a firms CSR activities. This research used content analysis to measure CSR and used a CSR database for robustness following the student thesis of Kemerink[10].

Content analysis

Content analysis is a common method used in studies to examine CSR performance (Khan et al., 2013; Liu & Zhang, 2017). Khan et al., (2013) followed a checklist which consists of five categories, where a firm received a value of "1" if the category was included and a value of "0" if not. The categories that were used are environmental, employee information, value-added information, product or service information and community involvement. A drawback of this method is that it does not take the amount of times a particular subject is mentioned. For example, a firm that mentions one thing in the environmental category receives the same score as a firm that mentions something ten times in the environmental category.

Ahamed et al., (2014) and Gamerschlag et al., (2011) performed content analysis by counting the number of times a specific word or sentence appears in a firm's annual report. An advantage of using words as unit of analysis is that it is not subjective to judgement. This is

[8] https://www.msci.com/msci-kld-400-social-index
[9] https://www.bloomberg.com/professional/solution/sustainable-finance/
[10] https://essay.utwente.nl/74393/

since the researcher does not have to consider if a word is considered CSR or not. Gamerschlag et al., (2011) adds that using this type of content analysis is considered as most reliable, because it is easy to replicate and it will give similar results. It is important to identify which keywords are used in the content analysis. The study of Gamerschlag et al., (2011) and Kabir and Thai (2017) retrieved the key words for the content analysis of the Global Reporting Initiative (GRI). Gamerschlag et al., (2011) states that the GRI is most used as a global standard and is seen as a relevant institution concerning CSR. The GRI has three standards; environmental, social and economic. The economic standard will be excluded from the research since these words do not refer to CSR. The keywords that were used in the study can be found in appendix A.

The annual reports of the firms in the sample were searched for the afore mentioned keywords. The amount of times each word is mentioned in the annual reports was summed up. To control for different sizes of the annual reports, the word count was divided by the number of pages of the annual report.

Transparency benchmark

There is a database available that measures the level of CSR performance for Dutch firms, which will be used as an alternative measurement of CSR for robustness. This database is called the 'Transparency Benchmark'[11], which is a research about the content and quality of CSR of Dutch firms, issued by the Ministry of Economics and Climate in collaboration with the Koninklijke Nederlandse Beroepsorganisatie van Accountants (NBA). The aim of this transparency benchmark is to improve the knowledge of firms in disclosing CSR engagement, gaining insights in points of improvements and see how firms score in comparison to their competitors. The Dutch ministry hopes to improve the level of CSR activities with the transparency benchmark. This database is considered as a good alternative to measure CSR performance, because the database is prepared by professionals with experience about the topic. A drawback of this database is that not every Dutch listed firm is presented in the results.

The scores in the transparency benchmark are measured in two ways. First, the participating firms fill in a questionnaire based on their CSR performance. After this, a panel of independent assessors and reviewers, including Earnst & Young, review the firms and their performance in CSR. Based on criteria such as social policy, management approaches and business model the participating firms receive a score between 0 and 200. The criteria are in line with the Global Reporting Initiative (GRI), the International Integrated Reporting Council (IIRC), and the European Guideline for publication of non-financial information and diversity. A higher score means that a firm scores good on CSR performance, whereas a lower score indicates bad CSR performance. In 2017 the lowest score was 2 and the highest score was 199. The firm with the highest score receives the 'Crystallises', which was won by Royal Bam Group in 2017. Firms

[11] https://www.transparantiebenchmark.nl/over-de-transparantiebenchmark

can receive a score of 0 if the firm did not publish the necessary information, for example their annual report, in time. The total of firms that received a score apart from 0 was 253 in 2017. (Ministerie van Economische Zaken en Klimaat, 2017)

3.2.2 Financial performance

Financial performance of firms is one of the main measures in this research. In this research it is the dependent variable, since the study wants to find out if a higher performance of CSR will improve the financial performance of a firm. Previous researches have included accounting-based and market-based proxies for financial performance. The study of Nollet et al., (2016) used Return on Assets (ROA), Return on Capital (ROC) and stock returns to examine the effect of CSR on financial performance. Wang and Sarkis (2017) used ROA and Tobin's Q as proxy variables for financial performance. Li et al., (2017) used ROA as main measurement. Wu and Shen (2013) used ROE, ROA, net-interest income and non-interest income for a sample consisting of Indian banks.

This study used both accounting-based and market-based proxies for financial performance. By doing this, the possible disadvantage of one measurement method can be covered by the other. According to Ahamed et al., (2014), a firms Return on Assets (ROA) and Return on Equity (ROE) are the most used accounting-based measurements by researchers. The ROA is calculated by using a firms operating income divided by total assets (Nollet et al., 2016; Wang & Sarkis, 2017; Li et al., 2017; Kabir & Thai, 2017). ROE is calculated by dividing the firms net income by the total equity (Wu & Shen, 2013; Waddock & Graves, 1997; Kabir & Thai, 2017). There are a few drawbacks of these accounting-based measurements. First of all, Ahamed (2014) argues that accounting-based measurements are subjective to manipulation of managers by using different accounting methods. Secondly, Ahamed (2014) argues that these measurements look at historical data of a firm and can be seen as backward looking. In comparison, market-based measurements are more forward looking as they represent how investors or shareholders value a firm. However, measuring performance of the future is hard, because no one can exactly predict the future. Typical examples of market-based measurements are market-to-book value, Earnings Per Share (EPS), stock return (RET) and Tobin's Q.

This study used ROA and ROE as the accounting-based proxies for financial performance. As market-based proxy Tobin's Q and stock return were used. Tobin's Q is the total market value of a firm divided by the total assets value (Inoue & Lee, 2011; Harjoto & Jo, 2011; Kabir & Thai, 2017). Since Tobin's Q takes the market value (market-based) and the total assets value (accounting-based) of a firm, it can be seen as a hybrid measurement method. According to Inoue and Lee (2011) Tobin's Q is the most used market-based measurement method. Tobin's Q is defined as the ratio of market value to replace the value of a firms assets (Salim & Yadav, 2012). If the Tobin's Q value of a firm is equal to 1, it means that the market value of a firm is equal to its replacements costs of its assets. If the value is lower than 1, the replacements costs of a firms assets are higher than the value of its stock, this means that the stock of a firm

is undervalued. Conversely, the value of Tobin's Q can be higher than 1. This means that the stock of a firm is overvalued and that it is worthy to invest in. Besides Tobin's Q, the stock return of a firm is used as proxy for financial performance which is in line with the study of Nollet et al., (2016), Nelling and Webb (2009) and Kabir and Thai (2017).

3.2.3 Board characteristics

The four board characteristics that were included in this study are board size, board independence, gender diversity and age diversity and are measured in the following way.

Board size and board independence

Board size is measured as the total number of board members, which is the number of management board and supervisory board members (Villiers et al., 2011; Jizi et al., 2011; Kabir & Thai, 2017). The second board characteristic, board structure is measured as the number of independent directors divided by the total of board members of a firm, which is in line with the studies of (Jizi et al., 2011; Harjoto & Jo, 2011; Liu et al., 2014). This research sees independent directors as members of the supervisory board. Since the usage of a two-tier board in the Netherlands, there are always independent board members present. Thus, for this study board independence is seen as board structure.

Gender diversity

Multiple authors have measured gender diversity in their studies. Liu, Wei and Xie (2014) used a dummy variable to measure gender diversity. A firm was given a value of "1" if a women is present on the board of directors. If there is no presence of a women on the board of directors, the firm gets a value of "0". Besides using a dummy variable to measure gender diversity, Liu et al., (2014) also uses the percentage of women on the board of directors. Sabatier (2015) also measures gender diversity as the number of female directors divided by the total of directors of a firm. In this research gender diversity is measured as the number of female board members divided by the total number of board members, since this measurement method takes the actual number of women on the board into consideration.

Age diversity

Authors have found different measurement methods to measure age diversity. Simons, Pelled and Smith (1999) measure age diversity as the range of age divided by the average age of the board of directors. The range of age is measured by subtracting the age of the youngest board member by the age of the oldest board member. However, this research did not want to use the difference between the oldest and youngest board member but the variance in age. The measurement method of Ali, Ng and Kulik (2014) is therefore more useful. This research measures age diversity by using the coefficient of variation, which was calculated by dividing the standard deviation of age by the mean of age.

3.2.4 Control variables

This study also used a few control variables. Barnett & Solomon (2012) state that control variables can systematically impact the independent and dependent variable. By including

these variables, the influence of these variables on CSR and financial performance become clear. Wang and Sarkis (2017) use a firms size, leverage ratio, liquidity and revenue growth as control variable. Nollet et al., (2016) found that leverage ratio, R&D expenses and firm size are important control variables. Gamerschlag et al., (2011) uses firm size and industry as control variable. Size, leverage ratio and year are used in the study of Inoue and Lee (2011). This study uses firm size, leverage ratio, sales growth year effects and industry effects as control variables, since these variables showed the most impact on the tests of CSR and financial performance. It would have been interesting to include liquidity; however current ratio is not examinable for banks. Since financial and insurance companies are not excluded from the sample, this would lead to too much missing data. More details about the sample will be given in section 3.3.

