



Master Thesis

Government ownership and corporate social responsibility in Europe.

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Abstract

This study aims to extend the literature on the relation between government ownership and corporate social responsibility (CSR) by deviating from the common context of prior studies – which is China – and focussing on European countries, whilst additionally aiming to raise awareness on the importance of CSR and the government's potential influences. The hypotheses, which are based on previous studies on this topic, predict significant, positive effects of government ownership on both CSR adoption and CSR performance (CSRP) and a larger positive impact of indirect government ownership compared to indirect government ownership. A sample of 355 listed firms from 15 European countries was extracted from the RepTrak[®] and ORBIS databases. Logit and OLS regression methods were applied to test the hypotheses. None of the regression models showed any significant effects of the existence and magnitude of government ownership on CSR adoption and CSRP. As such, no support was found for any of the hypothesized positive relationships. Four robustness tests were applied to assess the validity of the regression results. The regression results were fully validated by all four robustness tests in terms of the insignificance of government ownership as a predictor of CSR adoption or CSRP.

Keywords: *CSR, CSR adoption, CSRP, government, ownership, Europe*

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1. Introduction

This chapter will serve as a general introduction to this study, which is written in the context of a master thesis of the master Financial Management on the University of Twente. This introduction will start with an elaboration of the motivation for the topic of this study. Then, a brief description of the concept of CSR will be provided. Thereafter, the context of this study will be discussed in terms of government ownership in Europe. Then, based on prior literature, the research questions of this study will be formulated. To give further support to the topic and the formulated research questions, some practical recent examples of CSR-related issues will be presented. This study's introduction will be concluded with the author's personal motivation for this study.

The topic of CSR has become an increasingly interesting topic for consumers, firms, and researchers. Several effects of CSR on firm performance, such as its effect on customer satisfaction and job satisfaction (Yuen, Thai, Wong, & Wang, 2018) or financial performance (Fijałkowska, Zyznarska-Dworczak, & Garsztka, 2018; Huang, 2018; Javaid & Al-Malkawi, 2018; Yuen et al., 2018) have already been examined extensively. While the majority of studies in this field (approximately 85%) has treated CSR as the independent variable (Margolis & Walsh, 2003), some antecedents of CSR, such as country-level sustainability performance (Xiao, Wang, van der Vaart, & Van Donk, 2018) and government ownership, have also been investigated. This thesis study focusses on the latter antecedent in the context of Europe, as literature on CSR in the context of Europe appears to be parsimonious. This could be due to the relatively higher concentration of government ownership in emerging countries, such as China, Indonesia, and Malaysia (Kowalski, Büge, Sztajerowska, & Egeland, 2013). However, as Christiansen (2011) shows, there are various European governments with majority ownership in numerous firms, specifically for non-listed firms, which varies from 1 (Switzerland) to 573 firms (Poland) with a mean of about 79 firms for 20 European countries.

CSR represents a firm's position in a society and the way it interacts with stakeholders, such as other corporations, civil society, and governments (Griffin & Vivari, 2009). That is, a firm's management should not solely care about the financial aspect in the decision-process but should also consider the impact of corporate decisions on all stakeholders, society, and the environment. In order to fulfil these 'social responsibilities', firms can engage in CSR activities, such as donating to charity, using environmental-friendly energy, or incorporating ethically responsible resources in the product. Investments in one or more of the main domains of CSR – philanthropy, business practice, product-related, and environment (Mohr & Webb, 2005; Sen

& Bhattacharya, 2001) – have the potential to generate stronger relationships with stakeholders, which could create value (Peloza & Shang, 2011). The financial commitment of a firm with regards to these investments is referred to as CSR. In other words, the more a firm invests in CSR activities, the higher its CSR. A more elaborate description of CSR, its dimensions, and practical examples will be provided in *Section 2.1 Introducing CSR*.

Due to the emphasis of the majority of previous research on the context of China, it is the aim of this research to add to the existing literature by testing the external validity through an analysis of the effect of government on CSR in the context of European firms. Europe appears to be a suitable environment for this research, as there is a relatively larger percentage of SOEs compared to, for example, the US, based on Forbes Global 2000, ORBIS, and personal information and calculations from Kowalski et al. (2013). Their study found that government ownership among the largest companies in individual countries or economies is 0% for the USA, while several European countries (Russia, Norway, France, Ireland, Greece, Finland, Belgium, Sweden, Austria, and Turkey) have numerous cases of government ownership. Christiansen (2011) shows a comparison between European countries and other countries (from Oceania, Middle America, South America) and displays that government ownership is more noticeable in Europe, specifically for non-listed firms in Hungary, Poland, and Spain. These findings could be partially due to the massive nationalization during the 20th century as a result of World War II (The Economist, 2014, January 4). Between 1998 and 2013, many EU Member States have also undertaken important reform efforts which should also have influenced the corporate governance of SOEs (European Commission, 2016).

Thus far, two main CSR aspects have been researched by prior studies in the Chinese context. As such, the research questions of this paper will be based on these two aspects. Aaronson (2005), Elgergen, Khan, and Kakabadse (2018), Griffin and Vivari (2009), Han and Zheng (2016), Kao, Yeh, Wang, and Fung (2018), and Yin (2011) investigate the aspect of adoption, or engagement, of CSR activities. The first research question is therefore as follows: How does government ownership affect European firms' adoption of CSR? Reimsbach, Braan, and Wang (2018) additionally analyse the effect on CSR. Hence, the second research question is as follows: How does government ownership affect European firms' CSR? In other words, are firms with government ownership more inclined to initiate CSR activities compared to firms without government ownership? And do firms with government ownership allocate more resources to these CSR activities compared to firms without government ownership?

The need for research on CSR is related to several theories. Firstly, the corporate

institutionalism theory, specifically the *social power equation* principle, states that the social responsibilities of firms result from the amount of social power that they possess (Davis, 1967). As a government has a certain level of social power, one would expect, based on the corporate institutionalism theory, that the government uses this social power responsibly. Prior studies have yet to confirm this expectation in the context of Europe. Secondly, the agency theory states that there is a conflict of interest between the shareholders and management, as a result of separation between ownership and management (Jensen & Meckling, 1976; Ross, 1973). Since shareholders have difficulties with assessing the management's performance due to information asymmetry, shareholders need corporate governance to be able to monitor the management. Several mechanisms can be applied to improve the corporate governance, such as an appropriate ownership structure, executive compensation, or a board of directors (Conyon & He, 2012). This paper focusses on the effect of the ownership on CSR, specifically in the context of government ownership.

The practical relevancy of researching CSR is supported by several CSR-related issues that society is currently facing. In the Netherlands, for example, the issue of executive salary has become a political hot topic since the debacle with ING's executive Hamers, whose new salary was revoked due to social unrest (NOS, 2018, March 18). The Dutch government also influenced the governance of state-owned Air France-KLM in case of internal issues in the board (Nieuwsuur, 2019, February 12). Another example of the need for better CSR by the government is Nikkei's potential share value. The Japanese firm's hedge fund Oasis Management has stated that Nikkei's share average could be double the current value in five years if Japanese authorities push ahead with corporate governance reforms (Reuters, 2017, July 26). Another investment-related argument for government-endorsed CSR is the lack of proper incentives for corporate stewardship in the context of investment management (Reuters, 2017, June 12). However, one might ask if firms are open to government influence with regards to CSR. According to CNN Business (2019, March 29), US firms are actively asking the government to increase and improve regulation by imposing new rules. This could be due to the recent trend of an increased interest in investor stewardship by both governments and investors, as identified by O'Kelly, Goodman, and Martin (2017). However, even though CSR is a relatively recent hot topic, there is a desire for the supporting role of the government in supporting voluntary for quite some time, according to the United States Government Accountability Office (GAO, 2005). In short, there are several examples in various regions where the government is needed to influence CSR activities.

Besides expanding the existing literature on CSR through external validation, this research also aims to formulate managerial implications in order to provide practical relevance. It is the author's intention to make both firms and concerning authorities more aware of the importance of CSR and the potential influence of the government to stimulate CSR activities.

2. Literature review: Part I

This chapter will examine and elaborate previous literature on the topic of CSR as a theoretical preparation of the formulation of the hypotheses. Firstly, the concept of CSR will be introduced. This introduction will be supported with some practical examples of CSR activities. Then, to get a wider perspective of CSR, the determinants of CSR that were identified in prior studies will be elaborated. Another popular aspect of CSR in prior studies, namely CSR reporting, will also be discussed. To construct a foundation of the theoretical framework, an overview of prior CSR theories will be presented and discussed. Then, the literature will focus on the aspect from the government on CSR. This includes a description of CSR-related policies and regulations in Europe and the spread of government ownership in European countries. To conclude the literature review, empirical evidence will be combined with the CSR theories to construct a theoretical framework. This framework will consist of two parts: CSR adoption and CSRP.

2.1 Introducing CSR

Among researchers, there is a general consensus about the interpretation of CSR. Based on Logsdon and Wood (2002, 2005) and Waddock (2006), the following definition of CSR is formulated by Griffin and Vivari (2009): "...the position and placement of corporations in a society and the way of interaction with governments, special interest groups, civil society, and other corporations" (pp. 237). This definition can also be summarized by the term 'corporate citizenship', which can be interpreted as the responsibility for more than making profit (Godfrey & Hatch, 2007). Davis and Blomstrom (1975) even state managers are obliged to incorporate CSR into their decisions in order to protect and improve the welfare of society.

2.1.1 CSR activities. To get a more practical image of CSR, this paragraph will provide several examples of CSR activities that a firm can engage into. Based on the stakeholder theory and issues management, CSR activities could be categorized in accordance to the societal section to which it applies: education, sport, arts and culture, public welfare, and environment (Virakul, Koonmee, & Mclean, 2009). A more common categorization is the approach by Bird, Hall, Momentè, and Reggiani (2007) and Sen and Bhattacharya (2001), who identified six categories of CSR activities, based on the database by Kinder, Lydenberg, Domini & Co. (1999). Apart from the category 'non-domestic operations', these categories were also the CSR areas that were usually included in CSR reports (Castelo & Lima, 2006). As such, each of the following paragraphs in this section will address CSR activities of one of these dimensions.

The first category, community support, involves philanthropical investments to aid the (local) community, such as the support of health and arts programs, generous donations, or

housing and education initiatives for the poor. One of the most famous examples of community support is the Bill & Melinda Gates Foundation – founded by Microsoft’s principle founder and his wife in 2000 – which aims to reduce extreme poverty and enhance healthcare on a global scale. Another example is the IKEA foundation, which has donated 108 million euros to Save the Children, UNICEF & UNHCR (IKEA, 2018).

Diversity, the second category, regards internal and external minority-focussed investments and activities, such as diversity records and initiatives based on sex, race, sexual orientation, and disability. An example of a diversity-related activities is the Chan Zuckerberg Initiative (CZI), which was found by Facebook’s chairman and CEO, and his wife. CZI aims to promote equality in areas such as education, health, energy, and scientific research. Another initiative to promote equality is the pilot project from UniCredit in collaboration with the European Investment Bank (EIB), which promotes female entrepreneurship in Italy by means of financing (EIB, 2019).

The third category, employee support, consists of investments for the sake of personnel welfare, such as job security, profit sharing, safety, or employee involvement. An example in the context of employee involvement and safety performance is Steelscape. The manufacturing company uses self-directed work teams, which select their own additional team members. As there are no managers or supervisors, employees must make key, on-the-spot decisions, which motivates the selection of adequate additional colleagues. The team-centred hiring process, which consists of peer rating in several categories (e.g. commitment to quality, safety, and commitment) resulted in a smooth and safe working environment. Therefore, Steelscape was awarded both the APA’s 2004 Best Practices Honorees and the number one company in safety performance by the National Coil Coaters’ Association (APA, n.d.).

The environment category, which is the fourth category, involves activities to improve sustainability and to reduce the firm’s impact on the environment, such as recycling, hazardous-waste management, environment-friendly resources/product, pollution control, or non-animal testing. An example of an activity to preserve the environment is the Musk Foundation, which focusses on, among other things, renewable energy research and advocacy. Another inspiration in terms of sustainability is IKEA, which gets 76% of its wood from sustainable forest, has installed 700.000 solar panels on its buildings and uses sustainable sources for 100% of the used cotton. These activities, combined with the transition to 100% led lights, resulted in the Retail Sustainability Award 2017-2018 for IKEA (ABN AMRO, 2017).

The fifth category, non-domestic operations, regards international activities that usually

involve dealing with the culture or regulations of a specific country the firm operates in, such as overseas labour practices or operations in countries with human rights violations. A report by Stichting Onderzoek Multinationale Ondernemingen (SOMO) stated that H&M's clothes that were made in Bangladesh could be manufactured by exploited Indian girls (van Es, 2014, October 28). As a result, 655 factories and 930.000 garment workers are covered by H&M's key programmes for Wage Management Systems and workplace dialogue (H&M Group, 2018).

Product-related activities, the final category, consist of aiming attention at the prevention or avoidance of product-related issues, such as product quality, product safety, marketing controversies, or antitrust disputes. Usually, these activities involve recalling and redesigning products which appeared to be broken or unsafe after the product launch. An example is the recall of the Rock 'n Play Sleepers by Fisher-Price as a result of several related infant deaths (Consumer Product Safety Commission, 2019) or Volvo's recent recall of 37.000 cars in the Netherlands due to the potential melting of car parts (NOS, 2019).

2.1.2 CSR determinants. To get a wider understanding of the concept of CSR, the determinants of CSR will be identified and elaborated. When identifying CSR determinants, the question one tries to answer is: which factors could influence a firm's CSR? Previous literature has identified several firm-specific characteristics, country-specific characteristics, manager-specific characteristics and different typologies of motivations as determinants of CSR.

Thus far, various firm-specific variables have been discovered that have a significant influence on firms' CSR. Cowen, Ferreri, and Parker (1987) and Garde Sánchez, Rodríguez Bolívar, and López Hernández (2017) found that industry classification and firm size are associated with corporate social disclosures. Zu and Song (2009) contradict Cowen et al. (1987) by argues that smaller firms are more likely to opt for a higher CSR rating. Reverte (2009) confirms Cowen's et al. (1987) findings, whilst also discovering an even more influential variable, namely media exposure. McGuire, Sundgren, and Schneeweis (1988) and Zu and Song (2009) suggest that a firm's financial performance may influence CSR activities. However, according to Roberts (1992), previous studies have yet to provide a comprehensive story that predicts corporate social disclosure or -performance. Hence, Roberts (1992) investigated stakeholder power on CSR disclosure and found that ownership concentration has a significant, negative impact, while both the government – through policies, laws, and regulations – and creditors positively influences CSR disclosure. Instead of considering either firm- of industry-specific factors when assessing CSR, Moura-Leite, Padget, and Galan (2012) argue that CSR

needs to be examined on both levels simultaneously to get a better indication. So, prior studies have identified industry category and firm-specific factors such as firm size, firm performance, and ownership concentration as potentially influencing determinants of CSR.

Additional to firm-specific variables, some country-specific factors that could affect firms' CSR have been identified. Campbell (2006) and Chih, Chih, and Chen (2010) found that strong state regulations result in a higher likelihood of firms in that state to act socially responsible. Campbell (2006) additionally found that this effect of regulations on corporate responsibility depends on the extent to which firms are monitored towards responsible behaviour. Chin et al. (2010) also argue that the following country-specific factors positively influence CSR adoption: high quality management school, cooperative employer-employee relations, and an improved macroeconomic environment. Zu and Song (2009) argue that firms in poorer regions are more likely to opt for a higher CSR rating. In short, previous studies have identified the state regulations quality, monitoring, and economic environment as country-specific determinants of CSR.

Previous literature has mainly studied the effect of board characteristics in the context of CSR reporting (e.g. Fuente, García-Sánchez, & Lozano (2017) and Khan, Muttakin, & Siddiqui (2013)), but there are various studies that have also investigated these characteristics in the context of CSR in a more general context. Most of these characteristics appear to have a positive effect on CSR. For example, the positive influence of board independence on CSR is confirmed by various empirical evidence (Chang, Oh, Park, & Jang, 2017; Cucari, Esposito De Falco, & Orlando, 2018; Deschênes, Rojas, Boubacar, Prud'homme, & Ouedrago, 2015; Fernández-Gago, Cabeza-García, & Nieto, 2016). There is also some support for a positive effect of board gender diversity on CSR commitment (Deschênes et al., 2015; García-Sánchez, Martínez-Ferrero, García-Meca, 2018). A deviating study regarding the influence of gender diversity is the article by Cucari et al. (2018), who found a negative effect on CSR. Another investigated board characteristic is the number of board member (i.e. board size), which, according to Chang et al. (2017) and Fernández-Gago et al. (2016), has a positive impact on CSR. To summarize, several board characteristics such as independence, gender diversity and size have been identified in prior literature as influences of CSR.

The motivation to initiate CSR activities, which is an important matter in this report, has also been investigated and conceptualized by previous studies. Elgergeni et al. (2018) distinguish two general forms of motivation with regards to CSR: voluntary CSR and mandatory CSR. Voluntary CSR is often related to the previously mentioned philanthropy level of CSR

activities (Carroll, 1991; Jones, Comfort, Hillier, & Eastwood, 2005). And while it seems appealing to convey your voluntary CSR intentions for a better brand image, this form of motivation is often executed in a discrete fashion (Hung, Shi, & Wang, 2013; Jamali, 2007). This might be explained due to the added value of the CSR initiatives themselves (Mostovicz, Kakabadse, & Kakabadse, 2009; Van Zile, 2011). These added values will be further elaborated in *Section 2.2 CSR Theories*. Mandatory CSR can be considered as an obligation to the government, whereas voluntary CSR can be treated as an obligation to society (Crane & Matten, 2004; Van Zile, 2011). Also, contrary to the informal practices of voluntary CSR, mandatory CSR often involves formal policies in order to comply with the regulations (Matten & Moon, 2008). Due to the obligatory attribute, this form of conformation is treated as ‘ticking the criteria box’ (Arora & Dharwadkar, 2011).

