UNIVERSITEIT VAN TILBURG

The relationship between ESG-factors and the corporate financial performance.

A study for European small capitalization firms.

Master Thesis

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Abstract

This study examines how environmental, social and governance (ESG) performance is related to the financial performance of a firm. Despite the large amount of previous empirical work a consensus about the relation between ESG and firm value is not agreed upon. This study contributes to this discussion by focussing on small capitalisation firms located in Europe. An empirical analysis consisting of three stages is used to determine if and what factors of ESG have an effect on the corporate financial performance of European small capitalization firms. The results of the first stage indicate a positive effect of the ESG-rating on corporate financial performance. In contrast to this, the second stage analysis provide mixed results. For the subgroup governance performance, a positive relation is found while environmental performance has a negative effect on Tobin's q. Consistent with the second stage, the third stage analysis provide mixed results. An increase in the performance of the sub drivers board function and compensation policy results in an increase of corporate financial performance while product innovation and human rights are negatively related with corporate financial performance. Finally, the empirical analysis provides evidence for the moderating effect of firm size on the relationship between ESG and corporate financial performance. The instrumental variable approach is used to overcome existing endogeneity concerns.

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1. Introduction

The environmental, governance and social (ESG) performance of a firm has become both an important topic in academic research as in practice. Since the early seventies there have been more than 2000 academic studies published that examines the relationship between ESG and corporate financial performance (CFP). From an investment perspective, this increase in attention towards ESG can be indicated by looking at the amount of assets under management that can be linked to some form of ESG investing. Especially during the last financial crisis this particular type of assets increases a lot. For instance, in the United States this type of assets under management almost doubled between 2012-2014 (Friede, Busch and Bassen 2005)[1].

The increase in attention towards ESG has various reasons. From an academic perspective, the effect of ESG on the corporate financial performance is still relevant to study since a consensus on the effect of ESG on financial performance has not been reached. Despite these mixed empirical results, investors tend to pay more attention to assets which can be linked to ESG. New regulations, the management of reputation risks and the fiduciary duty of institutional investors are considered to be the main reasons for this increase in interest among investors. There are various ways to implement ESG into an investment policy. In most of the cases ESG is implemented into an investment policy by either negative screening, positive screening or with an engagement strategy. In case of negative screening assets that do not comply with a specific ESG standard are excluded from an investment portfolio. In case of positive screening assets that meet a specific ESG standard are used to construct a portfolio. In contrast, an engagement strategy focuses on improving the ESG scores of the current assets of the portfolio.

In contrast to the impact on financial performance there is no doubt about the positive contribution of an increase in ESG performance for the society. Despite the unknown impact on financial performance, investors are willing to invest in ESG in order to contribute in a positive way to society. Just like individual investors, institutional investors are willing to contribute with their assets to society. Although they have the same intention as individual investors, for institutional investors the financial implications of ESG investing are more important since they have to meet in most of the cases several financial obligations. Therefore, it is important to determine if ESG and which specific drivers have both a positive impact on the financial results and contribute to a better society.

[1] In the United States the assets under management increases between 2012 and 2014 from 2.8 trillion USD to 5.5 trillion USD.

Since the positive impact of ESG on society is a point without discussing this study focuses on the effect of an increase in ESG performance on the corporate financial performance of a firm. An increase in corporate financial performance will affect the share price of a listed firm in a positive way. If this is the case institutional investors are able to contribute to society while their financial performance is not affected in a negative way. Since ESG consists of different subgroups with underlying drivers this study uses a three-stage approach to determine which factors of ESG have a positive effect on the corporate financial performance of a firm. In the first stage, the effect of an increase in a firm's ESG rating will be determined. In the second stage the effect of the subgroups environmental performance, social performance and governance performance on corporate financial performance will be studied. The third stage examines the effect of the drivers of the subgroups on the corporate financial performance. Next to this three-stage approach, the moderating effect of size on the ESG-CFP relationship found in studies of Guest (2009) and Kruger (2015) will be tested.

This study contributes to the literature in various way. First, previous studies have mainly focused on the effect of ESG on the corporate financial performance of large companies. In most of the cases the sample consist of listed companies at a North-American stock exchange. A reason for this is the lack of data for small and firms located outside North-America. In contrast to previous empirical work this study focuses on small capitalization firms located in Europe. The sample consist of 120 European small capitalization firms whereby the effect of ESG on their corporate financial performance is examined during the period lasting from 2010 until 2016. Second, the data and methodology of the Asset4 Database of Thomson Reuters is used to compute the ESG scores while the financial data is retrieved from the COMPUSTAT Global Database. Since this study uses the Asset4 Database for ESG data the impact of the sub drivers behind the subgroups of the ESG score on corporate financial performance can be studied. To the best of my knowledge, this is the first study that examines the relationship between the ESG sub-drivers and corporate financial performance.

Based on the sample of 120 European small firms a positive effect of ESG on the corporate financial performance is found. The subgroup environmental performance affects the financial performance of a firm in a negative way while for corporate governance a positive effect is found. Consistent with the effect of the subgroup environmental performance the environmental driver product innovation is negatively related with corporate financial performance. Next to this, human rights affect the corporate financial performance in a negative way. In contrast to these negative relations the governance drivers compensation policy and board function affect

the financial performance in a positive way. Beside these effects on financial performance the results of this study provide evidence for a moderating role of firm's size on the relationship between ESG and corporate financial performance.

The rest of this article is organized as follows. In section two an overview of the conclusions of previous empirical work is given. As described above these studies focuses in most of the cases on large firms located in North-America. This overview makes it possible to compare the results of this study with large and North-America firms. In section three the methodology of this study is described. The sample selection and a description of the data is provided in section four. Section five reports the empirical results and the outcomes of the robustness test. Section six concludes.

2. Literature review

This part of the research describes the recent literature towards the effect of ESG and corporate financial performance. It will start with an overview of relations found when the effect of an ESG rating on firm performance is studied. After this overview this part focus on the more specific relations of each single sub factor on corporate financial performance. Subsequently, it describes the differences in relations found across regions. At last, this overview will be used to identify the existing gaps in literature and to develop the hypothesises for this research.

2.1 ESG and corporate financial performance

In the last two decades the effect of ESG has been an important research topic. In many studies the central question was whether or not ESG affect the value of a firm. Despite all these studies a consensus about the relation between ESG and firm value is not agree upon. As a consequence, theories describing the relationship between ESG and corporate financial performance show a wide variety.

According to the traditional neoclassical approach, investing in socially responsible aspects creates additional costs for a firm (Palmer, Oates and Portey 1995). In a competitive market additional costs reduces the profits of a company (Baumol 1991). In the long term, the competiveness of a firm can be affected by higher costs which has an impact on the cash flows. A reduction of profits and revenues is not consistent with the well-known shareholders theory of Friedman (1970). In this theory Friedman argues that the only social responsibility of a firm is to maximize its shareholders value.

On the other hand, different theories state that an active CSR policy could also create additional benefits for a firm. For instance, Godfrey, Merrill and Hansen (2009) argue that investing in environmental, social and governance can be seen as an 'insurance' against reputation risks. Recent scandals in which British Petroleum, Hennes & Mauritz and Rabobank were involved provides clear evidence for the value of investing in these factors[2]. Beside an insurance for reputation risks, investing in CSR can enhance the reputation of a firm. According to McWilliams and Siegel (2006) a positive reputation has positive economic value. They argue that consumers consider products of companies with a positive reputation as high quality. Another implication of a good reputation is that it enhances the commitment of stakeholders (Godfrey 2005; Wang, Choi and Li 2008). Suppliers and partners are more likely to act in favour

[2] British Petroleum, oil disaster in the Gulf of Mexico, 2010. In 2016 Hennez & Mauritz were accused of using children in their production process. Rabobank, was involved in the Libor and Euribor fraud as a consequence of an insufficient governance policy.

of the firm. Rindova and Fombrun (1991) find that this enhanced support from stakeholders can lead to an increase of capital and creates more wiliness to provide resources to a firm. A positive reputation enhance employee satisfaction and the wiliness to work for the company and to work for a longer time for the same firm. Edams (2011) finds that employee satisfaction affect the corporate financial performance in a positive way. Next to a positive influence, Edams finds that it is possible to generate a positive alpha based on employee satisfaction since his results indicate that markets are not able to price this intangible correctly.

Beside negative and positive theories, some studies provide explanations for the more mixed results found in the relationship between CSR and corporate financial performance. Weber (2008) introduces a theory which is closely related to the discounted cash flow methodology. She argues that doing good is profitable as long as its financial benefits exceeds its financial costs. The total value of doing good is determined by discounting the additional cash flows. Horváthová (2010) presents a theory which indicates an inverted 'U'-relationship between CSR and performance. This inverted 'U'-relationship is explained by the fact that investing in CSR can only result in an additional value as long as the value of a firm is not already maximized. Another theory regarding the mixed results found in recent literature is based on the 'learning hypothesis'. This hypothesis states that the possibility to generate alpha with ESG factors becomes more difficult when the market pays attention to it and as a consequence of this adjust current price levels. Bebchuk, Cohen and Wang (2013) find clear evidence when studying the effect of governance principles over time. They construct two portfolios of firms with either high or low governance scores and test their performance in periods of high and low attention towards governance. They find that the positive alpha, in a period of low governance attention, disappears in the following period when the market pays more attention towards the corporate governance principles of firms. Empirical work of Borgers, Derwall, Koedijk and Ter Horst (2013) finds evidence for the learning hypothesis in periods with a difference in attention towards stakeholders-relations. The learning effect, the discounted cash flow theory and the inverted 'U'-relationship are all possible reasons for the lack of consensus in recent literature regarding the effect of ESG on corporate financial performance.