Size

Several previous studies have found that firm size has a significant influence on the financial performance of firms. Inoue and Lee (2011) find that larger firms have more available resources to invest in society and environment. Secondly, larger firms are more visible for the public than smaller firms (Gamerschlag et al., 2011). Because of this they face more pressure from outside stakeholders, which is in line with the legitimacy and stakeholder theory. This pressure leads to more engagement in CSR. The third perspective comes from economies of scale. There is a positive association between the size of a firm and its profitability (Kang, Lee, & Huh, 2010). The size of a company is firstly measured by the natural logarithm of a firms total assets, which is in line with previous studies (e.g. Inoue & Lee, 2011; Wang & Sarkis, 2017, Gamerschlag et al., 2011; Kang et al., 2010). Secondly, as robustness test, size is measured by the natural logarithm of a firms total sales (Reverte, 2009).

Leverage

Leverage is the second control variable in this study. A higher leverage ratio might suggest a higher financial risk, leading to a lower financial performance (Wang & Sarkis, 2017). In addition, Inoue and Lee (2011) state that higher leverage ratios will lead to constrains for managers about investing in new opportunities. Thus, this will lead to a negative influence of a firms financial performance. Leverage is measured as a firms total debt divided by total assets (Wang & Sarkis, 2017; Inoue & Lee, 2011).

Sales growth

Sales growth is the fourth control variable used in the study. Wang and Sarkis (2017) argue that firms with higher sales growth need to assign more working capital to investments, which may influence their short-term profitability. The research of Nollet et al., (2016) also use sales growth as control variable after finding this variable essential in other studies investing the CSR and financial performance relationship. Sales growth is measured as the percentage of change in sales from year t-1 to year t (Nollet et al., 2016; Wang & Sarkis, 2017).

Year effects

The research of Brammer and Millington (2008) discuss that the impact of CSR on financial performance differs over time. They argue that firms invest more money in CSR activities when the economic situation is more favourable. Because of this a dummy variable is created to control for year effects.

Industry effects

Following the research of McWilliams and Siegel (2011), this research controls for industry effects, since firms from various industries may differ in their CSR engagement. Furthermore, the public opinion is argued to be different for industries that are less environmentally friendly. A dummy variable is included to control for the industry effects. A classification of the industries is given in the following section 3.3.

3.3 Sample and data selection

In the first part of this section a discussion is given about which firms were included in the sample and what the size of the sample is. Secondly, the section describes how the data that was used is collected. Last of all the industry classification of the sampled firms is given.

3.3.1 Sample and data

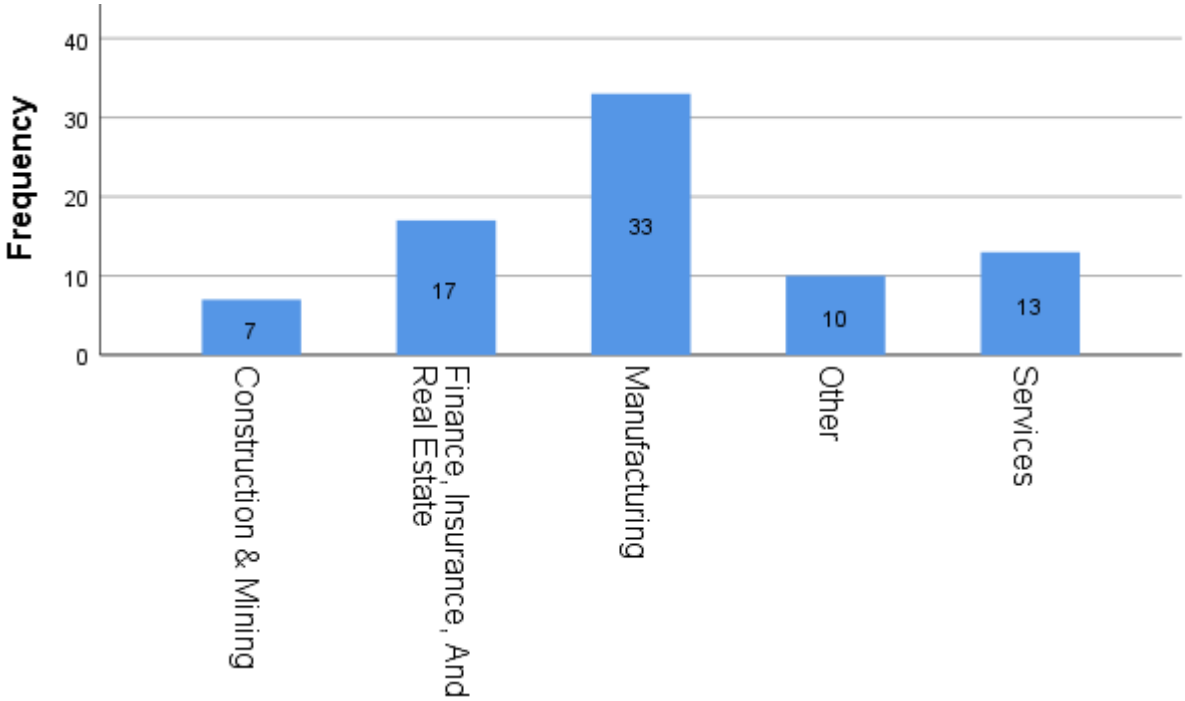
This section discusses which sample and data were used in this research. The sample consists of Dutch listed firms with securities on the Euronext Amsterdam from 2014-2017. The lagged CSR and board characteristic observations come from 2013-2016. Firms listed on the Euronext Amsterdam are divided in the AEX index, the AMX index and the AScX index. The firms on the AEX are the 25 largest Dutch securities on the Euronext Amsterdam. The firms on the AMX are the firms ranked between 26 and 50. The AMX is also called the midcap index. The last group is the AScX, also called the small-cap index, and consists of the firms ranked between 51 and 75. The ORBIS database was used to select the firms that are listed on the Euronext Amsterdam. The sample used in the study consists of 81 firms, since the firms listed on the Euronext Amsterdam varied through the sample period. The financial data of the sample was also retrieved from the ORBIS database. The ORBIS database is a good source to gather (financial) information from multinational firms. The CSR scores are retrieved from the Transparency Benchmark and by conducting content analysis. It became clear that not all financial data for 2017 was available in ORBIS, thus extra data was retrieved from firms annual reports. To prevent sample bias, firms were not removed from the sample when data for a particular year was missing.

3.3.2 Industry classification

To classify the firms into different industries, the US SIC codes were used. The US SIC classifies firms into one of its eleven industries for example “Manufacturing”, “Services” and “Finance, Insurance and Real Estate”. It is important to have substantial sample sizes when controlling for industry effects. Some industries have only a few number of firms. For example, “Agriculture, Forestry and Fishing” only consists of one firm. Since the sample is not large

enough to classify each industry, some industries were pooled to create large enough sample sizes per industry. The industries “Manufacturing”, “Services” and “Finance, Insurance and Real Estate” consist of a minimum of 10 firms and were considered large enough. The industries “Construction” and “Mining” were pooled to “Construction and Mining”. The industries “Agriculture, Forestry and Fishing”, “Trading” and “Transportation, Communications, Electric, Gas and Sanitary service” are too small on their own and were therefore pooled to “Other”. This led to the distribution as can be found in figure 3.1. The largest group consists of thirty-three firms active in the “Manufacturing” industry. The smallest group consists of seven firms and are active in the “Construction and Mining” industry. The “Finance, Insurance and Real Estate” industry consists of seventeen firms. The “Services” industry consists of thirteen firms and the pooled industry “Other” consists of ten firms. Appendix B shows a list of the firms that are included in the sample and the industry in which they are classified.

Figure 3.1 – Industry classification



3.4 Robustness tests

To test if the results hold true under different circumstances, several robustness tests were performed. The first robustness test used a different measurement technique for CSR. Instead of using content analysis, the 'Transparency Benchmark' (as explained in section 3.2.1) was used to measure CSR a firms CSR performance. The second robustness test used an alternative measurement for firm size. Instead of using total assets, the amount of total sales was used as measurement for firm size. Thirdly, since this study includes firms from the "Finance, Insurance and Real Estate" industry, the impact of CSR on financial performance was measured for firms from this industry. A comparison was made with firms from the "Construction and Mining", "Manufacturing", "Services" and "Other" industries.

Table 3.1 – Variable definitions

Name	Definition	Measurement
CSR		
CSRCTotal $_{i,t-1}$	Corporate social responsibility	Total CSR words
CSRC $_{i,t-1}$	Corporate social responsibility	CSR words / number of annual report pages
CSRT $_{i,t-1}$	Corporate social responsibility	Transparency Benchmark
Financial performance		
ROE $_{i,t}$	Return on equity	Net income / book value of total assets
ROA $_{i,t}$	Return on assets	Operating income / book value of total assets
Tobin's Q $_{i,t}$	Tobin's Q ratio	(Market value of equity + book value of liabilities) / book value of total assets
RET $_{i,t}$	Stock return	((Stock price year end - stock price year start + dividend) / stock price year start)
Board characteristics		
Size $_{i,t-1}$	Board size	Total number of board members
Structure $_{i,t-1}$	Board independence	Independent directors / total board members
Gender $_{i,t-1}$	Gender diversity	Female board members / total board members
Age $_{i,t-1}$	Age diversity	Sum of board members age / board members
CAge $_{i,t-1}$	Age diversity	Standard deviation of age / mean of age
Control variables		
Total Assets $_{i,t}$	Firm size	Total assets
LnTotal Assets $_{i,t}$	Firm size	Natural logarithm of total assets
Total Sales $_{i,t}$	Firm size	Total sales
LnTotal Sales $_{i,t}$	Firm size	Natural logarithm of total sales
Leverage $_{i,t}$	Leverage	Total debt / total assets
Growth $_{i,t}$	Sales growth	Total sales year t - total sales year $_{t-1}$ / total sales year $_{t-1}$

4. Results

In this chapter the results of the study are described. In the first section the descriptive statistics of the variables are described, that were used in the study. Secondly a correlation matrix was performed to test if there exists multicollinearity between the different variables. The third section contains the regression results which tested the impact of CSR on financial performance. In the fourth section the regression results are reported of moderating impact of board characteristics on CSR and financial performance. In section 5 the outcomes of the different robustness tests are given.

