DETERMINANTS OF CORPORATE SOCIALLY RESPONSIBLE ACTIVITIES OF DUTCH LISTED FIRMS.

MSc IN BUSINESS ADMINISTRATION

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Abstract

Corporate social responsibility (CSR) is a topic that is receiving increased attention. The notion of firms holding responsibilities has become more generally accepted. Existing studies have mostly focused on the beneficial effects of socially responsible activity. This study contributes to academic literature by examining the determinants of corporate socially responsible activity. This research builds on theories discussed by academics and associated empirical results to identify possible determinants of CSR. Ownership structure, financial performance, size and innovativeness of firms are the determinants of CSR activity that are included in the study. These determinants are tested in a sample containing 64 Dutch firms listed on the Amsterdam Euronext stock exchange. Based upon data obtained from the annual reports a rating of social responsibility has been composed for each firm. Secondary data, obtained from the databases ORBIS and Reach, has been used to measure the determining factors. Ordinary least squares regression analysis was used to test the determinants. The study shows that the level of managerial ownership, institutional ownership and foreign ownership are significant determinants of CSR activity. In addition, the study indicates that the size of a firm is a determinant of CSR activity. However, the study reveals that the financial performance does not significantly determine CSR activity. The results also indicate that the innovativeness of firms is not a significant determinant of CSR activity.

Key words: Corporate social responsibility, determinants, agency theory, slack resources theory, resource-based view theory, AEX, AMX, AScX.

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Abbreviations

AEX	Amsterdam Exchange Index
AMX	Amsterdam Mid Cap Index
AScX	Amsterdam Small Cap Index
CSR	Corporate Social Responsibility
CSP	Corporate Social Performance
GRI	Global Reporting Initiative
KLD	Kinder Lydenberg Domini
MSCI	Morgan Stanley Capital International
OLS	Ordinary Least Squares
ROA	Return on Assets
ROE	Return on Equity
R&D	Research and Development
VIF	Variance Inflation Factor

1. Introduction

1.1 Introduction

The goal of this master thesis is to provide an indication of the determinants of socially responsible activities. Based upon the existing literature the topic of CSR is introduced. The literature review provides theories related to the determinants of CSR activity. Based upon the theory, hypotheses are formulated. These hypotheses are empirically tested and the results are presented. Based upon these results an insight in the determinants of CSR engagement of Dutch firms is provided. This chapter starts with an elaboration on the research problem in which the main research question is formulated. Subsequently, the academic and practical relevance of the study is discussed. The chapter ends with an elaboration on the structure of this thesis.

1.2 Problem definition

In recent history much attention has been paid to the morality of activities performed by firms. The responsibilities of firms towards society have been frequently debated. Thereby the traditional perspective implies the only responsibility of a firm is value maximization obtained by using resources properly and engaging in activities that increase profit while abiding the law and regulations (Friedman, 1970).

However, the demands posed by multiple stakeholder groups require firms to go beyond obeying the law (McWilliams & Siegel, 2001). The increased stakeholder interest in the responsibility of a firm's actions has been positively received by managers, which is shown by the increased attention and resources for responsible activities. The recognition of the relevance of different stakeholder groups is likely the driver for the increased attention to the

socially responsible activities. The increased possibilities and attention towards monitoring the behaviour of a firm increases the need to develop a favourable image by displaying socially responsible behaviour. Over time, the information about the behaviour of firms is more easily spread among the public, which also affects the consequences for certain types of behaviour. Recent examples have shown that especially irresponsible behaviour can have massive consequences for a firm's reputation. However, recent literature has shown that building a socially responsible image can bring forth multiple benefits for companies as well.

The topic of corporate social responsibility (CSR) has received much attention, which is mainly focused on the consequences that are associated with socially responsible activity of firms. Much of the academic literature has been focusing on the interaction between CSR and financial performance. However, it is acknowledged in many studies that the topic of CSR should be explored among multiple dimensions. Literature should also focus on the antecedents of CSR and attention is required towards the question "What catalyses organizations to engage in increasingly robust CSR activities (Aguilera, Rupp, Williams & Ganapathi, 2007). Research focusing on the antecedents of CSR activity is required to gain a more comprehensive view on the rising interest of firms in socially responsible initiatives. Besides, academic attention may bring forth unconsidered drivers of socially responsible behaviour. Identification of determinants of CSR activities can contribute to the understanding of different attitudes adopted by firms regarding socially responsible initiatives.

This thesis will focus on the determinants of CSR activity. Based upon existing theories multiple factors, that might determine the likeliness of firms to engage in socially responsible activities, are discussed. Based upon a content analysis a rating for socially responsible activity of each individual firm is constructed. The effect of ownership structure, level of

innovation, financial performance and size on the CSR rating of a firm are addressed within this thesis. Thereby, this study contributes to current CSR literature by identifying multiple determinants of CSR activities. The thesis is structured around the following central research question:

What are the determinants of corporate socially responsible activities of Dutch listed firms?

1.3 Academic and practical relevance

The academic literature on CSR is mainly focussed on the consequences of CSR engagement. This study adds to the existing literature by providing an insight on the drivers of CSR engagement. By identifying drivers of CSR this study adds to existing literature by creating a more comprehensive understanding on why there is variation between firms regarding their engagement in CSR activities. By incorporating empirical data within this study it is possible to clarify which theories apply best regarding CSR engagement of Dutch firms. This study provides managers with an understanding of the possible antecedents and effects of CSR. Managers may use the provided knowledge in their decision making process regarding CSR engagement.

1.4 Thesis structure

The second chapter contains a literature review in which a definition of CSR is provided. The second chapter also addresses the question why firms engage in socially responsible activities. Building on several theories and related empirical evidence the antecedents of CSR are discussed. In addition, an elaboration on the effects of CSR engagement is provided. Finally, a conclusion of the literature review is formulated. The third chapter provides several hypotheses, which are formulated based upon the discussed theories of determinants of CSR. The fourth chapter contains a discussion of research methods that are employed in existing

literature regarding determinants of CSR. An elaboration on the research method employed in this study will be provided. The fifth chapter provides details on the sampling criteria and the data source. The results and interpretation of the empirical analysis are provided in the sixth chapter. The seventh chapter provides conclusions and a discussion on the limitations of this study. In addition, recommendations on future research regarding the topic CSR are provided.

2. Literature Review

2.1 Introduction

This chapter begins with a discussion of the development of existing literature related to corporate social responsibility. Subsequently, a review of relevant studies related to the antecedents of socially responsible activity is presented. The goal of this review is to create an understanding of the mechanisms underlying socially responsible activity based upon existing theories. Theories adopted from existing literature are addressed to discuss different perspectives on drivers of socially responsible activities of firms. Additionally, literature on the effects of corporate social responsibility is discussed to gain a more comprehensive understanding of the consequences that are associated with corporate social responsible activity.

2.2 Defining CSR

Corporate Social Responsibility (CSR) is an expanding area for both managers and academics (Web, Cohen, Nath & Wood, 2009). The increasing body of literature related to CSR entails a problem of definition. Multiple definitions of CSR have been provided in the literature, which can form a problem for the comparability of studies (McWilliams, Siegel & Wright, 2006). Although a variety of definitions have been provided, the development of a solid definition of CSR is considered troublesome (Davis, 1973; Wood, 1991; Campbell, 2007). Davis (1973, p.312) argues that the concept of CSR refers to "the firms consideration of, and response to issues beyond the narrow economic, technical and legal requirements of the firm". Firms should be aware of the effects that are brought forth from their decisions. They should aim to obtain economic gains while simultaneously accomplishing social benefits. Davis (1973) argues that firms that comply with the minimum legal requirements are not socially responsible. He argues that firms should go beyond the legal boundaries and a voluntary

aspect is introduced to the concept of CSR since socially responsible firms accept their obligation beyond the legal requirements (Davis, 1973, p.313). Carrol (1979) developed a more concrete definition and argued that corporate social responsibility comprises the economic, legal, ethical and philanthropic responsibilities of firms. The most important responsibilities of firms to society are the economic responsibilities (Carrol, 1979). He discusses that firms have the economic responsibility to produce goods and services, requested by society, and to sell those goods and services at a profit. The legal responsibilities reflect the responsibilities of firms to comply with law and regulation. These legal responsibilities refer to "codified ethics" whereas the ethical responsibilities refer to the conception of society on desired behaviour which has not been recorded in law and regulation. Philanthropic responsibilities refer to fulfilling desires of society which go beyond the ethical responsibilities. Philanthropic responsibilities are more voluntary since firms are not regarded unethical if they do not fulfil these responsibilities. To fulfil all responsibilities firms should be profitable, while operating within the boundaries of the law. Besides, firms should operate ethically and be a good corporate citizen, which can be achieved by contributing to the community. Carrol (1991) discusses that this definition of CSR contains a very broad array of responsibilities.

McWilliams & Siegel (2001) state that firm's face a lot of pressure from different stakeholder groups. Since these stakeholder groups have different goals, which might be conflicting, it is not always clear what the firm's social responsibilities are. They define CSR as "actions that appear to further some social good, beyond the interests of the firm and that which is required by law" (McWilliams & Siegel, 2001). This definition includes the voluntary aspect, which relates to meeting social obligations beyond the minimal requirements of the law. However, in this definition it is also mentioned that actions that further a social good should go beyond the interests of the firm in order to be socially responsible. It is assumed that actions related to

CSR should go beyond the direct interests of the firm. However, it is plausible that CSR actions are mutually beneficial. The definition of CSR, provided by McWilliams & Siegel (2001), refers to the actions that are conducted by firms to meet the social responsibilities rather than the social responsibilities itself.

Campbell (2007) adopts a different approach when defining CSR. He focuses on a minimum behavioural standard regarding the relationships of firms with their stakeholders. He distinguishes between socially responsible firms and socially irresponsible firms. Firms are considered socially responsible if they do not knowingly harm their stakeholders. Besides, if the firms discover they have done harm, they must rectify it. The definition of Campbell (2007) combines a stakeholder theory approach with a minimum behavioural standard to define corporate social responsibility. The provided definition contains more focus on irresponsible behaviour rather than the actual responsibilities of a firm. In most definitions irresponsible behaviour is not considered. Campbell (2007) argues that in most definitions firms are regarded socially responsible if they engage in activities that further social welfare. However, it is questionable whether firms that engage in social activities, while simultaneously displaying irresponsible behaviour, can be considered as socially responsible. Most definitions regard firms engaging in social initiatives as responsible, while irresponsible behaviour is often disregarded. The definition provided by Campbell (2007) implies no reward for firms engaging in social initiatives. Firms are considered socially responsible as long as they do not do harm. Therefore, the definition can be considered not fully comprehensive.

For this thesis the definition of CSR is adopted from Aguilera, Rupp, Williams & Ganapathi (2007). Their definition is based on the original definition of Davis (1973) which has been frequently used in academic literature. Corporate social responsibility is defined as: "the firm's consideration of, and response to, issues beyond the narrow economic, technical and

legal requirements of the firm to accomplish social and environmental benefits along with the traditional economic gains which the firm seeks".

Another construct which needs to be defined is Corporate Social Performance (CSP), since it is closely related to CSR. The terms corporate social responsibility and corporate social performance are often used interchangeably by academics (Margolis, Elfenbein & Walsh, 2007). In general, CSP is defined from two perspectives. The first perspective regards CSP as a multidimensional construct, which includes the firms' activity to meet a variety of responsibilities. This variety of responsibilities includes economic, legal, ethical and philanthropic responsibilities (Carroll, 1991). The second perspective in defining CSP has related to the stakeholder approach. This perspective derives social performance from the relationship between a firm and its stakeholders. In this thesis CSP will be regarded as the extent to which a firm succeeds in fulfilling its social responsibilities.

2.3 Why do firms engage in CSR?

The focus of the academic studies on corporate social responsibility (CSR) has been shifting over the years. Early work on corporate social responsibility focused mainly on questioning the existence of social responsibilities of firms. Friedman (1970) argued that firms have just one responsibility, which is profit maximization. Firms should use resources and engage in activities to increase profits, while operating within the boundaries of law and regulation. The manager can be considered as the agent of the owner of the firm and should act in accordance with the goals of the owner. Managers engaging in socially responsible activities are argued to be spending money of the firm's owners and thereby do not act in accordance with the goals of the owner (Friedman, 1970; Jensen, 2001). According to Friedman (1970) the social responsibility rests with the government which imposes taxes and should make expenditures to advance social objectives.

In contrast, Freeman (1984) discusses a stakeholder theory perspective and argues that firms should interact with stakeholders. The stakeholders are individuals or groups that can affect or are affected by the achievement of organizational goals. In contrast to Friedman (1970), the stakeholder theory approach incorporates the interests of multiple parties instead of focusing merely on the stockholders. Stakeholder theory implies that in order to obtain organizational goals, the firm should focus attention towards the interests and well-being of groups that are able to influence the process of achieving these organizational goals (Phillips, Freeman & Wicks, 2003). Although the primary goal of stakeholder management is related to achievement of organizational goals a clear link to the topic CSR can be distinguished, since stakeholder management considers interests beyond profit maximization.

Carrol (1991) argues that there is a natural fit between CSR and the stakeholders of a firm. The concept of stakeholder personalizes the social responsibilities by distinguishing the different groups or individuals that firms need to consider when designing their approach to CSR. Wood (1991) argues that the stakeholder theory approach identifies groups or individuals to which firms hold responsibilities. Wood (1991) developed three principles of CSR, which indicate the levels on which the firms hold social responsibilities. The principle of legitimacy implies that firms only exist because they perform valuables services to society (Davis, 1973). To be able to perform these valuable services firms are granted legitimacy and power from society. The power of a firm can be withdrawn by society if they regard the use of power as irresponsible. If the stakeholders lose their confidence in the firm they can withdraw the legitimacy of the firm. Shareholders may sell their stock, customers may stop buying the products, employees can lose their loyalty and the government can withdraw subsidies or impose fines (Wood,1991, p. 697). Firms need to utilize their power in a responsible way to maintain their licence-to-operate (Halme & Laurilla, 2009). The principle of legitimacy is based on the Iron Law of Responsibility which implies that those who use

their power in a manner, which is regarded as irresponsible by the society, will lose their power (Davis, 1973). The nature of the legitimacy principle ensures that the corresponding social responsibilities apply equally for all firms. In contrast to Friedman (1970), the principle of legitimacy indicates that all firms hold responsibilities beyond profit maximization in order to be able to continue operating.