Friede et al. (2005) find that the majority of studies indicates a positive relationship between ESG and corporate financial performance. Although the majority is positive, the variety of relationships found in recent studies indicate that the relationship between ESG and corporate financial performance is not consistent. Many circumstances and factors are possible related to this relationship and do affect it either positive or negative. Despite the amount of recent studies

the factors and circumstances that effect this relationship are still not clear. The lack of consensus next to the unknown moderating factors makes it hard to expect the effect of ESG on corporate financial performance. Based on the empirical work of Edams (2011), that finds evidence for the existing difficulties to price in intangibles for large companies, the expectation is that for small firms with less public available information a positive relation will be found.

2.2 The effect of E, S and G on corporate financial performance

The ESG performance of a company is based on the performance of a company on the sub factors environmental, social and governance. The effect of each sub factor of ESG performance on corporate financial performance has been another topic of interest in literature. Despite the fact that in most of the cases positive relations where found, the significant amount of studies presenting a negative relation indicates the lack of consensus in the literature. This lack of consensus makes it still interesting to study the relationship between each sub-factor of ESG and their effect on the value of a firm. Friede et al. (2005) conduct a meta-analysis to identify the dominant sub factor in the relation of ESG on corporate financial performance. Their outcome is used as a starting point in the discussion of the effect of each E, S and G factor on corporate financial performance.

The effect of environmental performance on corporate financial performance

When subtracting the amount of studies that find a negative relation from studies that identify a positive relation, the sub factor environmental stands out as the factor with the highest number of positive relations (Friede et al. 2005). The effect of environmental performance on the value of a firm is a topic which is widely discussed in literature starting from the 1980s. The empirical work of McGuire, Sundgren and Schneeweis (1988) is one of the first studies that provides an overview of the theoretical arguments for a relation between environmental performance and the value of a firm. He distinguishes three theoretical concepts which argues all for a different relationship. First, management faces a trade-off between environmental and economic performance. Firms that improve their environmental performance are at an economic disadvantage. This theoretical explanation is in line with the neoclassical theory as explained above. Second, the cost to enhance corporate environmental performance are not substantial and are able to generate other managerial benefits such as a higher morale or an increase in productivity. This theory is in line with a study of Porter and van der Linde (1995) where they question the traditional view and argue that environmental regulation does not have to be costly for a firm. In their opinion, environmental regulation, if correctly managed, can enhance innovation which will offset the initial cost of complying with the new regulation. Third,

McGuire et al. (1988) state that the cost for improving environmental performance will be offset by a reduction of other cost or by an increase of revenues. These theoretical arguments are the basis of many hypothesis in recent empirical studies. The methodology used in these studies is in most of the times an event study or a long term regression analysis. Many event studies are focussing on abnormal returns caused by an event linked to environmental performance. Hamilton (1995) argues that pollution data released by the Environmental Protection Agency (EPA) results in negative abnormal returns for publicly traded firms from the New York and American Stock exchanges. The theoretical explanation behind this is that analysts' estimates are affected by different types of environmental costs. He finds that investors in firms with a relatively high pollution experience negative abnormal returns corresponding with an average loss of 4.1 million on the day the pollution data was published. Klassen and McLaughlin (1996) build upon this conclusion and find that beside the influence on stock market performance, stocks do react in an asymmetric way to environmental news. They find that an increase in stock price as a result of positive environmental information is less strong than the decrease in price when a company is facing negative news. In a more recent study the effect of the publication of Newsweek's 'Green Rankings' on returns is studied. Based on data of 394 large US firms Yadav, Han and Rho (2016) find evidence for the hypothesis that investors perceive environmental performance positively and are willing to pay a price for this.

Although, many studies use an event study approach to show the relationship between environmental and firm performance, the conceptual base is widely criticized. For example, McWilliams, Siegel and Teoh (1999) argue that event studies only provide an insight in the effect of environmental performance on the short-term in a limited timeframe. This makes the results very sensitive to design issues such as the event window and other economic events that could affect the performance (McWilliams and Siegel 1997). Next to this, an event window usually follows directly on the event and lasts only for a short period, long term affects are not captured by this methodology. Beside event studies, long term regression analyses are used in the literature to identify the relation between environmental and firm performance. Dowell, Hart and Yeung (2000) find evidence for a positive relation between environmental performance and firm value. Based on data of 98 listed mining and manufacturing firms over the period 1994 and 1997 they find that companies with a higher market value, measured by Tobin's q, appear to pollute less. Derwall, Guenster, Bauer and Koedijk (2005) focus on the concept of eco-efficiency which provides evidence for a positive non-linear relationship between corporate eco-efficiency and Tobin's q. Beside this positive relation, they show that this relationship

strengthened in recent years. In contrast to the begin of the studied period (1996-2002), high rated firms do sell for a premium in 2002. In contrast to this, Daszyńska-Żygadło, Slonski and Zawadzki (2016) find a negative relation. They test the relationship between environmental and firms financial performance across 10 global industry classification sectors. They find for each sector a negative relation which is statistically significant for 8 sectors[3]. These results are in line with Derwall et al. (2005) and Semenova and Hassel (2008) who argue that positive effects are more difficult to achieve in environmentally sensitive sectors due to higher cost of environmental performance. Compared to research based on US firms, research to the relationship between environmental performance and corporate financial performance for European firms is limited. Elsayed and Paton (2005) conduct a regression analysis using panel data for 227 firms in the UK for the period 1994-2000. The environmental performance for these companies is based on the community and environmental scores from the 'management today' evaluation criteria. They find a positive but insignificant relation between environmental performance and Tobin's q. In a more recent study, Kruger (2015) examines the effect of mandatory greenhouse gas emission disclosure on corporate value. He conducts a difference in difference analysis, an analysis that compares the outcome before and after the new regulation. For 419 listed firms on the London Stock Exchange, he finds a positive relation for firms that are most heavily affected by new regulation. The strongest relation is found for large- and firms in the oil and gas sector. The data used in studies of Elsayed and Paton (2004) and Kruger (2015) is based on European large capitalization firms. The effect of environmental performance for European small capitalization firms is still unknown. From the study of Kruger (2015) the conclusion can be made that the value of large firms do increase more compared to small firms as a consequence of new environmental regulation. This result implies that the capitalization of a firm is a relevant factor in the relation between environmental performance and firm value. Since only limited research has been conducted for the region Europe and small capitalization firms it will be interesting to study this relationship. Research focussing on large firms shows mixed results. Although mixed results were found, a positive relation is expected between environmental performance of European small capitalization firms and their firm value. This expectation is based on the study of Derwall et al. (2005), in which they show that

[3] Daszyńska-Żygadło et al. (2016) find a negative statistically significant between environmental performance and Tobin's q for the sectors: Materials, Consumer Discretionary, Energy, Financials, Health Care, Industrials, information Technology, Utilities.

the positive relation between environmental performance and firm value is strengthened in recent years.

The effect of social performance on corporate financial performance

Based on the meta-analysis of Friede et al. (2005) the conclusion can be made that the sub factor social shows the least amount of positive relations. From the social factor, a large amount of literature studies the question if human resource management does affect the corporate financial performance. Among these studies the consensus is found that organisational human resources policies can provide a direct and economically significant positive contribution to the corporate financial performance (Huselid 1995). Most evidence is found for the theory that human resource management can create a competitive advantage if they are integrated in the competitive strategy of a firm (Jackson and Schuler 1995). Molina and Ortega (2003) conduct a study on 405 publicly traded firms in North-America. They find that training and development expenses are positively associated with firm performance. Their results are in line with the expectation that firm performance may increase through employee satisfaction and customer loyalty.

Regarding the impact of diversity on corporate financial performance Herring (2009) describes three theories to explain previous empirical findings. First, the 'value-in-diversity' theory argues that a diverse workforce, relative to a homogenous one, creates better business results. Second, 'the diversity as a process loss' theory is sceptical about the benefits of diversity and states that diversity can be counterproductive. Finally, the 'paradox theory' argues that diversity results in more conflicts in an organisation. These conflicts will lead to better business results since these conflicts will force an organisation to come up with more innovative and well thought solutions compared to the easy more straight forward solutions found by a homogenous group. The results of the empirical work done by Herring provide evidence against the diversity as a process loss theory. He finds that racial and gender diversity have both a positive impact on the business results. Next to the diversity within a company, recent literature examines the effect of gender diversity in the board room and the effect on corporate financial performance. The outcomes of these results are mixed but in most of the cases neither a positive nor a negative effect is found when focussing on European firms (Marinova, Moon and Van Dyne 2010).

The differences in the relation of social performance and corporate financial performance across sectors is studied by Daszyńska-Żygadło et al. (2016). They find that for Consumer Discretionary, Financials and Utilities social performance does affect the corporate financial

performance in a positive way. For the sector Industrials a negative relation between corporate social performance and corporate financial performance is found.

Based on the positive relations found for the effect of human resources and diversity on corporate financial performance the expectation is that the corporate social performance of a firm is positively related with their corporate financial performance. The results found by Edams (2011) in the field of employee satisfaction and the difficulties to price this kind of intangibles make the expectation of a positive relation in the long run more reliable and therefore the learning effect as described before less plausible in this case.

The effect of corporate governance on corporate financial performance

From the meta-analysis of Friede et al. (2005) the conclusion can be drawn that the sub factor 'governance' represents both the highest amount of positive and negative relations[4]. This lack of consensus makes the impact of corporate governance on corporate financial performance an interesting sub area in the relation of ESG on corporate financial performance.