4.1 Descriptive statistics

In table 1 the descriptive statistics of the dependent, independent and control variables are reported. Before the descriptive statistics were conducted the data, of variables that are used in the regressions, was winsorized on the 95 percent scale to reduce the impact of outliers. The data is compared with other studies. The amount of observations has a maximum of 303 for ROE, ROA and the control variables. The lowest amount of observations is 249 for CSR measured by the transparency benchmark. The four financial performance proxies; ROE, ROA, Tobin's Q and RET were used to measure the financial performance of firms. The first financial performance proxy ROE has a mean of 0.082 and a median of 0.101. This is higher than the mean as reported in the study of Rodriguez (2015), who reported an average of 0.047. Secondly, the average ROA reported is 0.053 and the median is 0.058, which is higher than the mean of 0.020 as reported by Rodriguez (2015) and lower than 0.060 as reported by Wang and Sarkis (2017). The third financial performance proxy is Tobin's Q, which has a mean of 0.938 and a median of 0.800. Rodriguez (2015) reported a much higher Tobin's Q of 1.857. Wang and Sarkis (2017) reported a more similar result of 0.719. The last financial performance proxy is stock return (RET) and has a mean score of 0.133 and a median of 0.080. This is similar to the average of 0.130 found by Kabir and Thai (2017).

The first independent variable of this study is CSR, which is measured by content analysis (CSRC) and the transparency benchmark (CSRT). The CSRCTotal variable is the amount of total CSR words that were observed in the annual reports. For Groothandelsgebouwen only 1 CSR word was found. Akzo Nobel NV had the highest amount of CSR words, in total 1240. The mean score is 189 words and the median 98 words. Gamerschlag et al., (2011) reported a mean score of 129 keywords. The study of Kabir and Thai (2017) found a mean score of 38 keywords. This shows that the mean of this research is higher than in the studies of Gamerschlag et al., (2011) and Kabir and Thai (2017). CSRC is the amount of CSR word observations divided by the total pages of the annual report. The minimum CSRC score is 0.120 and the maximum CSRC score is 4.330. The mean score is 1.052 and the median score is 0.690. The minimum CSRT score is 11 and the maximum score is 198. The mean CSR score is 112 and

the median score is also 112. This is similar to the student thesis of Kemerink[12] who found a mean score of 109.

The first board variable used in this study is board size, which is the amount of total board members of a firm. The mean board size is 8.4 board members and the median is 8. This is higher than the mean of Kabir and Thai (2017) who reported a mean of 5.47 for Vietnamese firms. Harjoto and Jo (2011) found more similar result with an average of 9.1 board members. Board structure refers to the number of supervisors on the board of directors. On average 0.651 of the total board members is a member of the supervisory board. The median score is 0.670. This is in line with the study of Harjoto and Jo (2011), who found a slightly lower score of 0.601. The study of Kabir and Thai (2017) found a lower mean score of 0.560. Gender diversity has a mean of 0.155 and a median score of 0.170. This means that on average 15.5% of the total board members are women. This is higher than the study of Liu et al., (2014) who found a mean score of 0.102 for Chinese firms. The average age of the board members is 57.9 and the median is 58.1. The coefficient of age diversity is calculated by dividing the mean age of the board of directors divided by the standard deviation of the age. The mean age coefficient is 0.130 while the median is the same. This is in line with the study of Ali et al., (2014) who reported a mean age coefficient of 0.120.

The first control variable used in this study is total assets, to measure the size of the firms in the sample. The mean asset size is €21.928.000, and the median is €15.666.000. This mean asset size is lower than reported in the study of Gamerschlag et al., (2011), who reported a mean score of 24.706.000. This difference is explainable since the study of Gamerschlag et al., (2011) used a German sample. Total sales is the second control variable, used as robustness to measure firm size, and has a mean of €3.461.000 and a median of €901.000. The standard deviation of total assets and total sales is much higher than the mean score; this suggests that the variable is highly skewed. Therefore, the natural logarithm of total assets and sales was used during this study. The mean of the natural logarithm of total assets is 14.157, the median is 14.264. The mean of the natural logarithm of total sales is 13.497, the median is 13.712. The third control variable is leverage. This variable has a mean of 0.598 and a median of 0.580. This means that on average the firms in this sample have 0.63 Euros of debt compared to one euro of total assets. This is almost similar to the study of Wang and Sarkis (2017), who reported a mean value of 0.631. The last control variable is sales growth and has a mean of 0.084 and a median of 0.030. This is higher than the mean sales growth of 0.047 as reported by Wang and Sarkis (2017).

[12] https://essay.utwente.nl/74393/

Table 4.1 – Descriptive statistics

Variables	Mean	Median	Std. Dev.	Min	Max	N
Financial performance						
ROE $_{i,t}$	0.082	0.101	0.129	-0.312	0.298	303
ROA $_{i,t}$	0.053	0.058	0.060	-0.101	0.183	303
Tobin's Q $_{i,t}$	0.938	0.800	0.767	0.040	3.200	289
RET $_{i,t}$	0.133	0.080	0.283	-0.320	0.890	284
CSR						
CSRTotal $_{i,t-1}$	189	98	225	1	1240	299
CSRC $_{i,t-1}$	1.052	0.690	0.972	0.120	4.33	299
CSRT $_{i,t-1}$	112	112	57	20	195	249
Board variables						
Size $_{i,t-1}$	8.370	8	2.924	3	15	295
Independence $_{i,t-1}$	0.651	0.670	0.119	0.250	0.920	295
Gender $_{i,t-1}$	0.155	0.170	0.119	0.000	0.500	295
Age $_{i,t-1}$	57.908	58	4.844	47	71	295
CAge $_{i,t-1}$	0.130	0.130	0.080	0.039	0.285	295
Control variables						
Total Assets $_{i,t}$ (x1000)	21.928	15.666	75.786	16.575	394.482	303
LnTotal Assets $_{i,t}$	14.157	14.264	2.399	9.720	19.790	303
Total Sales $_{i,t}$ (x1000)	3.464	901	5.906	10	23.331	303
LnTotal Sales $_{i,t}$	13.497	13.712	2.084	9.240	16.970	303
Leverage $_{i,t}$	0.598	0.580	0.207	0.080	0.950	303
Growth $_{i,t}$	0.084	0.030	0.169	-0.260	0.590	303

Variable definitions in part 3.2. Table shows full sample. All variables that are used in the regressions are winsorized at 0.95 percent to reduce the impact of outliers.

4.2 Correlation matrix

A Pearson correlation test was performed to analyse if there exists correlation among the variables that are used in this study. Furthermore, it controls for multicollinearity, since regression results can be distorted when variables with high correlation are part of the same regression analysis. All of the financial performance proxies are positively correlated at the 0.01 level. The highest correlation is between ROE and ROA (0.746**). This is not a problem since the proxies of financial performance will not be used in the regression together. Secondly, ROE and ROA show a positive correlation with CSRC, respectively (0.151**) and (0.167**) at the 0.01 level. The other financial performance proxies do not show significant correlation with CSRT or CSRC. Furthermore, some of the financial performance proxies are correlated with the board characteristics. Firstly, ROA and Tobin's Q are correlated with board structure, respectively (0.139*) at the 0.05 level and (0.176**) at the 0.01 level. Secondly, ROE and ROA are correlated with gender diversity respectively (0.192**) at the 0.01 level and (0.120*) at the 0.05 level.

There is also correlation between the financial performance proxies and some of the control variables. The first correlation exists between ROA and Tobin's Q with the control variable total assets (-0.121*) at the 0.05 level and (-0.183**) at the 0.01 level. Secondly, ROE is correlated with total sales (0.178**) at the 0.01 level. The correlation with leverage is negative for ROE (-0.166**), ROA (-0.393**), Tobin's Q (-0.486**) and RET (-0.170**) at the 0.01 level. This means that all financial proxies have a negative correlation with leverage. Sales growth is correlated with ROA (0.136*), Tobin's Q (0.142*) and RET (0.147*) at the 0.05 level. There is no significant correlation with ROE and sales growth.

The two measurement variables of CSR (CSRT and CSRC) are highly correlated with each other (0.504**) at the 0.01 level. This is no problem since the variables will not be used together in the regression. Secondly, CSRT and CSRC are correlated with the board characteristics board size, respectively (0.599**) and (0.410**) at the 0.01 level. Gender diversity is correlated with CSRT (0.350**) and CSRC (0.388**) both at the 0.01 level. There is also correlation between CSRT and CSRC with the control variables. Total assets have a correlation of (0.636**) with CSRT and (0.313**) with CSRC at the 0.01 level. Total sales have a correlation of (0.691**) with CSRT and (0.469**) with CSRC at the 0.01 level. As last there is a correlation between CSRT and leverage of (0.210**) at the 0.01 level.