The second principle discussed by Wood (1991) is defined as the principle of public responsibility which relates to the social responsibilities of individual companies. On the individual level firms are responsible for outcomes that are produced in the business operations. Besides the responsibility for produced outcomes, firms also hold responsibility towards the additional effects that are generated during the business operations. The third principle discussed is the principle of managerial discretion. Wood (1991) argues that responsibilities are also spread among individuals within the firms. Actions of managers are required to meet social responsibilities of the firms. The managers are able to make choices on how to meet the firm's social responsibilities. The principle of Managerial Discretion implies that CSR is present on the individual level since managers hold discretion and are responsible for the fulfilment of a firm's social responsibilities (Wood, 1991). Whereas Freeman (1984) theorizes that firms hold responsibilities towards different stakeholders, Wood (1991) theorizes that the responsibilities of firms are spread among different levels. Thereby, Wood (1991) argues that firms hold responsibilities towards society in general whereas Freeman (1984) only focuses on stakeholders. However, both academics theorize that firms hold responsibilities beyond firm value maximization, in contrast to the argument of Friedman (1970). It is argued by multiple academics that investing in socially responsible initiatives does not necessarily imply less focus on value maximization (Freeman, 1984; Siegel & Vitaliano, 2007). Several studies indicate that investments in CSR contribute to value maximization (Orlitzky, Schmidt & Rynes, 2003; Margolis & Walsh, 2003). Based

upon the existing literature it is assumed in this study that CSR engagement can contribute to the value maximization goals of firms. The goals arising from stakeholder theory and the goals arising from value maximization theory are considered not the exact opposites but are the result of perspectives arisen within different time frames. However, the increased attention of practitioners to social initiatives and the increasing body of literature on CSR shows that the notion of firms holding social responsibilities is becoming more widely accepted (Margolis & Walsh, 2003).

2.4 Antecedents of CSR

The focus of literature on the topic CSR has been shifting over time. Many academics have tried to identify the effects that are accompanied by the increased engagement of firms in socially responsible activities. Besides the consequences of increased CSR activity, a focus should be adopted towards the factors that drive firms to engage in socially responsible initiatives (Aguilera et al., 2007; Udayasankar, 2008). In order to identify determinants of CSR activities it is necessary to discuss the factors that drive a firm's engagement in socially responsible activities as theorized in the existing literature. The legitimacy perspective implies that firms participate in socially responsible initiatives to maintain their licence-to-operate. By participating in socially responsible initiatives firms attempt to fulfil the demands of society and thereby receive society's permission to continue their business (Chiu & Sharfman, 2011). The legitimacy perspective contains an explanation on why firms conduct socially responsible activities. However, it does not offer a full explanation for the variation in the extent of CSR engagement among firms. Harjoto & Jo (2011, p.5) argue that there is no universally agreed-upon rationale behind the engagement of firms in socially responsible activities. However, multiple theories in literature have been argued to describe factors driving the tendency of firms to engage in socially responsibility. Several of these theories have been selected and will be discussed in the following section.

2.4.1 Agency theory

The agency theory discusses the relationship between two parties, the principals and the agents. The principals delegate work to the agents, who are then expected to perform the assigned work (Eisenhardt, 1989). In a firm's context, the principals are considered to be the shareholders, which are the owners of the firm. The managers from the firm are considered to be the agents, which are supposed to act towards the benefits of the shareholders. Agency problems can arise when there is a separation of ownership and control within a firm, which might lead to suboptimal decision making. It is assumed in the agency theory that agents are able to act in accordance with their personal goals rather than acting towards the goals of the principals (Oh, Chang & Martynov, 2011). Conflicting goals, between the agents and the principals, can be the cause of problems within the relationship between the principals and the agents. Another problem might arise when principals face difficulties while verifying if the agents are behaving in accordance with the principals goals. This problem relates to the information asymmetry assumption which is adopted within agency theory. This assumption implies that one party has superior access to information, relative to the other party. If the principals have access to information to verify the agent's behaviour, the agent is likely to display behaviour as requested by the principal (Eisenhardt, 1989). However, if there is much information asymmetry between both parties, the agents might be more likely to act towards their own interests.

The agency theory can be applied to the topic CSR activity as well. Barnea & Rubin (2010) discuss the principal-agent relationship, between the shareholders and managers, considering CSR engagement. When there are agency problems, managers may strive towards personal benefits rather than focusing on the interests of the owner. For instance, it is possible that managers are able to obtain bonuses linked to short-term results. Achievement of short-term

results may be conflicting with value maximization goals. Thereby, the manager may display behaviour which focused on obtaining personal benefits rather than acting towards the owner's interest. Regarding CSR engagement, managers may invest in other projects in order to obtain their personal benefits rather than investment in CSR which is desired for value maximization.

This corresponds with the assumption of the agency theory, which holds that agents are able to act out of self-interest rather than only focusing on the goals as formulated by the principal. Based on the agency theory, the tendency of firms to engage in CSR initiatives is related to the personal benefits that are obtainable by the agents. Agency problems may occur when the agent and the principal hold conflicting goals. Besides, the information asymmetry between the principal and the agent might influence the tendency of firms to invest in CSR activities.

Oh et al. (2011) build upon agency theory and discuss the effects of ownership structure on a firm's engagement in socially responsible activities. They argue that CSR engagement may function as a signalling mechanism which may reduce the information asymmetry between the principal and the agent (Oh et al., 2011, p.284). Thereby engagement in CSR activities can signal reliability and responsibility of a firm (Oh et al., 2011, p.286).

Besides, different types of owners are likely to hold different objectives and decision-making horizons which also influences whether they exert pressure on firms to engage in CSR initiatives. Oh et al. (2011) studied the effect of ownership structure on CSR while using a sample of 118 Korean firms. They classify three different types of ownership. Banks, pension funds, insurance-companies and securities firms are incorporated in the institutional ownership category. Institutional shareholders are likely to obtain large percentages of a firm's shares, and thus face more difficulty when selling their shares. They are assumed to be long-term oriented and tend to be more involved in the firms decision's in comparison to

other types of owners. Related to agency theory, the institutional shareholders hold asymmetric information advantages over other shareholders (Schnatterly, Shaw & Jennings, 2008). The institutional shareholders typically have direct access to the management. Besides, they are expected to have expertise in judging financial information. Economies of scale allow institutional owners to acquire information for relatively low cost (Schnatterly et al., 2008). The access to information allows institutional shareholders to monitor the behaviour of their agents. This increases the likelihood that the managers act in accordance with the desires of the shareholders. Siegel & Vitaliano (2007) argue that institutional investors offer their own clients credence services characterized by information asymmetry. The signalling theory implies that organizational attributes provide information towards clients about the functioning of the organization (Albringer & Freeman, 2000). Institutional investors might invest in socially responsible firms, or demand socially responsible activities from firms that they already own, in order to signal their reliability to their own clients. Based upon signalling theory, institutional investors are likely to demand socially responsible activities from firms. The top management team can be classified as managerial owners (Oh et al., 2011) Managerial owners hold a relatively large amount of firm-specific information since they are involved in the daily operations of the firms. Managerial owners are assumed to face little problems related to information asymmetry. Providing stock to managers allows owners to decrease problems that are coming forth of conflicting goals. Managerial ownership provides an incentive for managers to act in accordance with the interests of shareholders. The likelihood of managers to act from the perspective of the owner is related to their stock ownership level (Paek, Xiao, Lee & Song, 2013). Managers that hold a high proportion of ownership manage the company better from the owners perspective (Paek et al., 2013) Based upon agency theory, managerial owners face relatively little problems related to information asymmetry or conflicting goals and desires. Since there are little information asymmetry

problems and agency problems managerial owners are expected to act towards the interests of the owners.

A third category considers the foreign owners which are expected to face more information asymmetry problems relative to other types of shareholders (Oh et al., 2011, p.288). The agents are more likely to act towards personal goals, rather than the goals of the foreign owner since there are less possibilities of monitoring the agent's behaviour.

Based upon agency theory, managers engage in CSR activities to satisfy the demands of the owners. Whether firms participate in CSR initiatives is related to the preferences of the owners (Paek et al., 2013). Different types of owners hold different preferences and goals. When the goals of the owner and agent are conflicting it is likely that agency problems occur, which might influence the tendency of a firm to operate in a socially responsible way. According to the agency theory, the ability of the owner to monitor the behaviour of the manager is relevant for the tendency to engage in CSR activities. Regardless of the owners preferences the agent is more likely to act towards personal goals if appropriate behavioural monitoring is absent. Various types of owners hold different access to information and monitoring possibilities. Based upon agency theory, various types of owners face a different degree of problems related to information asymmetry and conflicting goals. This is likely to influence the tendency of a firm to act socially responsible.

Empirical evidence regarding agency theory

Empirical results from several studies have identified that the ownership structure is related to the activity of firms concerning social responsibilities. Paek et al. (2013) find in their study that managerial ownership has a significant negative impact on some aspects of CSR. They argue that managerial ownership has a negative impact on the diversity and employee relation dimensions. The results of their study indicate that the investment in CSR does not

significantly relate to the degree of managerial ownership for a product, environment and community dimension. Managerial owners might assume that investment in the employee- and diversity dimension does not add to their wealth as shareholders. Managers without stock may obtain personal benefits through investment in these dimensions, which might explain the negative relationship. Oh, Chang & Martynov (2011) found support for a relationship between ownership structure and a firm's engagement in socially responsible activities. They found that institutional ownership is positively associated with CSR engagement. The institutional owners are expected to favour CSR engagement since they are long-term oriented and hold extensive monitoring possibilities. From their study, foreign ownership shows to be positively associated with CSR engagement. Oh et al. (2011) argue that foreign investors face information asymmetry problems and might use the level of CSR engagement as an investment guide. Barnea & Rubin (2010) find that managerial ownership has a negative correlation with CSR engagement. They argue that managers expect that the cost of increasing CSR expenditures is greater than the accompanied benefits.

2.4.2 Slack resources theory

Another theory that can be related to determinants of CSR activity is the slack resources theory. The slack resources theory implies that financial performance can result in slack resources. A better financial performance may result in more available slack resources. If a firm obtains high financial performance it might hold relatively much available slack resources, which it can invest in socially responsible initiatives (Makni, Francoeur & Bellavance, 2008). Expenditures related to CSR activities, which require a certain level of managerial discretion, may be especially sensitive to the existence of slack resources (McGuire, Sundgren & Schneeweis, 1988; Orlitzky, Schmidt & Rynes, 2003). In addition, Campbell (2007) argues that firms with relatively less financial performance are likely to hold fewer resources to spare for socially responsible activities. Firms of which the financial

performance is relatively weak may be less inclined to engage in CSR activities, since they need to invest their slack resources in other options for short-term survival. When a firm is in financial trouble it may have little ability to make investments in socially responsible initiatives such as philanthropy (Waddock & Graves, 1997). The financial performance of a firm can be regarded as an indicator of the available slack resources (Surroca, Tribo & Waddock, 2010).

A second factor that indicates the availability of slack resources is the size of a firm (Udayasankar, 2008). Large firms are likely to hold more available slack resources, which can affect their commitment to CSR activities (Johnson & Greening, 1999). Smaller firms are more likely to hold an insufficient amount of slack resources, which restricts them from investing in certain CSR activities. Small firms often experience cash needs that prevents them from building up slack resources (Lepoutre & Heene, 2006)

Available slack resources offer a possibility for firms to invest in CSR activities. For instance, firms can invest in improvement of working conditions for employees, philanthropy and reduction of environmental burdens (Waddock & Graves, 1997). Surroca et al. (2010) argue that slack resources can be allocated to the development of innovative products and processes. Thereby, the innovation process can be supplied with resources which might enable the development of responsible attributes to a firm's products. For instance, the material of the product can be changed so that it is less damaging for the environment or firms can switch to fair-trade procurement of commodities for their products. Process innovation can also increase the efficiency of the production process so that effects on the environment are limited (Padgett & Galan, 2010). Besides, the slack resources may be utilized for process innovation to incorporate more responsible practices within the production process. For instance, making the production process more responsible with regard to the environment or improving the

conditions of employees. By product innovation or process innovation firms can increase their social performance in multiple ways.

Empirical evidence regarding slack resources theory

Financial performance as an indicator of slack resources has been incorporated in several studies related to CSR engagement (Surroca et al., 2010). In various studies a significant relationship was found between a firm's financial performance, which is assumed to indicate the available slack resources, and the social performance of a firm (McGuire, Sundgren, Schneeweis, 1988; Waddock & Graves, 1997; Orlitzky, Schmidt & Rynes, 2003; Chih, Chih & Chen, 2010). Thereby they found support for the slack resources theory. Makni, Francoeur & Bellevance (2008) studied a sample of Canadian firms and did not find support for the slack resources theory. They did not find significant results for the relationship between financial performance and social performance. Orlitzky et al. (2003) discuss that there is a positive association between financial performance and social performance in their meta-analysis and argue that this provides support for the slack resources theory. Multiple academics incorporated financial performance as a control variable in their study related to CSR engagement, since they assume it can be considered an indicator of available slack resources and is able to influence the relationship between determinants and CSR activity (Muller & Kolk, 2010; Oh et al., 2011). Various studies have incorporated size as an indicator of slack resources. Chih et al. (2010) studied 520 firms in 34 countries and found a significant positive relationship between the size and CSR engagement of firms. They argue that firms with larger size are more CSR-minded. Brammer & Millington (2008) found that the size of a firm is related to the social performance of a firm, which is measured by a firm's charitable donations. Muller & Kolk (2010) also found support for the association of size with social

performance. They argue that size can be considered as an important predictor of corporate social performance.

2.4.3 Resource-based view theory

Hull and Rothenberg (2008) build on the resource-based view to argue about the potential of CSR as a competitive advantage for a firm. Barney (1991) introduced the resource-based view, which implies that firms are bundles of resources which, if properly allocated and containing the right nature, can be the source of a competitive advantage. Resources that are valuable and rare are necessary to build a competitive advantage. Resources that are valuable can be utilized to exploit opportunities or reduce environmental threats. The rareness of a certain resource is related to the ability of current and potential competitors to acquire the particular resource as well. Barney (1991) argues that firms try to obtain a competitive advantage which is sustainable. Firms can achieve this sustainable competitive advantage if their resources are valuable and rare but also imperfectly imitable and non-substitutable. When a competitive advantage is due to resources that are easy imitable the competitive advantage will not sustain. Besides, if substitutes can be found the competitive advantage can have less worth since competitors will be able to obtain a similar position. Thereby, the competitive advantage obtained by a firm will not be sustainable. Building on the resource-based view it can be argued that the assets forthcoming from engagement in CSR activities is a potential source of competitive advantage (Padgett & Galan, 2010). Firms that possess a competitive advantage may expect to earn superior returns (Padgett & Galan, 2010).
Firms are able to differentiate themselves from competitors by engaging in CSR activities (Siegel & Vitaliano, 2007). By focusing on differentiation firms are able to outperform competitors (Porter, 1996). Another possible source of competitive advantage related to differentiation is innovation. Investing resources in Research and Development (R&D) can lead to product and process innovation, which can help firms to differentiate. Hull &

Rothenberg (2008) argue that firms, that are not able to differentiate themselves with innovative products, may differentiate from competitors through CSR engagement. Firms that are able to differentiate themselves due to their innovative products will have less incentive to differentiate even further from competition by engaging in CSR activities. However, firms that offer comparable products with regard of their competitors, have a high incentive to display CSR activities. The benefits obtained from engaging in CSR activities differ for the degree of innovation in a firm (Hull & Rothenberg, 2008). However, when discussing the drivers of CSR engagement, it can be argued that R&D expenditures can result in innovative products or processes (Surroca et al., 2010). Investment in innovation can lead to process and product innovation which may bring forth the incorporation of socially responsible attributes in a firm's products or processes (Branco & Rodrigues, 2006). R&D expenditures might provide solutions for the enhancement of processes so that they become more socially responsible. Besides, product innovation might allow the current product to be enhanced with socially responsible attributes. Firms may become more socially responsible as a side product of innovation. Therefore, the innovativeness of a firm seems to be interrelated with CSR engagement.