The effect of corporate governance is a widely discussed topic in recent literature. In most of the cases, studies focus either on the effect of internal or external governance. Empirical work that focus on internal governance studies the impact of board independence, size of board and level of debt financing on financial performance. The effect of board independence is studied by MacAvoy and Millstein (1999). They hypothesize that an independent board is more inclined to take steps that requires management of a firm to act in favour of shareholders. They find that these steps result in an increase of earnings per share. In a study based on 452 US large firms Yermack (1995) finds that the size of a board is negatively related with the corporate financial performance. He states that small boards are able to work more efficient which results in a higher market value. The same relation is found when 2746 listed UK firms for a period of 1981-2002 are studied (Guest 2009). He finds that expanding a six-person board size with one person results in a reduction of Tobin's q with 1. This result provides evidence for the argument that large boards face problems as a consequence of poor communication and decision making. Next to this, he finds that the size of a firm affects this existing relation in a negative way. In contrast to internal governance studies, empirical work focusing on external governance are more focused on the effect of corporate control and block ownership (Reddy, Locke, Scrimgeour and Gunasekarage 2008). Despite the high amount of literature, the relationship

[4] Friede et al. (2005) find from a sample of 644 studies that in 62.3% of the cases a positive relation is found. In 9.2% a negative correlation is found.

between block ownership and firm value is still unclear. Theoretical explanations show a wide variety which is supported by the unclear definition of block ownership. In recent empirical work, block ownership is defined as the ownership of either 5, 10 or 25 percent of the shares of a listed company. Thomsen (2005) finds that a block holder, in their definition someone who hold at least 5 percent of the shares outstanding, does affect the value of a company in a negative way. To be more precise, a one standard deviation increase in block holder ownership would affect the value of a company with -0.028 percent. Next to the variety in definition, a block holder can be defined as a family, strategic, government, financial or individual block holder. Andres (2008) conducts a panel data study in which he studies the effect of the different block holders on the value of 274 listed German companies for the period 1998-2004. He finds that only family block holders do have a positive impact on the value of a firm.

A more theoretical explanation for the differences in the effect of governance on firm value is that governance is highly affected by the country in which a company is located. This result in the fact that a major part of the literature that studies the effect of corporate governance on corporate financial performance is focussing either on differences among countries or variation in governance between firms in a specific country.

The differences in the effect of corporate governance on firm value across sectors is one of the central topics in a study of Daszyńska-Żygadło et al. (2016). They argue that the importance of a corporate governance mechanism do differ between sectors. They find a positive and significant relation for companies in the material, industrial and finance sectors. From these sectors they find that companies in the finance sector benefit the most. An explanation for this could be that financial firms are most affected by reputation risk as a consequence of bad governance. In contrast to this positive relation, a negative and significant relation is found for companies in the consumer discretionary sector.

The effect of the sub factor ‘governance’ on corporate financial performance is a topic of interest in a large amount of studies in recent literature. Despite all this empirical work a consensus is hard to find. The studies examining the effect of individual internal and external governance practices provides evidence for a positive expectation for the impact of governance on corporate financial performance.

2.3 Regional differences in the relationship of ESG and corporate financial performance

Another point of interest is the difference in the ESG and corporate financial performance relationship across regions. Most of the studies that address the differences across regions in

the ESG and corporate financial performance relation focuses on developed regions. Asia, Africa and South-America are regions with less coverage.

Friede et al. (2005) identifies two patterns regarding the ESG and corporate financial performance relation across regions. First, among developed countries excluding US, less positive relations are found compared to the US. Second, studies that discusses the relationship of ESG and corporate financial performance in emerging markets do find more positive relations compared to studies that discuss this relation in developed markets. Despite these patterns, controversies do still exist. For example, Dixon et al. (2013) find that the ESG and corporate financial performance relation of assets in the region North-America is higher than in the rest of the world. In contrast to this, when the sub-factor 'environmental' is regressed on corporate financial performance the highest positive relation on corporate financial performance is found outside the North-American markets (Albertini, 2013).

Miras-Rodríguez, Carrasco-Gallego and Escobar-Pérez. (2015) attribute these differences across regions to a difference in culture. They test the hypothesis that national culture acts as a moderator in the ESG and corporate financial performance relation. Their results show that in a culture with higher future orientation, institutional collectivism and human orientation ESG scores are positively correlated with financial performance.

Despite the fact that a consensus is hard to detect, the conclusion can be made that in Europe the least amount of positive relations are found (Friede et al. 2005). Beside less positive relations, negative relations are detected. In a recent study, based on ESG ratings of Sustainalytics, Auer and Schuhmacher (2015) find that investors in Europe even tend to pay a price for socially responsible investing.

The controversies found in recent literature makes the region Europe an interesting region for further research. According to the theory of Miras-Rodiguez et al. (2015) cultural aspects in the region Europe results in less impact of ESG on corporate financial performance. If this theory holds when small capitalization firms are studied, the effect of ESG on corporate financial performance will be relatively low across Europe compared to other regions. If this theory holds and a positive relation is found a generalization for other regions can be made.

2.4 ESG for European small firms and hypotheses development

Despite the large amount of research that examines the relation of ESG on corporate financial performance there are still some specific area's with less or no empirical coverage. When

analysing the existing literature it becomes clear that hardly any empirical work focuses on the impact of ESG on corporate financial performance of small capitalization firms. A possible explanation for this is the lack of available data of small capitalization firms. Although listed companies are forced to make information publically available, small capitalization firms are still more opaque than large capitalised firms. Especially data about environmental, social and governance performance are in many databases not available for small capitalised firms. In order to examine the relation between ESG rating and the corporate financial performance of small capitalization firms the following hypothesis will be tested in this research:

H1: ESG practices do increase the corporate financial performance of European small capitalization firms.

Some drivers behind the E, S and G sub factors are variables of concern in the existing literature. Especially the drivers behind corporate governance performance are more than once studied in recent literature. In contrast to this, the drivers behind social score are less covered in existing literature. Besides this lack of coverage, an empirical analysis which studies all the drivers and therefore is able to compare the impact of the drivers on the corporate financial performance is something that still does not exist. To investigate the impact of the drivers behind the E, S and G score a two-step approach is used. First of all the hypothesis that examines the impact of the sub score of E, S and G on corporate financial performance is studied:

H2: Individual E, S and G factors of European small capitalization firms do increase the corporate financial performance.

When positive or negative relations are found the impact of the drivers behind these sub scores are analysed by testing the following hypothesises:

H3: Environmental drivers behind the sub score corporate environmental performance do influence the corporate financial performance of European small capitalization in a positive way.

H4: Social drivers behind the sub score corporate social performance do influence the corporate financial performance of European small capitalization in a positive way.

H5: Governance drivers behind the sub score corporate governance performance do influence the corporate financial performance of European small capitalization in a positive way.

Another gap in existing literature is the moderating effect of size on the ESG and corporate financial performance relation. Previous studies indicate the existing effect of the factor size on the corporate financial performance of a firm (Guest 2009; Kruger 2015). Although these

studies clearly indicate that the capitalization of a company is important for the ESG and corporate financial performance relation empirical work examining this relation does not exist. To test the moderating effect of size on the ESG and corporate financial performance relationship the following hypothesis will be tested in this research:

H6: The size of a firm has a moderate role in the relation between ESG and corporate financial performance.

3. Methodology

This section describes the methodology used to empirically investigate the relation between ESG performance and corporate financial performance. It starts with a description of the methodological approach used in this study. Moreover, the regression equations and the assumptions for these models will be discussed. Finally, this section describes the robustness analysis in order to enhance the robustness of this study.

3.1 Methodology approach

Looking at prior empirical work, both event studies and longitudinal studies are used to examine the relationship between ESG and corporate financial performance. As described in the literature review, event studies have been criticized as an empirical instrument to examine the ESG and corporate financial performance relationship. Next to event studies one-dimensional methods or multi-dimensional methods can be used for the empirical analysis. A multi-dimensional method, using panel data, has the advantage that it takes both cross sectional variations as differences over time into account. Hao, Hsiao and Wang (2007) argues that a multi-dimensional method has several advantages over a one-dimensional method. First, it gives a more accurate inference of the parameters estimated in the model. Compared to cross sectional and time series data, panel data usually contains more degrees of freedom and more variation in the sample which increases the efficiency of the estimators. Second, panel data is more suitable for capturing complexity in general and in specific human behaviour. Finally, Bryman and Bell (2011) find that results of panel data can be more easily generalized since this multi-dimensional method reduces the impacts of temporal errors that could have an impact on the data. At the other side, a possible disadvantage of panel data is the required data. In contrast to a one-dimensional method a multi-dimensional method requires both data across the sample as in time. Next to this additional data the regression results can be affected by a (time-series) trend. In order to overcome this problem year fixed effects will be used to control for a time trend. For the empirical analysis of the effect of ESG on corporate financial performance a longitudinal study is a more suitable method since it provides insights in the long term effect of this relationship. Moreover, the advantages of a multi-dimensional method overcomes the disadvantage of the additional data needed in order to conduct an empirical analysis. Therefore, the effect of ESG on corporate financial performance is conducted by using a multi-dimensional methodology.

3.2 Regression equations

To study the relation between ESG and corporate financial performance a three step approach is used. Next to this, an additional analysis is used to examine the moderating effect of size on the ESG and corporate financial performance relationship. The regressions in this study are based on the Ordinary Linear Square (OLS) estimation technique. The hypotheses are tested using both a univariate- and multivariate regression analysis. Following the hypotheses as described in the literature review the first stage of the model is the regression of the ESG rating on the corporate financial performance of a company. This first step of the three step approach is tested with the following regression equation:

$$Tobin's\ q_{it} = \alpha_i + \beta_{\varepsilon 1} ESG\_rating_{it} + x_{it} + \varepsilon_{it} \quad (1)$$

where: *Tobin's q* = Tobin's q;

i = indication for a specific firm;

t = indication for a specific fiscal year;

ESG_rating = the score of a firm performance on ESG;

x = the control variables;

ε = random disturbance term

A positive and statistically sign of the estimator in this regression equation provides evidence in favour of the first hypothesis as stated in the literature review. When the financial analysis finds a neutral or negative statistically or an insignificant estimator the first hypothesis is rejected.