The control variables total assets and total sales are highly correlated (0.818**) at the 0.01 level. This can be explained since both variables are measurements of firm size. However, both variables will not be included in the same regression. Total sales will be used as a robustness test to control for firm size. The correlation of total assets and leverage is (0.401**) at the 0.01 level. To control for this correlation, the control variables are included separately at the regression and afterwards all together in a full model.

Besides a Pearson correlation test, variance inflation factor (VIF) tests were conducted to control for multicollinearity among the variables. This test assumes that if the VIF scores exceed 10 there is multicollinearity among the variables. The results of the VIF tests showed that none of the variables exceeded the critical threshold. In appendix C a few VIF test results are shown as evidence.

Table 4.2 – Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
CSRT $_{i,t-1}$	1													
CSRC $_{i,t-1}$	0.504**	1												
ROE $_{i,t}$	0.091	0.151**	1											
ROA $_{i,t}$	0.041	0.167**	0.746**	1										
Tobin's Q $_{i,t}$	-0.030	0.079	0.356**	0.544**	1									
RET $_{i,t}$	0.026	0.073	0.246**	0.244**	0.264**	1								
Size $_{i,t-1}$	0.599**	0.410**	0.075	-0.066	-0.030	-0.062	1							
Structure $_{i,t-1}$	0.042	-0.053	0.108	0.139*	0.176**	0.081	0.150**	1						
Gender $_{i,t-1}$	0.350**	0.338**	0.192**	0.120*	0.071	0.017	0.376**	0.165**	1					
CAge $_{i,t-1}$	-0.012	-0.095	-0.112	-0.085	-0.107	-0.043	0.005	-0.236**	-0.069	1				
LnTotal Assets $_{i,t}$	0.636**	0.313**	0.094	-0.121*	-0.183**	-0.094	0.773**	0.138*	0.305**	-0.056	1			
LnTotal Sales $_{i,t}$	0.691**	0.469**	0.178**	0.108	0.034	-0.060	0.698**	0.141*	0.260**	-0.147*	0.818**	1		
Leverage $_{i,t}$	0.210**	0.059	-0.166**	-0.393**	-0.486**	-0.170**	0.269**	0.012	0.134*	-0.045	0.401**	0.233**	1	
Growth $_{i,t}$	-0.074	-0.086	0.111	0.136*	0.142*	0.147*	-0.053	-0.053	0.012	-0.004	-0.073	-0.067	-0.093	1

**. Correlation is significant at the 0.01 level (2-tailed) *. Correlation is significant at the 0.05 level (2-tailed). *Variable definitions in part 3.2.*

4.3 Regression results

In this section the OLS regressions are reported which tested the first hypothesis; the impact of CSR on financial performance is positive. Table 4.3 reports the results of the OLS regressions of the independent and control variables on ROE, the proxy for financial performance. Table 4.4 reports the same regression with ROA as proxy for financial performance, table 4.5 reports the regression with Tobin's Q as financial performance proxy and table 4.6 reports RET as proxy for financial performance. In each table the first model regresses the impact of the independent variable CSR (CSRC) on the financial performance proxies (ROE, ROA, Tobin's Q, RET). In model 2 the control variable size (Total Assets) is added, in model 3 leverage (Leverage) is added and model 4 includes sales growth (Growth). The last model includes all control variables. Each of the five models controls for industry and year effects.

In the first model of table 4.3 it becomes clear that CSR has a significant positive impact on ROE (b=1.587*, t=2.003) at the 0.05 level. The results remain at the 0.05 level when including leverage or sales growth in the regression, as can be seen in model 3 and 4. When including size in the regression model the results become insignificant, as seen in model 2. The last model includes all three control variables in the regression, which shows an insignificant impact of CSR on ROE (b=1.059, t=1.238). Furthermore, table 4.3 shows that size (b=1.021**, t=2.790) and leverage (b=-12.409**, t=-3.048) have a significant impact on ROE at the 0.05 level. Sales growth has a significant impact on ROE (b=8.332*, t= 1.892) at the 0.10 level. Overall the results of table 4.3 do not support the first hypothesis, which states that there is a positive impact between CSR and financial performance. This is in line with the study of Schreck (2011) where no significant results for CSR on ROE were found.

Table 4.3 – ROE as dependent variable

Model	1	2	3	4	5
CSRC $_{i,t-1}$	1.587**	0.848	1.883**	1.727**	1.059
	(2.003)	(0.976)	(2.370)	(2.181)	(1.238)
LnTotal Assets $_{i,t}$		0.727**			1.021**
		(2.016)			(2.790)
Leverage $_{i,t}$			-9.766**		-12.409**
			(-2.445)		(-3.048)
Growth $_{i,t}$				8.705*	8.332*
				(1.939)	(1.892)
Constant $_{i,t}$	8.062**	-1.295	13.642***	7.703**	1.666
	(3.008)	(-0.242)	(3.894)	(2.881)	(0.310)
N	299	299	299	299	299
Adjusted *R*-Sq	0.032	0.042	0.048	0.041	0.078

*Dependent variable: ROE. Industry and year effects included in the model. Table shows the T-values in parentheses. ***. Correlation is significant at the 0.01 level. **. Correlation is significant at the 0.05 level. *. Correlation is significant at the 0.10 level. Variable definitions in part 3.2*

In table 4.4, the first model does not report a significant impact of CSR on ROA (b=0.572, t=1.608). However, when including size or sales growth into the model the impact of CSR on ROA becomes significant at the 0.10 level, which can be seen in model 2 and 4. Model 3 shows that when including leverage the impact of CSR on ROA becomes significant at the 0.05 level. When all control variables are included into the model, as seen in model 5, there is a significant impact of CSR on ROA (b=0.902**, t=2.449) at the 0.05 level. The control variable leverage shows a significant negative impact on ROA (b=-10.663***, t=-6.087) at the 0.01 level. Sales growth shows a significant positive impact on ROA (b=4.241**, t=2.238) at the 0.05 level. Overall the results of table 4.4 show a positive significant impact of CSR on ROA. This means that evidence was found to support the first hypothesis, which states that CSR has a positive impact on financial performance. The study of Nollet et al., (2016) shows the same results, finding a positive relation between CSR and a firms ROA.

Table 4.4 – ROA as dependent variable

Model	1	2	3	4	5
CSRC $_{i,t-1}$	0.572	0.765*	0.894**	0.647*	0.902**
	(1.608)	(1.950)	(2.643)	(1.825)	(2.449)
LnTotal Assets $_{i,t}$		-0.189			0.061
		(-1.165)			(0.386)
Leverage $_{i,t}$			-10.629***		-10.663***
			(-6.249)		(-6.087)
Growth $_{i,t}$				4.673**	4.241**
				(2.325)	(2.238)
Constant $_{i,t}$	6.682***	9.121***	12.756***	6.490***	11.819***
	(5.553)	(3.778)	(8.552)	(5.421)	(5.111)
N	299	299	299	299	299
Adjusted *R*-Sq	0.94	0.095	0.199	0.107	0.208

*Dependent variable: ROA. Industry and year effects included in the model. Table shows the T-values in parentheses. ***. Correlation is significant at the 0.01 level. **. Correlation is significant at the 0.05 level. *. Correlation is significant at the 0.10 level. Variable definitions in part 3.2*

In table 4.5, the first model shows an insignificant negative impact of CSR on Tobin's Q (b=-0.044, t=-1.059). When the control variables are added separately the results remain insignificant. In the full model with all control variables the impact of CSR on Tobin's Q is again insignificant (b=-0.026, t=-0.629). Furthermore, leverage shows a significantly negative impact on Tobin's Q (b=-1.314***, t=-6.706) at the 0.01 level. Sales shows a significantly positive impact in model 4, however the significance drops in the full model. Overall the results of table 4.5 do not support the first hypothesis, since no significant evidence is found for a positive impact of CSR on Tobin's Q. This is in line with the study of Schreck (2011) who also did not find a significant impact of CSR on Tobin's Q.

Table 4.5 – Tobin's Q as dependent variable

Model	1	2	3	4	5
CSRC $_{i,t-1}$	-0.044	-0.039	-0.007	-0.036	-0.026
	(-1.059)	(-0.867)	(-0.179)	(-0.885)	(-0.629)
LnTotal Assets $_{i,t}$		-0.004			0.027
		(-0.226)			(1.484)
Leverage $_{i,t}$			-1.314***		-1.369***
			(-6.706)		(-6.788)
Growth $_{i,t}$				0.439*	0.349
				-(1.855)	(1.585)
Constant $_{i,t}$	1.120***	1.175***	1.896***	1.097***	1.566***
	(7.889)	(4.169)	(10.807)	(7.733)	(5.849)
N	284	284	284	284	284
Adjusted *R*-Sq	0.273	0.270	0.373	0.279	0.379

*Dependent variable: Tobin's Q. Industry and year effects included in the model. Table shows the T-values in parentheses. ***. Correlation is significant at the 0.01 level. **. Correlation is significant at the 0.05 level. *. Correlation is significant at the 0.10 level. Variable definitions in part 3.2*

In table 4.6, the impact of CSR on RET is reported. The results show no significant impact of CSR on RET (b=0.008, t=0.451). The results remain insignificant when including the control variables or all control variables in the full model (b=0.021, t=1.127). The control variable size has a significant negative impact on RET (b=-0.152*, t=-1.709) at the 0.10 level. Sales growth has a significantly positive impact on RET (b=0.189*, t=-1.962) at the 0.10 level. Overall, the results of table 4.6 do not support the first hypothesis, meaning that no evidence was found for a positive impact of CSR on RET. This is in line with the study of Kabir and Thai (2017) who also did not find a significant impact of CSR on RET.