Previous literature has also distinguished several categories of motivation to engage in CSR activities based on the source of the motivation. Griffin and Vivari (2009) identified eight different categories of motivation, which are split up into internal motivators and external motivators. Internal motivators include marketing, employees, executives, and competitive advantage. PR/Marketing as a motivator for CSR activities is related to cause-related marketing. This approach implies that a firm uses branding to be perceived as responsible, which results in a higher perceived product quality by consumers (Varadarajan & Menon, 1988). This theory will be discussed in the *2.2.1. Instrumental theories* subsection. An example of this motivator is Motorola’s pledged donation of \$17 million from the RED MOTORAZR V3m phone sales to RED, an anti-AIDS campaign in Africa. Employees as a motivator is related to employee morale. By participating in CSR programs, employee morale can be improved by reshaping the company’s image. An example is the PM21 program by Philip Morris. Internal motivation from the executives’ perspective regards the executives’ personal efforts or sacrifices to manage the firm in a responsible way. As mentioned before, some studies have identified significant manager-specific characteristics that affect the managers’ perception of- and commitment to CSR, such as education, religion, and gender (Quazi, 2003; Cucari et al., 2018). An example of executive-related CSR is Whole Foods’ CEO John Mackey, who reduced his annual salary to \$1. Competitive advantage as a motivator for CSR is related to the competitive advantage theories, which will be discussed in the subsection *2.2.1 Instrumental theories*. This approach focusses on both long-term objectives, while also creating competitive advantages (Husted & Allen, 2000). An example of the competitive advantage approach is Patagonia’s usage of organic cotton and extensive recycling programs. This particular example is related to the

natural-resource based view of the competitive advantage approach.

External motivation is caused by stakeholder pressures, shareholders pressures, NGO pressures, and government mandate. Often, external motivators result in mandatory engagement of CSR activities, rather than voluntary, which is why these motivators are often associated with ‘pressure’ rather than ‘advantage’. Stakeholder pressure are related to the stakeholder theory, which states that the interest of all who affect or are affected by corporate practices and policies should be safeguarded (Sturdivant, 1979). This theory will be elaborated in the subsection 2.2.3. *Integrative theories*. An example of stakeholder pressure is the criticism from the media, NGOs, and union group towards Wal-Mart, due to many closures of family-owned businesses as a result of unfair competition. Shareholders can also apply pressure to steer the management’s way of doing business towards CSR. The main goal is to align the management’s interests with the shareholders’ interests, also referred to as the agency theory. An example is Great Plains Energy Inc.’s shareholders pressure to address the firm’s CO2 disclosure position. NGO pressure often comes from monitoring companies or firms who want to set a standard with regards to doing business responsibly. An example is Global Exchange and the Worker’s Rights Consortium publication of working conditions in Nike’s factories in Asia, which led to more oversight by both Nike and the US government. The final external motivator determined by Griffin and Vivari (2009) is the government mandate. This motivator is the most extreme motivator in terms of mandatory, as deviating from government mandate is illegal. As the government mandate is particularly relevant in this study, the effects of this motivator will be elaborated and compared with other government influences in *subsection 2.3 Government and CSR*.

2.1.3 CSR reporting. To get a better understanding of CSR, a popular aspect in prior literature, namely CSR reporting and its antecedents will be described. CSR reporting, also referred to as CSR disclosure (Said, Zainuddin, & Haron, 2009), can be described as the information disclosed by a firm about its relationship with its stakeholders and its environmental impact by means of relevant communication media (Campbell, 2004; Gray, Javad, Power, & Sinclair, 2001). A firm’s CSR reporting might also be influenced by the political dependence of the firm. Marquis and Qian (2014) investigated three factors that moderated the relation between private ownership and CSR reporting. The first factor that was studied is a firm’s connection to political councils. The motivation for maintaining political connection is to manage the constraints on the firm’s action, whilst decreasing risk through an increased access to information and resources (Hillman, 2005). Another motivation could be a

preferential treatment by the government or government-owned enterprises (e.g. lighter taxation, relaxed oversight) (Faccio, 2006). Marquis and Qian (2014) found that firms are more likely to issue CSR reports if the firm's CEOs are members of political councils. The second factor investigated by Marquis and Qian (2014) is political legacy. This rather indirect form of dependency implies that government influence at a firm's foundation is reflected in subsequent actions (Marquis & Tilcsik, 2013). However, in the case of Marquis and Qian (2014), this influence was reduced in China due to the implementation of the 2004 PRC Administrative Approval Law. Therefore, the influence of political legacy on CSR reporting was more noticeable for older firms. The third factor that influenced the relation between ownership and CSR reporting is financial resources. Park, Sine, and Tolbert (2011) found that firms with greater financial resources are more likely to follow legitimated practices to a greater extent. This was also found by Marquis and Qian (2014), who additionally found that CSR reporting by privately controlled firms was more responsive to their financial situation compared to SOEs.

Reimsbach et al. (2018) also found a significant positive relation between government ownership and the likelihood of CSR reporting in China. Additionally, this relation was moderated by the level of government ownership, in a way that central levels resulted in a higher likelihood of CSR reporting compared to local levels. The moderator can be explained by a difference in the regulatory environment between the two levels of government ownership (Wang, Choi, & Li, 2008). The central level often involves stricter monitoring by regulatory institutions and the central Chinese government, as a result of the crucial importance of firms in the Chinese economy (Sun, Tong, & Tong, 2002). The stricter monitoring, combined with more slack resources, results in the positive moderating effect of the central level on the relation between government ownership and likelihood of CSR reporting.

Despite the wide range of US programs and policies, including SOX, Griffin and Vivari (2009) found that US firms performed poorly compared to firms from Europe and other OECD regions, with regards to CSR reporting. Specifically, the financial service sector was a particularly poor industry in the context of CSR reporting. Furthermore, despite the trend of assurance of claims within CSR reports, only 3% of US CSR reports was assured. Therefore, Griffin and Vivari (2009) were critical about the impact of the US government on the growth of assurance of non-financial reporting in the US.

2.2 CSR theories

As CSR has become more popular since the second half of the 20th century, several CSR theories have emerged over time. Garriga and Melé (2004) categorized these theories into four groups – instrumental, political, integrative, and ethical – based on Parsons' (1961) observable aspects: adaption to the environment, goal attainment, social integration, and pattern maintenance or latency. Moreover, Garriga and Melé (2004) showed that each of the four categories of CSR theories is focussed on only one of these aspects.

2.2.1 Instrumental theories. The first group of CSR theories assumes that it is the sole social responsibility of a corporation to create wealth, therefore only emphasizing the economic aspect of CSR. Garriga and Melé (2004) classify this classical group of theories as *instrumental theories*, as CSR is only considered as an instrument to achieve profits. Based on their proposed economic objectives, instrumental theories can be divided into three main groups, namely the maximization of shareholder value, competitive advantages, and cause-related marketing.

Maximizing shareholder value completely separates the socio-economic from the economic objectives by primarily focussing on the increase in shareholder value when analysing investments in social demands (Garriga & Melé, 2004). The straightforwardness of this instrumental theory makes it a well-known approach to achieve wealth creation. Involving shareholder value maximization as the prime criterium for corporate decision-making is closely related to the agency theory. This theory concerns the alignment of managers interest with the shareholders' interest (Jensen & Meckling, 1976; Ross, 1973). If management only considers additional shareholder value maximization to be important in the decision-making processes, there is less need for corporate governance to 'steer' the management in the right way from the perspective of the shareholders. However, nowadays, shareholder value maximization also involves recognizing the interests of other stakeholders than just shareholders. As such, Jensen (2000) proposes a review concept, namely *enlightened value maximization*, which involves the stakeholder theory and the recognition of long-run value maximization as criteria for making trade-offs among stakeholders.

Competitive advantage theories aim to achieve long-term objectives while also creating competitive advantage (Husted & Allen, 2000). Garriga and Melé (2004) have identified three approaches in this theory group: social investments in competitive context, natural resource-based view of the firm, and strategies for the bottom layer of the economic pyramid. Porter and Kramer (2002) argue that the context of competitive advantage of a firm may only be improved by investing in philanthropic activities. According to Burke and Logsdon (1996), this also

depends on the alignment of philanthropic activities with the company's mission; a better alignment results in a greater wealth creation than different kinds of donations. Also, Chin et al. (2010) state that competitive advantage is more effective if the market competitiveness is more intensive. The natural resource-based view of the firm emphasises on the interplay of human, physical, and organizational resources over time (Barney, 1991; Wernelfelt, 1984). This approach considers the dynamic capabilities of combining resources into new sources of competitive advantage (Teece, Pisano, & Shuen, 1997). The third approach in competitive advantage theories sees poor people as an opportunity to innovate rather than a consumer segment that doesn't generate profit (Prahalad, 2002). A particular useful way to attend to the bottom layer of the economic pyramid is through disruptive innovation, which could result in low-cost production as products or services for the poor do not have the same conditions and capabilities as the regular variation (Christensen & Overdorf, 2000). In short, competitive advantage theories argue for either investing in philanthropic activities, developing new resource combinations, or applying disruptive innovation for poor consumers in order to achieve long-term objective and competitive advantage.

Cause-related marketing aims to enhance firm revenues or customer relationships by means of developing the brand through the association with the ethical or social responsibility dimension (Varadarajan & Menon, 1988). Cause-related marketing additionally could create a reputation that a firm is honest and reliable, which creates the perception that the firm's products are of high quality (McWilliams & Siegel, 2001). This instrumental approach both considers securing competitive advantage as well as reaping substantial financial benefits for charitable causes (Smith & Higgins, 2000). Examples of cause-related marketing are non-animal tested or pesticide-free products. To sum things up, instrumental theories appeal for maximizing shareholder value, creating competitive advantage, or establishing a responsible brand in order to create wealth.

2.2.2 Political theories. The second group – classified as *political theories* – focusses on the social power of a corporation in the context of its responsibility in the political environment and its relationship with society. Where the instrumental CSR theories emphasize on wealth creation, this group of theories prioritizes social duties and rights. Garriga and Melé (2004) categorize political theories into two major theory streams, namely corporate constitutionalism and corporate citizenship.

Corporate institutionalism focusses on managing social power in a supportive way (Davis, 1960). According to Davis (1960), a business has a role of power in society that needs

to be used responsibly. He has formulated two principles regarding managing the social power, namely the *social power equation* and the *iron law of responsibility*. The first principle states that the social responsibilities of managers result from the amount of social power that they possess (Davis, 1967). The second principle argues that, if one does not use his social power responsibly in the long run, one loses that power because other group will step in to take over that responsibility (Davis, 1960). Rather than destroying power, corporate institutionalism defines conditions for its responsible use.

Corporate citizenship emphasizes on the responsibility towards the local community and the consideration for the environment (Matten, Crane, & Chapple, 2003; Wood & Logsdon, 2002). Wood and Logsdon (2002) state that this responsibility towards the local community is a result of a sense of belonging to a community, which makes the business more aware of its impact on the community. Matten et al. (2003) distinguish three views of corporate citizenship, namely limited view, a view equal to CSR, and an extended view. The limited view implies certain responsibilities or social investments towards the local community. The view equivalent to CSR is a broader variant of the limited view by considering the social role of the business in the entire society (Carroll, 1999). The extend view, firms have replaced the government in terms of protection of citizenship, if the government has failed to do so (Matten & Crane, 2005). Lately, firms' focus on the local community has shifted towards a global concern mostly due to protests against globalization, which can be identified as *global corporate citizenship*. Firms with both local and global responsibilities are subsequently considered interesting subjects by some scholars (Tichy, McGill, & St. Clair, 1997).

2.2.3 Integrative theories. The third group of CSR theories argues that businesses depend on society for the sake of continuity and growth and should therefore integrate social demands. Consequently, this group of theories is classified as *integrative theories* by Garriga and Melé (2004). The aim of integrative theories is to scan and respond to social demands in order to achieve social legitimacy, social acceptance, and prestige. Converging themes in these theories are social responsiveness, stakeholder management, and social legitimacy.

Social responsiveness considers the gap between the public's expectance in terms of performance and the firm's actual performance (Sethi, 1975). Ackerman (1973) refers to this gap as the *zone of discretion* and states that the firm should act in order to close the gap. As such, social responsiveness incorporates issue management, which involves the processes to identify, evaluate, and respond to political and social issues (Watrack & Rude, 1986). Hence, issue management serves as a coordinating and integrating tool within the firm to improve

social responsiveness. However, Preston and Post (1975; 1981) claim that social responsiveness is insufficient and subsequently proposed the *principle of public responsibility*, which also emphasizes on the public process; which broadens the scope of responsibilities. As such, the principle of public responsibility includes the legal framework and the broad trend of social direction that results from public opinion, formal legal requirements, emerging issues or implementation practices (Preston & Post, 1981). This approach, however, is considered complex and difficult and, hence, requires considerable management attention.

Stakeholder management, rather than focussing on responding to specific issues, regards the interests of all stakeholders (Sturdivant, 1979). Emshoff and Freeman (1978) have formulated two stakeholder management principles. The first principle states that it is the firm's central goal to achieve optimal cooperation between the all actors in the system and the firm's objectives. The second principle states that, in order to manage stakeholder relations, the firm should deal with issues that are affecting multiple stakeholders. Both principles imply a stakeholder dialogue, which both enhances the firm's sensitivity to the environment while also increasing the environment's awareness of the firm's dilemmas (Kaptein & Van Tulder, 2003).

The concept of searching for social legitimacy was firstly introduced by Carroll (1979), who developed a model of *corporate performance*. In a more recent study, Schwartz and Carroll (2003) propose an alternative Venn framework which is based on three core domains – economic, legal, and ethical responsibilities – and resulted in seven CSR categories. As Wartick and Cochran (1985) mention, the search for social legitimacy is an integration of some of the previous theories, where corporate performance rests on the concepts of social responsibility, social responsiveness, and issue management. Wood (1991) confirms this statement with his model, which considers the dimensions of CSR principles, such as the scope, social responsiveness, and outcomes of corporate behaviour.

2.2.4 Ethical theories. The final group – classified as *ethical theories* – is similar to the integrative theory group with regards to the recognition of the social aspect. However, ethical theories emphasize on the firm's ethical obligation through the prioritization of social responsibilities. Three main approaches can be identified in this group of theories, namely normative stakeholder theory, sustainable development, and the common good approach.

The normative stakeholder theory represents the shift of stakeholder theory from integrative theories towards ethically based theories since 1984. Based on Freeman's (1984) book, *Strategic Management: a Stakeholder Approach*, Donaldson and Preston (1995) state that stakeholder theory has a normative core which is based on these two major ideas, namely 1)

stakeholders are persons or entities with legitimate interest in substantive and/or procedural aspects of firm activity, and 2) the interests of all stakeholders are of intrinsic value. Freeman (1994) states that the generic formulation of stakeholder theory, as described previously, is insufficient to point out how managers ought to act and requires a normative core of ethical principles. Thus far, several normative ethical theories have been developed, mainly based on Kantian and/or Rawlsian principles (Bowie, 1998; Freeman & Evan, 1990; Philips, 2003). Kantian principles are based on Kant's (1785) view that a good will is the only intrinsically good thing, which is also referred to as the moral law. Rawlsian principles arose from Rawls' (1971) book, *A Theory of Justice*, and are a combination of an updated version of Kantian principles and a variant of conventional social contract theory. Rawls' core messages are that society should provide the maximum amount of liberty to its members, without infringement of individuals' liberties and that social and economic equality must be maintained. Both represent a stakeholder approach that is centred around ethics.

The sustainable development approach was introduced by the United Nations (UN, 1987), which implied that one must seek to meet the needs of the present without harming the future generation's ability to meet its regarding needs. The term sustainable development has undergone some development over time, resulting in numerous definitions. Gladwin and Kennelly (1995) provide the following definition of sustainable development, based on a content analysis of the many definitions: "a process of achieving human development in an inclusive, connected, equitable, prudent and secure manner" (p. 876). Some studies have proposed an extension of the traditional 'bottom line' accounting (i.e. net profitability) to a 'triple bottom line' which would present social, environmental, and economic aspects of the firm (Shrivastava, 1995; Stead & Stead, 2002). These aspects differ per firm. Subsequently, according to Van Marrewijk and Were (2003), the process of sustainable development differs per organization, as this custom-made process should be aligned with the organization's specific ambitions with regards to corporate sustainability.

The common good approach states that firms have to contribute to the common good, as firms are a part of society (Mahon & McGowan, 1991; Velasquez, 1992). In this approach, a firm is also referred to as a mediating institution that positively contributes to the wellbeing of society (Fort, 1996; 1999). Contributing to the common good can occur in various ways, for example by creating wealth, providing products in a fair way, respecting the fundamental rights of the individual, ultimately creating a peaceful and friendly present and future (Melé, 2002). While being quite similar to the stakeholder approach and sustainable development, the

common good approach differs from these approaches in terms of philosophical base (Argandoña, 1998). The emphasis lies on the fulfilment of human nature, which grants the avoidance of cultural relativism, which is often related to corporate sustainability.

3. Literature review: Part II

3.1 Government and CSR

The government has several mechanisms to potentially influence the corporate governance of firms. This section will elaborate the following mechanisms and their respective impact on firms' CSR: government ownership, government mandate, and support to voluntary firms.

The first mechanism, government ownership, involves the controlling power of the government over the CSR policy of the regarding firm. Ownership implies a significant, majority, or full ownership and this results in a respective proportion of the voting shares of the firm (PwC, 2018). With these voting shares – also referred to as controlling interest – the government can significantly influence the action of the firm, including CSR adoption and performance. Thus far prior studies are ambiguous on whether the government uses this controlling power to pursue CSR adoption by firms or to increase the firms' CSR: Lopatta, Jaeschke, and Chen (2017) do find evidence for the positive effect of the controlling power of the government in European countries, while Boubakri, Guedhami, Kwok, and Wang (2019) argue that private firms outperform other publicly listed firms in terms of CSR.