Empirical results regarding resource-based view theory

Hull & Rothenberg (2008) studied the interaction of CSP with firm innovation, which they measured using the R&D expenses, and they find that CSP has a more positive impact on financial performance when a company is low on innovation. They argue that improving CSP can provide less innovative companies with a competitive advantage if they offer products of acceptable quality. Padget & Galan (2010) created a model with R&D investment as the explanatory variable and find a significant positive effect on CSR. They argue that R&D leads to product and process innovations which can lead to incorporation of socially responsible

aspects in their processes and products. When controlling for the industry they find that the manufacturing industry showed a positive effect of R&D investment on CSR, while the non-manufacturing industries did not show a significant result. They argue that this might be due to the pressures that manufacturing industries face from stakeholders and government.

2.5 Effects of CSR

In order to identify why firms engage in CSR activities it is necessary to discuss the effects of CSR engagement. The first literature on CSR was mainly focused on the existence of social responsibilities for firms. Over time, interest for the consequences of engaging in socially responsible initiatives has been growing (McWilliams, Siegel & Wright, 2006).

2.5.1 Financial performance

Most of the studies, related to the effects of CSR, have focused on financial performance (Makni, Francoeur & Bellavance, 2009; McWilliams & Siegel, 2000; Orlitzky, Schmidt & Rynes, 2003; Waddock & Graves, 1997). Waddock & Graves (1997) discuss the good management theory which implies that managerial attention to CSR improves the relationships with stakeholder groups, which can result in increased financial performance. If stakeholder groups hold positive perceptions of a firm it may result in increased sales or reduced stakeholder management costs (Waddock & Graves, 1997). Surroca et al. (2010) conducted a study among 599 industrial firms including data from 2002 to 2004 and they find a positive relationship between financial performance and social performance.

Several academics have conducted a meta-analysis in which they combine multiple studies to obtain a more accurate understanding (Orlitzky, Schmidt & Rynes, 2003; Margolis & Walsh, 2003). Orlitzky, Schmidt & Rynes (2003) studied 52 articles and argue that although mixed results have been found in separate studies, across studies CSP is positively correlated with financial performance. Besides, they argue that the relationship is bidirectional, which refers

to the virtuous cycle in which social performance affects financial performance and vice versa. Margolis & Walsh (2003) included 167 articles in their meta-analysis and discuss that the positive effect of CSP on financial performance is statistically significant but small. They argue that the effect of financial performance on subsequent CSP is significantly positive and stronger.

2.5.2 Risk

Orlitzky & Benjamin (2000) conducted a meta-analysis to study the effects of CSP on the risk of a firm. They argue that although CSP may increase financial importance, it is necessary to know whether it also increases the financial variability. The risk of a firm is measured as the amount of financial performance fluctuations over time. Irresponsible behaviour of a firm may result in lawsuits which increase the financial performance fluctuations, which implies that low CSP may increase firm risk (McGuire, Sundgren & Schneeweis, 1988; Orlitzky & Benjamin, 2000; El Ghoul, Guedhami, Kwok & Mishra, 2011). They argue that firms with high CSP hold good relations with their stakeholders. The quality of the relationships allows firms to anticipate to the concerns of stakeholders, through which they can control the variability of their business returns. Orlitzky & Benjamin (2000) find a significant and negative relationship between CSP and firm risk in their study. The relationship between a lagged variant of CSP and firm risk is even stronger. The results indicate that higher social performance is related to lower financial risk for a firm. Godfrey, Merril & Hansen (2009) argue that CSR engagement can result in moral capital. The goodwill generated by CSR engagement should reduce the reactions of stakeholders when a negative event occurs. To address firm risk they studied the change in stock price surrounding a negative event. For instance, a lawsuit against the firm or the announcement of a fine received by a government entity can be regarded as a negative event for a firm. The study of Godfrey et al (2009) shows that participation in CSR activities yields insurance-like protection to firms.

The effects of CSR engagement on firm risk may have further implications. El Ghoul, Guedhami, Kwok & Mishra (2011) argue that firms with low social performance are associated with a small investor based and higher perceived risk. This can lead to a higher cost of capital for firms with low social performance. Their study is based on 12,915 observations from 1992 to 2007. The results obtained from their study indicate that the mean cost of equity is significantly lower for firms with high social performance. Besides, they argue that the negative relationship between CSR engagement and cost of equity has become more significant over time. This might be due to increased investor awareness regarding socially responsible firms. El Ghoul et al. (2011) argue that CSR engagement is likely to benefit the firm by decreasing the cost of equity capital.

2.5.3 Workforce

Greening & Turban (2000) discuss the effect of CSP on attracting a quality workforce. Attracting and retaining highly skilled employees can be of importance for firms to obtain a competitive advantage. They build on the social identity theory which implies that the self-image of individuals is based on their association with different organizations, which includes the company for which they work (Greening & Turban, 2000). Employees are likely to be more willing to work for a firm with a socially responsible image, since they associate themselves with this image. Greening & Turban (2000) discuss the relevancy of the signalling theory, which suggests that individuals with incomplete information interpret information they receive as a signal. This signal may inform the individuals about the attributes of the organization. Potential employees may interpret the socially responsible image as a signal about the working conditions of the firms. The study of Greening & Turban (2000) reveals that the intention to pursuit a job, the probability of attempting to interview and the probability of accepting a job where all significantly and positively related to the social

performance of a firm. They argue that employees are more likely to pursue jobs from socially responsible firms. De Roeck & Delobbe (2012) discuss the organizational identification theory which implies that individuals feel closely related to the organization in a sense that they associate themselves with the organization. Individuals reinforce their self-concept by classifying themselves in groups of reference. De Roeck & Delobbe (2012) found that an employee is more likely to feel connected to the organization if the organization engages in CSR initiatives. Kim, Lee, Lee & Kim (2010) discuss a similar argument and their results indicate that CSR participation of a firm is associated with organizational identification, which leads to commitment of employees to the company.

2.6 Conclusion

The preceding sections indicated that there has been much debate on the idea that firms hold social responsibilities. However, many firms have engaged in socially responsible initiatives, which indicates that the notion of firms holding social responsibilities is commonly accepted by managers. The focus of the academic literature has shifted to the antecedents and consequences of CSR. In the literature review CSR has been defined. Stakeholder theory was discussed which indicates to whom the firms hold responsibilities. Based on the legitimacy perspective, firms are assumed to engage in CSR activities since they want to retain their license-to-operate. Several antecedents of CSR have been discussed. The agency theory indicates that ownership structure is a factor that likely influences whether a firm engages in CSR activities, since there is a difference in agency problems and information asymmetry problems for various categories of owners. The slack resources theory implies that firms with high financial performance hold more available slack resources to invest in CSR. This indicates that the financial performance of a firm will influence CSR engagement. The visibility of an organization determines the benefits of a firm when it engages in CSR activities. Besides, it influences the consequences for firms displaying socially irresponsible

behaviour. Large firms are also assumed to hold relatively much slack resources which will likely influence a firm's CSR engagement. Therefore, the size of a firm is likely to influence CSR engagement. The resource-based view theory indicates that CSR engagement and innovation can both be a source of competitive advantage. Firms without competitive advantage might aim for a competitive advantage by engaging in CSR. Firms that already hold a competitive advantage are less likely to engage in CSR activities since they have less incentive. This may indicate that firms that are aiming to obtain a competitive advantage through innovation are less likely to also invest in CSR. In contrast, a side product of innovation can be the inclusion of socially responsible attributes in products or processes. If a firm aims for innovation it is assumed that CSR may be a side product. Therefore innovation is likely to influence CSR engagement.

Besides the antecedents it was found that engagement in CSR has an influence on several factors as well. CSR engagement may lead to an increase in future financial performance. CSR engagement also contributes to the relationship with a firm's stakeholders which may affect the financial variability of a firm. Therefore CSR engagement can influence the risk of a firm, which is also reflected in the cost of capital. Based upon the organizational identity theory it is argued that the ability of an organization to retract and retain employees is influenced by its participation in CSR activities.

3. Hypothesis Development

3.1 Introduction

Based on the theories discussed in preceding chapter, four hypotheses about the relationship between firm-specific characteristics and engagement in CSR activities are formulated in the following sections.

3.2 Hypothesis 1: Ownership structure

Barnea & Rubin (2010) argue that if insiders are able to gain benefits, at the cost of other stockholders, the ownerships structure will be a determining factor for a firm's stance towards CSR. Thus, stockholders are likely to hold different preferences based upon their personal values, since some stockholders favour economic benefits whereas other stockholders will favour a contribution from the firm to society (Barnea & Rubin, 2010).

The good management theory implies that the long-term performance of a firm can be improved by engaging in CSR activities (Oh, Chang & Martynov, 2011; Orlitzky, Schmidt & Rynes, 2003; Waddock & Graves, 1997) Institutional owners often own a significant part of the firm's shares and face relatively much problems when selling their stock in comparison to other owners, since it can greatly affect the stock price (Oh et al., 2011). Thereby, it is expected that institutional ownership is associated with longer-term investment which likely influences their preferences regarding CSR engagement. Institutional owners, which are associated with long-term investment, are likely to demand engagement in CSR activities from firms since it can contribute to value maximization goals on a long term (Margolis & Walsh, 2003; Orlitzky et al.,2003).

The institutional owners offer credence services to their own clients, which is characterized by information asymmetry (Siegel & Vitaliano, 2007). Based on signalling theory, the

information asymmetry from institutional owners towards its own clients increases the likeliness that these type of owners invest in socially responsible companies to signal their own responsibility and trustworthiness (Albringer & Freeman, 2000). Institutional owners are therefore expected to demand engagement in CSR activities of the firms in which they hold stock. Institutional owners hold asymmetric information advantages compared to other stakeholders and typically have direct access to the management (Schnatterly, Shaw & Jennings, 2008). This allows them to verify the behaviour of the agents which decreases agency problems (Eisenhardt, 1989). Since the behaviour of the managers can be verified by the institutional owners, it is assumed that they are likely to behave in accordance with the desires of the owners (Eisenhardt, 1989). Therefore the following hypothesis is formulated:

Hypothesis 1a: Institutional ownership is positively associated with the CSR engagement of a firm.

Agency problems can arise when the interests of the owners, which are considered the principals, are conflicting with the interests of the managers, which are considered the agents. The agency theory suggests that managers are able to benefit themselves at the cost of the shareholders (Eisenhardt, 1989). The managers may act out of self-interest rather than acting towards the interests of the owners. The good management theory implies that socially responsible actions increase the firm's value (Waddock & Graves, 1997). Meta-analyses of studies related to the CSR – financial performance link have indicated that overall the relationship between CSR engagement and financial performance is positive (Margolis & Walsh, 2003; Orlitzky et al., 2003). It is assumed that engagement in CSR activities has a positive effect on the financial performance of a firm. Shareholders will demand that managers engage in CSR activities in order to strive towards value maximization of the firm.

The agency problems will be reduced when managers hold stock since their interests become more aligned with the interests of the owners (Eisenhardt, 1989; Paek, Xiao, Lee & Song, 2013).

Since the agency problems are reduced when stock is obtained by managers it is expected that managers will act towards the owners' interest and therefore will be likely to engage in CSR initiatives. This leads to the following hypothesis:

Hypothesis 1b: Managerial ownership is positively associated with the CSR engagement of a firm.

Based upon the agency theory foreign owners are assumed to have relatively much information asymmetry problems in comparison to other types of owners (Oh et al, 2011. Therefore they have less possibility in verifying the behaviour of the agent. This allows managers to act towards personal goals rather than acting towards the interests of the owners (Eisenhardt, 1989). Based upon signalling theory it is assumed the organizational attributes provide information towards the owners about the function of the organization when there is information asymmetry (Albringer & Freeman, 2000; Siegel & Vitaliano, 2007). Firms are able to signal their trustworthiness to the foreign owner by engaging in CSR activities (Oh et al., 2011). Therefore, it can be argued that foreign owners favour firms that engage in socially responsible activities. However, since foreign owners are expected to face both information asymmetry problems and agency problems it is expected that the managers of the firms are less likely to act towards the interests of the owners. Since managers are less likely to act towards the interests of the owner it is expected that they are less likely to engage in CSR activities. This leads to the following hypothesis:

Hypothesis 1c: Foreign ownership is negatively associated with the CSR engagement of a firm.

3.3 Hypothesis 2: Financial performance

Based on the slack resources theory it is expected the availability of slack resources influences a firm's CSR engagement. Investment in CSR initiatives requires a certain level of managerial discretion which is sensitive to the existence of slack resources (McGuire, Sundgren & Schneeweis, 1988). When firms holds little slack resources they are assumed to be more concerned with short term survival instead of being concerned with engagement in CSR activities (Waddock & Graves, 1997). Firms with a higher financial performance are likely to hold more resources to spare for socially responsible initiatives (Campbell, 2007; Makni, Francoeur & Bellavance, 2008). Therefore, it is expected that the CSR engagement of a firm is likely to be influenced by the availability of resources, which is indicated by the financial performance of a firm. Based upon the preceding discussion the following hypothesis is formulated.

Hypothesis 2: Financial performance is positively associated with the CSR engagement of a firm.