The first hypothesis implied that there is a positive impact of CSR on the financial performance of firms. This hypothesis was tested by performing several regressions with four proxies of financial performance. All of the regressions showed a positive influence for CSR on financial performance except for Tobin's Q. However, only the positive impact of CSR on ROA was significant in the full model. Since the results lack overall significance, only limited evidence was found for a positive impact of CSR on financial performance. The results are in line with particular previous studies, since no overall consensus was found for the impact of CSR on financial performance. For example, Li et al., (2017) only found a positive impact of CSR on ROA, while Nollet et al., (2016) found a positive impact on ROC but not for ROA. Schreck (2011) did not find a significant impact for ROE and Tobin's Q. However, Rodriguez (2015) found evidence for a positive impact on ROE and ROA and Karagiorgos (2010) found a positive impact for RET. Kabir and Thai (2017) found evidence for a positive impact of CSR on ROE, ROA and Tobin's Q, but not for RET and ROS.

Table 4.6 –RET as dependent variable

Model	1	2	3	4	5
CSRC $_{i,t-1}$	0.008	0.017	0.013	0.011	0.021
	(0.451)	(0.902)	(0.739)	(0.654)	(1.127)
LnTotal Assets $_{i,t}$		-0.009			-0.006
		(-1.171)			(-0.718)
Leverage $_{i,t}$			-0.176**		-0.152*
			(-2.032)		(-1.709)
Growth $_{i,t}$				0.199**	0.189*
				(2.058)	(1.962)
Constant $_{i,t}$	0.180***	0.299**	0.283***	0.171**	0.335**
	(3.088)	(2.558)	(3.676)	(2.937)	(2.808)
N	281	281	281	281	281
Adjusted *R*-Sq	0.085	0.086	0.095	0.096	0.103

*Dependent variable: RET. Industry and year effects included in the model. Table shows the T-values in parentheses. ***. Correlation is significant at the 0.01 level. **. Correlation is significant at the 0.05 level. *. Correlation is significant at the 0.10 level. Variable definitions in part 3.2*

Besides the independent variable CSR, conclusions are drawn about the control variables. The regression results show that size has a significantly positive impact on ROE, however the results on the other financial proxy variables are insignificant. The study of Inoue and Lee (2011) also find no overall evidence for the relationship between size and financial performance. The second control variable, leverage, is negative and significant in all regressions. This shows support that more leveraged firms have lower financial performance. This is in line with the study of Kabir and Thai (2017). The third control variable, sales growth shows a positive and significant impact on all proxy variables of financial performance, but not for Tobin's Q in the full model. This is in line with the study of Nollet et al., (2016). This might imply that sales growth only has an impact on accounting-based proxies of financial performance.

4.4 Moderating effect of board characteristics

The second to fifth hypothesis tests if board characteristics moderate the impact of CSR on financial performance. The results of these OLS regressions with moderating effects are reported in table 4.7. To test the moderating impact of board characteristics on the impact of CSR on financial performance, only the financial proxy ROA was used. Baron and Kenny (1986) state that a mediating impact can only appear when there is a significant impact between the independent variable (CSR) and the dependent variable (financial performance). In section 4.3 it became clear that only evidence was found for a significant impact of CSR on ROA. Thus, only ROA was used as proxy for financial performance, since no significant impact was found for ROE, Tobin's Q and RET. The first model of the table shows the moderating impact of the board characteristic board size, the second model reports the moderating impact of board

structure. The third model reports the moderating impact of gender diversity and the last model is about age diversity.

Model 1 reports the results to test the second hypothesis; larger boards strengthen the positive impact of CSR on financial performance. Since it is expected that larger boards can acquire more knowledge, expertise and recourses (Ahmadi et al., 2017; Villiers et al., 2017). The results show that there is a significant impact of CSR on ROA (b=4.010***, t=3.542) on the 0.01 level. Secondly, it became clear that board size does not have a significant impact on the financial performance of a firm (b=0.227, t=1.019). More important, the table shows that board size negatively moderates the impact of CSR on financial performance (b=-0.293**, t=2.839) at the 0.05 level. This is contrary to the second hypothesis and therefore the second hypothesis is not supported. This is not in line with the study of Kabir and Thai (2017) who found that board size strengthens the impact of CSR on financial performance.

Model 2 reports the results to test the third hypothesis; independent boards strengthen the positive impact of CSR on financial performance. This is expected since independent directors are more focused on long term sustainability (Jizi et al., 2014; Post et al., 2011) and are more free in their decision making (Villiers et al., (2011). The results of model 2 showed that there is no significant impact of CSR on ROA (b=2.397, t=1.277). Therefore, a mediating effect is ruled out (Baron & Kenny, 1986). Nevertheless, the model reports that board independence has a significant impact on ROA (b=9.546**, t=2.271) at the 0.05 level, suggesting that firms with more independent board of directors achieve higher financial performance. The mediating impact of board independence did not show significant results.

Model 3 reports the results of the fourth hypothesis; gender diversity strengthens the positive impact of CSR on financial performance. According to Bear et al., (2010), the presence of more female directors is correlated with increased attention to ethical issues and the environment. Hafsi and Turgut (2013) add that women are more sensitive to corporate social responsible performance. Model 3 shows that CSR has a significant impact on ROA (b=2.216**, t=3.053) at the 0.05 level. Secondly, gender diversity has a significant impact on ROA (b=15.165***, t=3.614) at the 0.01 level. This indicates that a higher percentage of women in the board of directors leads to higher ROA. As last, gender diversity significantly weakens the impact of CSR on ROA (b=-7.470**, t=-2.581) at the 0.05 level. Suggesting that firms with more women in the board of directors have a weaker effect on the impact of CSR on financial performance. This is contrary to the expectations and therefore the fourth hypothesis is not supported. No articles are found examining the moderating impact of gender diversity on CSR, although Hafsi and Turgut (2013) found a significant impact of gender on the board of directors and CSR performance.

Model 4 reports the results to test the fifth hypothesis; age diversity strengthens the positive impact of CSR on financial performance. Darmadi (2011) states younger board members are important to engage in innovative strategies, and Hafsi and Turgut (2013) add that younger

board members are more sensitive to environmental issues and CSR. Post et al., (2011) mentions that to reason in a moral way develops over time. The results of model 4 report a significant impact of CSR on ROA (b=3.539**, t=2.641). No significant impact is found for the impact of age diversity on ROA. More important, age diversity weakens the impact of CSR on ROA (b=-20.727**, t=-2.060). This is contrary to the fifth hypothesis and thus the fifth hypothesis is not supported. No other articles were found who examined the moderating impact of age diversity and the impact of CSR on financial performance.

Table 4.7 – Moderating impact of board characteristics

Model	1	2	3	4
CSRC $_{i,t-1}$	4.010***	2.397	2.216**	3.539**
	(3.542)	(1.277)	(3.053)	(2.641)
Size $_{i,t-1}$	0.227			
	(1.019)			
CSRC*Size $_{i,t-1}$	-0.293**			
	(-2.839)			
Structure $_{i,t-1}$		9.546**		
		(2.271)		
CSRC*Structure $_{i,t-1}$		-2.034		
		(-0.704)		
Gender $_{i,t-1}$			15.165***	
			(3.614)	
CSRC*Gender $_{i,t-1}$			-7.470**	
			(-2.581)	
CAge $_{i,t-1}$				4.186
				(0.392)
CSRC*CAge $_{i,t-1}$				-20.724**
				(-2.060)
LnTotal Assets $_{i,t}$	0.071	-0.063	-0.014	0.068
	(0.309)	(-0.381)	(-0.091)	(0.430)
Leverage $_{i,t}$	-10.770***	-10.612***	-10.669***	-10.778***
	(-6.154)	(-6.048)	(6.145)	(-6.102)
Growth $_{i,t}$	3.922**	4.620**	3.814**	3.943**
	(2.075)	(2.417)	(2.030)	(2.072)
Constant $_{i,t}$	8.990***	6.668**	9.917***	10.842***
	(3.558)	(2.115)	(4.223)	(3.845)
N	294	294	294	293
Adjusted *R*-Sq	0.222	0.218	0.233	0.214

*Dependent variable: ROA. Industry and year effects included in the model. Table shows the T-values in parentheses. ***. Correlation is significant at the 0.01 level. **. Correlation is significant at the 0.05 level. *. Correlation is significant at the 0.10 level. Variable definitions in part 3.2*

4.5 Robustness tests

In this section the results of the robustness tests are reported, which were performed to see if the previous results and conclusions hold true under different circumstances. A common robustness check, for example Nollet et al., (2016), Wang and Sarkis (2017) and Li et al., (2017) is to use different measurement variables for financial performance. This research has used the same method of checking for robustness using ROE, ROA, Tobin's Q and RET as proxies for financial performance. In section 4.3 the results of the impact of CSR on financial performance were reported. The results showed only a significant impact of CSR on ROA and are therefore not robust for all proxies of financial performance. As second robustness test another measurement technique for CSR performance was tested and the third robustness test used a different measurement technique for firm size. The fourth robustness test used a sub-sample analysis with firms from the "Finance, Insurance and Real Estate" industry.