Government mandates, the second mechanism, can influence CSR activities in direct and indirect ways. An example of a government mandate that affected all industries directly in the US is the Sarbanes-Oxley Act (SOX), which was passed in 2002. This law set a minimum for disclosure and oversight with the aim to create more transparency. Another example is the Tabaksblat Code, a Dutch corporate governance code that became effective on January 2004. This code required listed firms to be transparent in their annual reports regarding their compliance with the Tabaksblat Code (Akkermans et al., 2007). While SOX and Tabaksblat Code affected business directly, government mandates can also indirectly influence CSR through the empowerment of others to directly influence CSR activities. An example provided by Griffin and Vivari (2009) is the SEC rule that made shareholders resolutions possible, thus enabling shareholders to have more influence on the firm's CSR-related decisions.

Regarding the final mechanism, supporting voluntary firms, Griffin and Vivari (2009) identified three categories of government activities to encourage CSR, based on a 2005 GAO report. The first category, endorsing, involves awards for CSR activities and the recognition of the importance of CSR in public speeches. Examples of the endorsing role of the government are the nominations for the Award for Corporate Excellence and the Climate Protection Award. Similar to responsibility-related quality marks (e.g. Fair Trade and UTZ), these awards can function as a marketing incentive to be recognized as responsible firms. The second category, facilitating, concerns the provision of CSR information and subsidies. For example, the

government organizes trainings for service employees regarding corporate stewardship. The government also subsidize exports such as renewable energy projects and water treatment projects (e.g. the Environmental Exports Program). The third category, partnering, involves the government's facilitation of public-private partnerships through a convention of stakeholders. An example of this partnering is the Climate Leaders Program, where major US firms voluntarily aim to aggressively reduce greenhouse gas. Another partnering initiative is the Voluntary Principles process, which involves guiding mining and oil firms on how to ensure respect for human rights by formulating voluntary principles through collaboration with all relevant stakeholders. Endorsing, facilitating, and partnering can be considered as voluntary external motives for a firm to engage in CSR activities, compared to the mandatory characteristic of a government mandate.

3.2 CSR-related (country-specific) policies and regulations in Europe

Before examining the country-specific context of CSR-related policies and regulations, a more general CSR program will be addressed, namely the Europe 2020 Strategy by the European Commission (EC). This program, an adoption of the former Lisbon Strategy, represents a strategy to improve Europe's competitiveness through inclusive, smart, and sustainable growth, spanning the period during 2011-2020 (Fura, Wojnar, Kasprzyk, 2017; Kedaitis & Kedaitiene, 2014). These aspects were conceptualized into five headline targets, namely employment, R&D, climate change and energy sustainability, education, and fighting poverty and social exclusion; each with its regarding specified goals (EC, 2010). Fura et al. (2017) investigated whether the Europe 2020 Strategy was implemented by the EU-28 countries and found noticeable disparities between, among other, highly developed and less developed countries and 'old' and 'new' member countries. Their country ranking, based on their level of implementation, will be used subsequently in this study with regard to country classification.

As each European country has its own rules that could influence CSR, this section will investigate these country-specific policies and regulations. Before examining the regulatory frameworks in European countries with regards to CSR, a better insight into the dimensions of policies and regulations could improve identifying the various government rules. Based on personal empirical research and a systematic analysis of various exploratory studies, Steurer (2010) has identified four themes and five instruments of public policies on CSR in Europe, which resulted in a matrix of twenty typologies. As there are some similarities, this matrix typology is an expansion of the identified governmental influences as described in the previous section. The matrix typology is presented in table 1.

Insert **Table 1** here

Steurer (2010) does note that a government initiative is not necessarily bounded to a single instrument or theme, as there is some overlapping. The next paragraphs of this section will identify and describe several examples of policies and regulations in Europe based on the five themes by Steurer (2010). All described examples are initiated by or in collaboration with the government of the regarding country.

The first theme, raising awareness and building capacities for CSR, is most widely represented through informational initiatives (Berger, Steurer, Kondrad, & Martinuzzi, 2007). This includes the distribution of information on CSR through country-specific websites (e.g. <http://www.csr.gov.uk>), government-sponsored guidelines (e.g. Tabaksblat and other country-specific Corporate Governance Codes), and campaigns (e.g. the Danish ‘Our Common Concern’ CSR campaign and the British Payroll Giving campaign). Another often-used instrument in the first theme is partnering. This is done through the negotiation of agreements between firms and businesses (Crocì, 2008; Mol, Lauber, & Liefferink, 2000) and by national partnerships (e.g. the Swedish ‘Global Ansvar’). The Dutch ‘Knowledge and Information Centre on CSR’ is an example of the hybrid instrument, which co-ordinates CSR activities on a national scale, while also promoting partnerships and dialogues. Besides the French ‘Charter for the Environment’ – a second attempt following the failed public procurement of 2004 (Steurer et al., 2007) – legal instruments are rarely used to raise awareness or to build capacities for CSR (Berger et al., 2007).

The second instrument, improving disclosure and transparency, improves three CSR aspects, namely labels, reports, and stakeholder involvement (Steurer, 2010). The French ‘New Economic Regulations’ is an example of a legal initiative which obliges listed French firms to include CSR disclosures in their annual reports. Holgaard and Jørgensen (2005) found similar laws in Denmark, the Netherlands, Spain and Sweden. However, as there is no consensus on the effectiveness of mandatory CSR reporting, there appears to be a lack of enforced regulations in this aspect. Therefore, certified labels are the most important method to improve corporate transparency. As dozens of (inter)national labels have emerged, the dominating concern seems to be closer related to the environment, rather than CSR in a general sense (de la Cuesta & Martinez, 2004).

A socially responsible investment (SRI), the third instrument, is considered an integration of social, environmental, and ethical aspects. Compared to the other instrument, the government has a relatively few numbers of initiatives on SRI. The Belgian implemented a law

in the context of SRI in 2007, which forbid investors to invest in or finance any firm that is involved with cluster munitions and anti-personnel mines. The effectiveness of this legal initiative is debatable, since disclosure requirements are low for professional investors (Steurer, Margula, & Berger, 2008). The Swedish Public Pension Act of 2000 – a more demanding law compared to its Belgian variant – requires pension funds to express environmental and ethical issues in their investment plans and the impact of these aspects on the funds' management in their annual business plans. Comparable initiatives are Pension Reserve Fund in France and CSR promotions by the Swedish Ethical Council. An example of a facilitating SRI initiative is the Green Funds Scheme in the Netherlands. Another Dutch SRI initiative is the informational 'Sustainable Money Guide', which is comparable with the Austrian *gruenesgeld* ('green money') website.

The final instrument, leading by example, is also referred to as the promotion of sustainable public procurement (SPP). A majority of EU member states have renewed their procurement laws based on two 2004 EU public procurements in the context of SPP, according to a survey (Steurer et al., 2007). The French Prime Minister adds to this development by issuing compelling, legal texts that facilitate SPP by means of advice on the new procurement law. However, as these texts are solely compelling, they are not binding. Another example of informational initiatives in this context are Austrian guidelines, such as 'Check it', 'Greening Events', and the General Government Guidelines. Steurer et al. (2007) do mention some concerns on the effectiveness of SPP in Europe, as the cost-benefit relation seems ambiguous. A more hybrid method in the context of SPP is the 2007 'Sustainable Procurement Action Plan' from the UK, which aimed to make UK the leader in SPP by 2009. While partnering is a rarely used method in SPP, the Dutch PIANOo network is one of the few examples. The network facilitates experience exchanges among public procurers. Thus far, no economic incentives have been identified in the SPP context.

Having examined examples of the different typologies of CSR-related policies and regulations, there appear to be some dominating and some under-represented initiatives. A common issue in all instruments appears to be the effectiveness of the legal theme, which lead to a lack of legal initiatives. This could be due to the non-binding aspect of the legal initiative, but also due to the concerns about the cost-benefit relation. A more popular and perhaps more effective method is the facilitation of CSR activities. While it is still an initiative on a voluntary basis, firms appear to be more attracted to this method, especially when a clear orientation is provided by policies (Barth, Wolff, & Smitt, 2007). The facilitation mainly occurs through

information distribution or partnering. A hybrid method in which these two are combined is also an existing variant. Besides the legal theme, economic incentives appear to be a minority compared to the other three themes.

3.3 Government ownership in Europe

Before discussing the potential effects of government ownership on CSR, the topic of government ownership in Europe needs to be addressed to get a better understanding of the context of this research. Research on government ownership in Europe is mostly concentrated on either Western- or Central and Eastern Europe (CEE). As such, this section will initially treat these two regions separately, after which a short comparison will be made to get a total image of government ownership in Europe.

The 20th century initially seemed like a period where nationalization was a common phenomenon. Several utility and industrial firms were taken over by the government, such as telephone operators (e.g. Spanish Telefónica in 1945 and British Telecom in 1983), petrol companies (e.g. all Portuguese petrol companies in 1974 and Russian Gazprom in 1998), and airlines (e.g. British Airways in 1939 and Greece Olympic Airlines in 1974). But in the 1990s, Western Europe underwent a privatization period, which was mainly driven by the positive outlook in financial markets and fiscal conditions, as reforms were necessary to join the European Union (Bortolotti & Milella, 2008). But after a decennium, the nationalization of firms rose again. Examples of the re-emergence of state ownership in Western Europe are the nationalizations of Fortis and the SNS Bank by the Netherlands in 2008 and 2013 respectively, the BPN bank by Portugal in 2008, the Federal Print Office by Germany in 2008, the London & Continental Railways by the UK in 2009, and the Anglo Irish Bank by Ireland in 2010.

The widespread privatization also resulted in a dramatic decrease of state ownership in CEE in the reform period of the 1990s (Pula, 2017). Supporters of the privatization were convinced that state ownership would be totally or nearly eliminated in the economy. However, CEE has witnessed the rise of state ownership from the early 2000s, which is considered a possibility of a potential new developmental “state capitalism” model (Musacchio & Lazzarini, 2014), while other see it as “the end of the free market” (Bremmer, 2010). Several examples of the rise of state ownership in CEE are the nationalizations of the Parex Bank by Latvia in 2008, the Proton Bank by Greece in 2011, the Snoras bank by Lithuania in 2011, and the space industry by Russia in 2013. CEE governments, such as Poland and Hungary, even have recently publicly announced their intentions to expand the role of the state in the economy (Foy, 2016; Than, 2014). The numbers on government ownership support these, as Christiansen (2011)

shows that Poland and Hungary have the highest numbers of non-listed enterprises with majority government ownership in Europe, by far.

While SOEs still represent a minority in the European economy, they are nevertheless concentrated at the higher ranks (Pula, 2017). The significant impact of SOEs in Europe is not that surprising as SOEs comprise approximately 10% of the global GDP (Peng, Bruton, Stan, & Huang, 2016). When looking at the beforementioned examples of nationalizations, one might notice that the majority of nationalizations after the 1990s privatization reform occur during or immediately after the financial crisis of '08 – '10 and regard saving banks. This is not surprising, as saving banks in many European countries, such as France, Italy, and Spain, were facing financial difficulties and were in need of capital injections by the government. Particularly Spanish banks were governmentally influenced and eventually taken over in order to implement appropriate restructuring (Cardenas, 2013). As a result of the nationalization of banks, state-owned banks hold roughly 21% of the total banking industry's assets (Gonzalez-Garcia & Grigoli, 2013). German saving banks, however, remained in the hands of the public, as they coped relatively well with the financial crisis (Ghulam & Beier, 2018).

In short, during the 20th century, various European utility and industrial were nationalized. After the privatization reform period in the 1990s, several cases of nationalization emerged, mainly as a result of the financial crisis. Despite being a minority in the economy, European SOEs still have significant impact in terms of contribution to the total GDP.

3.4 Government ownership and adoption of CSR

Having separately discussed government ownership and CSR-related policies in Europe, this section will analyse the literature on the effect of government ownership on CSR adoption. Han and Zheng (2016) investigated the influence of political legacy in China on two categories of CSR practices: labour and environmental protections. Political legacy can be interpreted as the imprinting effects of founding ownership; government founding ownership in particular. Han and Zheng (2016) found that SOEs, even when going through restructuring, maintained their pro-labour practices as a result of political legacy. However, SOEs were putting less effort on the environmental domain of CSR than private firms. Based on Han and Zheng's (2016) study, the government's influence is related to integrative theories, as pro-labour practices can be a part of stakeholder management whilst identifying and responding to political and social issues regarding poor working conditions.

Kao et al. (2018) and Yin (2017) identified external and internal factors that have resulted in the adoption of CSR by Chinese firms. Regarding the external factors, Chinese

suppliers were bound to meet social and environmental standers in order to do business with Western firms; also referred to as globalization pressure. Regarding the internal factor, and more relevant for this research, Kao et al. (2018) found that the Chinese government acknowledged the need and importance of CSR, specifically for economic, social, and environmental aspects. As a result of arising directives or financial incentives form the Chinese government, CSR is mainly concentrated at Chinese SOEs (Li & Zhan, 2010). An underlying motivation for SOEs to engage in CSR is to serve the government's interest in order to survive, as SOEs often have lackluster performance as a result of inefficiency due to slack (Chen, Sun, Tang, & Wu, 2011). Yin (2017) additionally found that government ownership positively influenced CSR adoption of Chinese firms in emerging countries. However, there was no signifcation relation found between government ownership and employee or community responsibility. Based on these studies, the government's impact is related to both the ethical theory and the instrumental theory, while no link with political theory was found. As mentioned by Kao et al. (2018), the recognition of the economic, social, and environmental aspects can be considered a sustainable development approach. Chen et al.'s (2011) incentive of slack resources to be able to survive indicates the prioritization of the economic aspect, which can be related to both the maximization of shareholder value and competitive advantage. As Yin (2017) found no signifcation relation between government ownership and employee or community responsibility, there appears to be no link with corporate citizenship.

Aaronson (2005) researched the influence of the US government on the adoption of CSR and why it is quite difficult to delineate a global CSR strategy. Aaronson (2005) firstly claims that the US government does have the ability to globally promote CSR through a wide range of programs and policies. However, the execution of these political initiatives is lacking, according to Aaronson (2005). There appears to be inadequate coordination and cooperation of CSR strategies and objectives between the agency staff in different bureaus. Furthermore, the public was insufficiently informed about the policies and programs that could encourage global CSR. Aaronson (2005) explains the difficulty in delineating a global CSR strategy by stating that certain government policies need to be flexible, since each sector is unique and market change constantly. This difficulty might be related to the argument by Van Marrewijk and Were (2003), who argue that the process of CSR, specifically the sustainable development approach, differs per organization. Hence, confirming Aaronson's (2005) conclusion, Van Marrewijk and Were (2003) state that the process of formulating a CSR strategy should be custom-made per organization, where the process is aligned with the organization's specific ambitions.

Griffin and Vivari (2009) support Aaronson (2005) in saying that, in the US, CSR often does not occur via a regulatory system and systematic, overarching policy. However, Griffin and Vivari (2009) did identify government mandate as an external motivator to engage in CSR activities, as mentioned earlier. As also discussed before, the obligation to the state was considered a mandatory form of motivation to engage in CSR activities (Elgergeni et al., 2018). As conforming to a mandate can be seen as a legal responsibility, Griffin and Vivari (2009) state that the government's influence is related to the integrative theory of social legitimacy.

To summarize, the influence of the government on CSR adoption is related to all integrative theories – stakeholder management, social responsiveness (Han & Zheng, 2016), and social legitimacy (Griffin & Vivari, 2009), two instrumental theories – maximization of shareholder value and competitive advantage (Chen et al., 2011), and one ethical theory – sustainable development (Kao et al., 2018). Thus far, there was no significant link found with political theories (Yin, 2017). This would imply that firms are mainly driven by the integration of social demands to adopt CSR under the impact of the government, whilst the second priority is the economic aspect, followed by the sustainability. Evidence for an impact of the social duties and rights is yet to be found in the contexts of prior studies.

3.5 Government ownership and CSRP

After a firm has adopted CSR, the question remains to what extent a firm is committed invest in CSR. The willingness and ability of a firm to invest in CSR is also be referred to as CSRP (Reimsbach et al., 2018).

According to Wei and Varela (2003) and Xia and Fang (2005), the government – in this case the Chinese government – has strong incentives to encourage firms to pursue non-financial objectives, which implies investments in CSR activities. As mentioned before, the Chinese government recognized the importance and need for CSR, which also translated into the official government policy that was aimed to obtain societal welfare (Bai, Lu, & Tao, 2006; Shi, Peng, Liu, & Zhong, 2008). As found by Reimsbach et al. (2018), Chinese firms with government ownership have a higher CSRP compared to firms without government ownership. The underlying motivation of this relationship appears to be related to political theories and integrative theories. The aim to obtain social welfare, as found by Bai et al. (2006) and Shi et al. (2008) can be considered to be mainly linked corporate institutionalism, as the business needs to responsibly fulfil its role of power in society. The prioritization and integration of social demand can also be linked to all integrative theories.

Besides the direct pressure from the government, there are two indirect factors related

to government ownership that would increase a firm's investments in CSR activities. Firstly, if a firm is urged to incorporate CSR reporting in their public reports, then that firm is subjected to even stronger pressure from the government to increase their CSRP (Xu & Zeng, 2016). In other words, as SOEs are considered role models regarding the implementation of government policies, SOEs are pressured to set a good example by substantially investing in CSR activities. The second factor is related to the slack resource hypothesis. This hypothesis states that if a firm has more slack resources, the firm has an increase in opportunity to invest in CSR activities (Tang & Peng, 2003; Waddock & Graves, 1997). Usually, SOEs get more access to financial resources, compared to non-government-owned firms, for example through favourable regulatory treatment, as mentioned by Agrawal and Knoeber (2001), or through government subsidies (Chen et al., 2011). Therefore, SOEs could have more financial slack to invest in CSR activities, compared to non-SOEs. These studies show that the influence of the government is related to integrative- and instrumental theory. The pressure to invest in CSR activities due to public expectance can be linked to the integrative theory of social responsiveness (Xu & Zeng, 2016). Similar to the slack resource incentive for CSR adoption, the influence of the government on CSRP is also related to instrumental theory, as the financial aspect dominates this incentive (Agrawal & Knoeber, 2001; Chen et al., 2011).