3.4 Hypothesis 3: Size

Building on the slack resources theory, large firms are assumed to hold more available resources regardless of their financial performance (Udayasankar, 2008). As mentioned previously, the slack resources can be utilized for CSR activities. Besides holding more slack resources, large firms are expected to be more visible to society. Udayasankar (2008) argues that large firms tend to be more visible for society and have a higher social impact. In contrast, small firms may gain less recognition from their CSR activities due to their limited

visibility. Large firms face relatively more monitoring from the general public, which makes them more visible for society (Chang, Oh, Jung & Lee; 2012; Chih, Chih & Chen, 2010; Fornburn & Shanley, 1990; Stanwick & Stanwick, 1998). The increased visibility will result in a greater incentive for large firms to display socially responsible behaviour. Firms that are highly visibly may gain more as a result of enhanced legitimacy and reputation effects (Fornburn & Shanley, 1990; Udayasankar, 2008). Besides, being highly visible might increase negative consequences when firms do not sufficiently meet their social responsibilities. These consequences may include costs related to loss of competitive advantage, increased taxation, regulation or litigation (Brammer & Millington, 2008). Small firms gain less recognition from engaging in CSR activities due to their limited visibility. (Udayasankar, 2008) Waddock & Graves (1997) discuss similar argument and argue that larger firms receive an increased level of attention from external constituents. This allows large firms to obtain higher benefits from displaying CSR activities in comparison with small firms. Therefore, they argue that large firms are likely to hold a better social responsible image than small firms.

Brammer & Millington (2008) concur with the argument that large firms obtain more public visibility. If large firms do not manage their visibility properly they might face high cost in terms of loss of competitive advantage (Brammer & Millington, 2008). Therefore, large firms are likely to engage in CSR activities in order to prevent high costs.

It is expected that large firms hold more slack resources and more incentive to engage in CSR activities. Therefore the following hypothesis is formulated.

Hypothesis 3: Size is positively associated with the CSR engagement of a firm.

3.5 Hypothesis 4: Innovation

Properly allocated resources can be considered the source of competitive advantage according to the resource-based view (Barney, 1991). It is assumed that CSR engagement can result in a

valuable firm reputation which can be the source of a competitive advantage (Padgett & Galan, 2010). Building on the resource-based view firms will allocate resources to obtain a competitive advantage. A competitive advantage can also be obtained by allocating resources to innovation (Branco & Rodrigues, 2006) . Firms that are highly innovative are likely to hold a competitive advantage since they offer superior products. Firms that are not able to develop innovative products might obtain a competitive advantage by engaging in socially responsible activities (Hull & Rothenberg, 2008). The incentives regarding CSR engagement are expected to be higher for firms associated with little innovation since it offers them another way to obtain a competitive advantage. Therefore the following hypothesis has been formulated.

Hypothesis 4: The level of innovation is negatively associated with the CSR engagement of a firm.

4. Research method

4.1 Introduction

In this chapter the methodology of the study is discussed. The second paragraph contains an elaboration on the research design. Subsequently, the measures of CSR activity of the individual firms are discussed. The fourth paragraph elaborates on the proposed determinants of CSR activity .The last paragraph contains a description of the control variables that are incorporated in the study. Table 4.2 contains an overview of all the variables and the corresponding abbreviations and descriptions.

4.2 Research method

There are several types of methods that have been applied in research regarding CSR in existing literature.

Univariate analysis can be regarded as a simple form of quantitative analysis. It can be employed to indicate whether there is a significant difference between multiple groups.

In CSR research it is used by some academics as a first step in their research (Branco & Rodrigues, 2008; Chih, Chih & Chen, 2010; Harjoto & Jo, 2011; Reverte, 2009). Reverte (2009) has studied which firm- and industry-characteristics are potential determinants of CSR disclosure. The firms included in the sample are separated in two groups based upon their CSR disclosure rating. The median CSR rating is selected as cut-off point in order to classify firms in two groups. Chih et al. (2010) studied determinants of CSR and use the listing on the Dow Jones Sustainability World Index to distinguish two groups. Branco & Rodrigues (2008) studied CSR disclosure and grouped companies based on their information disclosure in the annual report and on the internet. Then they assess whether the mean level of disclosure significantly differed between groups. By conducting a univariate analysis it is possible to study whether there are significant differences between two groups regarding a single

variable. This type of analysis does not show whether there is an actual relationship between two variables. The univariate analysis also requires an arbitrary cut-off point to distinguish groups.

Bivariate analysis allows the identification of association between two variables. Therefore, it can be used to test whether two variables are significantly related. The bivariate analysis does not regard the impact of other variables on the relationship between the independent and dependent variable. Many studies incorporate a correlation matrix to check for multicollinearity when employing a multivariate analysis (Reverte, 2009; Gamerschlag, Möller & Verbeeten, 2010; Chiu & Sharfman, 2011; Oh, Chang & Martynov, 2011).

Multivariate analysis is often employed when a dependent variable is likely to be related to multiple independent variables. Multivariate analysis can be used in research for determinants since it allows analysis of the relationship with the dependent variable using different models containing various independent variables. The most used method in studies regarding the determinants of CSR is the ordinary least squares (OLS) regression analysis (Chang, Oh & Lee, 2012; Muller & Kolk, 2010; Oh et al., 2011; Reverte, 2009). Regression analysis is a method to predict an outcome variable from one or several predictor variables (Field, 2005). The coefficient in the regression analysis represents the change in the outcome variable when the predictor variable changes one unit. The OLS analysis reports the T-statistic for each predictive variable. The T-statistic tests whether the impact of the predictor variable on the outcome variable is significant. In order to obtain valid result from OLS regression analysis it is required that perfect multicollinearity is not present. Reverte (2009) first enters the explanatory factors on by one in regression analysis and finally combines all variables. Mostly, models are developed to identify the results of individual determinants followed by a model comprising all determinants (Hull & Rothenberg, 2008; Muller & Kolk, 2010; Padgett & Galan, 2010).

Another method which is used in studying determinants is a two –stage least square regression method (Erhemjamts, Li & Venkateswaran, 2012; Harjoto & Jo; 2011). OLS regression analysis requires that the value of the error term is independent of the predictive variables. Two-stage OLS can be employed when this requirement is not fulfilled.
Regression analysis requires a consideration of the entry of predictor variables.
Chiu & Sharfman (2011) use hierarchical regression analysis which allows entering of predictor variables in different stages. Thereby predictive variables are entered accordingly to their influence as predicted by theory. According to the hierarchical method of entry the known predictors should be entered in the model first in order of importance. Then the predictive variables on which no knowledge is available yet can be entered in the model.
The forced entry method implies that all variables are forced in the model simultaneously. The method relies on good theoretical reasons for including predictive variables (Field, 2005). When using the forced entry method it is not necessary to identify the order of entry of predictive variables. The last method of entry is the stepwise method which implies that entry is based on mathematical criterion in which software enters the variable that contains the most explained variation in the outcome. Another option besides hierarchical regression is stepwise regression which is the choice of predictive variables by an automatic procedure. Both are used to assess the predictive value of the variables.
Another method to test the determinants of CSR activity, which is used in several studies, is a probit model (Chih et al., 2010; Harjoto & Jo, 2011).
The probit model can be used to estimate the likelihood that an observation with certain characteristics will fall in one specific category. The probit model can be used if the dependent variable only holds two values. For example, the firm engages in CSR activities or does not engage in CSR activities. A similar model can be employed by conducting logit regression. Chih et al. (2010) use a probit model to test which factors have an influence on the

likeliness of a firm to engage in CSR activities. They classified the firms into a CSR group and a non-CSR group based on their listing on the Dow Jones Sustainability World Index (DJSI World). A similar method employed by Zu & Song (2009) is the logistic regression analysis which can be used to predict the outcome of a categorical dependent variable. Zu & Song (2009) studied the determinants of managers' valuation of CSR. They develop a model to estimate whether a manager strives for a high CSR rating or does not strive for a high CSR rating. The outcome variable can only hold two values and is categorical.

Consistent with previous studies OLS regression analysis will be used to test the hypotheses (Muller & Kolk, 2010; Oh et al., 2011; Reverte, 2009). For the OLS regression analysis the following equation has been designed:

Equation 1:

$$CSR_i = ß_0 + ß_1 Ownership + ß_2 Financial\ Performance + ß_3 Size + ß_4 Innovation + ß_5 Debt\ Ratio + ß_6 Industry + \varepsilon i.$$

The industry effects will be controlled for by employing dummy variables. A distinction has been made between four groups which results in three dummy variables. The control group will be a heterogeneous group of firms from various industries, which is defined as miscellaneous.

The predictive variables will be checked for multicollinearity which exists when there is a strong correlation between two predictive variables. A high level of multicollinearity increases the change of a type II error (Field, 2005). High levels of collinearity increase the probability that a good predictor of the outcome will be found non-significant.

Besides, if the predictive variables are highly correlated and account for the same explained variance of the model it becomes impossible to identify which variable is important.

Multicollinearity can be identified by computing a correlation matrix of the predictive variables and check for variables that are highly correlated (De Veaux, Velleman & Bock, 2008). Field (2005) states that if there are no substantial correlations (R > .90) then multicollinearity is not present in the data.

To identify the model fit, the R-squared will be computed. The R-squared represents the percentage of variation in the outcome that can be explained by the developed model. Thus, the R-Squared identifies the amount of variance that can be explained by the model relative to the total amount of variation of the outcome variable. The R-squared identifies how much of the variance in CSR rating can be identified by the hypothesized predictive variables.

To cross validate the model the adjusted R-squared will be calculated. The adjusted R-squared will make model comparable with other models that have a different number of predictive variables (De Veaux et al., 2008).

4.3 Dependent variable

Many academics have discussed the problems associated with measuring CSR (Waddock & Graves, 1997; McWilliams, Siegel & Vitaliano, 2006). Specifically, measuring the degree of socially responsible activity brings forth multiple problems since it is multidimensional and studies may use different definitions of CSR (Waddock & Graves, 1997). Multiple methods of measuring CSR have been used which decreases the comparability among different studies. A review of measurement methods has been included in table 4.1. While CSR has often been defined as a multidimensional construct, in several studies a one-dimensional measurement approach was conducted (Freedman & Jaggi, 1982). This makes it likely that the measurement does not comprehensively reflect all aspects of the multidimensional construct. Besides, another problem raised by the utilization of one-dimensional measurements has been the interchange ability with CSR. In some studies the one-dimensional measurement was

described as directly reflecting CSR (Waddock & Graves, 1997). This decreases the comparability within studies.

Table 4.1: Measurement methods of CSR.

Author	Method of CSR measurement
Chih, Chih, Chen (2010)	Grouping of firms based on listing on indices
Freedman & Jaggi (1982) Griffin & Mahon (1997)	CSR rating using one-dimensional measurement
Waddock & Graves (1997), Turban & Greening (2013), McGuire, Sundgren & Schneeweis (1988), McWilliams & Siegel (2001), Siegel & Vitaliano (2007), Jo & Na (2012)	CSR rating using multidimensional measurement
Webb, Cohen, Nath & Wood (2009), Reverte (2009), Gamerschlag, Möller & Verbeeten (2010), Khaveh, Nikhashemi, Yousefi & Haque (2012)	Content analysis of documents

Grouping of firms based on listing on indices

Chih et al. (2010) measured CSR as a dichotomous variable. They classified firms in two categories corresponding to the social responsibility of the firm. The first category was identified as the "CSR group", which are firms that are listed on the Dow Jones Sustainability Index (DJSI) World. The second category, known as the "Non-CSR group", included the firms that where listed on the Dow Jones World Index, but not on the DJSI World. The DJSI World includes the 10 percent highest performing firms, in terms of social responsibility,

listed on the Dow Jones World index. Thereby the economic dimension includes risk and crisis management, code of conduct, compliance, corruption, bribery and corporate governance. The environmental dimension includes environmental performance and environmental reporting. The social dimension includes human capital development, talent attraction and retention, labour practice indicators, corporate citizenship/philanthropy and social reporting. All of the dimensions were also judged on industry specific criteria (Chih, et al., 2010, p.116).

The method employed by Chih et al. (2010) has the advantage that a distinction between groups can be easily made. Another advantage is that the DJSI World also considers indicators of irresponsible behaviour, such as corruption and bribery and labour practice indicators. The described method also has some disadvantages. The method includes an arbitrary cut-off point of 10 percent, since this cut-off point is used to form the DJSI World. Besides, the different types of performance might be subject to judgment since qualitative data is used. Using the DJSI world also inherently limits the possible sample, since it only incorporates 300 companies.

CSR rating using one-dimensional measurement

A one-dimensional measurement method of CSR has been used in early studies. Freedman & Jaggi (1982) use a pollution performance index which is based upon the pollution emissions of firms. The firm's pollution emissions from firms are compared with firms operating in the same industry. Although the pollution performance is comprised of several factors it is used as a one-dimensional measure for CSR rating (Waddock & Graves, 1997). Griffin & Mahon (1997) discuss that the treatment of toxic wastes by firms can be used as a measure for its social responsibility. They assess responsibility of firms based upon the change in waste production between 1991 and 1992. They make the assumption that a change in waste

production is evidence for a change in the approach of a firm regarding CSR. Measuring CSR while using a one-dimensional measure has several disadvantages. The measure only addresses the environmental aspect of CSR, while the construct CSR may encompass more aspects. Besides, the performance of firms regarding environmental aspects is likely dependent on their core business. This decreases the comparability of firms between industries.

CSR rating using multidimensional measurement

Waddock & Graves (1997) discuss that CSR can be regarded as a multidimensional construct which is related to the inputs, outputs and internal behaviour and processes of firms. Therefore they constructed an index, which incorporates multiple dimensions, to measure CSR. Their index is based upon eight attributes related to CSR. They obtained data from a database composed by Morgan Stanley Capital International (MSCI), which was formerly known as Kinder Lydenberg & Domini (KLD). MSCI provides investment decision support and rates attributes related to corporate social performance. Waddock & Graves (1997) relate five attributes to the firm's stakeholder relationships. Community relations, Employee relations, performance with respect to the environment, product characteristics and treatment of women were considered regarding the stakeholder dimension. Besides, three negative attributes where incorporated that were considered to bring forth high external pressures on corporate social performance. Participation in nuclear power, involvement in South Africa and military contracting are the three attributes which are less directly related to stakeholder relationships. The assessment of each attribute for firms ranges from major strength to major concern. Thereby each attribute score increases or decreases the firm's CSR rating. The scale contains the following subsequent scores, with the attribution to the CSR rating within the paraphrases: major concern (+2), concern (+1), neutral (0), strength (-1) and major strength (-

2). Waddock & Graves (1997) constructed a weighted index of which the weights for each attribute where developed with the help of three experts on CSR from the Academy of Management Journal. The net CSR rating for each company is the weighted average of each attribute.

Creating a CSR rating using multidimensional measurement is associated with multiple advantages and disadvantages. The CSR rating is comprised of multiple attributes which is in line with the multidimensional nature of CSR (Waddock & Graves, 1997). Besides, the attributes included in the CSR rating are weighted which deals with changing social standards. The CSR rating is based upon the current social standards which indicates the social performance of a firm relative to other firms in the same timeframe. It can indicate whether the social performance of a firm has increased or decreased while accounting for the change in social standards.