Alternative measurement of CSR

The second robustness test used another technique to measure CSR performance. Instead of using content analysis to measure CSR performance, the results of the transparency benchmark were used. In table 4.8 the results of the first robustness test are reported. The impact of CSR on ROA becomes stronger (b=1.895***, t=2.767) to the 0.01 level instead of 0.05, when using the transparency benchmark as CSR measurement. The results of CSR on ROE and RET remain insignificant. For Tobin's Q the influence of CSR becomes positive, but still insignificant. Concerning the control variables, the impact of size on ROE becomes insignificant. Leverage remains significantly negative except for RET where no significance is reported. Sales growth is still significant for ROE and ROA but loses significance for RET.

Table 4.8 – Alternative measurement of CSR

Model	1	2	3	4
	ROE	ROA	Tobin's Q	RET
CSRT $_{i,t-1}$	1.105	1.895***	0.091	0.043
	(0.719)	(2.767)	(1.098)	(1.232)
LnTotal Assets $_{i,t}$	0.713	-0.399	-0.016	-0.018
	(1.305)	(-1.637)	(-0.551)	(-1.427)
Leverage $_{i,t}$	-8.513*	-8.230***	-1.472***	-0.049
	(-1.932)	(-4.191)	(-6.176)	(-0.495)
Growth $_{i,t}$	18.119***	6.214**	0.215	0.147
	(3.568)	(2.746)	(0.769)	(1.248)
Constant $_{i,t}$	-0.663	8.982**	1.703***	0.246*
	(-0.104)	(3.164)	(4.949)	(1.696)
N	249	249	235	230
Adjusted *R*-Sq	0.127	0.236	0.409	0.103

*Dependent variable: ROE, ROA, Tobin's Q and RET. Industry and year effects included in the model. Table shows the T-values in parentheses. ***. Correlation is significant at the 0.01 level. **. Correlation is significant at the 0.05 level. *. Correlation is significant at the 0.10 level. Variable definitions in part 3.2*

Overall the results of the test with the transparency benchmark as measurement for CSR were robust with the main results, since the impact of CSR on ROA remains significant.

Table 4.9 – Alternative measurement of CSR including board characteristics

Model	1	2	3	4
CSRT $_{i,t-1}$	5.792***	3.683	3.115**	4.052**
	(3.811)	(1.270)	(3.096)	(2.396)
Size $_{i,t-1}$	2.455**			
	(2.752)			
CSRC*Size $_{i,t-1}$	-0.528**			
	(-2.832)			
Structure $_{i,t-1}$		18.598		
		(0.932)		
CSRC*Structure $_{i,t-1}$		-2.466		
		(-0.567)		
Gender $_{i,t-1}$			50.427**	
			(2.280)	
CSRC*Gender $_{i,t-1}$			-9.902*	
			(-2.053)	
CAge $_{i,t-1}$				67.113
				(1.246)
CSRC*Cage $_{i,t-1}$				-17.828
				(-1.428)
LnTotal Assets $_{i,t}$	-0.274	-0.481*	-0.375	-0.468*
	(-0.906)	(-1.951)	(-1.541)	(-1.927)
Leverage $_{i,t}$	-7.846***	-8.728***	-7.454***	-7.561***
	(-4.010)	(-4.430)	(-3.722)	(-3.840)
Growth $_{i,t}$	6.934**	7.095**	6.278**	5.594**
	(3.041)	(3.104)	(2.762)	(2.444)
Constant $_{i,t}$	-10.569	-2.789	1.943	1.420
	(-1.421)	(-0.208)	(0.425)	(0.194)
N	245	245	245	244
Adjusted *R*-Sq	0.255	0.252	0.254	0.241

*Dependent variable: ROA. L is logged transformed variable. Industry and year effects included in the model. Table shows the T-values in parentheses. ***. Correlation is significant at the 0.01 level. **. Correlation is significant at the 0.05 level. *. Correlation is significant at the 0.10 level. Variable definitions in part 3.2*

In table 4.9, the results are shown of the regression which includes the mediating impact of the board characteristics. Since table 4.8 only found evidence for a significant impact of CSR on ROA, only this proxy of financial performance was used. The results show that the impact of CSR is still significant in all models except model 2, where the mediating impact of board structure is regressed. Contrary to the main regression, board size has a significant impact on

ROA (b=2.455**, t=2.752) at the 0.05 level. In line with the main regression, board size moderates the impact of CSR on ROA in a significantly negative way (b=-0.528**, t=-2.832) at the 0.05 level. In model 2 the impact of CSR on ROA is again insignificant. The impact of board structure on ROA becomes insignificant. Model 3 shows that gender diversity still has a significant impact on ROA (b=50.427**, t=2.280), but at the 0.05 level instead of 0.01. The last model shows that the impact of age diversity on ROA remains insignificant. Age diversity does not moderate the impact of CSR on ROA in a significant way, this is contrary to the main regression. Overall, the impact of CSR on ROA is robust with the results of table 4 where CSR is measured by content analysis. However, the results of the moderating variables were not entirely robust, since the moderating impact of age diversity becomes insignificant.

Alternative measurement for firm size

The third robustness test used a different measurement of firm size. Instead of using total assets the variable total sales was used. The results are reported in Table 4.10. The most important conclusion is that the impact of CSR on ROA becomes insignificant (b=0.572, t=1.548). The impact of CSR on the other financial performance proxies remains insignificant.

Table 4.10- Alternative measurement of firm size

Model	1 ROE	2 ROA	3 Tobin's Q	4 RET
CSRC $_{i,t-1}$	0.883	0.572	-0.038	0.021
	(0.960)	(1.548)	(-0.889)	(1.138)
LnTotal Sales $_{i,t}$	1.325***	0.403**	0.040**	-0.008
	(3.213)	(2.289)	(1.967)	(-0.852)
Leverage $_{i,t}$	-12.145**	-11.739***	-1.385***	-0.167*
	(-2.998)	(-6.793)	(-6.921)	(-1.894)
Growth $_{i,t}$	8.181*	4.105**	0.341	0.187*
	(1.865)	(2.194)	(1.553)	(1.960)
Constant $_{i,t}$	-2.856	8.087**	1.399***	0.377**
	(-0.479)	(3.178)	(4.743)	(2.868)
N	298	298	285	280
Adjusted *R*-Sq	0.083	0.228	0.382	0.112

*Dependent variable: ROE, ROA, Tobin's Q and RET. Industry and year effects included in the model. Table shows the T-values in parentheses. ***. Correlation is significant at the 0.01 level. **. Correlation is significant at the 0.05 level. *. Correlation is significant at the 0.10 level. Variable definitions in part 3.2*

As a conclusion, the CSR results of the main regressions are not robust when using another measurement technique of firm size. Concerning the control variables, the impact of size measured by total sales has a significant impact on all proxy variables of financial performance except RET, while this impact was only significant on ROE when using total assets as measurement for size. The impact of leverage remains significantly negative for all proxy

variables of financial performance. Sales growth still has a significant impact on ROE, ROA and RET and not for Tobin's Q.

Financial vs non-financial firms

In table 4.11 the regression results are reported for the sample of financial firms (Finance, Insurance and Real Estate) and the non-financial firms (Construction and Mining, Manufacturing, Services and Other). This is interesting, since Brammer and Pavelin (2006) and Reverte (2009) state that the impact of CSR on financial performance varies for firms from different industries. Furthermore, multiple authors have excluded firms of the "Finance, Insurance and Real Estate" since they might influence the results (e.g. Kabir & Thai, 2017). The descriptive statistics of the financial firms are shown in appendix D. Table 4.11 shows that for the financial firms, CSR has no significant impact on any of the proxy variables of financial performance. This indicates that there is no evidence that CSR improves the financial performance for financial firms. For the non-financial firms it becomes clear that CSR still has a significant impact on ROA (b=1.076**, t=2.478) at the 0.05 level. This is higher than the results of the full sample (b=0.902**, t=2.449). Contrary to the results of the financial firms and the full sample, CSR has a significant impact on RET (b=0.046**, t=2.254) for the non-financial firms. The impact of size is significantly negative on Tobin's Q and significantly positive on RET for financial firms. For non-financial firms the impact of size is significantly positive on ROE and significantly negative on RET. The impact of leverage is significantly negative on all proxies of financial performance, except on ROE for financial firms. Sales growth has a significantly negative impact on RET for financial firms, while it is significantly positive on all proxies of financial performance for non-financial firms.