Research on the relation between government ownership and CSRP in the context of European countries is scarce and ambiguous. Lopatta et al. (2017) find a positive effect of government ownership on CSRP¹, while other types of controlling ownership had no impact. Contrary, Boubakri et al. (2019) argue that private firms have better CSRP than other publicly listed firms². Boubakri et al. (2019), however, did find an inverted U-shaped relation between residual state ownership and CSR intensity.

In short, the influence of the government on CSRP appears to be related to all integrative theories – stakeholder management, social legitimacy (Bai et al., 2006; Shi et al., 2008), and social responsiveness (Xu & Zeng, 2016) – two instrumental theories – maximization of shareholder value and competitive advantage (Agrawal & Knoeber, 2001; Chen et al., 2011) – and one political theory – corporate institutionalism (Bai et al., 2006; Shi et al., 2008). This would imply that, once again, the main drive for firms to financially commit to CSR under the

¹ The studied sample consists of firms from 25 countries, among which the following European countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Ireland, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the UK.

² The studied sample consists of firms from 41 countries, including the following European countries: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Turkey, and the UK.

influence of the government is the integration of social demands, while the economical aspect was prioritized secondly, followed by the impact of social duties and rights.

4. Hypothesis development

This chapter will be dedicated to the construction and argumentation of the hypotheses. The aim of these hypotheses is to provide predictions in order to answer the two research questions.

Thus far, the majority of studies regarding CSR adoption is solely applicable to the context of emerging areas, such as Asia, and have mainly been centred around the adoption of CSR disclosures or reporting; which would be positively influenced by government ownership (Marquis & Qian, 2014; Muttakin & Subramaniam, 2015, Reimsbach et al., 2018). There are, however, some studies that did examine the effect of government ownership – or ownership structure in general – on CSR adoption, even though the main context remains Asia; particularly China. For example, Xu and Zeng (2016) and Du, Jian, Du, Feng, & Zeng (2013) found a positive relationship between state ownership and CSR adoption for Chinese firms. Du et al. (2013) suggest that political pressure from the government is the main drive for SOEs to adopt CSR, rather than due to economic benefits such as performance maximization. Sánchez (2000) found a similar relationship in the context of El Salvador, Central America. Recognizing the lack of studies on CSR in the context of Europe, Doś (2019) examined a sample of Polish firms and found that state ownership is an important positive determinant of the adoption of CSR practices. A contradicting article, compared to the beforementioned studies in this section, is the study by Qu (2007), who found no significant effect of ownership structure (including state ownership) on CSR adoption for Chinese firms; whilst indicating government regulations as a significant predictor of CSR. Aaronson (2005) and Griffin and Vivari (2009) also fail to find a significant impact of the US government on CSR adoption. They do, however, recognize the potential for proper CSR promotion by the state, as the implementation of CSR regulations in terms of communication could be improved.

Several arguments have been discussed as to why government ownership would lead to the adoption of CSR. Firstly, as CSR has become a hot topic recently, European governments could also start to acknowledge the importance of CSR and demonstrate this acknowledgement by endorsing CSR adoption as a shareholder. Secondly, governmental directives for CSR adoption could also improve CSR adoption in Europe, as there are several cases of guidelines in European countries as discussed previously. Thirdly, financial incentives – which are also related to SOEs' need to survive as a result of slack performance – could provide an economical reason why government ownership would lead to more CSR adoption. Fourthly, related to the

stakeholder theory, political pressure from the government can lead to CSR engagement of SOEs.

Many prior studies have not made the distinction between direct and indirect ownership when investigating the effect of government ownership on CSR in such a way that the difference between the two forms of ownership was recognized, but not incorporated in the data analyses (Ang & Ding, 2006; Sun et al., 2002; Yu, 2013). As such, there is no indication whether the effects of ownership are caused by direct and/or indirect share ownership. Besides the study by Berkman, Cole and Fu (2002), who provide evidence that direct government ownership was perceived as less valuable than indirect ownership, there does not appear to be sufficient empirical data that could function as a base for any predictions on the relationships between the individuals sorts of ownership and CSR. Therefore, this study will combine both direct and indirect ownership as a predicting factor of CSR.

Based on the empirical finding of prior literature and the subsequent arguments, the following hypotheses are formulated:

- 1a: *The presence of government ownership positively influences CSR adoption*
- 1b: *The magnitude of government ownership positively influences CSR adoption*

The second set of hypotheses to be formulated concern the impact of government ownership on CSRP. Yet again, the dominant context in previously articles is China. Studies found that, if the government recognized the importance and need for CSR, then the government has strong incentives to encourage firms to invest in CSR activities (Wei & Varela, 2003; Xia & Fang, 2005). The more sizable access to financial resources of SOEs – compared to non-SOEs – as a result of government ownership also increase the firm's capacity to invest in CSR activities (Tang & Peng, 2003). In addition, Lopatta et al. (2017) found a positive relationship between government ownership and CSRP in a global study involving, among others, 16 countries from Europe³. Yet, Boubakri (2019) found that private firms have a higher CSRP, indicating some ambiguousness about the effect of government ownership in the context of Europe⁴.

The arguments that predict a positive relationship are quite similar to the argument that were related to CSR adoption. Firstly, as governments starts to recognize the importance of

³ Concerning, among other, the following countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Ireland, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the UK

⁴ Concerning, among other, the following countries: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Turkey, and the UK.

CSR, they incorporate several aspects in their government policy to obtain societal welfare. Secondly, related to the first argument, SOEs often serve as role models with regards to the implementation of the aforementioned government policy, resulting in a higher CSRP. Thirdly, as SOEs generally have more access to financial resources, the resulting level of slack resources improves the capacity to invest in CSR activities. Fourthly, regarding the distinction between direct and indirect ownership, a larger positive impact of indirect on CSRP is expected based on the findings and reasoning by Berkman et al. (2002).

Hence, based on the empirical findings of prior studies and the resulting arguments, the following hypotheses have been constructed:

- 2a: *The presence of government ownership positively influences CSRP.*
- 2b: *The magnitude of government ownership positively influences CSRP.*

5. Methodology

This chapter will elaborate the methodological plan of action that will be used to test this study's two hypotheses and, hence, answer the two research questions. Firstly, the methods of analysis will be chosen based on prior literature and the context of this study. Then, the variables that will be included in the methods of analysis will be selected and elaborated.

5.1 Methods of analysis

After constructing a theoretical model based on the hypotheses, a methodology has to be formulated in order to test the two hypotheses. Firstly, a univariate analysis will be conducted on all variables to get more familiar with the data. Then, based on a bivariate analysis, a correlation matrix will be constructed to assess correlation and multicollinearity; as the latter could reduce the predictive power of independent variables. If there are some multicollinearity issues, either a correction must be made, or the results should be interpreted cautiously; depending on the amount and magnitude of issues. If the data is deemed sufficiently applicable, the actual testing of the theoretical model starts.

As the theoretical model of this study involves multiple measurements (i.e. variables) simultaneously on various units (i.e. observations) in a sample, a multivariate analysis is considered appropriate (Rencher, 2003). Thus far, prior studies have mainly applied several variants of multiple regression analysis to examine a relationship between independent variables and CSR. Multiple regression analysis is used when analysing a relationship between several independent variables and a single dependent variable (Hair, Black, Babin, & Anderson, 2014). Specifically, the aim is to predict the dependent variable (criterion) with the independent variables (predictors). Therefore, multiple regression analysis will be applied to test the model.

After determining the general method to test the hypotheses, specific appropriate approaches must be identified to test the individual predicted relationships (i.e. hypotheses 1a, 1b, 2a, and 2b.). As mentioned, various multiple regression methods have been used in prior studies. The most used approach in these studies is an ordinary least squares (OLS) regression (Harjoto, Laksmana, & Lee, 2015; Kao et al., 2018; Marquis & Qian, 2018; Zahm, 1989). This linear regression method is applied when the investigated relationship consists of a metric dependent variable (i.e. on a ratio or interval scale) (Hair et al., 2014). However, the first hypothesis of this study does not involve a metric dependent variable, which makes the OLS inappropriate. As such, an alternative regression method for a dependent non-metric variable is required to test the first hypothesis.

When testing relations with non-metric dependent variables, two regression methods

appear suitable possibilities: probit or logit – also referred to as logistic (Rencher, 2003) – regression (De Veaux, Velleman, & Bock, 2016). In contrast to the OLS regression, both probit and logit models fit a non-linear function to the data (Karlson, Holm, & Breen, 2012). The difference between probit and logit lies in the way how the nonlinear relationship is defined: the probit model applies the cumulative distribution function of the standard normal distribution, whilst the logit model uses the cumulative distribution function of the logistic distribution (Hoetker, 2007). As such, probit models are more generalizable, mostly in advanced economic settings, whilst the coefficients of logit models can be interpreted in terms of odds ratios; which can be interpreted as rather intuitive coefficients. However, both methods will result in similar, yet not identical, inferences. To test the relationship between government ownership and CSR adoption (i.e. hypothesis 1a and 1b), a logit regression will be conducted, as CSR adoption is a dichotomous dependent variable and the logit model enables a more intuitive interpretation of the coefficients compared to the probit model.

Based on the models from Marquis and Qian (2014), Reimsbach et al. (2018), Wang et al. (2008), and Xia and Fang (2005) – which will be described in the following section – the following model has been constructed, including the dependent, independent, and control variables to test hypotheses 1a and 1b:

$$\begin{aligned} CSR_{adoption_i} = & \beta_0 + \beta_1 Gov_i + \beta_2 Size_i + \beta_3 Age_i + \beta_4 Tobin'sQ_i + \beta_5 ROA_i \\ & + \beta_6 Country_i + \beta_7 Industry_i + \beta_8 Board_{size_i} + \beta_9 Board_{gender_i} \\ & + \beta_{10} Board_{independence_i} + \varepsilon_i \end{aligned}$$

Where

| | | |
|---------------------------|---|--|
| β_0 | = | Intercept of the model; |
| $CSR_{adoption_i}(dummy)$ | = | RepTrak [®] ESG Rating above 60 of firm i ; |
| Gov_i | = | Government ownership of firm i , expressed as either a dummy variable (Gov_{dummy}) equal to 1 if positive government ownership exists and 0 otherwise, or expressed as the accumulated percentage of direct and indirect government ownership (GOV_{total}) of the total number of shares outstanding of firm i ; |
| $Size_i$ | = | Logarithm number of employees (FTE) of firm i ; |
| Age_i | = | Logarithm of years since founding of firm i ; |
| $Tobin'sQ_i$ | = | Tobin's Q of firm i , calculated as the sum of the market |

| | | |
|--------------------------|---|--|
| | | value of equity and the book value of debt divided by the book value of the total assets; |
| ROA_i | = | ROA of firm i , calculated as the ratio between net income and total assets; |
| $Country_i$ (dummy) | = | Country category by Fura et al. (2017) of firm i ; |
| $Industry_i$ (dummy) | = | ICB industry category of firm i ; |
| $Board_{size_i}$ | = | Size of the board of directors of firm i ; |
| $Board_{gender_i}$ | = | Gender diversity of the board of directors of firm i , expressed as the percentage of women on the board; |
| $Board_{independence_i}$ | = | Independence of the board of directors of firm i , expressed as the percentage of independent board members; |
| ε_i | = | Error term of firm i ; |

As CSR_P has been measured in different ways and through different aspects, various methods have been used in prior studies to examine a relationship with CSR_P. As mentioned, a popular method is the OLS regression (Harjoto et al., 2015; Kao et al., 2018; Yin, 2017; Zahm, 1989). Other used methods are the seeming unrelated regression (SUR) model (Sharma, Moses, Borah, & Adhikary, in press), a panel data model with random effects (Andrevski, Richard, Shaw, & Ferrier, 2014; Richard, Murthi, & Ismail, 2007), and a two-way fixed-effects model (Paek, Xiao, Lee, & Song, 2013). Conform most prior CSR_P-related studies, the OLS regression will be used to test hypotheses 2a and 2b. As both government ownership and CSR_P are measured on a metric scale, the OLS regression is deemed suitable. However, the coefficients of GOV_{dummy} should be interpreted cautiously, as this is an independent dummy variable.

Incorporating the models from Marquis and Qian (2014), Reimsbach et al. (2018), Wang et al. (2008), and Xia and Fang (2005) – with the addition of the models by Janssen, Sen, and Bhattacharya (2015), Lee (2016), and Othman, Darus, and Arshad (2011) to account for CSR_P – the following model has been constructed, which will be used to assess hypotheses 2a and 2b:

$$\begin{aligned}
 CSR_{performance_i} &= \beta_0 + \beta_1 Gov_i + \beta_2 Size_i + \beta_3 Age_i + \beta_4 Tobin's Q_i + \beta_5 ROA_i + \beta_6 Country_i \\
 &+ \beta_7 Industry_i + \beta_8 Board_{size_i} + \beta_9 Board_{gender_i} + \beta_{10} Board_{independence_i} \\
 &+ \varepsilon_i
 \end{aligned}$$

Where the independent and control variables are equal to the equivalents in the model used for hypotheses 1a and 1b, with the replacement of the dependent variable. $CSR_{performance_i}$ is

measured as the ESG Rating by RepTrak®.

Before conducting the regression analyses, the regarding assumptions for each method need to be assessed. According to Follmann and Lambert (1989) and Peng, Lee, and Ingersoll (2002) a logit regression assumes that the distribution of the errors (i.e. the difference between the actual and the predicted value of the dependent variable) is described by a binomial distribution. The distribution for the conditional mean value of the dichotomous outcome should also be binomial, implying a constant probability across the range of predicting values. To test the binomial assumption, a normal z test could be conducted (Siegel & Castellan, 1988). However, this test can be considered unnecessary, as the main idea behind this assumption lies in the independence of observations from each other (Efron, 1975; Peng et al., 2002). Since the observations are considered independent of each other, as there is no direct or obvious reason to reason otherwise, the binomial assumption will be treated as robust.

As Hair et al. (2014) state, there are five assumptions related to OLS regression analysis. The linearity of the phenomenon (1) will be examined through residual plots of the bivariate relationships. The constant variance of the error term (2), which is related to heteroscedasticity, will be assessed by plotting the studentized residuals against the predicted dependent values. The independence of the error term (3) will be investigated by looking at the residuals over time. The normality of the error term distribution (4) is tested by examining a normal probability plot. The multicollinearity (5) will be assessed by examining the variance inflation factor (VIF) values. If assumptions are violated, either a correction must be made, or the results should be interpreted cautiously.

5.2 Variable selection

This section will elaborate the variables that have been included in the regression models as discussed previously. Before this elaboration, an important issue has to be noted that regards the measurement of all variables. The database of the Reputation Institute (RI), which will serve as the source of input for the CSR-related variables, does not provide data for every year in the period 2015-2018 per firm. For example, some firms only have a value for the year 2016, while other firms have values for all years. Since imputating data would result in a substantial part of 'fabricating' data, the average CSR rating across the entire period will be used as a proxy for the CSR-related variables. This would result in a smoothening of the data for the dependent variables. As such, the data for the independent variables and the control variables will also be smoothened by using the average values per firm across the years 2015-2018. This has a certain impact on the interpretation of the results of the regression models, as this leads to a cross-

sectional regression. As such, the results should be interpreted with caution and conform the coefficients of a cross-sectional regression.

5.2.1 Dependent variables. Two dependent variables will be used as criterion variables. Both variables will be measured by means of the RepTrak[®] ESG Rating by the RI, conform previous literature (Janssen et al., 2015; Kolisch, 2015; Lee, 2016; Othman et al., 2011) as a measurement of CSR.

According to RI, the RepTrak[®] ESG Rating consists of three dimensions, namely workplace, governance and citizenship; the RepTrak[®] database does not provide data on each dimension separately. The workplace dimension, as stated, involves rewarding employees fairly, caring about employee well-being, and facilitating equal opportunities. This dimension is mainly related to the diversity and employee support categories of CSR activities, as categorized by Hall et al. (2007) and Sen and Bhattacharya (2001). The governance dimension concerns openness and transparency, ethical behaviour, and fair business. This interpretation of governance is somewhat linked with the community support and non-domestic operations categories of CSR activities. A more apparent connection can be found between the governance dimension and the CSR theories; such as the integrative theories (e.g. stakeholder management) and the ethical theories (e.g. common good approach). The third dimension, citizenship, regards the support of good causes, positive societal influence, and environmental responsibility. These aspects appear rather closely connected to the community support and environment categories of CSR activities, but also to several CSR theories, such as the political theories (e.g. corporate institutionalism and -citizenship) and the ethical theories (e.g. sustainable development approach). The three dimensions of Reptrak's[®] Ratings are constructed by means of empirical data that was gathered through over 61,000 interviews. RI also partners with Forbes, a reputable trusted source, to collect data on public assessment of firms; in this case on the CSR perspective. The database consists of top 50/100/150 ESG ratings per year of, among other, 15 European countries⁵; the size of the rating list differs per country.