The second hypothesis is tested using a multivariate regression analysis with each subgroup as an independent variable. The subgroups environmental, social and governance are regressed on the corporate financial performance of a firm. This hypothesis is tested with the following equation:

$$Tobin's\ q_{it} = \alpha_i + \beta_1 Env_{it} + \beta_2 Soc_{it} + \beta_3 Gov_{it} + x_{it} + \varepsilon_{it} \quad (2)$$

where: *Env* = environmental performance of a firm;

Soc = social performance of a firm;

Gov = governance performance of a firm

Positive and statistically significant estimators provide evidence in favour of the second hypothesis.

The last step of the model is performed by testing the impact of the drivers behind the subgroups on the corporate financial performance of a firm. To test hypothesis three the drivers emission reduction, resource reduction and product innovation are regressed on the corporate financial performance of a firm. This results in the following regression equation:

$$Tobin's\ q_{it} = \alpha_i + \beta_1 Emis\_R_{it} + \beta_2 Res\_R_{it} + \beta_3 Prod\_I_{it} + x_{it} + \varepsilon_{it} \quad (3)$$

where: *Emis_R* = the emission reduction score of a firm;

Res_R = the resource reduction score of a firm;

Prod_I = the product innovation score of a firm

Any positive estimators provides evidence in favour of the third hypothesis.

The fourth hypothesis is tested by regressing employment quality, health & safety, training and development, diversity, human rights and community on the corporate financial performance of a company. This hypothesis is tested with the following regression equation:

$$Tobin's\ q_{it} = \alpha_i + \beta_1 Employ\_Q_{it} + \beta_2 Health\_S_{it} + \beta_3 Train\_D_{it} + \beta_4 Diver_{it} + \beta_5 Human\_R_{it} + \beta_6 Com_{it} + \beta_7 Prod_{it} + x_{it} + \varepsilon_{it} \quad (4)$$

where: *Employ_Q* = the score on employment quality of a firm;

Health_S = the score on health and safety of a firm;

Train_D = the score on training and development of a firm;

Diver = the score on diversity of a firm;

Human_R = the score on human resource management of a firm;

Com = the score on community of a firm;

Prod = the score on product responsibility of a firm

Any positive and statistically significant estimators provides evidence in favour of the fourth hypothesis.

The fifth hypothesis is tested by regressing the board structure, board function, compensation policy, shareholder rights and vision and strategy on the corporate financial performance of a firm. This hypothesis is tested with the following regression equation:

$$Tobin's\ q_{it} = \alpha_i + \beta_1 Board\_S_{it} + \beta_2 Board\_F_{it} + \beta_3 Comp\_P_{it} + \beta_4 Share\_R_{it} + \beta_5 Vision\_S_{it} + x_{it} + \varepsilon_{it} \quad (5)$$

where: *Board_S* = the score on the board structure of a firm;

Board_F = the score on board function of a firm;

Comp_P = the score on compensation policy of a firm;

Share_R = the score on shareholder rights of a firm;

Vision_S = the score on vision and strategy of a firm

Any positive estimators provides evidence for the fifth hypothesis.

The sixth hypothesis examines if the size of a firm acts as a moderator in the ESG and corporate financial performance relationship. To test the moderating effect of size on the ESG and corporate financial performance the sample is divided into three equally groups based on the size of a firm. For each of the three groups the first stage regressions is conducted. After these regressions the statistically significance of the differences between the groups will be determined. To determine the statistically significance of the differences the approach of Fairchild and MacKinnon (2009) is used. For the second and third group, dummy variables of firm's size are multiplied with the corresponding ESG rating dummy variables. In order to determine the statistically significance of the differences all the dummy variables are used as explanatory variables in the model. This results in the following regression equation:

$$Tobin's\ q_{it} = \alpha_i + \beta_1 ESG_{rating_{it}} + \beta_2 ESG_{rating} * D2_{it} + \beta_3 ESG_{Rating} * D3_{it} + \beta_4 DESG_{rating}2_{it} + \beta_5 DESG_{rating}3_{it} + \beta_6 DS2_{it} + \beta_6 DS3_{it}\ x_{it} + \varepsilon_{it} \quad (6)$$

where: *ESG_ratingxD2* = ESG score multiplied with size of group medium firms;

ESG_ratingxD3 = ESG score multiplied with size of group largest firms;

DESG_rating2 = Dummy variable ESG_rating of medium firms;

DESG_rating3 = Dummy variable ESG_rating of largest firms;

DS2 = Dummy variable Firm size of medium group;

DS3 = Dummy variable Firm size of largest group

3.3 Endogeneity

One concern when the relationship between ESG and corporate financial performance is examined is the endogeneity bias. The endogeneity problem occurs when the explanatory variables are endogenous and correlated with the error term (Wooldridge 2012). If the explanatory variables are endogenous the estimators will be biased and the effect of ESG on corporate financial performance cannot be inferred.

In literature, the direction of causality in the relationship of ESG and corporate financial performance has been widely discusses. Waddock and Graves (1997) state two conflicting hypothesis for the direction of causality in this relationship. The ´good management hypothesis´ states that by increasing the ESG performance the relationship between the company and their stakeholders improves which results in higher corporate financial performance. Alternatively, the ´slack resources hypothesis´ argues that better financial performance results in a shortage of resources which gives a company the opportunity to allocate their financial sources to ESG factors to increase their performance.

The first step to overcome a potential endogeneity bias is to check for endogenous explanatory variables. By performing a Wu-Hausman specification test endogenous explanatory variables can be identified. In case of endogenous explanatory variables estimators are biased and causality cannot be inferred.

The instrumental variable estimation method provides a way to overcome the problem of endogeneity by identifying the causal effect of an explanatory variable on the independent variable. The instrumental variable estimation method uses an instrument variable that is correlated with the endogenous variable while it is not correlated with the error term that has an influence of the dependent variable. If an instrument does satisfy these conditions the ESG coefficient can be estimated by using the two-stage least squares technique. This technique consist of two steps. For equation (1) this results in the following two stages. In the first stage the relevance of the instrument is tested with regression equation (7):

$$ESGscore_{it} = \alpha_i + \beta_1 Z_{it} + x_{it} + \varepsilon_{it} \quad (7)$$

In equation (7), $ESGscore_{it}$ is the dependent variable indicating the ESG performance of a company, Z_{it} indicates the instrument used in this stage, x_{it} indicates the control variables and ε_{it} is the error term of the model. In order to perform the second stage the coefficient of $ESGscore_{it}$ from the first stage is inserted in the second stage. This results in the following equation:

$$Tobin's\ q_{it} = \alpha_i + \beta_{\varepsilon 1} \widehat{ESGscore}_{it} + x_{it} + \varepsilon_{it} \quad (8)$$

Equation (8) provides an estimator that is consistent and can be used to interpret the influence of ESG on the corporate financial performance of a company.

3.4 Robustness analysis

In order to make sure that the relations found by this model are robust and not influenced by spurious relationship a robustness check is performed. For the robustness test this paper follows the robustness analysis performed by Dyck, Lins, Roth and Wagner (2016). They use data from other ESG data providers to make sure that the results are not influenced by the ESG provider. Two concerns lay behind this robustness test. First, although the Thomson Reuters Asset4 database uses publicly available data the accuracy of the data collection process cannot be evaluated. Second, a standardize methodology and list of variables used to calculate the ESG scores is still not available. In order to check for the influence of data providers this paper uses ESG data from Bloomberg to re-estimate the baseline models.

4. Data description

This section starts with the description of the sample selection and the data used in order to test the hypothesises as stated before. Beside the sample selection, the dependent- independent- and control variables are described in this paragraph.

4.1 Sample selection

In this paper the STOXX Europe 200 small index is used as the starting point of the sample selection. The STOXX Europe 200 small index consist of 200 firms of the STOXX Europe 600 based on their free-floating market capitalization[5]. These indices are updated on a quarterly basis to provide an actual representation of the investable landscape. For this paper the STOXX Europe 200 small index as on Q1 2017 were matched with the Asset4 database of Thomson Reuters. Although the Thomson Reuters Asset4 database explicitly stated that it includes data of the STOXX Europe 200 small index this match reduces the sample from 200 to 138 small capitalization firms. In order to perform the empirical analysis financial data from the COMPUSTAT Global database and Bloomberg were used. The match with the COMPUSTAT Global database results in a loss of another 18 firms. Using financial data from the Bloomberg database results in a reduction of firm-year observations. At first, data over the period 2002-2016 are collected to construct a panel database. Since the data needed from this database is only accessible starting at the year 2010 a reduction of 1080 firm-year observations reduces the sample to 840 firm-year observations based on 120 European small capitalization firms. The last reduction of the firm-year observations is a result of the differences in fiscal year endings between companies. For companies with a fiscal year which correspondents with the calendar year, the ESG scores for the year 2016 are not yet publicly available. This results in a reduction of another 112 firm-year observations which results in a final sample of 738 firm year observations.