Additional regressions were performed to test the moderating impact of board characteristics, since significant impacts of CSR on ROA and RET were found for non-financial firms. In table 4.12 the results are reported for ROA and RET. The impact of CSR on ROA is only significant for model 1 and 3, where the moderating impact of board size and gender diversity is regressed. The impact of CSR on RET is only significant for model 5 where the moderating impact of board size is regressed. In both panels board size significantly weakens the impact of CSR on financial performance, respectively (b=-0.272**, t=2.267) and (b=-0.012**, t=-2.149) at the 0.05 level. This is in line with the results of the full sample. A significant impact of gender diversity on ROA is found (b=21.302***, t=4.004). Furthermore, gender diversity significantly weakens the impact of CSR on ROA (b=-10.012**, t=3.000) at the 0.05 level, which is in line with the results of the full sample. No further significant impacts of the board characteristics are found, whereas for the full sample evidence was found that age diversity weakens the impact of CSR on ROA

Table 4.11 – Financial vs non-financial

	Financial				non-Financial			
Model	1	2	3	4	5	6	7	8
	ROE	ROA	Tobin's Q	RET	ROE	ROA	Tobin's Q	RET
CSRC $_{i,t-1}$	1.532	0.115	0.007	0.013	1.376	1.076**	-0.009	0.046**
	(0.564)	(0.178)	(0.157)	(0.211)	-1.443	-2.478	(-0.171)	-2.254
LnTotal Assets $_{i,t}$	0.807	0.073	-0.018**	0.028**	0.910*	0.023	0.029	-0.025**
	(0.130)	(0.580)	(-2.351)	-2.695	-1.906	(0.104)	-1.179	(-2.512)
Leverage $_{i,t}$	-6.524	-8.477***	-0.693***	-0.351**	-14.958**	-11.030***	-1.611***	-0.186*
	(-0.972)	(-5.301)	(-7.082)	(-2.692)	-3.138	(-5.082)	(-6.337)	(-1.823)
Growth $_{i,t}$	-1.153	0.711	-0.112	-0.253**	14.780**	6.063**	0.693**	0.452***
	(-0.198)	(0.513)	(-1.287)	(-2.185)	-2.653	-2.390	-2.326	-3.783
Constant $_{i,t}$	2.682	7.678***	1.062***	-0.005	3.429	10.518***	1.798***	0.558***
	(0.387)	-4.653	-10.526	(-0.036)	(0.527)	-3.553	-5.225	-4.260
N	67	67	61	58	232	232	224	280
Adjusted *R*-Sq	0.108	0.343	0.634	0.307	0.069	0.116	0.183	0.118

*Dependent variable: ROE, ROA, Tobin's Q and RET. Year effects included in the model. Table shows the T-values in parentheses. ***. Correlation is significant at the 0.01 level. **. Correlation is significant at the 0.05 level. *. Correlation is significant at the 0.10 level. Variable definitions in part 3.2*

Table 4.12 – Financial vs non-financial with board characteristics

Model	1	2	3	4	5	6	7	8
	ROA	ROA	ROA	ROA	RET	RET	RET	RET
CSRC $_{i,t-1}$	3.930**	1.279	2.722***	1.903	0.172**	0.023	0.042	0.087
	-3.011	(0.524)	-3.314	-1.256	-2.829	(0.201)	-1.050	-1.230
Size $_{i,t-1}$	0.098				0.021			
	(0.330)				-1.470			
CSRC*Size $_{i,t-1}$	-0.272**				-0.012**			
	(-2.267)				(-2.149)			
Structure $_{i,t-1}$		9.473				0.302		
		-1.538				-1.033		
CSRC*Structure $_{i,t-1}$		-0.199				0.050		
		(-0.053)				(0.283)		
Gender $_{i,t-1}$			21.302***				-0.006	
			-4.004				(-0.022)	
CSRC*Gender $_{i,t-1}$			-10.012**				0.033	
			(-3.000)				(0.205)	
CAge $_{i,t-1}$				-9.826				-0.271
				(-0.729)				(-0.432)
CSRC*CAge $_{i,t-1}$				-7.177				-0.299
				(-0.620				(-0.555)
LnTotal Assets $_{i,t}$	0.223	-0.055	0.010	-0.028	-0.038**	-0.032**	-0.028**	-0.026**
	(0.656)	(-0.247)	(0.046)	(-0.127)	(-2.351)	(-3.059)	(-2.732)	(-2.471)
Leverage $_{i,t}$	-11.071***	-10.089***	-11.017***	-10.419***	-0.216**	-0.188*	-0.207**	-0.221**
	(-5.103)	(-4.520)	(-5.183)	(-4.799)	(-2.115)	(-1.776)	(-2.001)	(-2.151)
Growth $_{i,t}$	5.898**	5.897**	5.964**	5.541**	0.444***	0.456***	0.455***	0.474***
	-2.344	-2.342	-2.419	(5.541**	-3.739	-3.843	-3.799	-3.956
Constant $_{i,t}$	6.661*	4.712	7.646**	12.162***	0.588***	0.465**	0.634***	0.635***
	-1.937	(0.992)	-2.546	-3.257	-3.631	-2.070	-4.387	-3.646
N	231	231	231	230	222	222	222	221
Adjusted *R*-Sq	0.127	0.122	0.160	0.105	0.136	0.134	0.117	0.129

*Dependent variable: ROE, ROA, Tobin's Q and RET. L is logged transformed variable. Year effects included in the model. Table shows the T-values in parentheses. ***. Correlation is significant at the 0.01 level. **. Correlation is significant at the 0.05 level. *. Correlation is significant at the 0.10 level. Variable definitions in part 3.2.*

5. Conclusion

In this chapter the conclusions are given which are drawn from the main findings of the research. Furthermore, the limitations of the research and recommendations for further research are given.

5.1 Conclusions

Corporate Social Responsibility (CSR) has gained increasing attention in recent years. Firms spent high amounts of money in CSR activities, however it is not certain that these activities improve their financial performance. Many researchers have tried to investigate the impact of CSR on financial performance. The results vary from a positive impact, a neutral impact and even a negative impact of CSR on a firms financial performance. The impact of CSR on financial performance has been less examined for European countries. This led to the first research question; does CSR affect the financial performance of Dutch listed firms? Secondly, the moderating impact of board characteristics has not been examined by many researches. Therefore, a second research question was formulated; do board characteristics moderate the impact of CSR on financial performance for Dutch listed firms? This thesis contributes by investigating the impact of CSR on financial performance for Dutch listed firms. Secondly, the study investigated whether board characteristics moderate the impact of CSR on financial performance.

Based on a literature review and previous studies, five hypothesises were developed. The stakeholder theory, legitimacy theory and resource-based theory expect a positive impact of CSR on financial performance. The institutional theory misses a direct link between CSR and financial performance. Based on the agency theory both a positive and negative impact of CSR on financial performance can be expected. Furthermore, most previous studies found a positive impact of CSR on financial performance. Therefore, this thesis expected a positive relation between CSR and financial performance. Based on previous research, the study expected the board characteristics board size, board independence, gender diversity and age diversity to strengthen the impact of CSR on financial performance.

To test the five hypothesis, an (OLS) regression was performed. The CSR performance scores were measured by performing a content analysis and using the transparency benchmark. The financial data was retrieved from the ORBIS database and annual reports. To examine financial performance, accounting-based (ROE and ROA) and market-based (Tobin's Q and RET) measurements were used. The board characteristics were found by searching annual reports. Furthermore, the control variables, firm size, leverage, sales growth are included in the regression as were the industry and year dummies. The sample of the study consisted of 81 Dutch listed firms. The financial data observations come from 2014-2017, while the lagged CSR and board characteristic observations come from 2013-2016

In the first group of OLS regressions the impact of CSR on the accounting-based and market-based proxies of financial performance were performed. The impact was positive and significant for ROA. These results are in line with the expectations from the stakeholder theory, legitimacy theory, resource-based theory. The results showed an insignificant impact of CSR on ROE and RET. For Tobin's Q a negative relation was shown, which could be explained by the agency theory. However, the results were insignificant. Since only evidence was found for a significant impact of CSR on ROA, the first hypothesis; the impact of CSR on financial performance is positive, was not fully supported.

The second group of regressions tested if board characteristics moderate the impact of CSR on financial performance. Only ROA was used as proxy for financial performance, since no significant impact was found for the other proxies of financial performance. The results of the regressions showed that the moderating impact of board size, gender diversity and age diversity and CSR on financial performance is negative. For board independence no significant results were found. This is contrary to hypothesises 2 until 5 and therefore these hypothesises were not supported.

Additional robustness tests were performed to see if the results hold under different circumstances. As first robustness test, an alternative measurement technique was used for CSR. Instead of using content analysis the scores came from the transparency benchmark. The results with CSR scores from the transparency benchmark are robust with the main results, since the impact of CSR on ROA remained significant. When including the moderating impact of the board characteristics, the results were not entirely robust. Similar to the main results, the moderating impact of board size and gender diversity on CSR and financial performance was negative. However, the moderating impact of age diversity was insignificant. In the second robustness test, an alternative measurement of firm size was used. Instead of using total assets, the variable total sales was used. The results showed that the impact of CSR on ROA became insignificant and are therefore not robust with the main findings. The last robustness test made a comparison between financial and non-financial firms. No evidence was found for a significant impact of CSR on financial performance for the financial firms. For the non-financial firms, evidence was found that CSR improved a firms ROA and RET. Additional regressions were performed to test if board characteristics moderate the impact of CSR on ROA and RET for non-financial firms. Evidence was found that board size moderates the impact of CSR on ROA and RET in a significantly negative way. Furthermore, gender diversity moderates the impact of CSR on ROA in a significantly negative way.