The first dependent variable, *CSR_{adoption}*, is a dummy variable which will indicate a 1 if the ESG rating is above 60 – the minimum value to be considered moderate in terms of CSR reputation – and 0 otherwise (Han & Zheng, 2016; Rathert, 2016). The assumption is made that if a firm has an ESG rating above the moderate level of 60, then that firm has adopted CSR. The *CSR_{adoption}* variable is examined to test hypotheses 1a and 1b. The ESG Rating is a

⁵ Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Ireland, Italy, Luxembourg, the Netherlands, Norway, Spain, and Sweden.

composite measure for CSR; quite similar to the RKS rating used by Lau, Lu, and Liang (2016), McGuinness, Vieito, and Wang (2017) and Reimsbach et al. (2018). Therefore, to measure CSRP and test hypotheses 2a and 2b, the variable $CSR_{performance}$ is the second dependent variable and is equal to the ESG Rating.

5.2.2 Independent variables. Prior studies have used several types of variables to account for the effect of government ownership as a predictor. Marquis and Qian (2014) used a dummy variable to indicate whether the firm was ultimately controlled by dispersed private holders (1) or by the government (0). Ang and Ding (2006), Yu (2013), and Sun et al. (2002) apply a metric variable to measure government ownership, namely the fractions of state shares among total shares outstanding. Since data on the percentage of government ownership is available, the options of using a dummy and a ratio variable are both possible.

Both available options, a dummy and a ratio variable, will be applied to represent government ownership as a predictor of $CSR_{adoption}$ and CSRP. The dummy variable GOV_{dummy} , equal to 1 if government ownership is present and equal to 0 otherwise, will be applied to test hypotheses 1a. and 2a. GOV_{total} , which is equal to the accumulative percentage of direct and indirect government ownership, will be used to assess hypotheses 1b. and 2b.

5.2.3 Control variables. Conform previous literature, various variables have been added to control for additional influences on a firm's decision to adopt CSR or the firm's commitment to CSR investments.

Larger firms often have more personnel and resources available to engage in- and manage CSR activities compared to smaller firms (Marquis & Qian, 2018; Yin, 2017). Additionally, larger firms often face higher pressure to respond to stakeholder's demands for responsibility (Burke, Logsdon, Mitchell, Reiner, & Vogel, 1986). Therefore, the variable *Size* has been added, which is measured in two ways in prior studies. Kao et al. (2018) and Marquis and Qian (2018) apply the natural logarithm of the firm's total assets as a proxy for firm size. However, the engagement of total assets as a measurement for firm size can cause statistical multicollinearity when also using ROA; since total assets is calculated with total assets as its denominator (Arora & Dharwadkar, 2011; Husted & Allen, 2007). Therefore, conform Elgergeni et al. (2018) and Yin (2017), firm size is measured as the natural logarithm of employees.

Age may affect CSR adoption and performance as mature firms have a more established reputation and history of social engagement (Yin, 2017). As such, conform Marquis and Qian (2018) and Reimsbach et al. (2018), the variable *Age* has been added in the model. This variable

will be measured as the natural logarithm of the number of years since founding to prevent statistical issues (Godos-Díez, Fernández-Gago, & Martínez-Campillo, 2011).

Past research has identified firm performance as an influencing factor of CSR. CSR investments can be considered costly, which implies that firms with relative high performance in the past may be more able to absorb the concerned costs (Jackson & Apostolakou, 2010). Following previous literature concerning government ownership and CSR adoption, one would be inclined to only use return on assets (ROA), net income over total assets, as a measurement for firm performance; which seems natural, as this is a common accounting-based measure of financial performance (Marquis & Qian, 2018). While Peng and Luo (2000) state that ROA is seen as the best measure of firm performance in the context of China – which is the context of the majority of previous literature on government ownership and CSR – this measure is also used to measure firm performance of European firms (Jackson & Apostolakou, 2010; Maury, 2006). De Andres, Azofra, and Lopez (2005) and Maury (2006) additionally measures European firm performance by Tobin's Q, which is measured the book value of debt plus market value of equity divided by the book value of total assets. As Tobin's Q and ROA were used in the context of European firms, these variables will be used to measure firm performance.

Previous literature has already discovered a diversity in social responsibility practices across different industries (Bowman & Haire, 1975; Griffin & Mahon, 1997). For example, firms in the heavy manufacturing or chemical industry face criticism about their major pollution (i.e. the environmental dimension of CSR), whilst clothing manufacturers are more pressured to care about labour conditions (i.e. the social dimension of CSR). To account for variety in CSR by industry-specific effects, the variable *Industry* has been included, which will initially be determined based on the NACE Rev. 2 industry codes in ORBIS. However, this classification would lead to an abundant diversity of industry categories, which would complicate the matter. Therefore, the initial industry codes (i.e. NACE Rev. 2) will be converted conform the Industry Classification Benchmark (ICB), as this categorization only consists of 10 industries (Di Clemente, Chiarotti, Cristelli, Tacchella, & Pietronero, 2014, Phillips & Ormsby, 2016). Then, as the variable is categorical, dummy coding will be applied to be able to include industry-specific effect into the models.

According to Galaskiewicz and Burt (1991), the geographical location of the firm may influence CSR. While that study refers to 'regions', the same principle can be applied to this study, as the different countries in Europe have different regulations and policies that could influence CSR as discussed in *section 2.4*. A distinction might be made between mandatory and

voluntary rules, as mandatory rules should, per definition, be more effective in influencing CSR. However, as Berger et al. (2007), Steurer et al. (2007, 2008) and Steurer (2010) found, there is a minority of binding legal initiatives in Europe. Furthermore, as Barth et al. (2007) state, voluntary-based sustainability activities are more effective than conventional hard-law regulations, as firms take a more active approach if the activity is voluntary and facilitating. Also, the few policies that are binding are not relevant to this study, as they influence CSR reporting. Moreover, the available database does not provide any insights into country-specific legal frameworks. As such, conform Reimsbach et al. (2018) and Yin (2018), the variable *Country* has been added to control for these country-specific effects. Initially, the country will be determined according to their ISO 3166 codes. To reduce the complexity, which is caused by the relatively high number of different countries, the countries will be categorized conform the 2015 ranking by Fura et al. (2017), which is based on the level of implementation by EU-28 countries of the Europe 2020 Strategy. This ranking consists of, among other, four groups in which the first group has adopted the EU strategy the most extensive. A final step to include country-specific effects into the models is dummy coding of the different groups, as the variable is categorical.

Previous studies have identified various board characteristics that could influence CSR adoption and performance. Conyon and He (2012) and Eisenberg, Sundgren, and Wells (1998) found a negative impact of board size on corporate governance. Liu, Wei, and Xie (2014). Board gender (i.e. board diversity) was found to be a positive influence on CSR (Fernandez-Fijoo, Romero, & Ruiz, 2012; Liu, Wei, & Xie, 2014). And lastly, Alexandrina (2013) and McGuinness et al. (2017) found that board independence is positive related to a firm's CSR. Hence, the variables *Board_{size}* (number of directors on the board), *Board_{gender}* (percentage of women directors on board), and *Board_{independence}* (percentage of independent board directors).

An overview of the variables, their measurements and prior studies that used these variables is displayed in table 2.

Insert **Table 2** here

6. Data

The chapter concerns the data that will be used in this study. First, the data sources will be described. After which, the sample selection will be elaborated. Then, the methods for identifying and managing outliers will be discussed. Lastly, the data criteria will be elaborated to ensure data quality and the robustness of the results.

6.1 Data sources

The data that will be used to investigate the effect of government ownership on CSR of European firms will be collected from the ORBIS database from Bureau Van Dijk (BVD), as this database holds a vast amount of numerical and factual data on, among others, 90 million European companies (BVD, 2018). This database is a popular database in prior CSR-related studies, such as Cavaco and Crifo (2014), Cruz, Larraza-Kintana, Garcés-Galdeano, and Berrone (2014), El-Bassiouny and El-Bassiouny (2019), Ferrell, Liang, and Renneboog (2016), Gupta and Krishnamurti (2015), Kabir and Thai (2017) Miska, Witt, and Stahl (2016). Additional data on board characteristics, such as size, gender diversity, and independence, will be collected from annual reports; as ORBIS does not specify these insights for board members.

The Marketscreener.com database from Superformance SAS will function as the source for the data on government ownership. This database, like many other sources on ownership structure solely provide data on the top 10 largest shareholders of the regarding firms. As such, if the government, or a government-owned firm, does not appear in the top 10 largest shareholders, then the assumption is made that the government has zero direct or indirect ownership of that firm.

Data on CSR will be collected from the RepTrak[®] database. This database includes the ESG rating by RI, a reputable research- and advisory-company who won the *2018 Boston's Best and Brightest Companies to work for* and the *2019 Connectiv Innovation Award*. This ESG rating, which involves the aspects of citizenship, governance, and workplace, will be used as a proxy to measure CSR adoption and performance.

6.2 Sample selection

The hypotheses concern solely European firms so, accordingly, the data only consists of information from European firms. The data will be collected from the period of 2015-2018. First, available ESG data from RepTrak[®] was manually imported, after which the remaining data on the regarding European firms were extracted from the ORBIS database. This procedure resulted in a sample selection of 355 listed firms. Initially, the distribution of firms per country

was based on the ISO 3166 The distribution of the sample per country and per industry are displayed in table 3 and table 4, respectively.

Insert **Table 3** here

Insert **Table 4** here

As mentioned previously, the categorization of the countries is based on the ranking by Fura et al. (2017) to reduce the complexity with regards to dummy coding. Once again, to reduce an abundant diversity in categories, the industry categorization has been performed conform the ICB.

6.3 Managing outliers

Preceding the various analyses of this study, any potentially influencing outliers in the data must be identified and dealt with to ensure the validity of the results. Outliers can be defined as observations that appear inconsistent compared to the rest of the data set (Barnett & Lewis, 1994). If outliers remain undetected, the parameter estimates could be inaccurate, leading to Type 1 or Type II errors (Wisnowski, Montgomery, & Simpson, 2001). Barnett and Lewis (1994), Hampel, Ronchetti, Rousseeuw, and Stahel (1986), Wilcox (1998), and Zimmerman (1994) have shown that outliers specifically inflate Type 1 error rates. A Type I error implies that a true null-hypothesis is rejected, while a type II error means that one failed to reject a false null-hypothesis (Bryman & Bell, 2015). To deal with outliers, they first have to be detected with an appropriate detection procedure. Then, a suitable method has to be chosen to delete or replace these outliers.

The procedure for identifying outliers depends on the number of potential outliers. As Wisnowski et al. (2001) state, many standard regression diagnostics (e.g. plots) could be reliable and useful tools if there are only a few outliers. In case of multiple outliers, there is a variety of procedures in the literature. Hadi and Simonoff (1993) classify these procedures into two broad classes, namely direct- or indirect methods; where direct methods use backward or forward search and indirect methods are based on the residuals. Examples of the direct methods are the recursive residual forward search algorithm by Swallow and Kianifard (1996), the influence matrix algorithm by Pena and Yohai (1995), and the clustering algorithm by Sebert, Montgomery, and Rollier (1998). Examples of the indirect methods are the LMS- or LTS estimator by Rousseeuw (1984), the M-estimator by Huber (1973) and the Coakley and Hettmansperger (1983) estimator. However, Wisnowski et al. (2001) found through simulations that almost all of these methods perform insufficiently in higher dimensions, specifically if the

number of outliers is large.

A more popular method to identify outliers is the combination of boxplots and the interquartile range (IQR). A boxplot is a visual representation of the minimum, maximum, 1st and 3rd quartile and median of a dataset. The distance between the 1st and 3rd quartile (also referred to as Tukey's Hinges) is the IQR. Tukey (1977) was the first to use an IQR multiplier to detect outliers. The general rule was that if an observation is more than 1.5 times the IQR above the 3rd quartile, then that observation would be labelled as an outlier (Hoaglin, Iglewicz, & Tukey, 1986). However, in a later study, Hoaglin and Iglewicz (1987) demonstrated that the original 1.5 multiplier was inaccurate roughly 50% of the cases. An initial improvement was doubling the multiplier to 3.0, but that appeared too extreme. The most valid multiplier, as Hoaglin and Iglewicz (1987) show, is 2.2. However, SPSS can only label outliers in boxplots based on the 1.5 or 3.0 multiplier; there is no adjustable function for the multiplier. Therefore, the IQR multiplier labelling procedure will be conducted manually.

Having identified outliers using the 2.2 IQR multiplier method, these outliers must be managed to improve the validity of the results of the following analyses. In general, one can either delete or transform the identified outliers. Deleting outliers decreases the sample and could potentially cause the loss of useful information (Orr, Sacket, & DuBois, 1991). The alternative approach is transforming the outliers, for which are several methods. A popular method is the log transformation, in which you take the logarithm of the specific data set (Warner, 2008). Another approach is the non-parametric statistical ranking, such as the Mann-Whitney-Wilcoxon test, which would outperform parametric tests such as ANOVA methods (Zimmerman & Zumbo, 1990). Another often used approach is winsorizing, which replaces the outlier values with the value of a specific percentile and, hence, reduces the weights of outliers (Dixon & Yuen, 1974; Orr et al., 1991). Compared to non-parametric tests, winsorizing appear to be more effective in controlling Type 1 error rates with relatively large sample sizes, while non-parametric tests performed better in relatively small sample sizes (Liao, Li, & Brooks, 2016, 2017). Therefore, conform Flammer (2015) and Reimsbach et al. (2018), the winsorizing approach will be implemented, in which the outliers will be replaced with the value equal to the median plus (in case of a high outlier) or minus (in case of a low outlier) the 2.2 IQR multiplier.

6.4 Data quality

Having managed the outliers, several tests should be conducted to verify the appropriateness of the methods of analysis and to assess the robustness of the results. Firstly, the assumptions for the regression analyses need to be tested. The normality of the error terms of CSR_{adoption} and

CSR_{performance} will be assessed by means of a Shapiro-Wilk test. The linearity of CSR_{performance} will be investigated by examining a Q-Q plot. The homoscedacity of CSR_{performance} will be assessed by means of a scatterplot of the standardized predicted values and residuals. The endogeneity assumption will be demonstrated by examining empirical evidence from prior literature. Lastly, the multicollinearity will be assessed by examining a correlation matrix and the VIF-values of the predictors (Hang & Zheng, 2016).

To deal with missing data, there are two common techniques, namely listwise deletion and pairwise deletion (Peugh & Enders, 2004). The listwise approach deletes all of a case if that case has one or more missing values and is mostly used when conducting a treatment study. A drawback of this method is that it produces bias parameters and estimates and reduces the sample substantially. The pairwise deletion minimizes the loss of data through the use of the correlation between variables. A drawback of this approach is the under- or overestimation of standard errors. However, the pairwise technique is typically preferred over the listwise method as it increases the power of the analyses. Hence, the pairwise deletion will be used to deal with missing data.

To assess the robustness of the results, four different robustness tests will be conducted. Robustness implies the model's ability to perform effectively while variables or assumptions are altered (Huber & Ronchetti, 2009). Firstly, the previous regression models will be run with the subsample containing only firms with government ownership to validate the effect of the magnitude of government ownership on CSR adoption and CSRO. Secondly, the validation approach of split samples will be applied, in which the sample will be split in two equally sized samples at random (Hair et al., 2014). Thirdly, as a custom in most business studies, the regression analyses will be run excluding financial institutions and regulated utilities, as the capital structures, risk models, and accounting rules differ substantially from firm in these industries differs substantially from firms in other industries (Chih et al., 2010; Gloßner, 2019; Leuz, Nanda, Wysocki, 2003; Shen & Chang, 2009; Zheng, El Ghoul, Guedhami, & Kwok, 2012). Fourthly, the logit regression analysis will be re-conducted with a different threshold for CSR_{adoption}, in which the threshold changes from an ESG Rating of 60 to a rating of 70 to indicate whether a firm has adopted CSR.

7. Results

This chapter will examine and discuss the results of this study. Firstly, the results of the univariate analysis will be studied to get familiar with the data. Then, the results of the bivariate analysis will be looked at to assess correlation and multicollinearity. After possibly necessary corrections, the assumptions for the logit and OLS regression will be tested. Therafter, following possibly necessary corrections, the results of the logit and OLS regression will be examined. Lastly, the results of the robustness test will be discussed.

7.1 Descriptive statistics

To get more familiar with the data, this section will examine the descriptive statistics; i.e. the results of the univariate analysis. Besides a description of these results, a comparison will be made with other studies that have investigated the same regarding variables to assess the validity. The results of the descriptive statistics, after managing the outliers, is presented in table 5.

Insert **Table 5** here

The results of table 5 represent a sample of 355 listed firm in the period of 2015 to 2018. The means for the dependent variables, $CSR_{adoption}$ and $CSR_{performance}$, were 0.88 and 68.72, respectively. This implies that, on average, 88% of the firms have a CSR score of at least 60 and that the average CSR score is 68.72; based on the ESG rating by RepTrak[®]. While the dummy variable for CSR adoption has not been used in prior studies, besides adoption of CSR reporting, the results for CSRP could potentially be compared as it has been studied before. However, this proves to be difficult, as various measurements have been applied previously for this variable. For example, as mentioned previously, some studies applied an RKS rating to measure CSRP (Lau et al., 2016; McGuinness et al., 2017; Reimsbach et al., 2018). Fuzi, Habidin, Hibadullah, and Ong (2017) and Zahm (1989) focussed on the social and environmental aspects of CSRP by means of questionnaires. McDonald (2014) examined donation expenditures as a CSRP proxy. In short, due to the variety of measures of CSRP, the ability to compare results with regards to CSRP is limited.

A study that does apply a similar measurement is the study by Kolisch (2015), who compared CSR between Germany and the US. The results of that study showed a mean of 70.80 for the variable CSRP using the RepTrak[®] ESG rating for the period 2011 to 2013, which is quite similar to the outcome of this study. Boubakri et al. (2016) used an alternative scoring approach – based on an environmental score and a social score – which resulted in a mean of

56.56. The difference between means of that study and this study could be explained due to difference in measurement and different sample characteristics; since that study also included non-European firms and concerns a different period. Lopatta et al. (2017) applied a sustainability rating by Global Engagement Service as a proxy for CSRP, which resulted in a mean of 0.407. This would be equivalent to a mean of 40.7 when comparing it to the mean of this study. The difference between both means could, once again, be explained due to different sample characteristics, such as countries and period. In short, the mean for CSRP is in line with prior research that has used the same measurement and a similar setting, while it differs from studies that used other measurement and/or other contexts.