4.2 Dependent variable

The dependent variable in this paper is the corporate financial performance of a firm. Tobin's q is in this paper used as a proxy for the corporate financial performance of a firm. Among recent literature Tobin's q is widely used as a measure of the financial performance of a firm since it use both the value of tangible- and intangible assets in their analysis (Perfect and Wiles 1994). The value of Tobin's q is assumed to represent the economical results of the performance

[5] The STOXX Europe 600 index is a subset of the STOXX World 1800 index which provides a broad investable representation of the world's economic markets in developed regions of Europe, North-America and Asia-Pacific.

of a firm (Tobin 1978). Tobin's q is best described as the firm's market value relative to its replacement value. Tobin´s q can be expressed with the following equation:

$$\text{Tobin's q} = \frac{\text{Market Value of the Firm}}{\text{Replacement Value of Assets}} \tag{9}$$

Tobin's q is widely used in literature as a proxy to examine the effect of ESG on corporate financial performance. Among this empirical work, various methodologies are used to estimate Tobin's q. This is due to the complexity of the calculation of the replacement value of a firm and limitations in the accessibility of the data to estimate this. Perfect and Wiles (1994) describe five different estimators of Tobin's q and calculates the value of Tobin's q for 62 random selected firms in order to compare the outcome of the different estimators. In addition to the benchmark estimator they calculate Tobin's q using the 'simple Tobin's q', the Lindenberg-Ross Tobin's q, the modified Lindenberg-Ross Tobin's q and the Hall Tobin's q as below:

$$\text{Tobin's q benchmark} = \frac{\text{COMVAL+PREFVAL+BBOND+STDEBT}}{\text{LLRC}} \tag{10}$$

$$\text{Tobin's q simple} = \frac{\text{COMVAL+PREFVAL+SBOND+STDEBT}}{\text{SRC}} \tag{11}$$

$$\text{Tobin's q Lindenberg Ross} = \frac{\text{COMVAL+PREFVAL+LRBOND+STDEBT}}{\text{LLRC}} \tag{12}$$

$$\text{Tobin's q modified Lindenberg Ross} = \frac{\text{COMVAL+PREFVAL+PWBOND+STDEBT}}{\text{PWRC}} \tag{13}$$

$$\text{Tobin's q Hall} = \frac{\text{COMVAL+HPREFVAL+HBOND+STDEBT}}{\text{HRC}} \tag{14}$$

They find that the 'simple' Tobin's q estimator does not provide results comparable to the other four estimators. Although the results of the 'simple' Tobin's q estimator are not comparable with the other estimators, Perfect and Wiles (1994) argue that it can provide an estimation of the value of the firm. Based on the literature review as described above it becomes clear that in most empirical work the 'simple' methodology is used to estimate Tobin's q. In order to compare the results of this analysis with previous empirical work this study uses the ´simple estimator´ of Tobin´s q as the dependent variable. This estimator is expressed above by equation

(11). In this equation the company value, *comval,* is calculated by multiplying the share price by the total amount of shares outstanding at the end of the fiscal year. The value of preferred dividends, *prefval,* the book value of short term debt, *stdebt,* the book value of long term debt, *sbond* and the value of total assets, *src,* are retrieved from the COMPUSTAT global database.

4.3 Independent variable(s)

For the independent variable ESG, scores from the Asset4 database of Thomson Reuters were retrieved. Asset4 is a subset of Thomson Reuters and scores firms on ESG dimensions since 2002. Since 2002 firms are scored at the end of their fiscal year based on 900 evaluation points using objective and publicly available data. Due the fact that the data should be objective and publicly available, firms are scored using stock exchange fillings, corporate social responsibility reports, annual reports, non-governmental organization websites and news websites. These 900 evaluation points are the basis of 118 key performance indicators that they categorize into 15 categories within the three subgroups; environmental, social and governance. In Appendix C a description of these key performance indicators is provided. Subsequently, the database contains an economic performance subgroup.

The ESG rating consist of the three subgroups as described above and an economical pillar. The environmental subgroup measures a company's impact on living and non-living natural systems, including the air, land and water, as well as complete ecosystems. For the calculation of the environmental subgroup the performance of companies are compared with the average performance of the industry in which they act. The social subgroup measures the ability of a company to generate trust and loyalty with its workforce, customers and society, through its use of best management practices. The social subgroup score is calculated by a different methodology compared to the environmental subgroup. Some key performance indicators are compared with the average of the industry they act in, others are compared with the average score of the region in which they are located. The governance subgroup measures a company's systems and processes, which ensure that its board members and executives act in the best interest of its long term shareholders. The governance subgroup score is calculated by comparing the firm corporate governance performance with the average of the region in which they are located. The economical subgroup measures the company's capacity to generate sustainable growth and a high return on investment through the efficient use of all its resources. The final ESG rating is calculated using an equally weighted calculation methodology.

4.4 Control variables

To enhance the robustness of the model, variables that could affect the financial performance of a firm are used as control variables in the financial analysis. The control variables used in this study are the same as used by Derwall (2007) and Waddock and Graves (1997). In their studies they control for firm's size, return on assets, sales growth and R&D expenses. For the calculation of the size of a firm this study follows the methodology of Gompers, Ishii and Metrick (2003). The size of a firm is measured by taking the natural logarithm of the book value of the assets. In this case the book value of assets is calculate by multiplying the total amount of outstanding shares by the closing price of the shares at the end of the fiscal year. Based on recent empirical work firm's size is expected to have a positive effect on Tobin's q. Return on assets is calculated by dividing the amount of net income by the total assets at fiscal year ending. Return on assets is widely used in empirical work to control for the ESG corporate financial performance relationship. Previous empirical work finds a positive relation between return on assets and Tobin's q (Guenster et al. 2010). Next to firm's size and return on assets Hirsch (1991) finds that past sales growth does influence the value of a firm in a positive way. Therefore, past sales growth, measured by the difference (in percentage) between two years, is used as a control variable in the financial analysis. Subsequently, multiple studies find that R&D expenses are positively related with the value of a firm (Dowell et al.2000; Konar and Cohen, 2001; King and Lenox, 2002). Xerfi (2002) finds that especially in the technology sector R&D expenses can be seen as drivers for financial performance. Based on these studies a positive relation between R&D expenses and financial performance is expected. The necessary data to compute the control variable is retrieved from the COMPUSTAT Global database. Next to these economic variables, dummy variables for the years 2011-2016 will be used to control for a possible trend.

5. Empirical results

In this section, the results of the OLS regressions will be shown. First, the summary statistics of the variables that has been used in this study will be discussed. After discussing the summary statistics, the correlations between the main variables will be presented. Furthermore, the results of the Wu-Hausman test for endogenous variables and the instruments used in this study will be discussed. In the concluding section, whether or not the results of the empirical analysis provide evidence in favour of the hypotheses will be discussed.

5.1 Summary statistics

In this section, the summary statistics of the data used in this study will be shown. The financial data and the ESG data will be presented in two different overviews. The data used in this study is based on 120 small capitalization firms for a period of 2010 until 2016. This results in 737 individual firm year observations. Table 1 indicates that the companies in the sample have on average a Tobin's q of 1.298 and range between 0.036 and 20.074. A Tobin's q with a mean of 1.298 means that on average the company is worth more than the cost of its assets. The companies with a relative high Tobin's q are active in the oil & gas sector. In contrast to this, companies active in the insurance and banking sector have relatively low values of Tobin's q. These low values of Tobin's q are a result of their relatively high amount of short- and long-term values of debt. In order to control for this low and high values of Tobin's q, the lower and upper 2.5 percentile of Tobin's q is removed from the sample.

Table 1. Summary statistics financial data

Variable	Obs.	Mean	Std. Dev.	Min	Max
Tobin's q	737	1.30	1.43	0.04	20.07
ROA	737	0.05	0.07	-0.27	0.42
Sales Growth (%)	737	17.35	306.48	-87.05	8280
R&D expenses	737	93.51	429.95	0.00	8149
Firm's size (ln)	737	8.10	1.09	4.50	12.15

The sales growth is the change in sales between two fiscal years expressed in a percentage. It has an average of 17.345% and a range between -87.053% and 8280%. From this range, the conclusion can be drawn that sales growth differs a lot among the companies in the sample. Companies active in the oil & gas sector are responsible for the largest negative values. A reason for this could be the oversupply of oil during the financial crisis. This oversupply causes a drop in the price per barrel whereupon producers decide to decrease their sales. At the other side, companies active in the metals & mining industry faces high sales growths. Especially during the financial crisis these companies have relative high sales growths. An explanation

for this could be that in times of market turbulence some metals are considered to be a safe investment since they retain their value or even increase in value. This could have an effect on the demand of some of the metals during these years. For R&D expenses an average of 93.507 million dollar is found. The R&D expenses are relatively high for companies active in the pharmaceutical sector. This is in line with a study done by Scherer (2001) who argues that pharmaceutical companies invest a lot in the development of new products that might cause a positive return in the future. Firm's size is expressed by taking the natural logarithm of the market capitalization at fiscal year ending. On average the firms have a size of 8.102 with a range between 4.50 and 12.15.[6]

In Table 2 the summary statistics of the ESG data retrieved from the Thomson Reuters Asset4 database can be found. All ESG variables are expressed in percentages. Table 2 shows high standard deviations for all variables. This indicates that the performance on the variables in the sample differs a lot. On average, the companies in the sample have an ESG score of 67.50% with a range between 3.42% and 96.09%. Compared to the environmental and social corporate performance the companies in the sample score on average relatively low on corporate governance. For the sub factor corporate governance they score on average 59.87%. A range between 0.63% and 97.59% is found.

Table 2. Summary statistics ESG data

Variable	Obs.	Mean	Std. Dev.	Min	Max
ESG rating	737	67.50	26.03	3.42	96.09
Environmental	737	64.11	27.39	0.10	95.16
Corporate governance	737	59.87	27.44	0.63	97.59
Social	737	64.39	27.48	0.42	97.31
Emission reduction	737	62.69	28.67	8.95	95.94
Resource reduction	737	65.94	26.85	7.80	94.06
Product innovation	737	55.56	31.67	10.88	97.84
Board structure	737	53.61	28.14	2.35	94.45
Board function	737	52.54	27.71	2.81	94.38
Compensation policy	737	58.96	25.06	4.25	90.20
Shareholder rights	737	57.25	27.52	1.17	98.99
Vision and strategy	737	65.74	27.52	8.74	96.13
Employment quality	737	62.77	28.59	3.06	97.26
Health and safety	737	57.00	28.48	8.89	98.15
Training & development	737	66.69	27.31	5.17	95.72
Diversity	737	63.39	28.48	7.04	96.41
Human rights	737	61.37	31.65	14.27	97.02
Community	737	55.64	30.39	3.47	96.74
Product responsibility	737	58.03	32.12	4.36	98.01

[6] The mean and range of firm's size is given in the natural logarithm.