Overall this thesis contributes by finding evidence of a positive influence of CSR on ROA for Dutch listed firms, suggesting that more CSR engagements leads to improved ROA. However, no consensus was found for the other proxies of financial performance. Secondly, the study found that board size, gender diversity and age diversity weaken the impact of CSR on ROA. The results of the study help convincing Dutch listed firms to engage in CSR activities, since it improves their financial performance.

5.2 Limitations and recommendations

Some limitations are found in this research. First of all, the research used a small sample size with a low number of observations. Only 81 Dutch listed firms were included in the sample with around 300 observations, whereas Nollet et al., (2016) and Wang and Sarkis (2017) reach over 1000 observations. Because of the small sample size, not every classified industry had a substantial sample size. Therefore, some of the industries were pooled. In addition, this research only takes Dutch listed firms in the sample. Replicating this study in other (European) countries might produce different results. For example, it is possible that the moderating impact of board characteristics is different for each country. Thus, it is recommended to add multiple countries in the sample or to make a country comparison to see if the results are similar to this study. This will also deal with the first limitation, because the number of observations can be increased by doing so.

Thirdly, only one model was used to test the relationship of CSR on financial performance. Varies authors have used different research methods to test this relationship, for example structural equation model (SEM) in Mustafa, Othmana and Perumal (2012). Comparing results of different models in future research could lead to improved reliability of the results. As last, this study did not use a random effect or fixed effect model. These are used when the regression is based on panel data, as in this study. A Hausman specification test is used to specify if a random or fixed effects model should be used. However, this test is not available in SPSS which was used during this study.

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Appendices

Appendix A – CSR keywords for content analysis

Social	Environmental
Charity Child labour Collective bargaining Compulsory labour Corruption Customer health Customer privacy Customer safety Discrimination Diversity Donation Education Employment Equality Forced labour Freedom of association Human rights Integrity Labour relations Local communities Product quality Product safety Public policy Rights of indigenous peoples Security practices Socioeconomic compliance Supplier social assessment Training Transparency Well-being	Bio Clean water Climate Circular economy Effluent Emission Energy efficiency Environmental benefit Environmental compliance Environmental performance Global warming Green Recycle Renewable Reproduction Supplier environmental assessment Sustainability Waste

Appendix B – Sampled firms and industry

Firm name	Industry
AHOLD DELHAIZE N.V.	Other
AALBERTS INDUSTRIES N.V.	Manufacturing
ABN AMRO GROUP N.V.	Finance, Insurance, And Real Estate
ACCELL GROUP NV	Manufacturing
ADVANCED METALLURGICAL GROUP N.V.	Manufacturing
AEGON NV	Finance, Insurance, And Real Estate
AKZO NOBEL NV	Manufacturing
AMSTERDAM COMMODITIES N.V.	Other
AND INTERNATIONAL PUBLISHERS NV	Services
ARCADIS NV	Services
ASM INTERNATIONAL NV	Manufacturing
ASML HOLDING N.V.	Manufacturing
ASR NEDERLAND NV	Finance, Insurance, And Real Estate
BASIC-FIT N.V.	Services
BATENBURG TECHNIEK N.V.	Construction & Mining
BE SEMICONDUCTOR INDUSTRIES NV	Manufacturing
BETER BED HOLDING NV	Manufacturing
BEVER HOLDING NV	Finance, Insurance, And Real Estate
BINCKBANK NV	Finance, Insurance, And Real Estate
BRUNEL INTERNATIONAL NV	Services
C/TAC NV	Services
CORBION N.V.	Manufacturing
CORE LABORATORIESNV	Construction & Mining
DPA GROUP N.V.	Services
ESPERITE N.V.	Finance, Insurance, And Real Estate
EUROCOMMERCIAL PROPERTIES N.V.	Other
FORFARMERS N.V.	Services
FUGRO NV	Services
GEMALTO N.V.	Other
GRANDVISION N.V.	Finance, Insurance, And Real Estate
GROOTHANDELSGEBOUWEN	Construction & Mining
HEIJMANS NV	Manufacturing
HEINEKEN NV	Manufacturing
HOLLAND COLOURS NV	Manufacturing
HYDRATEC INDUSTRIES N.V.	Services
ICT GROUP N.V.	Manufacturing
IMCD N.V.	Finance, Insurance, And Real Estate
ING GROEP NV	Services
INTERTRUST N.V.	Finance, Insurance, And Real Estate
KARDAN N.V.	Finance, Insurance, And Real Estate
KAS BANK NV	Manufacturing
KENDRION N.V.	Construction & Mining
KONINKLIJKE BAM GROEP NV	Construction & Mining
KONINKLIJKE BOSKALIS WESTMINSTER NV	Manufacturing
KONINKLIJKE BRILL NV	Manufacturing
KONINKLIJKE DSM N.V.	Other
KONINKLIJKE KPN NV	Manufacturing
KONINKLIJKE PHILIPS N.V.	Construction & Mining
KONINKLIJKE VOLKERWESSELS N.V.	Other

KONINKLIJKE VOPAK N.V.	Manufacturing
LUCAS BOLS N.V.	Manufacturing
N.V. KONINKLIJKE PORCELEYNE FLES	Manufacturing
NEDERLANDSCHE APPARATENFABRIEK 'NEDAP' N.V.	Manufacturing
NEWAYS ELECTRONICS INTERNATIONAL NV	Finance, Insurance, And Real Estate
NIBC HOLDING NV	Finance, Insurance, And Real Estate
NN GROUP NV	Finance, Insurance, And Real Estate
NOVISOURCE N.V.	Finance, Insurance, And Real Estate
NSI N.V.	Manufacturing
OCI N.V.	Services
ORANJEWOUD N.V.	Other
ORDINA NV	Manufacturing
PHARMING GROUP NV	Other
POSTNL N.V.	Services
RANDSTAD NV	Manufacturing
REFRESCO	Manufacturing
RELX	Manufacturing
ROODMICROTEC N.V.	Construction & Mining
SBM OFFSHORE N.V.	Manufacturing
SIF HOLDING N.V.	Other
SLIGRO FOOD GROUP N.V.	Manufacturing
SNOWWORLD N.V.	Other
STERN GROEP NV	Manufacturing
TKH GROUP N.V.	Manufacturing
TOMTOM NV	Manufacturing
UNILEVER NV	Manufacturing
VALUE8 NV	Finance, Insurance, And Real Estate
VAN LANSCHOT KEMPEN NV	Finance, Insurance, And Real Estate
VASTNED RETAIL N.V.	Finance, Insurance, And Real Estate
WERELDHAVE NV	Manufacturing
WESSANEN N.V.	Services
WOLTERS KLUWER NV	Other

Appendix C – VIF results

Variable	ROE	ROA	Tobin's Q	RET
	VIF			
CSRC $_{i,t-1}$	1.627	1.627	1.631	1.672
CSRT $_{i,t-1}$	2.461	2.461	2.662	2.733
LnAssets $_{i,t}$	4.052	4.052	4.155	3.096
LnSales $_{i,t}$	3.133	3.133	3.533	3.552
Leverage $_{i,t}$	1.330	1.330	1.319	1.288
Growth $_{i,t}$	1.063	1.063	1.089	1.084
Size $_{i,t\text{-}1}$	2.598	2.598	2.759	2.801
Structure $_{i,t-1}$	1.207	1.207	1.199	1.222
Gender diversity $_{i,t-1}$	1.338	1.338	1.379	1.381
Age diversity $_{i,t-1}$	1.194	1.194	1.189	1.199

Appendix D – Descriptive statistics of financial firms

Variables	Mean	Median	Std. Dev.	Min	Max	N
Financial performance						
ROE $_{i,t}$	0.052	0.070	0.102	-0.312	0.298	67
ROA $_{i,t}$	0.019	0.009	0.028	-0.049	0.089	67
Tobin's Q $_{i,t}$	0.238	0.100	0.075	0.040	1.180	61
RET $_{i,t}$	0.071	0.075	0.221	-0.320	0.890	58
CSR						
CSRTotal $_{i,t-1}$	188	93	228	1	1240	67
CSRC $_{i,t-1}$	0.606	0.500	0.481	0.12	2.76	67
CSRT $_{i,t-1}$	114	108	59	23	188	52
Board variables						
Size $_{i,t-1}$	9.080	9	2.755	3	15	63
Independence $_{i,t-1}$	0.623	0.630	0.157	0.290	0.910	63
Gender $_{i,t}$	0.177	0.180	0.114	0.000	0.500	63
Age $_{i,t}$	58.068	58	3.982	47	71	63
CAge $_{i,t-1}$	0.136	0.130	0.040	0.040	0.290	63
Control						
Total Assets $_{i,t}$ (x1000)	82.176	3.924	145.833	16.575	394.482	67
LnTotal Assets $_{i,t}$	15.579	15.183	2.889	9.720	19.790	67
Total Sales $_{i,t}$ (x1000)	3.689	208	6.638	10	23.331	67
LnTotal Sales $_{i,t}$	12.889	12.245	2.350	9.240	16.970	67
Leverage $_{i,t}$	0.738	0.870	0.216	0.370	0.950	67
Growth $_{i,t}$	0.039	0.001	0.207	-0.260	0.590	67

Variable definitions in part 3.2. Table shows sample with financial firms. All variables that are used in the regressions are winsorized at 0.95 percent to reduce the impact of outliers.