The mean values for GOV_{dummy} and GOV_{total} are 0.46 and 9.99, respectively. This implies that, on average, 46% of the firms has positive government ownership and the average magnitude of government ownership is 9.99%. Similar to the CSR dummy variable, the ability to compare the government ownership dummy variable with prior studies is limited as this type of measurement appears rarely used. Since prior studies have mainly used measurement similar to the GOV_{total} variable, the results for GOV_{total} are more suitable for comparison. The result of 9.99% for GOV_{total} is quite lower than the equivalent results in the Chinese context. For example, Marquis and Qian (2018), Reimsbach et al. (2018), and Yin (2017) found mean values for government ownership of 64%, 39%, and 47%, respectively. The relatively low percentage of government ownership of this study might be explained by the higher degree of privatization in Europe compared to China, as mentioned previously. When comparing the percentage of government ownership of this study with other studies in the European context, some similarities and some discrepancies have been found. Mean values for government ownership of 0.9% (Lopatta et al., 2017), 4.3% (Beuselinck, Cao, Deloof, & Xia, 2017), 11% (Boubakri et al., 2019), 14% (Thomsen & Pedersen, 2001), 19% (Stančić, Čupić, & Obradović, 2014), and 21% (Iwasaki & Mizobata, 2018) have been found thus far. So, while there are some deviations compared to some studies, the mean value for government ownership of this study appears similar to the equivalent results of prior studies in a similar context.

The analysis of the descriptive statistics will be completed concluded with a brief examination of the control variables. Firm size has a mean value of 9.57 (equivalent to roughly 50,180 employees). Firm age has a mean value of 4.06 (equivalent to approximately 85 years). Tobin's Q has a mean value of 1.05. ROA has a mean value of 4.78. The average number of board members is 11.68. The mean value for board diversity in terms of percentage of women in the board is 35%. And lastly, the average percentage of independent board members is 48%.

7.2 Correlation

To assess the correlation, a bivariate analysis of the relationship between the variables will be examined. The results of the bivariate analysis, in the form of a correlation matrix, is displayed in table 6.

Insert **Table 6** here

This correlation matrix displays the Pearson correlation coefficient for the regarding relationships. This correlation coefficient, usually denoted as r , is defined as the “centred and standardized sum of cross-product of two variables” (Rodgers & Nicewander, 1988, pp. 61). As Lord and Novick (1968) show with the Cauchy-Schwartz inequality, r is bounded by the values -1 and 1.

As expected, both CSR variables are positively significantly at 0.01 level, as the CSR_{adoption} dummy variable is based on the CSR_{performance} variable; a CSRP rating of 60 or higher gives a CSR_{adoption} value of 1, and 0 otherwise. The correlation coefficient even appears excessively high with a value of 0.702, but this is considered irrelevant as the CSR variables will not be measured simultaneously but separately per hypothesis. Another fulfilled expectation is the significant correlation between GOV_{dummy} and GOV_{total}, since the former variable is based on the latter variable. As such, these two variables will be treated separately in the regression models.

The correlation matrix also shows some significant correlations between the dependent variables and the control variables, and between the control variables themselves. For example, Size has significant correlation with Board_{size} and Board_{independence}, while Tobin’s Q has significant correlation with Board_{size}. To deal with any issues caused by this correlation, such as multicollinearity, multiple combinations of control variables will be used in the regression models. The subject of multicollinearity will be further discussed in the following section.

7.3 Assumptions regression

Before conducting the regression analyses, specific assumptions need to be tested to assess the appropriability of the data with regards to the regression methods. As Follmann and Lambert (1989) and Peng et al. (2002) stated, a logit regression assumes a binomial distribution of the error terms. However, as mentioned before, the binomial assumption is treated as fulfilled, as the observations are considered independent of each other.

Following the logit regression assumption, the assumptions for OLS regression must be

met. First, the linearity assumption is tested by means of a normal Q-Q plot of the dependent variable $CSR_{performance}$, as displayed in figure 1.

Insert **Figure 1.** here

This plot shows a rather linear relationship between the observed and the expected normal value, conforming the linearity assumption. Secondly, the equal variance assumption is tested by plotting the standardized predicted values against the standardized residual, as displayed in figure 2.

Insert **Figure 2.** here

The scatterplot shows no apparent narrowing or widening of the ‘cloud’, affirming the homoscedacity assumption. Thirdly, the independence of the error term is difficult to assess visually (De Veaux et al., 2016). Prior studies have examined this concept in the context of CSR and consider CSR as endogenous (Garcia-Castro, Ariño, & Canele, 2010; Siegel & Vitaliano, 2007). Sheikh (2018) even proves the endogeneity of CSR using Durbin-Wu-Haussman tests. Hence, the independence of the error term assumption is deemed fulfilled. Fourthly, the normality of the error terms is examined by means of a Shapiro-Wilk test, as displayed in table 7.

Insert **Table 7** here

The results of this test indicate that the error terms of $CSR_{performance}$ are not normally distributed. Still, as the sample size is considered adequate, the analysis can be continued. Some caution may be required when interpreting the results of the OLS regression. Fifthly, the magnitude of multicollinearity is assessed by examining the VIF values, as displayed in table 8.

Insert **Table 8** here

The VIF of all included variables is below the maximum requirement of 10. The multicollinearity assessment indicates no VIF value above 10 for any variable. As mentioned previously, $CSR_{adoption}$ and $CSR_{performance}$ were significantly correlated with each other, but this is irrelevant since these two variables will be modelled separately in different regression analyses. The same principle is applied to the variables GOV_{dummy} and GOV_{total} . Additionally, as mentioned previously, different combinations of control variables will be used in the regression models to account for any potential issues related to multicollinearity.

Besides the assumptions for logit and OLS regression, there is an additional rule of

thumb regarding sample size that should be paid attention to, as this influences the power and generalizability of the model. The power of a test indicates the probability that a false null hypothesis is reject; which is related to the previously mentioned type II error (Ellis, 2010). The most used rule of thumb states that the minimum ratio of observations to explanatory variables is 5:1, but the desired level should be between 15:1 and 20:1 to maintain power at 0.80 (Hair et al., 2014; Siddiqui, 2013). Green (1991) supports an alternative guideline, which states that the number of subjects should be equal to, or greater than, 104 plus the number of predictors. As the sample size consists of 355 firms, the sample is considered sufficiently large.

After assessing the assumptions and an additional rule of thumb, the logit and OLS regression analyses are deemed appropriate. Some caution may be applied to the interpretation of the OLS regression results due to the non-normality of the distribution of the error terms.

7.4 Regression

To test the two hypotheses, two regression models have been constructed. The first regression models regard hypotheses 1a and 1b and is computed with the logit regression method. The second regression models, which is used to test hypotheses 2a and 2b, will be run applying the OLS regression method.

7.4.1 Logit regression. The results of the logit regressions are displayed in table 9. The full “original” sample is used in these logit regression models. The dependent variable in these models is $CSR_{adoption}$.

Insert **Table 9** here

Before examining this table, some attention must be paid to the interpretation of the results of the logit regression. Normally, in linear regression models, the unstandardized coefficients (i.e. β) in the regression model represent a change in the value of the criterion variable if the predictor variable increases with 1 unit, *ceteris paribus*. However, as a logit regression has a dichotomous criterion variable – and thus, a non-linear relationship – the ‘classic’ interpretation of coefficients does not work. Therefore, the relationship is made linear by converting the probabilities of falling into the two dichotomous group into so-called log odds (Powers, 2005). These log odds, which are denoted as the β coefficient in the model, are the natural logarithms of the ratio between the probability of being in the first group and the probability of being the second group. In the context of this study, this odd ratio is the ratio between the probability of adopting CSR and the probability of not adopting CSR. The odds ratios are denoted as $Exp(\beta)$ in the model. If the ratio is above 1, then the probability of adopting CSR increases if the

predictor variable increases, and below 1 if the probability of adopting CSR decrease with an increase of the predictor; a ratio equal to 1 indicates that the predictor variable does not affect the probabilities. In short, instead of interpreting the β in the model as linear coefficients, they can be considered as proxies for an increasing or decreasing effect of the predictor variable on the probability to adopt CSR.

Having elaborated the interpretation of logit regression results, the results of table 9 will be examined accordingly. When talking about a positive (or negative) effect in the logit regression model, an increasing (or decreasing) effect of the predictor on the probability to adopt CSR is implied.

The results of the logit regression results indicate non-significant effects of both GOV_{dummy} and GOV_{total} on $CSR_{adoption}$. The only significant effects shown in table 9 are the positive effects of Tobin's Q on CSR adoption, which were only significant when excluding the board characteristics in the model. The explained variance of the logit regression models, denoted as Nagelkerke R^2 , varied between 0.247 and 0.469; depending on the number of relevant variables included. This can roughly be interpreted as the following: between 24.7% and 46.9% of the variance in the dependent variable can be explained by the explanatory variables in the regarding models. Since a dummy variable has not been used often in prior studies, a comparison with the explained variance of similar studies is limited. The goodness-of-fit indicator, denoted as the Hosmer and Lemeshow Chi-square, is non-significant for all displayed variants of the logit regression model. One might interpret this result as an indication for a good model fit, but a more conservative interpretation would be that there is not enough evidence to indicate a poor fit (Hosmer, Lemeshow, & Sturdivant, 2013).

7.4.2 OLS regression. The results of the OLS regressions are displayed in table 10. The full "original" sample is used for these OLS regression models. The dependent variable in these models is $CSR_{performance}$.

Insert **Table 10** here

The OLS regression results indicate no significant effects of either CSR_{dummy} or CSR_{total} on $CSR_{performance}$ in any of the models. The significant effects that have been identified were the positive effects of Tobin's Q and the negative effects of $Board_{gender}$ and $Board_{independence}$ on $CSR_{performance}$. The explained variance of the models, denoted as R^2 , varies between 0.276 and 0.436. This would normally be translated into the finding that between 27.6% and 43.6% of the variance in the dependent variable is explained by the explanatory variables. However, as more

variables are added, regardless of the impact of the added variables, R^2 automatically increases and, hence, provides a deceptively high value (Theil, 1961). Instead, the adjusted R^2 will be examined to assess the explained variance, which varies between 25.5% and 39.3%. These results for adjusted explained variance are somewhat similar to the equivalent results of prior CSR studies. The model of Qu (2007) resulted in an adjusted explained variance of 36%. Lopatta et al. (2017) achieved an adjusted explained variance between 33.4% and 51.4% with their models. The explained variance of this study outperforms studies by Reimsbach et al. (2018) and Wu, Lin, and Wu (2012), who's models resulted in an adjusted explained variance between 17.2% and 19.3%, and 15.1% and 19.5%, respectively. So, the explained variance of the models in this study appear comparable to prior studies, while it also seems to be an improvement compared to some studies.

7.5 Robustness tests

To assess the validity of the results of the logit and OLS regressions, four robustness tests will be conducted. The first robustness test involves a subsample that contains only firms with positive government ownership to validate the results on the effect of GOV_{total} on $CSR_{adoption}$ and $CSR_{performance}$. The second robustness test is a split-sample validation method, which involves applying the previously conducted regression methods on two randomly split subsamples of equal size. The third robustness test applies the previously conducted regression methods on a subsample than contains only non-financials firms. The final robustness test involves a re-run of the logit regression with the full sample, but with a different threshold for the dependent variable $CSR_{adoption}$.

7.5.1 Split validation: Only firms with government ownership. To validate the results on the effects of the magnitude of government ownership on CSR, the same regression models as run previously will be run with the subsample that only contains firms with government ownership. This subsample will henceforth be referred to as subsample A. As this subsample only contains firm with positive government ownership, the variable CSR_{dummy} is redundant; as it would be equal to 1 for every firm. The logit and OLS regression results with subsample A are displayed in tables 11 and 12, respectively.

Insert **Table 11** here

Insert **Table 12** here

The regression results of both tables 11 and 12 indicate no significant effects of GOV_{total} on either $CSR_{adoption}$ or $CSR_{performance}$. The variable Age was identified as a significant, positive predictor of $CSR_{performance}$, but not in the model containing $CSR_{adoption}$ as the dependent variable. So, the first robustness test of split validation with a subsample containing only firms with government ownership validates the original regression results in terms of insignificance of GOV_{total} as a predictor of $CSR_{adoption}$ and $CSR_{performance}$.

7.5.2 Split validation: 50/50. To test for selection bias, the same regression models as run previously will be run with two randomly split subsamples of approximately equal size. The random splitting process resulted in the subsamples B and C, which have mean values for GOV_{dummy} of 47.42% and 44.10%, respectively, indicating that 47.42% and 44.10% of the firms in both samples have positive ownership. The results of the logit regressions with subsamples B and C are displayed in table 13 and 14, respectively. The results of the OLS regressions with subsamples B and C are displayed in table 15 and 16, respectively.

Insert **Table 13** here

Insert **Table 14** here

Insert **Table 15** here

Insert **Table 16** here

The logit regression results of both subsamples B and C indicate non-significance with regards to the effects of both GOV_{dummy} and GOV_{total} on $CSR_{adoption}$. Tobin's Q was identified as the only variable that was positively significant in most displayed logit models. The OLS regression results of both subsamples B and C also shown no significant effects of GOV_{dummy} and GOV_{total} on $CSR_{performance}$. Once again, Tobin's Q was the only variable that has been identified as a significant, positive predictor of $CSR_{performance}$ in the majority of the displayed OLS models. As such, the results 50/50 split validation method validate the results of the original regression results in terms of the insignificance of GOV_{dummy} and GOV_{total} as predictors of $CSR_{adoption}$ and $CSR_{performance}$.

7.5.3 Split validation: Excluding financial firms. The following robustness test involves conducting the similar regression methods as used previously on a subsample that only contains non-financial firms. After filtering out the financial institutions and regulated utilities based on their industry-code, a sample of 311 firms remained. This sample will henceforth be

referred to as subsample D. The logit and OLS regression results with subsample D are displayed in table 17 and 18, respectively.

Insert **Table 17** here

Insert **Table 18** here

The logit and OLS regression results of subsample D show no significant effects of both GOV_{dummy} or GOV_{total} on either $CSR_{adoption}$ or $CSR_{performance}$. The identified significant effects were the positive effects of Tobin's Q on $CSR_{performance}$ and the negative effects of $Board_{gender}$ and $Board_{independence}$ on $CSR_{adoption}$ and $CSR_{performance}$. Once again, the insignificance of the effects of GOV_{dummy} and GOV_{total} on $CSR_{adoption}$ or $CSR_{performance}$ appears to be confirmed.

7.5.4 Logit regression with different threshold. The final validation method in this study involves a re-run of the logit regression with the original sample, but with a different threshold for the dummy variable $CSR_{adoption}$. The original threshold was 60, as this was the minimum score to be considered sufficiently responsible, according to the RepTrak[®] database. The new threshold will be equal to the median value of $CSR_{performance}$, which is 70. The logit regression results with this new threshold are displayed in table 19.

Insert **Table 19** here

These logit regression results reveal non-significant effects of both GOV_{dummy} and GOV_{total} on $CSR_{adoption}$. Positive, significant effects of Tobin's Q have been identified in these results. So, this different threshold for the dependent variable $CSR_{adoption}$ does not appear to have any substantial impact on the (in)significance of the effects of GOV_{dummy} and GOV_{total} on $CSR_{adoption}$.

8. Conclusion and discussion

This chapter will examine the main results in order to formulate a conclusion with regards to confirming or rejecting this study's two hypotheses. Then, the chapter will be concluded with a brief discussion, in which the limitations of this study will be elaborated and some suggestions for future research will be mentioned.

8.1 Main results

The results of the conducted logit and OLS regression models does not provide evidence that supports any of the hypotheses. The logit regression models show no significant effects of GOV_{dummy} on $CSR_{adoption}$. In other words, the existence of positive government ownership does not appear to significantly influence the probability of a firm to adopt CSR. As such, no support is found for hypothesis 1a. The logit models also fail to identify any significant effects of GOV_{total} on $CSR_{adoption}$. That is, the magnitude of government ownership is not sufficiently relevant as a predictor of the probability that a firm adopts CSR. Therefore, this study fails to provide support for hypothesis 1b. The OLS regression results do not show significant effects of GOV_{dummy} on $CSR_{performance}$. This implies that the existence of positive government ownership does not significantly influence a firm's CSRP. Hence, no support was found for hypothesis 2a. The OLS regression results also did not identify any significant effects of GOV_{total} on $CSR_{performance}$. This would mean that the magnitude of government ownership has no significant impact on a firm's CSRP. Because of this, no evidence was found that could support hypothesis 2b.

Four robustness tests have been conducted to assess the validity of the results of the initial regression models. These tests involved using a subsample containing only firms with positive ownership, two randomly chosen subsamples of roughly equal size, a subsample containing only financial firms, and a different threshold for the dependent variable $CSR_{adoption}$. All five robustness tests show non-significance of the effects GOV_{dummy} and GOV_{total} on both $CSR_{adoption}$ and $CSR_{performance}$. Thus, the results of the initial regression models have been fully validated in terms of the insignificance of GOV_{dummy} and GOV_{total} as predictors of $CSR_{adoption}$ and $CSR_{performance}$.