However, the rating itself is not comparable over time since the social standards of the timeframe determine whether the behaviour of the firm is considered socially responsible or socially irresponsible. When the behaviour of the firm remains constant the rating can change based upon the social standards. Creating a CSR rating based upon attribute data obtained from MSCI involves several other disadvantages. The MSCI database, upon which the attribute scores are based, uses quantitative and qualitative data. Incorporating qualitative data within the attributes requires interpretation and judgement. Transforming quantitative data to an attribute rating requires an arbitrary cut-off point to distinguish negative and positive ratings. Another disadvantage concerns the use of the MSCI database which holds restricted access. It might not always be feasible to obtain a license, which is required, since the data source is not publicly available. McGuire, Sundgren & Schneeweis (1988) used the rating of corporate reputation published in Fortune Magazine to measure CSR. Fortune magazine conducts a yearly survey in which 8.000 executives are asked to rate the 10 largest companies

for 20 to 25 industries. The reputation is composed of scores from four social and four financial categories. Since the survey is conducted on a yearly basis, this method allows comparison over time. This method also has some disadvantages. The survey of Fortune Magazine only incorporates the largest 10 firms of each type of industry. This limits the scope for CSR research using this data source since size is likely to influence CSR engagement (Stanwick & Stanwick, 1988). The survey only incorporates firms within the United States, which makes the data source not suitable for research among firms that are not primarily located in the United States.

Content analysis

Turker (2008) states that firms pay increasingly more attention to disclosure of information about their practices regarding environmental, community, employee and consumer issues. Thereby the use of content analysis as measure of CSR has increased since more literature on corporate social reporting has become available. Content analysis provides a somewhat objective measure since it often includes a standardized method of assessing a firms' CSP (Ruf, Muralidhar & Paul, 1998). Written documents can be codified into categories based on selected criteria by conducting content analysis (Gamerschlag, Möller & Verbeeten, 2011, p.241) Measuring CSP through content analysis also contains different approaches.

Ruff et al. (1998) mention that the quantity of disclosure regarding CSR in financial reports can be used as measure of CSR. The page or word count has been used in previous literature to quantify the volume of CSR disclosure (Web, Cohen, Nath & Wood, 2008). Besides the percentage of CSR disclosure in relation to the financial reports has been used as indicator of CSR as well.

Khaveh, Nikhashemi, Yousefi & Haque (2012) designed a different scoring method. The method exists of two steps. In the first step it is determined whether the indicator of CSR is

disclosed within the annual report or CSR report. The disclosure of an indicator will be scored "one" if the indicator is disclosed. A score of "zero" will be assigned if the indicator has not been disclosed. This first score indicates the total amount indicators of CSR which are disclosed by a firm. The second step involves the assessment of the disclosed information for each individual indicator. The informational content of the disclosed information can be scored within a range of one to four. Thereby quantitative information is regarded as holding more informational content then qualitative information.

In the method of Khaveh, Nikhashemi, Yousefi & Hague (2012) the CSR rating can be calculated by dividing the informational content by the amount of disclosed indicators. Thereby firms are not penalised if a certain indicators, that are not relevant for the firm, are not disclosed. Not all the indicators are relevant to disclose for firms in certain industries like software and banks. They are, for instance, less likely to disclose environmental information since it is of less relevance for their type of firm (Branco & Rodrigues, 2008, p.693). The range of possible CSR ratings for each firm lies between one and four. Thereby a score of one can be achieved if there is no qualitative and quantitative data disclosed for any indicator, whereas a score of four indicates disclosure of quantitative and qualitative data for all of the corresponding indicators. This method focuses more on the informative value of the disclosed information rather than the quantity of disclosed information.

One of the limitations concerns firms that disclose only information about one indicator and thereby can still obtain a maximum CSR rating, if the disclosed information is of qualitative and quantitative nature. Another limitation regards the method, which is very time intensive since it requires full reading, and subsequently scoring, of the content included in the study. The main limitation is that this type of content analysis requires subjective judgement which can influence the results of the study.

The use of content analysis when measuring the CSR rating of a firm brings forth problems to the nature of the included content. Thereby the initial purpose of the documents may differ from the measurement goal which influences the content validity (Babbie, 2010). Besides, the content might not be fully comprehensive and the analysis itself can be biased by selective inclusion of content (Waddock & Graves, 1997). Besides, research based on context analysis may confuse social action with the social orientation of corporate actions (McGuire, Sundgren & Schneeweis, 1988). Firms are likely to keep in mind their reputation when reporting about CSR rather than truthfully report their activities in a transparent way. Since the content included within the analysis is likely to influence the constructed rating it is important to consider the sources of content. Web, Cohen, Nath & Wood (2008) discuss multiple sources of content which can be included within a content analysis to measure CSR. They mention CSR reports, governance documents, mandatory filings, press releases, websites and product fact sheets as sources of content.

When developing a multidimensional measurement tool for CSR it is important to identify the relevant dimensions. Web et al. (2008) adopt CSR variables from the Global Reporting Initiative (GRI) guidelines in their content analysis. The GRI is an organization that develops guidelines which helps firms to raise their transparency regarding sustainability.

CSR measurement

A CSR rating will be constructed by conducting a content analysis based on the annual reports of the firms included in the sample. Content analysis has been used in multiple studies to determine the social performance of the selected firms (Reverte, 2009; Gamerschlag et al., 2010). In recent years the disclosure of information about CSR has been increasing among firms (Turker, 2008). Subsequently, the use of the method of content analysis to measure a firm's social responsibility has been increasing as well (Turker, 2008). By basing the content

analysis on the annual reports only public information will be used to create a CSR rating, which allows easy replication of the study. Besides, this measure allows the construction of CSR ratings without making use of databases with restricted access. Therefore it is applicable for all firms of which the annual report is available.

The annual report can be regarded as the primary source of information for investors. Therefore the annual report is a significant communication tool to a firm's stakeholders (Dawkins & Ngunjiri, 2008). Dawkins & Ngunjiri (2008, p.291) argue that the annual report can be regarded as a useful indication of a firm's priorities. Gelb & Strawser (2001) found that firms which engage in CSR activities provide more informative and extensive disclosure of these activities then firms that are less engaged in CSR activities. The engagement in CSR activities is reflected in the annual reports because companies will report their positive activities (Dawkings & Ngunjiri, 2008, p.289). The annual reports reflect the positive, socially responsible, activities of firms. The negative, socially irresponsible, activities will less likely to be extensively disclosed. Therefore the content analysis will be based on the positive indicators of CSR activity. This also improves the comparability of firms from different industries. For instance, the banking industry is characterized by a having a limited direct pollution to the environment and a relatively high level of product and employee safety, therefore they are likely to disclose less information about these topics. However, since the analysis focuses on the positive indicators firms from different industries can be included in the analysis despite their characteristics.

CSR can be regarded as a multidimensional construct (Waddock & Graves, 1997). Therefore the content analysis will be focusing on indicators of the different dimensions associated with CSR. The performance indicators for socially responsible behaviour will be adopted from the Global Reporting Initiative (GRI) 3.1 Framework and the Intangible Value Assessment (IVA)

methodology of April 2013 as provided by MSCI. The indicators provided by the GRI 3.1 Framework will be used as starting point and will be supplemented with indicators of MSCI in order to prevent overlapping indicators. The indicators as provided by GRI and MSCI are widely used within the existing academic literature to reflect a firm's CSR rating (Gamerschlag, Möller & Verbeeten, 2011; Waddock & Graves, 1997; McWilliams & Siegel, 2001). Keywords are assigned to the performance indicators. The keywords that are related to the performance indicators are noted in Appendix 1. The CSR rating will be computed by calculation of the total number of keywords found in the analysed reports, which indicates the total quantity of CSR disclosure (Gamerschlag, Möller & Verbeeten, 2011). There is no subjective judgment required in calculating the CSR rating since the quantity of keywords is used.

4.4 Independent variables

This section contains a description of the measurements for both the independent variables and the dependent variable. Measures derived from the available literature are discussed for each predictive variable. The reasons for adopting a certain measure of predictive variable within this study are discussed.

Ownership structure

The ownership structure is determined by distinguishing between different categories of ownership types. The category institutional ownership includes insurance companies, banks and financial companies and pension funds. The category managerial ownership includes the ownership of managers and directors of a firm. Managerial ownership will not regard shares owned by a supervisory board. The foreign ownership category holds owners that are primarily located outside of the Netherlands. Ownership structure is measured for each

category by the percentage of shares, owned by the specific ownership category, in comparison to the total amount of outstanding shares (Oh et al., 2011).

Innovation

The level of firm innovation is often determined by measuring a firm's investments in Research & Development (R&D). Hull & Rothenberg (2008) adopt the three year average in R&D spending. However the absolute number of R&D spending will likely be influenced by the size of the firm. McWilliams & Siegel (2000) use a ratio of R&D expenditure to sales in order to measure the amount of innovation. The ratio of R&D to sales is used in this study, as an indicator of the innovativeness of a firm, since it represents the relative importance of innovation for the associated firm. A dummy variable is included in the analysis to test the robustness of the results. The dummy distinguishes between firms that have disclosed R&D expenses in their annual report and firms which did not disclose any R&D expenses.

Financial Performance

In order to measure the financial performance the Return on Assets (ROA) ratio is often used (Chih et al., 2010; Oh et al., 2011). ROA can be calculated by dividing the earnings before tax and interest (EBIT) by the total assets of a firm. The ROA is an indication of financial performance and the ratio represents the amount of EBIT that a company generates for each euro of assets (Palepu, Healy & Peek, 2010). Another indicator of financial performance that is often used is the Return on Equity (ROE) ratio (Waddock & Graves, 1997; Makni, Francoeur & Bellevance, 2008). The ROE is calculated by dividing the net profit by the shareholders' equity of a firm. The ROE provides information about the generated returns of a firm in comparison to the invested funds by the shareholders of a firm (Palepu et al., 2010). Both measures are determined for the year 2011. A lagged variant of financial performance is

also used since it may be that the financial performance of 2011 is a result of increased CSR engagement in the same year. In order to check for the causality issue between financial performance and CSR engagement the financial performance of 2010 is included in the analysis.

Size

The size of the firm has multiple methods of measurement. The most used methods include total assets and total sales. The absolute number has frequently been used (Stanwick & Stanwick, 1998; Waddock & Graves, 1997). However several authors have used the natural logarithm of sales or assets (Brammer & Millington, 2008; Makni, et al.. 2008; Oh et al., 2011; Padgett & Galan, 2010; Paek, Xiao, Lee & Song, 2013). The natural logarithm can be used to re-express the data so it becomes more practical to describe the data. The natural logarithm is often used when there is a very large range of data (De Veaux, Velleman & Bock, 2008). Thereby positive skewness of the data can be reduced (Field, 2005). The natural logarithm of total sales will be calculated to determine the firm size. One of the requirements of the natural logarithm is that the values need to be higher than zero. This will be the case since the sales and assets of all the firms are higher than zero.

4.5 Control variables

Some academics argue that the type of industry should be regarded when studying determinants of CSR activities (Brammer & Millington, 2008; McWilliams & Siegel, 2000; Waddock & Graves, 1997). It is argued that industries are different in terms of public visibility (Jones, 1999). The industry may affect the tendency of a firm to engage in CSR due to the public visibility. The orientation of a firm to CSR may vary in accordance with their production process. Some firms may face more public monitoring since they are potentially

harmful for the environment while others face less public monitoring (Jones, 1999). Environmental issues are likely to vary across industries (Barnea & Rubin, 2010). Industry effects are often controlled for since media attention, public pressure and specific regulations differ for industries related to their environmental impact (Dixon-Fowler, Slater, Johnson, Ellstrand & Romi, 2013). Although the exact industry effects related to CSR engagement are not identified, it is important to control for these effects in order to obtain a clear results (Waddock & Graves, 1997).

Some studies on determinants of CSR activity have focused on a single industry to eliminate industry effects (Chih et al., 2010; Paek et al., 2013).

Siegel & Vitaliano (2007) distinguished industries by examining which type of products and services they offer. A distinction can also be made between manufacturing and non-manufacturing firms to control for industry effects (Barnea & Rubin, 2010; Padgett & Galan, 2010). Many of the studies incorporate industry as a control variable using the 2-digit SIC codes to create dummy variables (Barnea & Rubin, 2010; Bouquet & Deutsch, 2008; Erhemjamts, Li & Venkateswaran, 2012). However this might require a substantive sample to make sure that each category holds multiple firms in order to obtain valid results. Waddock & Graves (1997) used the division structure of the SIC codes to distinguish between different industries. The division structure classifies different categories based upon a range of 2-digit SIC codes. Thereby they combined several divisions in order to obtain a sufficient amount of firms in each category to acquire reliable results.

In accordance with existing literature, firms are distinguished in different industries (Waddock & Graves, 1997). The categories of industries are established based upon a range of 2-digit SIC codes. The division structure of SIC codes will be used in which multiple industries are combined to create different categories. By combining different industries each category holds a sufficient amount of observations, which is required to obtain reliable results.

Besides, this method is more comprehensive than distinguishing between manufacturing and non-manufacturing industries.

Similar to prior studies the leverage of a firm is also included in the analysis as a control variable (Waddock & Graves,1997; Brammer & Millington, 2008). The debt of a firm limits the amount of free cash flow available for managers to invest in CSR activities (Hull & Rothenberg, 2008; Barnea & Rubin, 2010). It is often included as an indicator of the riskiness of the firm (Makni et al., 2008; Padgett & Galan, 2010). Following the example of prior literature the leverage of the firms will be measured by dividing the total debt by total assets (Padgett & Galan, 2010; Harjoto & Jo,2011; Oh et al., 2011; Jo & Na, 2012).

Table 4.2: Description of all variables incorporated in the research.

Category	Variable	Short	Description
Dependent	Corporate social responsiblity rating	CSR_Rating	Rating that is based upon quantity of keywords in a firm's annual report of 2011.
	CSR disclosure ratio	CSR_Ratio	CSR Rating/ total number of words in a firm's annual report of 2011
	Natural logartihm CSR	ln_CSR	Natural logarithm of CSR_Rating
Independent	Institutional Ownership	Inst_Own	The percentages of shares owned by insurance companies, banks and financial companies and pension funds.
	Managerial Ownership	Man_Own	The percentages of shares owned by employees, managers and directors.
	Foreign Ownership	For_Own	The percentages of shares owned by shareholders that are primary located outside of the Netherlands.
	Return On Assets	ROA	Earning before interest and taxes / total assets.
	Return On Equity	ROE	Net income/ shareholders equity.
	Total Sales	ln_TS	The natural logarithm of total sales.
	Total Assets	ln_TA	The natural logarithm of total assets.
	R&D expenditure to Sales	R&D_Sales	R&D expenditures / total sales.
Control	Mining & Construction Industry	MC	The firm operates in the Mining & Construction industry.
	Manufacturing Industry	MAN	The firm operates in the Manufacturing industry.
	Trade Industry	WRT	The firm operates in the Trade industry.
	Debt Ratio	Debt_Ratio	Total book value of debt / total book value of assets.