In Table 3 the summary statistics of the three different groups based on firm size are presented. As expected Tobin's q and ESG rating increases with the size of a firm. Despite an increase in the overall score of ESG, the corporate governance performance is lower for larger firms. Environmental- and social performance do increase with the size of a firm. The average of sales growth is much higher for the first group compared to the other two groups. The mean of the R&D expenses shows a u-curve among the three different groups. For group two the average R&D expenses is somewhat lower compared to the first group. In group three the mean is almost five times as high as in the other groups.

Table 3. Summary statistics three (size) groups.

	Variable	Obs.	Mean	Std. Dev.	Min	Max
Smallest firms	Tobin's q	245	1.19	0.90	0.04	6.46
	ESG rating	245	65.45	25.26	3.42	94.74
	Environmental	245	61.76	26.65	0.10	94.44
	Corporate governance	245	67.54	24.84	0.82	96.77
	Social	245	60.67	25.17	0.47	96.25
	ROA	245	0.06	0.08	-0.17	0.42
	Sales growth	245	40.27	529.11	-35.89	8280.00
	R&D expenses	245	45.20	113.27	0.00	835.50
	Firm size	245	7.06	0.49	4.50	7.56
Medium firms	Tobin's q	245	1.21	0.99	0.06	9.06
	ESG rating	245	66.85	26.26	3.66	95.72
	Environmental	245	63.02	27.60	0.10	94.92
	Corporate governance	245	57.02	27.81	0.73	97.06
	Social	245	64.37	28.69	0.42	96.41
	ROA	245	0.48	0.07	-0.25	0.42
	Sales growth	245	6.16	45.84	-50.66	699.59
	R&D expenses	245	42.13	120.16	0.00	974.00
	Firm size	245	7.94	0.23	7.56	8.34
Largest firms	Tobin's q	246	1.49	2.07	0.36	20.07
	ESG rating	246	70.14	26.47	3.98	96.09
	Environmental	246	67.42	27.68	0.12	95.16
	Corporate governance	246	55.12	28.04	0.63	97.59
	Social	246	68.04	28.05	0.51	97.31
	ROA	246	0.04	0.05	-0.27	0.20
	Sales growth	246	5.69	21.90	-87.05	182.44
	R&D expenses	246	193.74	717.73	0.00	8149.00
	Firm size	246	9.30	0.84	8.35	12.14

Table 4, 5, 6 and 7 provide the correlations between the main variables used in this research. A positive but insignificant correlation of 0.005 between Tobin's q and ESG rating is found. The correlation between the environmental sub score and Tobin's q is -0.167 and significant at 1%. This result is consistent with the results of Daszyńska-Żygadło et al. (2016), Derwall et al. (2005) and Semenova and Hassel (2008) who all find a negative relation between environmental performance and corporate financial performance. The correlation between corporate governance and Tobin's q is 0.170 and significant at 1%. This positive correlation is consistent with the results of Yermack (1995), MacAvoy and Millstein (1999), Thomsen (2005) and Guest (2009). A negative but insignificant correlation between corporate social performance and Tobin's q of -0.038 is found. The control variables used in this research are as expected positively correlated with Tobin's q. For return on assets and firm size the correlations are significant at 1%. The correlation between sales growth and Tobin's q is significant at 10%.

Table 4. Correlation matrix Tobin's q, ESG rating, environmental, governance, social and control variables. An asterisks (*) is an indication for a statistically significant coefficient at a 1 % level.

	Tobin's q	ESG	Env	Corp	Soc	ROA	Sales	R&D	Size
Tobin's q	1.000								
ESG	0.005	1.000							
Env	-0.167*	0.826*	1.000						
Corp	0.170*	0.652*	0.358*	1.000					
Soc	-0.038	0.880*	0.773*	0.435*	1.000				
ROA	0.284*	-0.018	-0.093	0.074	-0.081	1.000			
Sales	0.061	-0.057	-0.065	0.042	-0.063	-0.022	1.000		
R&D	0.033	0.066	0.126*	-0.031	0.076	-0.092	-0.008	1.000	
Size	0.190*	0.022	0.044	-0.203*	0.074	-0.065	-0.023	0.224*	1.000

The drivers of the corporate environmental performance are all negatively correlated with Tobin's q. In contrast to the results of Hamilton (1995) and Klassen and McLaughlin (1996) the sub driver emission reduction is negatively correlated with corporate financial performance. A correlation of -0.087 which is significant at 2% is found.

Table 5. Correlation matrix Tobin's q, emission reduction, resource reduction, product innovation and control variables. An asterisks (*) is an indication for a statistically significant coefficient at a 1 % level.

	Tobin's q	Emission	Resource	Product	ROA	Sales	R&D	Size
Tobin's q	1.000							
Emission	-0.087	1.000						
Resource	-0.170*	0.763*	1.000					
Product	-0.146*	0.421*	0.443*	1.000				
ROA	0.284*	-0.113*	-0.078	-0.063	1.000			
Sales	0.061	-0.066	-0.035	-0.048	-0.022	1.000		
R&D	0.033	0.085	0.071	0.160*	-0.092	-0.008	1.000	
Size	0.190*	-0.009	0.031	0.069	-0.065	-0.023	0.224*	1.000

The sub drivers behind corporate governance are, except from the sub driver vision and strategy, positively correlated with Tobin's q. The correlation between board structure and Tobin's q is 0.168 and significant at 1%. This is consistent with the results of Yermack (1995) and Guest (2009). The sub driver vision and strategy deviates from the others. A correlation of -0.066 which is significant at 8% is found.

Table 6. Correlation matrix Tobin's q, board structure, board function, compensation policy, shareholder rights, vision and strategy and control variables. An asterisks (*) is an indication for a statistically significant coefficient at a 1 % level.

	Tobin's q	Board_s	Board	Comp	Share	Vision	ROA	Sales	R&D	Size
Tobin's q	1.000									
Board_s	0.168*	1.000								
Board	0.170*	0.614*	1.000							
Comp	0.188*	0.514*	0.499*	1.000						
Share	0.109*	0.260*	0.236*	0.221*	1.000					
Vision	-0.066	0.198*	0.256*	0.255*	0.023	1.000				
ROA	0.284*	0.132*	0.048	0.069	0.046	-0.102*	1.000			
Sales	0.061	0.029	0.053	0.029	0.061	-0.039	-0.022	1.000		
R&D	0.033	-0.020	-0.088	0.092	-0.124*	0.028	-0.092	-0.008	1.000	
Size	0.190*	0.185*	-0.194*	-0.203*	-0.098*	-0.008	-0.065	-0.023	0.224*	1.000

The sub driver diversity is negatively correlated with Tobin's q. It has a correlation of -0.113 which is significant at 1%. This is inconsistent with the results of the empirical work of Herring (2009).

Table 7. Correlation matrix Tobin's q, employment quality, health and safety, training & development, diversity, human rights, community and control variables. An asterisks (*) is an indication for a statistically significant coefficient at a 1 % level. An asterisks (*) is an indication for a statistically significant coefficient at a 1 % level.

	Tobin's q	Employ	Health	Train	Diver	Human	Com	Product	ROA	Sales	R&D	Size
Tobin's q	1.000											
Employ	-0.075	1.000										
Health	0.079	0.403*	1.000									
Training	-0.065	0.521*	0.479*	1.000								
Diver	-0.113*	0.426*	0.324*	0.552*	1.000							
Human	-0.066	0.403*	0.419*	0.485*	0.352*	1.000						
Com	0.048	0.451*	0.432*	0.490*	0.500*	0.446*	1.000					
Product	0.075	0.210*	0.208*	0.221*	0.142*	0.120*	0.114*	1.000				
ROA	0.284*	-0.103*	-0.045	-0.125*	-0.069	-0.086	0.084	-0.012	1.000			
Sales	0.061	-0.076	0.014	-0.037	-0.049	-0.024	-0.050	0.001	-0.022	1.000		
R&D	0.033	-0.042	0.085	0.045	0.053	0.156	-0.061	0.099*	-0.092	-0.008	1.000	
Size	0.190*	0.094	0.073	0.042	-0.006	0.178	0.014	0.103*	-0.065	-0.023	0.224*	1.000

5.2 Regression results

OLS regression results

In this section the results of the regression models will be discussed. First the results of the OLS regressions will be discussed. Since there are concerns for endogenous variables the Wu-Hausman test is performed. In case endogenous variables are found the two-stage least squares estimation technique will be used to get consistent estimators.

Columns (1) and (2) of Table 8 provide the results of the first and second stage of the OLS regression using Tobin's q as a dependent variable. The ESG rating and the environmental-, governance- and social corporate performance are used as the independent variables. Column (1) of Table 8 reports the relationship between ESG rating and corporate financial performance. The regression coefficient indicates a positive relation whereby an increase of one standard deviation in ESG rating results in an increase of 0.0057 Tobin's q. A 0.0057 increase in Tobin's q is equal to a 0.44 percent increase of the mean. Although the coefficient indicates a positive relationship the model is insignificant. A positive but insignificant relation is consistent with previous empirical work. The Wu-Hausman test indicates that the variable ESG rating is endogenous. This results in an inconsistent OLS regression estimator. In order to get a consistent estimator, the two-stage least squares estimation technique should be used.