Potential explanations could be given to justify the failed attempts to prove the hypotheses of this study. Qu (2007), who also could not find a significant effect of corporate ownership (including state ownership) as a determinant of CSR (adoption) in China, argues that ownership may have a small amount of control in the decision process of the management. Boubakri et al. (2019) also mentions a possible explanation for the contradiction the second

hypothesis; i.e. why do privatized firms have a higher CSRP compared to government-owned firms? As they claim, private firms invest more in CSR in order to improve their profitability through an increase in competitiveness or to enhance the firm's reputation. Both motivations appear to be related to the instrumental CSR theories: the former motivation is linked to the competitive advantage theories, while the latter motivation is associated with cause-related marketing theories. Various studies provide empirical evidence that shows the positive economic effects of CSR intensity for private firms, such as improved access to external finance (Cheng, Ioannou, & Serafeim, 2014), better merger performance (Deng, Kang, & Low, 2013), larger abnormal stock returns (Dimson, Karakas, & Li, 2015), lower cost of capital (El Ghouli, Guedhami, Kwok, & Mishra, 2011), and lower idiosyncratic (i.e. firm-specific) risk (Lee & Faff, 2009). Based on Boubakri's et al. (2019) conclusion, the beforementioned empirical evidence and the CSR theories, one could say that privatized firms are more driven than government-owned firms to invest in CSR activities due to the emphasis on the economic aspects of CSR engagement.

8.2 Limitations and future research

The value of this study's results and implications are bounded by several limitations. Firstly, the generalizability of the results is limited due to the sample selection. As the sample contain solely listed European firms, the result may only apply to that particular context. Secondly, also related to generalizability, the sample size is smaller than the sample sizes of most prior CSR-related studies in Europe, such as Boubakri's et al. (2019) sample size of 1.029 firms in 21 countries or Kiesewetter and Manthey's (2017) sample size of 792 firms in 20 countries. While Jackson and Apostolakou (2010) have a comparable sample size – 274 firms in 16 countries – the sample size of this study is massively overshadowed by similar research in China, such as Marquis and Qian's (2018) sample size of 1.390 firms or Reimsbach's et al. (2018) sample size of 2.202 firms. A larger sample size improves the power and generalizability of the results (Hair et al. 2014). Therefore, the results and implications of this study are less powerful and generalizable than the results of prior studies on the same subject and/or a similar context. Thirdly, the use of a single proxy for CSR, namely the ESG rating by RepTrak®, could also pose issues to the validity of the study's results. This database also did not provide CSR data for every firm for every year in the period, so the average score had to be taken; which smoothens the effects in the regression models. There are some alternative proxies used in prior studies, such as the RKS rating (Lau et al., 2016; McGuinness et al., 2017; Reimsbach et al., 2018), the ESG rating by Bloomberg (Reimsbach et al., 2018; Wang & Sarkis, 2017), or the

Asset4 CSR ratings by Thomson Reuters (Chollet & Sandwidi, 2018; Daszyńska-Żygadlo, Słowski, Zawadzki, 2016; Mitra, Latiff, & Bany-Ariffin, 2018). Another alternative was the examination of CSR expenditures in annual reports. Due to financial and practical considerations, the RepTrak[®] database was the chosen source of the used CSR proxy.

This study provides several suggestions for future research, in which the researcher can improve this study. Based on this study's limitation, three suggestions could be formulated. Firstly, the researcher could assess the external validation of this study by studying another context than Europe; excluding China, as this context has already been covered by the majority of prior studies. A potentially interesting context could be the emerging economy of India. Several studies have investigated the impact of nationalization on firm performance, such as the nationalization of Indian railways (Bogart, Chaudhary, 2015), Indian banks (Budhedeo & Pandya, 2018), or Indian coal mining (Khanna, 2016). But the effect of this nationalization on CSR has not yet been investigated. Secondly, the researcher could expand this study's sample by including other firms of the selected or other European countries as this improves the generalizability. For example, other studies that investigated (among others) European government ownership and CSR also included countries such as Greece, Hungary, Poland, Portugal, and Turkey. Thirdly, an additional (or different) proxy for CSR could be used to verify the robustness of the results of this study, such as the RKS rating, the ESG rating by Bloomberg, or the Asset4 CSR rating by Thomson Reuters.

Besides improving this study, some other suggestions for future research arose from the results. Contradicting the majority of prior studies, a negative, significant effect of Board_{gender} on CSR_{performance} was found in the main regression results, which was partially validated in the robustness test. In other words, the higher the percentage of women on the firm's board of directors, the lower the CSRP of that firm. Cucari et al. (2018) were one of the few – if not, the only study – who also found a negative effect of board gender diversity on CSR. A future study could investigate whether the choice of proxy for CSR has any influence on the relationships between this board characteristic and CSR, as the measurement used in this study differs from the studies that found positive effects. Another suggestion for future research is the investigation of the effect of ownership structure on CSR in terms of ownership identity in the context of Europe. The majority of prior studies on this subject have been focussed on Asia (Choi, Lee, & Park, 2013; Li & Zhang, 2010; Oh, Chang, & Martynov, 2011). Ducassy and Montandrou (2015) are one of the few equivalent studies in the European context, and only focus on France. In short, it appears there is a gap in the literature on the effect of ownership

identity on CSR in contexts other than Asia, such as Europe or the US. A final recommendation for future studies is a more in-depth investigation of the differences between the impacts of direct and indirect ownership on firm characteristics such as firm performance or corporate governance as there appears to be no clear-cut evidence from prior literature on this study.

Appendix

Table 1. Matrix typology of public policies on CSR (Steurer, 2010); themes (horizontal) and instruments (vertical)

| | Raise awareness & build capacities of CSR | Improve disclosure & transparency | Foster socially responsible investment (SRI) | Lead by examples |
|----------------------|--|--|---|---|
| Legal | Legal acts that indicate engagements to sustainable development or CSR | Disclosure laws | Laws which prohibit specific investments | Laws that enable social- or green public procurement |
| Economic | Subsidies related to CSR activities | CSR report awards | Tax incentives | [Mostly indirect economic incentives] |
| Informational | Educational activities | Guidelines and information on CSR reporting | Brochures and websites on (SRI) | Provision of SRI-related information to government agencies |
| Partnering | Partnerships and networks | Contact points or forums | SRI-related partnerships and networks | Public procurer network |
| Hybrid | Multi-stakeholder initiatives such as platforms and programs for CSR | Informational and/or economic labels | SRI implementation and promotion by pension funds | Social responsibility action plans in government |

Table 2. Variable overview

| | Variable | Definition | Also used by |
|--------------------|-------------------------------|--|--|
| Dependent | CSR _{adoption} | Dummy variable, equal to 1 if the RepTrak [®] ESG rating is at least 60, otherwise equal to 0 | Han & Zheng (2016) Rathert (2016) |
| | CSR _{performance} | Equal to the RepTrak [®] ESG rating | Janssen et al. (2015) Lee (2016) Othman et al. (2011) |
| Independent | GOV _{dummy} | Dummy variable, equal to 1 if government ownership is present, otherwise equal to 0 | Ang and Ding (2006) Yu (2013) Sun et al. (2002) |
| | GOV _{total} | Accumulative percentage of direct and indirect government ownership | Ang and Ding (2006) Yu (2013) Sun et al. (2002) |
| Control | Size | Logarithm of the number of employees | Elgergeni et al. (2018) Yin (2017) |
| | Age | Logarithm of firm age in year | Marquis & Qian (2014) Reimsbach et al. (2018) Yin (2017) |
| | Tobin's Q | (Book value of debt + market value of equity) / book value total assets | Andres et al. (2005) Maury (2006) |
| | ROA | Net income / book value total assets | Marquis & Qian (2018) Peng and Luo (2000) |
| | Country | Country-specific effects | Reimsbach et al. (2018) Yin (2017) |
| | Industry | Industry-specific effects | Elgergeni et al. (2018) Han & Zheng (2016) Marquis & Qian (2014) |
| | Board _{size} | Number of directors in the board of directors | Conyon & He (2012) Eisenberg et al. (1998) |
| | Board _{gender} | Percentage of females in the board of directors | Fernandez-Fijoo et al. (2012) Liu et al. (2014) |
| | Board _{independence} | Percentage of independent directors in the board of directors | Alexandrina (2013) McGuinness et al. (2017) |

Table 3. Distribution sample per country.

Sample only consists of listed firms. Primary categorization is based on each country's ISO 3166. Second categorization is based on the ranking by Fura et al. (2014) to simplify the abundance of diversity.

| Group rank ¹ | Country | Frequency | Percent |
|-------------------------|-----------------|------------|--------------|
| #1 | Austria | 4 | 1.1 |
| | Czech Republic | 31 | 8.7 |
| | Denmark | 11 | 3.1 |
| | Finland | 2 | 0.6 |
| | France | 80 | 22.5 |
| | Norway | 1 | .3 |
| | Sweden | 44 | 12.4 |
| Total #1 | | 173 | 48.7 |
| #2 | Belgium | 12 | 3.4 |
| | Germany | 34 | 9.6 |
| | Great Britain | 71 | 20.0 |
| | The Netherlands | 21 | 5.9 |
| Total #2 | | 138 | 38.9 |
| #3 | Ireland | 14 | 3.9 |
| | Luxembourg | 2 | .6 |
| Total #3 | | 16 | 4.5 |
| #4 | Italy | 24 | 6.8 |
| | Spain | 4 | 1.1 |
| Total #4 | | 28 | 7.9 |
| Total | | 355 | 100.0 |

Table 4. Distribution sample per industry. *Categorization is based on the ICB classification.*

| Industry | Frequency | Percent |
|--------------------|------------|--------------|
| Basic Materials | 29 | 8.2 |
| Consumer Goods | 74 | 20.9 |
| Consumer Services | 101 | 28.4 |
| Financials | 41 | 11.6 |
| Health Care | 2 | .5 |
| Industrials | 72 | 20.3 |
| Telecommunications | 23 | 6.5 |
| Utilities | 13 | 3.6 |
| Total | 355 | 100.0 |

Table 5. Descriptive Statistics

| | Obs. | Mean | SD | Min. | Max | 1 st Quartile | Median | 3 rd Quartile |
|-------------------------------|------|----------|----------|--------|-----------|--------------------------|----------|--------------------------|
| <i>Dependent</i> | | | | | | | | |
| CSR _{adoption} | 355 | .88 | .33 | 0 | 1 | 1 | 1 | 1 |
| CSR _{performance} | 355 | 68.72 | 6.96 | 43.62 | 83.80 | 64.60 | 70.00 | 73.70 |
| <i>Independent</i> | | | | | | | | |
| GOV _{dummy} | 355 | .46 | .50 | 0 | 1 | 0 | 0 | 1 |
| GOV _{total} | 355 | 9.99 | 23.76 | .00 | 100.00 | 0.00 | 0.00 | 3.31 |
| <i>Control</i> | | | | | | | | |
| Size | 338 | 9.57 | 1.96 | 3.25 | 13.35 | 8.57 | 9.83 | 10.98 |
| [# employees] | | [50,190] | [83,085] | [26] | [627,814] | [5,271] | [18,583] | [58,689] |
| Age | 355 | 4.06 | .92 | 1.25 | 6.30 | 3.31 | 4.20 | 4.83 |
| [# years] | | [84.95] | [76.43] | [3.50] | [544.50] | [27.50] | [64.50] | [125.50] |
| Tobin's Q | 330 | 1.06 | .96 | .01 | 3.73 | .42 | .81 | 1.52 |
| ROA | 327 | 4.78 | 6.48 | -23.22 | 39.94 | 1.23 | 3.97 | 6.70 |
| Board _{size} | 352 | 11.68 | 3.73 | 3.00 | 22.00 | 9.00 | 12.00 | 13.00 |
| Board _{gender} | 352 | .35 | .12 | .00 | .79 | .29 | .33 | .44 |
| Board _{independence} | 302 | .48 | .27 | .00 | 1.00 | .29 | .50 | .67 |

Table 6. Correlation matrix

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|-----------------------------------|--------|---------|--------|-------|--------|-------|---------|-------|--------|------|----|
| 1. CSR _{adoption} | 1 | | | | | | | | | | |
| 2. CSR _{performance} | .713** | 1 | | | | | | | | | |
| 3. GOV _{dummy} | .092 | .064 | 1 | | | | | | | | |
| 4. GOV _{total} | .052 | .014 | .438** | 1 | | | | | | | |
| 5. Size | -.050 | .013 | .014 | .101 | 1 | | | | | | |
| 6. Age | .045 | .112 | .038 | -.034 | .038 | 1 | | | | | |
| 7. Tobin's Q | .234** | .339** | .042 | -.010 | -.129* | -.043 | 1 | | | | |
| 8. ROA | .024 | -.019 | -.065 | -.109 | -.016 | -.020 | .019 | 1 | | | |
| 9. Board _{size} | -.141* | -.129* | .030 | -.037 | .368** | .025 | -.236** | .009 | 1 | | |
| 10. Board _{gender} | -.129* | -.196** | -.004 | .008 | .193** | -.042 | -.036 | -.078 | .082 | 1 | |
| 11. Board _{independence} | -.079 | -.135* | -.058 | .031 | .044 | -.103 | .016 | .067 | -.207* | .070 | 1 |

* and ** indicate statistical significance at 5% and 1% (2-tailed), respectively

Table 7. Shapiro-Wilk test

| | Statistic | Sig. |
|--------------------------------------|------------------|-------------|
| Residuals CSR _{performance} | .978 | .001 |

Table 8. VIF-values of multicollinearity

| | VIF |
|-------------------------------|------------|
| GOV _{dummy} | 1.259 |
| GOV _{total} | 1.284 |
| Size | 1.238 |
| Age | 1.022 |
| Tobin's Q | 1.069 |
| ROA | 1.025 |
| Board _{size} | 1.297 |
| Board _{gender} | 1.053 |
| Board _{independence} | 1.090 |

Figure 1. Normal Q-Q plot of CSR_{performance}

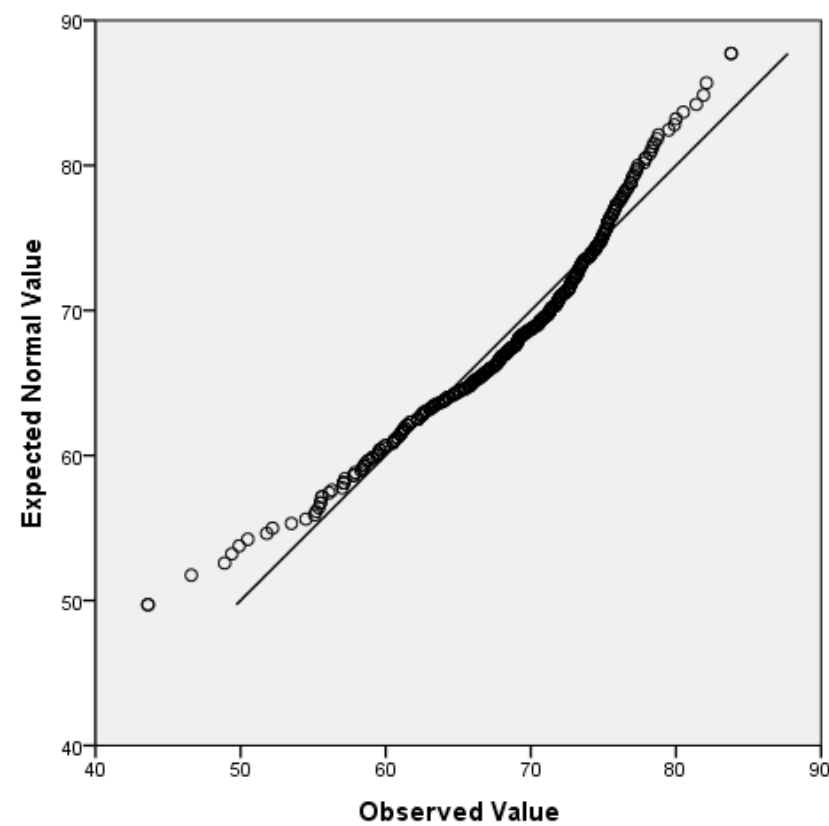


Figure 2. Scatterplot predicted value* CSR_{performance} × residual* CSR_{performance} (* = standardized)

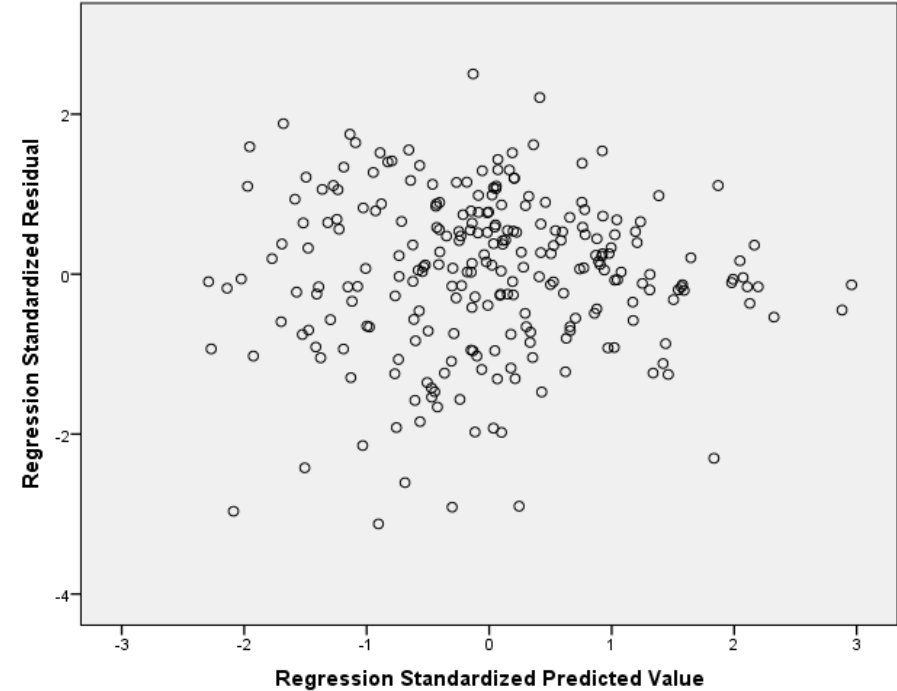


Table 9. Logit regression results: full sample
Dependent variable: $CSR_{adoption}$

| Models: | (1) | (2) | (3) | (4) | (5) | (6) |
|--------------------------------|----------------|------------------|-------------------|-----------------|------------------|-------------------|
| (Intercept) | .286 (.286) | 1.160 (1.538) | 2.897 (2.060) | .458 (.385) | 1.155 (1.536) | 2.743 (2.044) |
| GOV _{dummy} | .399 (.373) | .490 (.487) | .662 (.553) | | | |
| GOV _{total} | | | | -.001 (.008) | .013 (.018) | .012 (.018) |
| Size | | -.130 (.123) | -.033 (.147) | | -.130 (.123) | -.042 (.146) |
| Age | | -.089 (.229) | -.104 (.245) | | -.073 (.228) | -.087 (.243) |
| Tobin's Q | | .843* (.491) | .765 (.508) | | .817* (.481) | .744 (.494) |
| ROA | | .040 (.041) | .014 (.042) | | .041 (.040) | .019 (.041) |
| Board _{size} | | | -.066 (.078) | | | -.058 (.077) |
| Board _{gender} | | | -2.579 (2.505) | | | -2.158 (2.421) |
| Board _{independence} | | | -1.267 (.978) | | | -1.274 (.966) |
| Country | Y | Y | Y | Y | Y | Y |
| Industry | Y | Y | Y | Y | Y | Y |
| N | 355 | 288 | 257 | 355 | 288 | 257 |
| Nagelkerke R ² | .252 | .426 | .469 | .247 | .424 | .463 |
| Hosmer and Lemeshow Chi-square | 4.830 | 4.858 | 2.692 | 1.829 | 4.596 | 1.360 |

*, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.
Standard errors of the coefficients are displayed between brackets.