5. Data

5.1 Introduction

The first sections of this chapter contain a description of the sample that is incorporated in the study. Besides, the selection criteria of the sample are described. The second section of this chapter includes a description of the data source. It contains a description of the sources providing data on both the independent and dependent variable.

5.2 Sample description

The sample is comprised of the firms that compose the Amsterdam Exchange Index (AEX), the Amsterdam Mid Cap Index (AMX) and the Amsterdam Small Cap index (AScX).The AEX holds the 25 firms with the highest market capitalization. The AMX holds the number 26 to 50 and the AScX holds number 51 to 75 based upon the weight of the firms market capitalization. This sample is selected since it is expected that these firms provide much publicly available data. The firms are required to publish annual reports which can be considered their most important source of communication to shareholders. The AEX, AMX and AScX have a changing composition based upon events. The listing changes as a result of a quarterly review. The composition of the sample regards the listing of firms after the first quarterly review of 2011. Based upon the described composition of the indices the sample initially holds 75 firms.

Only the firms of which data on the ownership structure, R&D expenses, financial performance and size is available over 2011 within the Reach database, the ORBIS database or the annual report are included in the analysis. Besides, in order to determine a firm's CSR rating, the annual report of 2011 should be publicly available in order for the firms to be included in the analysis. After exclusion of firms with insufficient data a sample of 64 firms remains.

The CSR rating is composed based upon the data of 2011. The CSR ratings are based upon the keywords obtained from GRI and MSCI. Changing social standards require different keywords for each different timeframe. Therefore the social performance will not be comparable when measured with the same keywords for different time frames. Besides, due to the changing composition of the AEX , AMX and AscX the sample will be limited even more when utilizing a larger time-frame.

Table 5.1: Industries in the sample.

Industry	SIC	N
Mining & Construction	10-19	8
Manufacturing	20-39	21
Trade	50-51	5
Miscellaneous	40-49; 52-89	30

Notes: The industries have been composed based on 2-digit SIC codes.
The group comprising firms of heterogeneous industries is used as control group defined as: miscellaneous.
Source: Primary SIC codes are obtained from ORBIS Database

5.3 Data source

This study will be based upon secondary data. The data gathered regarding the dependent variable considers the year 2011 since all the annual reports have been deposited for 2011 which is required for the analysis. Data on the variables regarding financial performance and R&D expenditures and sales considers 2011 and 2010 to distinguish a lagged variant of financial performance and R&D to sales ratio. For the other independent variables only the year 2011 will be considered. Data regarding all the independent variables will be gathered using the database Reach which is published by Bureau Van Dijk. This database is available to students of the University of Twente. Reach contains numerical and factual data regarding more than 1 million companies in the Netherlands. The ORBIS database is published by Bureau van Dijk and contains numerical and factual data regarding more than 100 million companies worldwide. Data obtained from ORBIS on the ownership structure and R&D

expenditures is supplemented with data from the annual reports. The observations that are extracted from ORBIS and Reach will be cross-checked randomly with data from the annual report to determine the reliability. The type of industry will be determined for each firm by adopting their primary 2-digit SIC Code from ORBIS.

6. Results

6.1 Introduction

In this chapter the results of the analysis will be provided. First, the descriptive statistics of the dependent variable and independent variables will be presented. Secondly, a correlation matrix will be presented which provides correlation coefficients between the independent variables. Finally, the results of the regression analysis will be provided.

6.2 Descriptive Statistics

Table 6.1 provides the descriptive statistics of the dependent variable and all the independent variables. Due to incomplete data the amount of observations for all variables, apart from RD_sales, is 64. The independent variable RD_Sales, which contains the ratio of R&D to total sales, comprises 39 observations. A fraction of the firms do not explicitly publish the R&D expenses in the annual report which limits the amount of observations.

Table 6.1: Descriptive statistics of the dependent variable and independent variables.

Variable	N	Mean	Median	SD	Minimum	Maximum
Dependent variables						
CSR_Rating	64	150,953	131.500	90.998	12	399
CSR_Words	64	0.211	0.198	0.121	0.022	0.623
ln_CSR	64	4.830	4.879	0.649	2.485	5.989
Independent variables						
Inst_Own	64	0.297	0.275	0.217	0.005	0.750
Man_Own	64	0.020	0.004	0.058	0.000	0.425
For_Own	64	0.345	0.291	0.212	0.010	0.999
Debt_ratio	64	0.614	0.584	0.185	0.269	0.968
ROA	64	0.047	0.048	0.082	-0.245	0.330
ROE	64	0.087	0.111	0.230	-0.625	0.610
TA (in € millions)	64	17,556.929	2,383.934	55,592.130	73.181	333,859.000
TS (in € millions)	64	10,833.480	1,300.138	46,228.898	74.515	363,375.064
RD_Sales	39	0.027	0.009	0.039	0.001	0.136

Notes: CSR_Rating: Corporate social responsibility rating; Inst_Own: Institutional Ownership; Man_Own: Managerial Ownership; For_Own; Foreign Ownership; ROA: Return on assets; ROE: Return on equity; TA: Total assets; TS: Total sales; RD_Sales: Research and development expenses / total sales. The absolute numbers of total assets and total sales are presented.

The descriptive statistics on CSR rating are in line with the study of Gamerschlag, Möller & Verbeeten (2010) in which a similar measure of CSR activity has been utilized. Gamerschlag et al (2010) report a mean total CSR score of 151 with a standard deviation of 131. Institutional owners hold an average of 29,7% of the shares in firms which is in line with the study of Oh, Chang and Martynov which provide an average ownership level of 26 % of shared held by institutional owners. This corresponds with the study of Degryse & de Jong (2001), which indicates that institutional holdings in the Netherlands are on average above 20%. The average level of managerial ownership is lower with 2%, which is expected. Degryse & de Jong report managerial ownership levels of 6% among Dutch firms. However, they also include the shares owned by the supervisory board which can be the cause for the higher managerial stock holdings.

The level of foreign ownership is relatively high compared to the study of Oh, Chang and Martynov but the range and standard deviation correspond. The descriptive statistics of return on assets and return on equity are in line with existing literature (Oh, Chang & Martynov, 2011; Reverte, 2009) .The average value of total assets is larger than the average value of total sales which corresponds with the study of Degryse & De Jong (2010).

6.3 Univariate Analysis

Following previous studies the robustness of the results is checked by analysing the differences in the explanatory variables between firms with a high CSR rating and a low CSR rating (Reverte, 2009). The sample is split up in three groups based upon their CSR rating. The first group includes the 21 firms with the highest CSR score. The second group includes 21 firms with the lowest CSR scores. The third group includes 22 firms with an average CSR score. A t-test for the mean is performed between the first and second group, which corresponds with the high CSR group and low CSR group. Three panels are created in which the groups are split based upon the different measurement methods of CSR. The firms are split up based upon CSR Rating, natural logarithm of CSR rating and CSR ratio, as defined in table 4.2. The results of the t-tests for the mean are reported in table 6.2. The results of the t-tests indicate that in each panel, the high CSR group has significantly higher total sales in comparison to the low CSR group. The t-test indicates that there is significantly less foreign ownership in the high CSR groups in comparison to the low CSR groups.

Although the high CSR group has a higher percentage of institutional and managerial ownership there is no significant difference between groups. Both measures of financial performance do not provide significant differences between groups. The ratio of R&D expenditures to sales displays is on average higher for the low CSR group but the difference is also insignificant.

The t-tests for the mean have also been repeated with a sample split up in two groups. The first group included in the analysis holds firms with a CSR rating above the median value, whereas the second group holds all firms with a CSR rating below the median value. These groups correspond with respectively a high CSR group and a low CSR group. The results of this analysis are included in Appendix 3. This analysis also indicates that the high CSR

groups have a significantly higher total sales and level of foreign ownership than the low CSR group.

Table 6.2: Differences in the independent variables between high and low CSR groups.

Variables	High CSR group	Low CSR group	Difference	T-value	
Panel A: CSR Rating					
Institutional Ownership	0.319	0.245	0.074	0.962	
Managerial Ownership	0.031	0.011	0.020	1.070	
Foreign Ownership	0.307	0.381	-0.074	-1.764	*
Return On Assets	0.062	0.053	0.009	0.540	
Return On Equity	0.099	0.107	-0.008	-0.076	
Total Sales	15.202	13.161	2.041	3.793	***
Total Assets	15.222	14.430	0.792	1.389	
R&D expenditure to Sales	0.013	0.037	-0.024	-1.436	
Variables	High CSR group	Low CSR group	Difference	T-value	
Panel B: Ln CSR					
Institutional Ownership	0.325	0.258	0.066	0.962	
Managerial Ownership	0.034	0.011	0.023	1.070	
Foreign Ownership	0.294	0.410	-0.117	-1.764	*
Return On Assets	0.065	0.053	0.013	0.540	
Return On Equity	0.102	0.106	-0.005	-0.076	
Total Sales	15.202	13.161	2.041	3.793	***
Total Assets	15.222	14.430	0.792	1.389	
R&D expenditure to Sales	0.012	0.035	-0.023	-1.447	
Variables	High CSR group	Low CSR group	Difference	T-value	
Panel C: CSR Ratio					
Institutional Ownership	0.393	0.269	0.124	1.818	*
Managerial Ownership	0.015	0.005	0.010	1.740	*
Foreign Ownership	0.256	0.408	-0.152	-2.253	**
Return On Assets	0.062	0.055	0.007	0.300	
Return On Equity	0.100	0.114	-0.014	-0.218	
Total Sales	14.524	13.079	1.445	2.666	**
Total Assets	14.517	14.574	-0.056	-0.103	
R&D expenditure to Sales	0.017	0.033	-0.016	-1.384	

Notes: The table reports the means, differences in means and t-values for the independent variables. High CSR group includes 21 firms with highest CSR ratings. Low CSR group include 21 firms with lowers CSR ratings. All variables are defined in the table 4.2. Equal variance assumption has been checked for using Levene's test.
* Indicates significance at the 10% level; **Indicates significance at the 5% level; *** indicates significance at the 1% level.

6.4 Correlation Coefficients

A correlation matrix has been created to check for multicollinearity problems and is included in table 6.3.The correlation matrix shows significant correlations for both measures of financial performance. Besides, both measures of size are significantly correlated. Gamerschlag, Muller & Verbeeten (2010) argue that multicollinearity is no problem since the correlation coefficient does not exceed 0.9. The correlation matrix can be considered a decent method but may miss subtle forms of multicollinearity (Field, 2005).

Table 6.3: Correlation coefficients.

	Inst_Own	Man_Own	For_Own	ROA	ROE	ln_TA	ln_TS	RD_Sales
Inst_Own		-0.070	-0.183	0.198	0.119	-0.166	0.079	-0.218
Man_Own			0.054	-0.096	-0.099	0.126	0.207	-0.049
For_Own				-0.063	-0.010	0.131	-0.024	-0.052
ROA					0.670**	-0.071	0.160	-0.247
ROE						0.059	0.244*	-0.210
ln_TA							0.706**	0.349*
ln_TS								0.484**
RD_Sales								

Notes: Inst_Own: Institutional Ownership; Man_Own: Managerial Ownership; For_Own; Foreign Ownership; ROA: Return on assets; ROE: Return on equity; ln_TA: Natural logarithm total assets; ln_TS: Natural logarithm total sales: Research and development expenses / total sales

**. Correlation is significant at the 1% level. *. Correlation is significant at the 5% level.

The Variance Inflation Factor (VIF) indicates whether an independent variable has a strong relationship with other independent variables. Field (2005) argues that a VIF value greater than 10 indicates multicollinearity. This corresponds with the argument of Gamerschlag et al. (2010) which argue that a VIF value under 10 implies that multicollinearity is not an issue.

The tolerance statistic is the reciprocal of the VIF (1/VIF). Values below 0, 1 corresponds with a VIF value of 10 and indicates problems of multicollinearity (Field, 2005). The VIF and tolerance statistic are reported in table 6.4.

Table 6.4: Collinearity diagnostics.

Variable	Tolerance	VIF
Inst_Own	0.776	1.288
Man_Own	0.854	1.171
For_Own	0.911	1.097
ROA	0.641	1.561
ROE	0.630	1.588
ln_TA	0.227	4.414
ln_TS	0.209	4.786
RD_Sales	0.670	1.493

Notes: VIF: Variance Inflation Factor

Based upon the correlation matrix and the VIF it is possible that the natural logarithm of total sales and natural logarithm of total assets may display problems of multicollinearity. Although the VIF does not exceed the value of 10, multiple correlation coefficients have shown to be significant. The measures for financial performance correlate significantly. The measures for size also show a significant correlation coefficient. Therefore each of the models has been designed incorporating only a single measure of size or financial performance in each model. This eliminates the multicollinearity problems while still incorporating multiple measures for the independent variables.

6.5 Regression analysis

In order to test the hypotheses OLS regression analysis has been performed. Table 6.4 displays the results of regressing the independent variables in various models on CSR rating. Table 6.5 displays the results of the regression analysis with the natural logarithm of CSR rating included as the dependent variable. The ratio of CSR rating on the total number of words in the annual report of the firm has been included in table 6.6 as the dependent variable

in the regression analysis. The first model in the regression analysis includes only the control variables. This model allows checking for the influence of different additional explanatory factors. The remaining models are designed to test the formulated hypotheses.

6.5.1 Ownership

Model 2 has been designed to test the first set of hypotheses which are related to ownership. The different types of ownership have been regressed in model 2. Models 3 to 6 incorporate the different types of ownership to test the robustness of the relationships as found in model 2. Hypothesis 1a states that institutional ownership is positively associated with a firm's CSR rating. The models including CSR rating as the dependent variable indicate a positive but not significant coefficient for institutional ownership. When including the natural logarithm of CSR as the dependent variable, the coefficient remains positive but is also significant at the 10% level. When including CSR ratio as the dependent variable the relationship is positive and significant at the 5% level. All of the models display positive coefficients and although the significance of the findings differs the results are relatively consistent. The results provide support for hypothesis 1a which implies that there is a positive relationship between the level of institutional ownership and the CSR rating of firms.

Hypothesis 1b states that managerial ownership is positively associated with a firm's CSR rating. When including CSR rating and the natural logarithm of CSR rating in the regression analysis positive and significant coefficients are found for managerial ownership. When including CSR ratio as the dependent variable the relationship becomes insignificant. Therefore mixed results are found for managerial ownership as determinant of CSR activity. This implies that hypothesis 1b is partially supported.