In column (2) of Table 8 the results of the second stage are provided. The coefficient of environmental performance indicates a negative relationship whereby an increase in one standard deviation of environmental performance results in a decrease in 0.4793 Tobin's q. A decrease of 0.4793 in Tobin's q is equal to a decrease of 36.87 percent of the mean. This relationship is statistically significant at 10%. This negative relationship is in contrast with previous empirical work that finds in most of the cases positive relationships that strengthen in the last years (Derwall et al. 2005). In contrast to the environmental coefficient the corporate governance coefficient indicates a positive relationship between corporate governance performance and Tobin's q. An increase of one standard deviation in corporate governance performance results in an increase of 0.3924 Tobin's q. An increase of 0.3924 in Tobin's q corresponds with a 30.18 percent increase of the mean. The reported association between corporate governance performance and Tobin's q is significant at a 10% level. The positive relation between corporate governance and Tobin's q is consistent with previous empirical work. In contrast to environmental- and corporate governance performance the positive relation between social performance and Tobin's q is statistically insignificant. As described above the results of model three implies a negative relationship between environmental

performance and Tobin's q and a positive relationship between corporate governance performance and Tobin's q. Due to endogeneity concerns the Wu-Hausman test is conducted to test if the two-stage least squares estimation technique is needed. The null hypothesis which states that the explanatory variables are exogenous is tested. In Table 1 of Appendix A the outcomes of these test is reported. For the explanatory variable environmental performance the null hypothesis cannot be rejected. This means that this variable is exogenous and the OLS regression provides a consistent estimator. For the explanatory variables corporate governance performance and corporate social performance the Wu-Hausman null hypothesis can be rejected. Therefore, these explanatory variables are endogenous which means that the two stage least square estimation technique need to be performed in order to get consistent estimates in model two.

The sign of the coefficients of the control variables are consistent with previous empirical work. The coefficients of return on assets and sales growth indicates a positive relationship with Tobin's q and are statistically significant. R&D expenses and the natural logarithm of firm size are positively related with Tobin's q but in contrast with the results of Dowell et al. (2000), Konar and Cohen (2001) King and Lenox (2002) these relationship are statistically insignificant.

Table 8. OLS regression results model 1 and 2

This table reports the empirical results of the regression models 1, 2; see methodology. Tobin's q is the dependent variable which is used as a proxy for firm value. In all models the natural logarithm of firm size, return on assets, sales growth (%) and R&D expenses are used as control variables. The Newey-West standard errors are reported between brackets.

	(1)	(2)
Intercept	-1.069	-1.719
	(1.700)	(1.747)
ESG rating *(x100)*	0.022	
	(0.246)	
Environmental *(x100)*		-1.750*
		(0.759)
Corporate Governance *(x100)*		1.434*
		(0.587)
Social *(x100)*		0.517
		(0.485)
Control variables	Yes	Yes
# Observations	737	737
R-squared	0.1299	0.2276
F-value	40.95	35.73

significant at 10% level, ** at 5%, * at 1%*

In Table 9 the results of the third stage are presented. The first column present the results of model (3). This model test for the effect of the drivers behind the environmental performance on the corporate financial performance. The coefficient of the sub driver emission reduction indicates a positive relationship between a firm's effort to reduce emissions and their corporate financial performance. The coefficients of the sub drivers resource reduction and product innovation imply negative effects on Tobin's q. The coefficient of the environmental sub divers and Tobin's q are not statistically significant. The results of the Wu-Hausman test for these variables are presented in Table 1 of Appendix A. The variable product innovation is an exogenous variable while emission reduction and resource reduction are endogenous variables. A two-stage least square estimation is needed to estimate consistent estimators. The second column of Table 9 presents the results of model (4). For the corporate governance performance driver compensation policy a positive and significant coefficient is found. An increase of one standard deviation of compensation policy results in an increase of 0.2454 Tobin's q. An increase of 0.2454 Tobin's q is equal to a 18.88 percent increase of the mean. The coefficient of the variable vision & strategy indicates a negative effect on Tobin's q. A one standard deviation increase in vision and strategy results in a 0.1756 decrease in Tobin's q. A decrease of 0.1756 is equal to a 13.51 percent decrease of the mean. The Wu-Hausman test indicates that compensation policy is endogenous and a two-stage least squares estimation is needed to find a consistent estimator. For the drivers board function and vision and strategy the Wu-Hausman null hypothesis cannot be rejected. This means that the OLS coefficients are the most consistent estimators (Wooldridge 2012).

In the third column of Table 9 the results of the sixth model are shown. Although the coefficient that estimates the effect of corporate social performance on financial performance is not significant for the sub driver human rights a significant relation is found. The coefficient of human rights indicates a negative relationship. An increase in human rights with one standard deviation results in a decrease of 0.1762 Tobin's q. A decrease of 0.1762 Tobin's q corresponds with a 13.55 percent decrease of the mean. The results of the Wu-Hausman test for the social drivers indicates product responsibility as an endogenous variable. This results in inconsistent OLS estimators. The two-stage least square technique is needed to estimate consistent estimators.

Table 9. OLS regression results model 3, 4 and 5.

This table reports the empirical results of the regression models 3, 4 and 5; see methodology. Tobin's q is used as the dependent variable. In all models the natural logarithm of firm size, return on assets, sales growth (%) and R&D expenses are used as control variables. The Newey-West standard errors are used in all models.

	(3)	(4)	(5)
Intercept	-0.532	-2.362	-0.860
	(1.413)	(2.120)	(1.510)
Emission Reduction *(x100)*	0.896		
	(1.170)		
Resource Reduction *(x100)*	-1.325		
	(1.211)		
Product innovation *(x100)*	-0.504		
	(0.314)		
Board Structure *(x100)*		0.141	
		(0.246)	
Board Function *(x100)*		0.627	
		(0.340)	
Compensation Policy *(x100)*		0.980**	
		(0.323)	
Shareholder Rights *(x100)*		0.234	
		(0.220)	
Vision and Strategy *(x100)*		-0.638*	
		(0.269)	
Employment Quality *(x100)*			-0.361
			(0.253)
Health & Safety *(x100)*			0.703
			(0.425)
Training & Development *(x100)*			0.070
			(0.376)
Diversity *(x100)*			-0.649
			(0.370)
Human Rights *(x100)*			-0.557*
			(0.252)
Community *(x100)*			0.679
			(0.439)
Product Responsibility *(x100)*			-0.128
			(0.549)
Control variables	Yes	Yes	Yes
# Observations	737	737	737
F-value	34.12	24.91	23.30
R-squared	0.1733	0.2019	0.1732

significant at 10% level, ** at 5%, * at 1%*

Instruments description

In case of endogenous explanatory variables the two-stage least square technique should be used to estimate consistent estimators. For this technique an instrument is needed that is correlated with the explanatory variable while it has no effect on the dependent variable. In model one the Wu-Hausman test indicates ESG-rating as an endogenous variable (Table 1 Appendix A). Therefore, an instrument that sets the conditions as describe above is needed. Dyck et al. (2016) find that institutional ownership is positively related with firm-level environmental- and social performance while they control for firm´s governance performance. They conclude that on average institutional investors use their ownership to promote good corporate environmental and social responsibilities around the world. This conclusion is consistent with the first stage results as presented in Table 2 of Appendix A. When regressing institutional ownership on the ESG-Rating a coefficient of 0.11 is found which is significant at 1%. The second condition that needs to hold is that the instrument is not correlated with the dependent variable. Dana (2015) finds evidence for the second condition. His results indicate that there is no evidence for a relation between institutional ownership and firm performance. This conclusion provides evidence for the second condition. At last the null hypothesis for weak instruments is tested with the Wald test. The results of this test indicates a rejection of the null hypothesis which means that institutional ownership is not a weak instrument for ESG-rating (Table 3 of Appendix A).

The Wu-Hausman test for model three indicates that corporate governance performance and social performance are endogenous variables (Table 1 Appendix A). For these variables instruments are needed in order to get consistent estimators. For the endogenous variable corporate governance performance, board independence is used as an instrumental variable. Board independence is measured as the percentage of outsiders on the board to the total number of members. In many corporate governance guidelines the independence of the board is an important factor[7]. This indicates a correlation between board independence and corporate governance. The results of the first stage are consistent with this theoretical explanation. When board independence is regressed on the corporate governance performance a coefficient of 36.84 is found which is statistically significant at 1%. In contrast to this relation, Hermalin and Weisbach (2003) find that board composition is not correlated with firm performance. This provides evidence for the second condition. To test for a weak instrument the Wald test is

[7] In corporate governance guidelines of NYSE and NASDAQ the independence of the board acts as an important factor.

performed for board independence. This test results in a rejection of the null hypothesis for a weak instrument (Table 3 Appendix A).

For the endogenous variable social corporate performance, corporate philanthropy is used as an instrumental variable. The sub driver 'community' is used as a proxy for corporate philanthropy. In various corporate social guidelines corporate philanthropy is used as an indicator for corporate social performance. The first stage regression indicates a positive relation between social performance and community. A coefficient of 0.70, significant at 1% is found. Evidence for the second condition for a good instrument is found by Koehn & Ueng (2010). They find evidence for the hypothesis that firms may use corporate philanthropy to divert public attention from bad financial results. The Wald test results in a rejection of the null hypothesis for weak instruments (Table 3 Appendix A).

For the explanatory variables used in models 3, 4 and 5 the Wu-Hausman test indicates various endogenous variables. For these endogenous variables the instrument approach of Ghoul, Guedhami, Kwok and Mishra (2011) is used. They use the industry average of an endogenous variable as an instrument in the two-stage least square methodology. In model 3 the Wu-Hausman test indicates that emission reduction and resource reduction are endogenous (Table 1 Appendix A). The first stage results provide evidence for a relation between industry average of a sub driver and the sub driver itself. Beside of this the Wald test indicates for both instruments a rejection of the null hypothesis of a weak instrument (Table 3 Appendix A).