Table 10. OLS regression results: full sample
Dependent variable: *CSR_{performance}*

| Models | (1) | (2) | (3) | (4) | (5) | (6) |
|-------------------------------|---------------------|----------------------|----------------------|---------------------|----------------------|----------------------|
| (Intercept) | 67.305*** (.754) | 67.213*** (2.425) | 69.995*** (2.932) | 67.654*** (.721) | 67.358*** (2.421) | 70.095*** (2.935) |
| GOV _{dummy} | .249 (.645) | .430 (.682) | .636 (.699) | | | |
| GOV _{total} | | | | -.015 (.014) | -.001 (.021) | .005 (.022) |
| Size | | -.089 (.183) | .058 (.221) | | -.090 (.183) | .052 (.223) |
| Age | | .094 (.379) | .118 (.380) | | .110 (.378) | .141 (.380) |
| Tobin's Q | | .876** (.375) | 1.060*** (.392) | | .874** (.376) | 1.081*** (.391) |
| ROA | | -.027 (.051) | -.041 (.050) | | -.029 (.051) | -.042 (.051) |
| Board _{size} | | | -.045 (.117) | | | -.037 (.117) |
| Board _{gender} | | | -6.279** (3.117) | | | -6.236** (3.123) |
| Board _{independence} | | | -2.697* (1.386) | | | 2.740** (1.389) |
| Country | Y | Y | Y | Y | Y | Y |
| Industry | Y | Y | Y | Y | Y | Y |
| N | 355 | 288 | 257 | 355 | 288 | 257 |
| R ² | .276 | .368 | .436 | .278 | .367 | .434 |
| R ² adjusted | .253 | .333 | .393 | .255 | .332 | .391 |

*, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.
Standard errors of the coefficients are displayed between brackets.

Table 11. Logit regression results with subsample A
Sample A only contains firms with positive government ownership
Dependent variable: CSR_{adoption}

| Models: | (1) | (2) | (3) |
|---------------------------------------|-------------------|-------------------|---------------------|
| (Intercept) | 1.551** (.735) | -6.897 (4.492) | .903 (12.176) |
| GOV _{total} | -.011 (.010) | .008 (.029) | -.035 (.066) |
| Size | | .269 (.349) | 1.508 (1.011) |
| Age | | .610 (.622) | .775 (1.434) |
| Tobin's Q | | .360 (.952) | .020 (1.435) |
| ROA | | .090 (.080) | -.069 (.255) |
| Board _{size} | | | -.552 (.362) |
| Board _{gender} | | | -11.701 (15.077) |
| Board _{independence} | | | -11.894 (10.391) |
| Country | Y | Y | Y |
| Industry | Y | Y | Y |
| N | 163 | 121 | 105 |
| Nagelkerke R ² | .209 | .579 | .786 |
| Hosmer and Lemeshow Chi- square | 4.661 | 4.969 | .049 |

*, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

Standard errors of the coefficients are displayed between brackets.

Table 12. OLS regression results with subsample A
Sample A contains only firms with positive government ownership
Dependent variable: CSR_{performance}

| Models | (1) | (2) | (3) |
|-------------------------------|----------------------|----------------------|----------------------|
| (Intercept) | 68.903*** (1.131) | 59.926*** (3.627) | 61.913*** (2.932) |
| GOV _{total} | -.026 (.016) | -.016 (.022) | -.013 (.024) |
| Size | | .488* (.252) | .486 (.346) |
| Age | | 1.259** (.580) | 1.272** (.627) |
| Tobin's Q | | .084 (.523) | .337 (.573) |
| ROA | | -.097 (.077) | -.117 (.082) |
| Board _{size} | | | -.001 (.178) |
| Board _{gender} | | | -3.463 (4.845) |
| Board _{independence} | | | -.937 (2.225) |
| Country | Y | Y | Y |
| Industry | Y | Y | Y |
| N | 163 | 121 | 105 |
| R ² | .230 | .462 | .491 |
| R ² adjusted | .174 | .390 | .392 |

*, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.
Standard errors of the coefficients are displayed between brackets.

Table 13. Logit regression results from subsample B
Sample B represents 50% of the original sample
Dependent variable: CSR_{adoption}

| Models | (1) | (2) | (3) | (4) | (5) | (6) |
|--------------------------------|-----------------|------------------|-------------------|-----------------|------------------|-------------------|
| (Intercept) | -.238 (.643) | -.496 (2.331) | 1.882 (3.185) | -.063 (.587) | -.481 (2.438) | 1.239 (3.188) |
| GOV _{dummy} | .264 (.516) | .578 (.673) | .949 (.783) | | | |
| GOV _{total} | | | | | .039 (.033) | .034 (.032) |
| Size | | -.152 (.166) | -.005 (.230) | | -.166 (.171) | -.035 (.230) |
| Age | | .063 (.386) | -.075 (.442) | | .095 (.394) | -.043 (.442) |
| Tobin's Q | | 1.101* (.587) | 1.132* (.671) | | 1.050* (.568) | 1.060* (.629) |
| ROA | | -.084 (.051) | .076 (.060) | | .085* (.049) | .076 (.056) |
| Board _{size} | | | -.108 (.130) | | | -.049 (.131) |
| Board _{gender} | | | -2.513 (3.552) | | | -2.170 (3.470) |
| Board _{independence} | | | -1.804 (1.684) | | | -1.629 (1.647) |
| Country | Y | Y | Y | Y | Y | Y |
| Industry | Y | Y | Y | Y | Y | Y |
| N | 178 | 154 | 145 | 178 | 154 | 145 |
| Nagelkerke R ² | .356 | .505 | .564 | .355 | .522 | .566 |
| Hosmer and Lemeshow Chi-square | 6.315 | 3.600 | .941 | 8.708 | 4.480 | 1.513 |

*, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively. Standard errors of the coefficients are displayed between brackets.

Table 14. Logit regression results from subsample C
Sample C represents 50% of the original sample.
Dependent variable: CSR_{adoption}

| | (1) | (2) | (3) | (1) | (2) | (3) |
|--------------------------------|----------------|------------------|-------------------|-----------------|------------------|-------------------|
| (Intercept) | .486 (.581) | 2.765 (2.972) | 6.967 (5.203) | -.238 (.643) | -.496 (2.331) | 1.882 (3.185) |
| GOV _{dummy} | .405 (.636) | .940 (.969) | .841 (1.133) | | | |
| GOV _{total} | | | | .264 (.516) | .578 (.673) | .949 (.783) |
| Size | | -.219 (.264) | -.176 (.435) | | -.152 (.166) | -.005 (.230) |
| Age | | -.126 (.354) | -.005 (.414) | | .063 (.386) | -.075 (.442) |
| Tobin's Q | | 3.213 (2.351) | 2.875 (2.773) | | 1.101* (.587) | 1.132* (.671) |
| ROA | | -.054 (.102) | -.205 (.156) | | | .076 (.060) |
| Board _{size} | | | -.124 (.163) | | | -.108 (.130) |
| Board _{gender} | | | -6.644 (6.153) | | | -2.513 (3.552) |
| Board _{independence} | | | -.659 (1.976) | | | -1.804 (1.684) |
| Country | Y | Y | Y | Y | Y | Y |
| Industry | Y | Y | Y | Y | Y | Y |
| N | 177 | 134 | 112 | 194 | 154 | 145 |
| Nagelkerke R ² | .359 | .594 | .649 | .356 | .505 | .564 |
| Hosmer and Lemeshow Chi-square | 3.232 | .460 | .240 | 6.315 | 3.600 | .942 |

Table 15. OLS regression results from subsample B
Sample B represents 50% of the original sample.
Dependent variable: $CSR_{performance}$

| | (1) | (2) | (3) | (1) | (2) | (3) |
|-------------------------------|----------------------|-------------------|----------------------|---------------------|----------------------|-------------------|
| (Intercept) | 67.013*** (1.015) | 65.196 (3.627) | 67.584*** (4.438) | 67.281*** (.982) | 65.226*** (3.627) | 67.809 (4.438) |
| GOV _{dummy} | -.285 (.920) | .181 (.970) | .377 (.999) | | | |
| GOV _{total} | | | | -.022 (.018) | .004 (.028) | .005 (.029) |
| Size | | .016 (.266) | .200 (.326) | | .013 (.269) | .189 (.335) |
| Age | | .256 (.559) | .194 (.568) | | .264 (.556) | .208 (.567) |
| Tobin's Q | | 1.100** (.545) | 1.116* (.588) | | 1.101** (.545) | 1.130* (.587) |
| ROA | | -.022 (.062) | -.036 (.062) | | -.022 (.062) | -.036 (.063) |
| Board _{size} | | | -.057 (.189) | | | -.045 (.189) |
| Board _{gender} | | | -4.863 (4.625) | | | -4.753 (4.638) |
| Board _{independence} | | | -2.725 (2.037) | | | -2.722 (2.038) |
| Country | Y | Y | Y | Y | Y | Y |
| Industry | Y | Y | Y | Y | Y | Y |
| N | 178 | 154 | 145 | 178 | 154 | 145 |
| R ² | .290 | .412 | .434 | .295 | .412 | .434 |
| Adjusted R ² | .247 | .348 | .353 | .253 | .348 | .353 |

Table 16. OLS regression results from subsample C
Sample C represents 50% of the original sample.
Dependent variable: CSR_{performance}

| | (1) | (2) | (3) | (1) | (2) | (3) |
|-------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| (Intercept) | 67.869*** (1.128) | 70.258*** (3.339) | 74.356*** (4.061) | 68.301*** (1.054) | 70.737*** (3.342) | 74.668*** (4.066) |
| GOV _{dummy} | .688 (.929) | .773 (.977) | .951 (1.017) | | | |
| GOV _{total} | | | | -.007 (.021) | -.009 (.032) | .044 (.035) |
| Size | | -.223 (.255) | -.218 (.314) | | -.232 (.255) | -.219 (.315) |
| Age | | -.216 (.527) | -.247 (.529) | | -.208 (.528) | -.220 (.531) |
| Tobin's Q | | .834 (.528) | 1.229** (.549) | | .835 (.530) | 1.264** (.551) |
| ROA | | -.065 (.092) | -.033 (.150) | | -.071 (.093) | -.067 (.095) |
| Board _{size} | | | -6.909 (4.239) | | | -.027 (.151) |
| Board _{gender} | | | -3.316 (2.033) | | | -7.006 (4.260) |
| Board _{independence} | | | -.067 (.095) | | | -3.354 (2.054) |
| Country | Y | Y | Y | Y | Y | Y |
| Industry | Y | Y | Y | Y | Y | Y |
| N | 178 | 154 | 145 | 178 | 154 | 145 |
| R ² | .331 | .399 | .519 | .329 | .396 | .514 |
| Adjusted R ² | .287 | .328 | .432 | .284 | .325 | .427 |

*, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively. Standard errors of the coefficients are displayed between brackets.

Table 17. Logit regression with subsample D
Sample D represents only non-financial firms
Dependent variable: CSR_{adoption}

| | (1) | (2) | (3) | (4) | (5) | (6) |
|--------------------------------|-----------------|-------------------|--------------------|-----------------|-------------------|--------------------|
| (Intercept) | .006 (.540) | -1.930 (2.050) | 1.242 (2.947) | -.018 (.518) | -1.941 (2.085) | 1.061 (2.935) |
| GOV _{dummy} | -.104 (.450) | .479 (.591) | .709 (.728) | | | |
| GOV _{total} | | | | -.003 (.009) | .045 (.039) | .052 (.051) |
| Size | | .262 (.325) | .071 (.197) | | -.126 (.153) | .066 (.202) |
| Age | | .719 (.463) | .300 (.384) | | .305 (.327) | .388 (.399) |
| Tobin's Q | | .719 (.463) | .633 (.447) | | .737 (.464) | .629 (.441) |
| ROA | | .090* (.050) | .075 (.058) | | .088 (.049) | .070 (.054) |
| Board _{size} | | | -.098 (.119) | | | -.098 (.119) |
| Board _{gender} | | | -5.805 (3.527) | | | -5.947* (3.516) |
| Board _{independence} | | | -2.238* (1.331) | | | -2.071 (1.341) |
| Country | Y | Y | Y | Y | Y | Y |
| Industry | Y | Y | Y | Y | Y | Y |
| N | 301 | 254 | 224 | 301 | 254 | 224 |
| Nagelkerke R ² | .221 | .398 | .485 | .221 | .410 | .491 |
| Hosmer and Lemeshow Chi-square | 7.286 | 4.846 | 2.842 | 2.217 | 6.338 | 3.064 |

*, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively. Standard errors of the coefficients are displayed between brackets.

Table 18. OLS regression with subsample D
Sample D represents only non-financial firms
Dependent variable: CSR_{performance}

| | (1) | (2) | (3) | (4) | (5) | (6) |
|-------------------------------|---------------------|----------------------|----------------------|---------------------|----------------------|----------------------|
| (Intercept) | 67.345*** (.757) | 66.098*** (2.792) | 68.546*** (3.420) | 67.581*** (.721) | 66.336*** (2.789) | 68.704*** (3.427) |
| GOV _{dummy} | -.032 (.679) | .730 (.696) | .849 (.724) | | | |
| GOV _{total} | | | | -.015 (.014) | .006 (.022) | .009 (.023) |
| Size | | -.033 (.189) | .128 (.236) | | -.042 (.190) | .109 (.239) |
| Age | | .548 (.410) | .676 (.421) | | .583 (.409) | .715* (.422) |
| Tobin's Q | | .797** (.364) | 1.006*** (.384) | | .814** (.364) | 1.038*** (.384) |
| ROA | | -.022 (.052) | -.035 (.124) | | -.025 (.052) | -.038 (.053) |
| Board _{size} | | | -6.584** (3.187) | | | -.019 (.124) |
| Board _{gender} | | | -2.541* (1.409) | | | -6.569** (3.198) |
| Board _{independence} | | | -4.871*** (1.409) | | | -2.620* (1.412) |
| Country | Y | Y | Y | Y | Y | Y |
| Industry | Y | Y | Y | Y | Y | Y |
| N | 301 | 254 | 224 | 301 | 254 | 224 |
| R ² | .203 | .267 | .328 | .206 | .264 | .324 |
| Adjusted R ² | .178 | .227 | .276 | .182 | .224 | .272 |

*, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively. Standard errors of the coefficients are displayed between brackets.

Table 19. Logit regression results with full sample
Dependent variable: $CSR_{adoption}$ with threshold 70

| | (1) | (2) | (3) | (4) | (5) | (6) |
|--------------------------------|---------------------|----------------------|-----------------------|---------------------|----------------------|-----------------------|
| (Intercept) | -2.389*** (.500) | -4.817*** (1.489) | -22.089 (8050.884) | -2.290*** (.486) | -4.770*** (1.490) | -22.070 (8050.807) |
| GOV _{dummy} | .104 (.239) | .204 (.284) | .236 (.311) | | | |
| GOV _{total} | | | | -.004 (.005) | .001 (.009) | .003 (.010) |
| Size | | .004 (.076) | .000 (.097) | | .002 (.076) | -.006 (.098) |
| Age | | .254 (.167) | .339* (.181) | | .265 (.166) | .352* (.181) |
| Tobin's Q | | .340** (.159) | .387** (.176) | | .345** (.159) | .397** (.176) |
| ROA | | .007 (.022) | .007 (.023) | | .005 (.022) | .006 (.023) |
| Board _{size} | | | -.021 (.055) | | | -.018 (.055) |
| Board _{gender} | | | -.879 (1.360) | | | -.881 (1.362) |
| Board _{independence} | | | -.693 (.615) | | | -.732 (.613) |
| Country | Y | Y | Y | Y | Y | Y |
| Industry | Y | Y | Y | Y | Y | Y |
| N | 355 | 288 | 257 | 355 | 288 | 257 |
| Nagelkerke R ² | .266 | .351 | .408 | .268 | .349 | .407 |
| Hosmer and Lemeshow Chi-square | 6.865 | 16.001 | 4.433 | 9.326 | 6.012 | 5.263 |

*, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively. Standard errors of the coefficients are displayed between brackets.

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