It is possible that managers acknowledge the value of CSR activities for the shareholders goals. Regarding the agency theory, it can be argued that managerial ownership brings forth

less agency problems and the managers will be more inclined to act towards the interests of the shareholders.

Hypothesis 1c states that foreign ownership is negatively associated with a firm's CSR rating. All of the models, including foreign ownership as independent variable, show a negative coefficient. In addition, in most of the models the negative relationship between foreign ownership and the measurement of CSR is significant. When including the natural logarithm of CSR rating and CSR ratio the coefficients are significant at the 10% level. Besides, when including the CSR rating as dependent variable the coefficients are significant at the 5% level. Based upon these results, hypothesis 1c is supported and it can be concluded that foreign ownership is negatively associated with CSR engagement.

Although foreign owners are assumed to value CSR activities, foreign ownership has a negative effect on the firms CSR activity. Based upon agency theory, managers are able to focus on obtaining personal benefits rather than acting towards the interests of the owner when there are information asymmetry problems. The foreign owners may be relatively less able to verify the agents' behaviour which allows managers to focus less on CSR activities, although engagement in CSR activities is desired by the foreign owners.

6.5.2 Financial performance

Model 3 includes return on equity as measure of financial performance, which is considered an indicator of slack resources. This model is designed to test hypothesis 2 which states that financial performance is positively associated with a firm's CSR engagement. The coefficients provided in model 3 for return on equity included in model 3 display are positive but insignificant. In order to test the robustness of this result the regression analysis of model 3 was repeated while return on assets as measure of financial performance. The results of the additional regression analysis are presented in appendix 4. The relationship between return on

assets and CSR rating is positive but also insignificant (b = 27.384, t (63) = -0.200, p = 0.842). When including the other measures of CSR engagements in the regression analysis, the relationship with return on assets remains insignificant.

Return on assets and return on equity, which are considered measures of financial performance, have not been entered simultaneously since they have shown a significant correlation which may provide problems of multicollinearity. Both of measures of financial performance do not provide a significant relationship with CSR engagement which implies that there is not enough evidence to support the hypothesis 2. Additional models have been designed, including a lagged variant of financial performance, since there is still uncertainty about the causality of the relationship between CSR and financial performance. The results of these models have been included in appendix 4. Return on equity of 2010 shows a negative and insignificant relationship with CSR rating (b = -0.542, t (63) = -0.841, p = 0.404). When return on assets of 2010 is included in the model a similar relationship is found (b = -0.444, t (63) = -0.322, p = 0.748). The relationships remain insignificant when including other measures of CSR. Whereas the coefficients of financial performance for 2011 are mainly positive, the coefficients of financial performance for 2010 are mainly negative. However all of the coefficients related to financial performance are insignificant which implies that the hypothesis is not supported. This indicates that the slack resources, which are assumed to be the result of financial performance, do not determine whether a firm engages in CSR activities.

6.5.3 Size

Model 4 includes the natural logarithm of total sales, which is considered an indicator of the size of the firm. This model is designed to test hypothesis 3 which states that size is positively associated with CSR engagement of a firm. The relationship between the natural logarithm of

total sales and CSR rating is positive and highly significant. In addition, when including the natural logarithm of CSR rating as the dependent variable in the analysis

When controlling for innovation, using the R&D to sales ratio, the relationship is insignificant but when incorporating the R&D dummy the relationship is highly significant which corresponds with the results of model 4. The insignificance of the result may be due to the limited sample size when incorporating the R&D to sales ratio. In order to test the robustness of the result another model including the natural logarithm of total assets was designed. The results of this additional regression analysis are included in Appendix 4. The results indicate that there is no significant relationship between the natural logarithm of total assets and all three measures of CSR engagement. Therefore hypothesis 3 can be partly supported since the results regarding the natural logarithm of total sales support the hypothesis whereas the results regarding the natural logarithm of total assets do not provide enough support for the hypothesis.

6.5.4 Innovation

Model 5 and 6 have been designed to test hypothesis 4 which states that the level of innovation is positively associated with a firm's CSR engagement. The ratio of R&D expenses to total sales has been included as indicator of innovation in model 6. From the firms in the initial sample only 39 disclose information regarding their R&D expenses. The ratio of R&D to total sales shows a negative relationship with any of the measures of CSR engagement which indicates that innovativeness is negatively related to the CSR rating. However the reported coefficients are insignificant. To test the robustness of the result a separate model was created in which a dummy variable for innovation has been created. The dummy indicates whether a firm has reported R&D expenses. Model 5 shows a positive but insignificant coefficient for the R&D dummy when using CSR rating and natural logarithm of CSR rating as dependent variable. The relationship between the R&D dummy and CSR ratio

is negative and insignificant. In addition, another dummy was created in which the 39 observations were divided in groups based upon whether their R&D expenses where above or below median. When including this dummy in the model with CSR rating the coefficient remains positive but insignificant (b = 5,522, t (38) = 0,193, p = 0,848). Firms that are innovative may include socially responsible attributes in their products or processes. The R&D to sales ratio of 2010 has been included in an additional analysis in order to test whether lagged-innovation is determining for CSR engagement of a firm. The results are presented in Appendix 4. The coefficients for R&D to sales ratio of 2010 are insignificant and mainly negative. This indicates that innovation does not have a significant effect on subsequent CSR engagement. The results show that CSR is not determined by the level of innovation of firms. These results may indicate that firms may focus on CSR engagement and innovation, rather than only focusing on one source of competitive advantage. In addition, the results also indicate that the social responsibility of a firm is not a side product of their innovation activities. Based on these results hypothesis 4 can be rejected, which implies that innovation is not a significant determinant of CSR activity.

Table 6.5: Results from OLS regression analysis using CSR_rating as the dependent variable.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	61.833	78.733	76.431	-110.805	-109.013	42.950
	(1.450)	-1.406	(1.344)	(-1.299)	(-1.275)	(0.303)
MC	84.307 **	65.723 *	64.698 *	39.641	31.811	98.976 *
	(2.451)	-1.898	(1.847)	(1.168)	(0.9038)	(2.075)
MAN	12.315	-1.294	-1.677	-9.467	-19.613	12.578
	(0.492)	(-0.053)	(-0.0685)	(-0.410)	(-0.757)	(0.225)
WRT	10.612	-23.093	-24.815	-39.974	-47.875	5.883
	(0.250)	(-0.549)	(-0.581)	(-0.996)	(-1.161)	(0.145)
Debt_Ratio	115.560 *	102.218 *	104.476 *	83.320	73.062	32.253
	(1.946)	(1.711)	(1.724)	(1.468)	(1.258)	(0.340)
Inst_Own		78.357	77.787	68.692	59.231	-32.861
		(1.459)	(1.436)	(1.352)	(1.145)	(-0.403)
Man_Own		440.122 **	446.482 **	308.490 *	303.545	274.133
		(2.427)	(2.429)	(1.740)	(1.707) *	(1.218)
For_Own		-88.869 *	-88.718 *	-83.639 *	-85.119	-78.185
		(-1.720)	(-1.703)	(-1.714)	(-1.739) *	(-0.988)
ROE			15.197			-5.831
			(0.333)			(-0.075)
ln_TS				15.067 ***	15.112 ***	5.778
				(2.831)	(2.833)	(0.858)
R&D					19.961	
					(0.869)	
RD_Sales						-16.155
						(-0.559)
Adjusted R^2	0.102	0.209	.196	0.296	0.292	0.124
Observations	64	64	64	64	64	39

Notes: The table reports the unstandardized coefficient obtained from OLS regression analysis incorporating CSR_Rating as the dependent variable. T-statistics are presented in the parentheses.
All variables are defined in the table 4.2.
* Indicates significance at the 10% level; **Indicates significance at the 5% level; *** indicates significance at the 1% level.

Table 6.6: Results from OLS regression analysis using ln_CSR as the dependent variable.

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
Intercept	4.160	***	4.318	***	4.310	***	2.766	***	2.789	***	4.548	***
	(13.522)		(10.747)		(10.557)		(4.620)		(4.730)		(5.353)	
MC	0.526	**	0.359		0.355		0.145		0.042		0.463	*
	(2.120)		(1.443)		(1.412)		(0.608)		(0.174)		(1.814)	
MAN	0.108		0.027		0.025		-0.040		-0.173		-0.209	
	(0.598)		(0.153)		(0.144)		(-0.249)		(-0.970)		(-1.029)	
WRT	0.021		-0.267		-0.272		-0.405		-0.509	*	-0.086	
	(0.067)		(-0.883)		(-0.887)		(-1.437)		(-1.787)		(-0.277)	
Debt_Ratio	0.888	**	0.772	*	0.780	*	0.618		0.483		0.065	
	(2.073)		(1.802)		(1.792)		(1.550)		(1.205)		(0.136)	
Inst_Own			0.682	*	0.681	*	0.603	*	0.483		-0.412	
			(1.771)		(1.750)		(1.692)		(1.348)		(-0.896)	
Man_Own			2.509	*	2.529	*	1.431		1.366	**	1.452	
			(1.927)		(1.916)		(1.149)		(1.113)		(1.236)	
For_Own			-0.767	**	-0.767	**	-0.725	**	-0.744	**	-0.459	
			(-2.069)		(-2.050)		(-2.115)		(-2.204)		(-1.066)	
ROE					0.049						-0.,381	
					(0.149)						(-0.862)	
ln_TS							0.123	***	0.124	***	0.052	
							(3.302)		(3.369)		(1.190)	
R&D									0.262			
									(1.652)			
RD_Sales											-3.440	
											(-1.634)	
Adjusted R^2	0.088		0.205		0.191		0.322		0.343		0.253	
Observations	64		64		64		64		64		39	

Notes: The table reports the unstandardized coefficient obtained from OLS regression analysis incorporating ln_CSR as the dependent variable. T-statistics are presented in the parentheses.
All variables are defined in the table 4.2.
* Indicates significance at the 10% level; **Indicates significance at the 5% level; *** indicates significance at the 1% level.

Table 6.7: Results from OLS regression analysis using CSR_Ratio as the dependent variable.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	0.073	0.102	0.096	-0.069	-0.066	-0.082
	(1.060)	(1.183)	(1.091)	(-0.517)	(-0.487)	(-0.324)
MC	0.059	0.021	0.018	-0.004	0.001	0.013
	(1.235)	(0.435)	(0.372)	(-0.078)	(0.010)	(0.179)
MAN	0.068 *	0.063 *	0.062 *	0.048	0.053	0.032
	(1.910)	(1.800)	(1.751)	(1.341)	(1.351)	(0.539)
WRT	0.040	-0.018	-0.022	-0.039	-0.035	0.002
	(0.687)	(-0.300)	(-0.369)	(-0.651)	(-0.569)	(0.019)
Debt_Ratio	0.174	0.146	0.152	0.102	0.109	0.178
	(1.709) *	(1.417)	(1.465)	(0.979)	(1.002)	(0.966)
Inst_Own		0.153 **	0.152 **	0.150 **	0.155 **	0.096
		(2.026)	(2.005)	(2.031)	(2.026)	(0.754)
Man_Own		0.048	0.065	-0.058	-0.048	-0.085
		(0.190)	(0.252)	(-0.223)	(-0.178)	(-0.251)
For_Own		-0.138 *	-0.137 *	-0.134 *	-0.134 *	-0.050
		(-1.914)	(-1.894)	(-1.891)	(-1.855)	(-0.417)
ROE			0.037		0.010	-0.123
			(0.574)		(0.153)	(-1.037)
ln_TS				0.015 *	0.014	0.013
				(1.682)	(1.554)	(0.945)
R&D					-0.012	
					(-0.354)	
RD_Sales						-0.278
						(-0.459)
Adjusted R^2	0.035	0.128	0.118	0.156	0.126	0.102
Observations	64	64	64	64	64	39

Notes: The table reports the unstandardized coefficient obtained from OLS regression analysis incorporating CSR_Ratio as the dependent variable. T-statistics are presented in the parentheses.
All variables are defined in the table 4.2.
* Indicates significance at the 10% level; **Indicates significance at the 5% level; *** indicates significance at the 1% level.

7. Conclusion

7.1 Introduction

In this chapter the results of the study are interpreted. First, the implications of the statistical analyses are discussed with consideration of the discussed theories. Second, the limitations of this study are discussed and recommendations for future research are formulated.

7.2 Conclusion

Corporate social responsibility is a topic which has received much attention. The promise of increased financial performance may have been the driving factor for the increased attention towards CSR research. However, the focus of CSR research should be expanded to drivers of CSR to increase the understanding of the construct (Aguilera, Rupp, Williams & Ganapathi, 2007). What drives organizations to engage in CSR activities is likely to be of importance to investors, managers and academics. This research supports several drivers of CSR activity theoretically and empirically.

Based upon the agency theory, managerial ownership is expected to be positively associated with CSR rating of a firm due to decreased information asymmetry and agency problems. This expectation was supported by the regression analysis, in which the relationship was positive and significant in most models. It can be argued that managers acknowledge the benefits of CSR activity to value maximization goals. Foreign ownership is expected to be negatively associated with the CSR rating of a firm since foreign owners face information asymmetry problems. The results indicate that foreign ownership does negatively influence the tendency of firms to engage in CSR activities. A negative and significant relationship was found in nearly all models. The relationship remains significant across the different measures of CSR. Regarding agency theory, it can be argued that managers rather focus on personal benefits then striving towards the owners' goals, which is possible due to information

asymmetry problems. As expected, institutional ownership shows a positive effect on the CSR rating of firms. The relationship was found to be significant in models for two measures of CSR. The models including CSR rating indicated a relationship which was nearly significant. Regarding agency theory, it is assumed that institutional owners favour CSR engagement and also face little asymmetry problems, which allows them to verify the managers behaviour. Therefore, regarding the ownership structure, managerial ownership, institutional ownership and foreign ownership prove to be determinants of CSR activity. Based upon the slack resource theory it is expected that firms with much available slack resources are likely to hold a high CSR rating. However, from the results it was found that both return on assets and return on equity do not have a significant influence on CSR activity. Return on equity appears to be higher in the low CSR group whereas return on assets appears to be higher in the high CSR group but significant differences between groups were not found. It might be that financial performance influences CSR activity over time. Therefore a lagged variant of return on assets and return on equity was incorporated in the regression analysis. Both of the lagged variants did not provide enough evidence to prove the value of financial performance as a determinant of CSR activity. Therefore financial performance was not found to be a determinant of CSR activity within this study. Based upon the slack resources theory size is to be positively related to CSR activity of firms. Besides, large firms are expected to be highly visible and therefore face more consequences for their activities. The amount of total sales was found to be highly significant and positively influencing the CSR rating. The high-CSR group was found to have significantly more sales than the low CSR group. These results support the slack resources theory. Total assets as an indicator of size was found to be positive as well but insignificant. It may be that the type of firm determines the amount of total assets. A firm may hold a relatively large amount assets compared to firms with other characteristics, while the amount of assets may be small compared to similar firms.

Therefore total sales may be more appropriate as indicator of size. The results found in the study indicate that size is partiality supported as a determinant of CSR. Based upon the resource-based view firms are expected to aspire a competitive advantage. Firms that already hold a competitive advantage by means of innovativeness are expected to be less focused on achieving additional competitive advantage by being highly socially responsible. The results of the regression analysis indicate that there is a negative but insignificant relationship between R&D intensity and the measures of CSR when incorporating only the firms of which R&D expenditures are known. When incorporating a dummy, which makes distinction between high innovation and lowly innovation, the relationship remains insignificant. The high CSR group displays a lower R&D to sales ratio than the low CSR group but the difference is also insignificant. The results do not support a relationship between innovativeness and CSR engagement of a firm.

Overall, it can be argued that this study contributes to existing literature by discussing multiple possible determinants of CSR activity. Thereby managerial ownership, institutional ownership, foreign ownership and size of a firm have been proven to be of influence on CSR activity of a firm. The results do not support financial performance and innovativeness as determinants of CSR activity. Model 5 using natural logarithm of CSR rating as dependent variable and including the control variables, ownership structure and size displays the highest adjusted R-squared value ($R^2 = 0.343$) which indicates that it is the best model for prediction when considering the amount of explanatory variables.

7.3 Limitations and recommendations

This study has tested different determinants of CSR activity within Dutch firms. The study has provided various relevant results but as with all studies there are also some limitations. The sample consists of 64 firms of which data for variable measurement was available. This size is limited when compared to other studies which include over 400 firms (Padgett &

Galan, 2010; Gamerschlag, Möller and Verbeeten, 2010; Paek, Xiao, Lee & Song, 2013). However, smaller sample sizes which include less than 100 firms have been used in previous research as well (Zu & Song, 2008). The sample is also limited to Dutch firms. It is possible that institutional effects are influencing the tendency of firms to engage in CSR activities (Campbell, 2007). Further research, including multiple countries, would be necessary to identify if institutional effects are determinants of CSR activities. The firms selected in the sample are among the 75 largest firms in the Netherlands based on market capitalization. It may be that the discussed determinants have a different effect on small and medium enterprises (Udayasankar, 2008). Besides limitations related to the sample the study also contains some limitations related to the research design and variable measurement.

The study focuses on CSR activity measured for 2011. Therefore the study does not focus on what a change in a determining factor means for CSR activity over time. Future research can focus on the effects of the determinants on CSR activity considering different time intervals. Another limitation of the study concerns the measurement of CSR activity. The annual report was used to determine the level of CSR activity. It is expected that the annual report only provides positive aspects regarding the firm's social responsibilities. It is unlikely that irresponsible activities will be disclosed in the annual report. Therefore the measure of CSR includes only positive indicators of socially responsible behaviour. A measure of socially responsible activity which incorporates indicators of responsible and irresponsible behaviour is already employed in research (Barnea & Rubin, 2010; Paek et al., 2013; Padgett & Galan, 2010). This measure however relies upon data delivered by MSCI which is not publicly available and only considers a select sample of firms. Future research could focus on identifying a measurement method of socially responsible activity which can be applied to all firms. Innovation was measured using a ratio of R&D expenses to total sales. Some of the firms did not disclose data on the R&D expenses, which is likely the result of reporting

standards. This resulted in the exclusion of firms in the test related to innovation as determinant of CSR. Although the firms did not report R&D expenses it is possible that these costs have occurred. The sample may be biased since firms may disclose their R&D expenses based upon the reporting standards.

Although the study certainly holds its limitations it adds to the understanding of drivers of CSR and offers options for more in-depth research for academics.

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Appendix 1: Keywords of content analysis CSR

Dimension	Financial	Environmental	Social	Governance
Keywords	Economic performance Donations Financial implications Financial assistance Local impact Economic impact	Recycled Energy consumption Biodiversity Emissions Effluents Waste Spills Environmental impacts Carbon footprint Climate change Biodiversity Water Clean tech Green building Renewable energy	Employment Employee turnover Collective bargaining Collective agreements Occupational health Occupational safety Training Diversity Equal opportunities Human rights Discrimination Freedom of association Child labour Forced labour Compulsory labour Community Product responsibility Customer health Customer safety Labour management Human capital Product safety Product Quality Chemical Safety Responsible investment Healthcare Social opportunities	Corporate governance Ethics Compliance Public policy Corruption Fines Sanctions Privacy Data security

Appendix 2: CSR ratings of firms

Name	CSR	ln_CSR	CSR_Ratio	Name	CSR	ln_CSR	CSR_Ratio
Aalberts Industries	52	3.95	0.162	Koninklijke KPN	158	5.06	0.194
Accell Group	100	4.61	0.231	Koninklijke Vopak	151	5.02	0.196
Aegon	154	5.04	0.209	Koninklijke Wessanen	93	4.53	0.154
Air France - KLM	374	5.92	0.290	Lbi International	89	4.49	0.137
AMG	284	5.59	0.623	Logica	153	5.03	0.195
Amsterdam Commodities	32	3.47	0.112	Macintosh Retail Group	146	4.98	0.022
Aperam	125	4.83	0.226	Mediq	268	5.65	0.456
Arcadis	261	5.56	0.353	Nieuwe Steen Investments	65	4.17	0.109
Arcelormittal	309	5.73	0.229	Nutreco	207	5.33	0.232
Arseus	119	4.78	0.245	Ordina	86	4.45	0.162
ASM International	95	4.55	0.103	Prologis European Properties	12	2.48	0.035
ASML Holding	70	4.25	0.047	Qurius	217	5.38	0.257
Ballast Nedam	353	5.87	0.463	Randstad Holding	243	5.49	0.280
Be Semiconductor Industries	65	4.17	0.127	Reed Elsevier Group	234	5.46	0.253
Beter Bed Holding	176	5.17	0.565	Royal Dutch Shell	241	5.48	0.415
Binckbank	90	4.50	0.112	Royal Imtech	201	5.30	0.302
Brunel International	74	4.30	0.286	Royal Ten Cate	95	4.55	0.151
Corio	77	4.34	0.119	SBM Offshore	302	5.71	0.199
CSM	212	5.36	0.376	Sligro Food Group	69	4.23	0.245
Eurocommercial Properties	47	3.85	0.117	SNS Reaal	84	4.43	0.093
Exact Holding	68	4.22	0.101	Telegraaf Media Group	96	4.56	0.201
Fugro	165	5.11	0.193	TKH Group	66	4.19	0.113
Grontmij	164	5.10	0.270	Tomtom	89	4.49	0.209
Heijmans	160	5.08	0.259	Unilever Group	178	5.18	0.239
Heineken	78	4.36	0.108	Unit4	148	5.00	0.215
Kardan	254	5.54	0.235	USG People	110	4.70	0.189
Kas Bank	130	4.87	0.244	Vastned Offices/Industrial	86	4.45	0.037
Kendrion	83	4.42	0.147	Vastned Retail	84	4.43	0.034
Koninklijke Ahold	139	4.93	0.196	Wavin	358	5.88	0.115
Koninklijke Bam Groep	133	4.89	0.151	Wereldhave	55	4.01	0.100
Koninklijke Boskalis Westminster	72	4.28	0.132	Wolters Kluwer	217	5.38	0.287
Koninklijke DSM	399	5.99	0.420	Xeikon	146	4.98	0.262

Notes: All variables are defined in the table 4.2. Ratings are obtained from the annual reports.

Appendix 3: T-test for high & low CSR groups

Table A1: Differences for the independent variables between high and low CSR groups.

Variables	High CSR group	Low CSR group	Difference	T-value	
Panel A: CSR Rating					
Institutional Ownership	0.329	0.265	0.064	0.962	
Managerial Ownership	0.024	0.015	0.009	1.070	
Foreign Ownership	0.305	0.385	-0.079	-1.764	*
Return On Assets	0.049	0.046	0.003	0.540	
Return On Equity	0.094	0.080	0.014	-0.076	
Total Sales	15.048	13.314	1.734	3.793	***
Total Assets	15.185	14.333	0.852	1.389	
R&D expenditure to Sales	0.021	0.036	-0.014	-1.447	
Variables	High CSR group	Low CSR group	Difference	T-value	
Panel B: Ln CSR					
Institutional Ownership	0.329	0.265	0.064	1.183	
Managerial Ownership	0.024	0.015	0.009	0.600	
Foreign Ownership	0.305	0.385	-0.079	-1.516	*
Return On Assets	0.049	0.046	0.003	0.122	
Return On Equity	0.094	0.080	0.014	0.237	
Total Sales	15.048	13.314	1.734	4.244	***
Total Assets	15.185	14.333	0.852	1.954	*
R&D expenditure to Sales	0.021	0.036	-0.014	-1.130	
Variables	High CSR group	Low CSR group	Difference	T-value	
Panel C: CSR Ratio					
Institutional Ownership	0.315	0.279	0.036	0.658	
Managerial Ownership	0.029	0.010	0.019	1.299	
Foreign Ownership	0.282	0.408	-0.126	-2.480	**
Return On Assets	0.041	0.054	-0.013	-0.651	
Return On Equity	0.051	0.123	-0.072	-1.263	
Total Sales	14.672	13.690	0.981	2.195	**
Total Assets	14.856	14.661	0.195	0.435	
R&D expenditure to Sales	0.026	0.029	-0.003	-0.212	

Notes: The table reports the means, differences in means and t-values for the independent variables. All variables are defined in the table 4.2. High CSR group includes 21 firms with highest CSR ratings. Low CSR group include 21 firms with lowers CSR ratings. Equal variance assumption has been checked for using Levene's test.
* Indicates significance at the 10% level; **Indicates significance at the 5% level; *** indicates significance at the 1% level.

Appendix 4: OLS regression analysis

Table A2: Additional results from OLS regression analysis using CSR_rating as the dependent variable.

	Model 1		Model 2		Model 3		Model 4		Model 5
Intercept	36.108		41.263		43.032		-43.764		95.984
	(0.716)		(0.800)		(0.856)		(-0.461)		(1.099)
MC	78.251	**	79.122	**	79.216	**	77.822	**	86.103
	(2.247)		(2.282)		(2.297)		92.261)		(1.875)
MAN	19.466		20.516		21.226		20.888		-2.581
	(0.743)		(0.797)		(0.828)		(0.817)		(-0.063)
WRT	11.282		15.021		16.146		15.161		-6.251
	(0.263)		(0.347)		(0.380)		(0.359)		(-0.076)
Debt_Ratio	158.772	**	155.308	**	160.881	**	128.014		81.287
	(2.145)		(2.086)		(2.185)		(1.615)		(0.658)
ROA	27.384								
	(-0.200)								
ROA 2010			-0.444						
			(-0.322)						
ROE 2010					-0.542				
					(-0.841)				
ln_TA							6.718		
							(1.002)		
RD_2010									-2.700
									(-0.432)
R^2	0.278		0.170		0.179		0.183		0.278
Adjusted R^2	0.088		0.099		0.108		0.113		0.088
Observations	64		64		64		64		25

Notes: The table reports the unstandardized coefficient obtained from OLS regression analysis incorporating CSR_Rating as the dependent variable. T-statistics are presented in the parentheses.
All variables are defined in the table 4.2.
* Indicates significance at the 10% level; **Indicates significance at the 5% level; *** indicates significance at the 1% level.

Table A3: Additional results from OLS regression analysis using ln_CSR as the dependent variable.

	Model 1		Model 2		Model 3		Model 4		Model 5	
Intercept	3.944	***	3.997	***	3.968	***	3.482	***	4.523	***
	(10.920)		(10.859)		(10.986)		(5.109)		(8.257)	
MC	0.482	*	0.485	*	0.483	*	0.476	*	0.341	
	(1.933)		(1.959)		(1.949)		(1.925)		(1.183)	
MAN	0.179		0.180		0.182		0.181		-0.113	
	(0.956)		(0.978)		(0.988)		(0.988)		(-0.440)	
WRT	0.040		0.074		0.055		0.055		-0.026	
	(0.132)		(0.240)		(0.181)		(0.181)		(-0.050)	
Debt_Ratio	1.258	**	1.220	**	1.270	**	1.087	*	0.721	
	(2.374)		(2.296)		(2.402)		(1.910)		(0.932)	
ROA	-0.021									
	(-0.021)									
ROA 2010			-0.006							
			(-0.611)							
ROE 2010					-0.002					
					(-0.500)					
ln_TA							0.038			
							(0.794)			
RD_2010									-0.014	
									(-0.348)	
R^2	0.164		0.170		0.168		0.173		0.242	
Adjusted R^2	0.092		0.098		0.096		0.102		0.043	
Observations	64		64		64		64		25	

Notes: The table reports the unstandardized coefficient obtained from OLS regression analysis incorporating CSR_Rating as the dependent variable. T-statistics are presented in the parentheses.
All variables are defined in the table 4.2.
* Indicates significance at the 10% level; **Indicates significance at the 5% level; *** indicates significance at the 1% level.

Table A4: Additional results from OLS regression analysis using CSR_Ratio as the dependent variable.

	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept	0.064	0.083	0.076	0.189	0.162
	(0.927)	(1.159)	(1.080)	(1.437)	(1.567)
MC	0.055	0.060	0.059	0.060	0.024
	(1.140)	(1.242)	(1.229)	(1.267)	(0.444)
MAN	0.061 *	0.068	0.068 *	0.067 *	-0.008
	(1.683)	(1.905)	(1.904)	(1.893)	(-0.157)
WRT	0.032	0.047	0.042	0.036	-0.010
	(0.536)	(0.777)	(0.707)	(0.620)	(-0.103)
Debt_Ratio	0.179 *	0.167	0.175 *	0.217 *	0.071
	(1.755)	(1.620)	(1.706)	(1.975)	(0.485)
ROA	1.065				
	(0.200)				
ROA 2010		-0.001			
		(-0.570)			
ROE 2010			0.000		
			(-0.279)		
ln_TA				-0.010	
				(-1.035)	
RD_2010					0.001
					(0.134)
R^2	0.113	0.101	0.097	0.112	0.048
Adjusted R^2	0.037	0.024	0.019	0.036	-0.203
Observations	64	64	64	64	25

Notes: The table reports the unstandardized coefficient obtained from OLS regression analysis incorporating CSR_Rating as the dependent variable. T-statistics are presented in the parentheses.
All variables are defined in the table 4.2.
* Indicates significance at the 10% level; **Indicates significance at the 5% level; *** indicates significance at the 1% level.