In model 4 compensation policy and shareholder rights are endogenous variables (Table 1 Appendix A). For both variables the instrumental approach of Ghoul et al. (2011) is used. The first stage indicates positive relations between the industry average sub drivers and the drivers itself (Table 2 Appendix A). At last the Wald test provide evidence for a rejection of the null hypothesis of weak instruments.

In model 5 product responsibility is an endogenous variable. By using the instrumental approach of Ghoul et al. (2011) a positive relation between the industry average sub driver and the driver itself is found in the first stage (Table 2 Appendix A). The Wald test indicates that industry average is not a weak instrument since the null hypothesis can be rejected.

Two-stage least squares regression results

Column 1 of Table 10 reports the relationship between ESG rating and corporate financial performance. In this model institutional ownership is used as an instrument for ESG rating. The regression coefficient indicates a positive relation whereby an increase of one standard deviation in ESG rating results in an increase of 0.9661 Tobin's q. An increase of 0.9661 Tobin's q is equal to a 74.32 percent increase in the mean. This relationship is statistically significant at 5%.

In column 2 of Table 10 the results of the second stage are provided. As indicated by the Wu-Hausman test corporate governance performance and corporate social performance are endogenous variables. Therefore, the ratio of independent board members and corporate philanthropy are used as instruments in this model. The sign of the relationships in this model are consistent with the OLS regression. An increase in environmental performance has a negative effect on Tobin's q. A one standard deviation increase in environmental performance results in a decrease of 0.4793 in Tobin's q. This decrease is equal to a 36.87 percent decrease in the mean of Tobin's q. This relation is statistically significant at 10%. In contrast to this negative relationship, corporate governance performance has a positive effect on Tobin's q. An increase in one standard deviation corporate governance results in an increase of 0.3935 in Tobin's q. An increase of 0.3935 in Tobin's q is equal to a 30.27 percent increase of the mean of Tobin's q. For corporate social performance a statistically insignificant effect on Tobin's q is found.

Table 11 reports the two-stage least square regression results of model 3, 4 and 5. In column 1 the effect of the environmental sub drivers on Tobin's q is reported. For emission reduction and resource reduction the industry average score is used as an instrument. All coefficients indicates negative relations. These negative relations are consistent with the effect of the environmental performance on Tobin's q. For product innovation a statistically significant relation is found at 5%. An increase in one standard deviation product innovation results in a decrease of 0.1936 Tobin's q. A 0.1936 increase in Tobin's q is equal to a 14.89 percent increase in the mean of Tobin's q.

In column 2 of Table 11 the results of the two-stage least square regression are reported. For the endogenous variables compensation policy and shareholder rights the industry average performance are used as instruments. The relations of this model are consistent with the ones found by the OLS regression. The coefficients of board structure, board function,

compensation policy and shareholder rights indicates positive relations. The relationship between board function and Tobin's q is statistically significant at 1%. A one standard deviation increase in board function results in an increase in 0.2465 Tobin's q. An increase of 0.2465 Tobin's q corresponds with a 18.96 percent increase of the mean. The coefficient of compensation policy is statistically significant at 1%. An increase in one standard deviation compensation policy performance results in an increase of 0.7313 in Tobin's q. This is equal to a 56.25 percent increase in the mean of Tobin's q. For the sub driver vision and strategy a negative but insignificant relationship is found.

In column 3 of Table 11 the regression results of model 5 which are estimated with the two-stage least square regression technique is reported. In this model the industry average of product responsibility is used as an instrument. In contrast to the OLS regression results the effect of the sub drivers in this model are not statistically significant.

Table 10. Two-stage least square regression results model 1 and 2.

This table reports the empirical results of the regression models 1 and 2. For endogenous explanatory variables the two-stage least square technique is use to get consistent estimators. Tobin's q is the dependent variable which is used as a proxy for firm value. In all models the natural logarithm of firm size, return on assets, sales growth (%) and R&D expenses are used as control variables. The Newey-West standard errors are reported between brackets.

	(1)	(2)
Intercept	-3.857*	-3.278
	(1.63)	(0.000)
ESG rating *(x100)*	3.711**	
	(1.184)	
Environmental *(x100)*		-1.255*
		(0.593)
Corporate Governance *(x100)*		2.715*
		(1.127)
Social *(x100)*		0.953
		(0.735)
Control variables	Yes	Yes
# Observations	737	562
F-value	49.76	589.61
R-squared	-	-

significant at 10% level, ** at 5%, * at 1%*

Table 11. Two-stage least square regression results model 3, 4 and 5.

This table reports the empirical results of the regression models 3, 4 and 5. For the endogenous variables the two-stage least square technique is used to get consistent estimators. Tobin's q is used as the dependent variable. Return on assets, Sales Growth, R&D expenses and Firm's size are used as control variables.

	(3)	(4)	(5)
Intercept	0.519	-6.592	-1.38
	(1.701)	(3.400)	(1.480)
Emission Reduction *(x100)*	-1.064		
	(0.833)		
Resource Reduction *(x100)*	-0.597		
	(1.870)		
Product innovation *(x100)*	-0.611*		
	(0.304)		
Board Structure *(x100)*		0.262	
		(0.226)	
Board Function *(x100)*		0.890*	
		(0.450)	
Compensation Policy *(x100)*		2.918***	
		(0.879)	
Shareholder Rights *(x100)*		2.572	
		(1.672)	
Vision and Strategy *(x100)*		-0.488	
		(0.288)	
Employment Quality *(x100)*			-0.394
			(0.247)
Health & Safety *(x100)*			0.660
			(0.399)
Training & Development *(x100)*			-0.070
			(0.368)
Diversity *(x100)*			-0.656
			(0.377)
Human Rights *(x100)*			-0.574*
			(0.330)
Community *(x100)*			0.665
			(0.392)
Product Responsibility *(x100)*			0.972
			(0.613)
Control variables	Yes	Yes	Yes
#Observations	737	737	737
F-value	33.54	28.87	23.73
R-squared	-	-	-

significant at 10% level, ** at 5%, * at 1%*

In order to determine the moderating effect of firm's size on the relationship between ESG and corporate financial performance the sample is divided into three subgroups based on the size of a firm. For each sub sample the first and second stage regression using the two-stage least square technique are performed. In Table 12 the results of these regressions are presented. For the smallest group a positive relation between ESG-rating and Tobin's q is found. An increase in one standard deviation of ESG-rating results in an increase of Tobin's q with 1.3842. This relationship is significant at 1%. For the medium size firms group an increase in one standard deviation of ESG-rating results in an increase of Tobin's q with 0.7353. This relation is significant at 5%. In contrast to the positive relations found for the smallest and medium size group, the coefficient of the largest size group indicates a negative relationship between ESG-rating and Tobin's q. An increase in one standard deviation ESG-rating results in a decrease of Tobin's q with 0.9259. In contrast to the other estimators this coefficient is statistically insignificant.

In order to determine the statistically significance of these differences this study follows the approach of Fairchild and MacKinnon (2009). An interaction affect for firm size is created by multiplying the dummy variables of firm size with the corresponding ESG rating. This interaction effect is used in model six. In Table 13 the results of model six are presented. The results in this table indicate a difference between the smallest and medium size groups. The estimator is statistically significant at 10%. The effect of an increase in one standard deviation ESG rating is 0.00015 Tobin's q less for medium size firms compared to smallest firms. This results provide evidence in favour of hypothesis six. In contrast to the differences between the smallest and medium size firms the differences between the smallest and largest firms is statistically insignificant.

Table 12. Two-stage least square results size groups.

This table reports the empirical results of the first stage regression for the three different groups; see methodology. In order to compare the three group the sample is equally divided into 3 groups based on the size of the firm. Tobin's q is used as the dependent variable. In all models the natural logarithm of firm size, return on assets, sales growth (%) and R&D expenses are used as control variables. The Newey-West standard errors are reported between brackets.

	Smallest group	Medium group	Largest group
Variable	(1)	(1)	(1)
Constant	-3.14***	0.81	-4.80
	(0.92)	(1.77)	(3.23)
ESG rating *(x100)*	5.48***	2.80**	-0.72
	(1.36)	(1.03)	(2.63)
Control variables	Yes	Yes	Yes
#Observations	245	245	246
F-value	94.62	2.90	1.65

significant at 10% level, ** at 5%, * at 1%*

Table 13. Two-stage least square results interaction affect model 6.

This table reports the empirical results of model 6. In order to determine the statistically significance of the differences between the three groups dummy variables for ESG rating and Firm size are created and multiplied with each other. Tobin's q is used as the dependent variable. In all models the natural logarithm of firm size, return on assets, sales growth (%) and R&D expenses are used as control variables. The Newey-West standard errors are reported between brackets.

	(6)
Constant	-7.256
	(3.051)
ESG rating *(x100)*	0.035**
	(0.012)
ESG rating * D2 *(x100)*	-0.006*
	(0.002)
ESG rating * D3 *(x100)*	-0.0002
	(0.0001)
D2 ESG rating *(x100)*	3.033
	(1.755)
D3 ESG rating *(x100)*	-2.660
	(2.788)
D2 firm's size	-1.557
	(1.086)
D3 firm's size	0.551
	(1.653)
Control variables	Yes
#Observations	737
F-value	32.08

significant at 10% level, ** at 5%, * at 1%*

5.3 Robustness tests

Independent variable robustness test

As described in paragraph 3.5 the robustness test in this study follows the approach of Dyck et al. (2016). In order to control for differences between ESG data providers this robustness test uses ESG data from Bloomberg to test if the results are consistent with the results based on the Thomson Reuters Asset4 database. In Table 14 an overview of the summary statistics of the variables constructed with the Bloomberg Data is presented.

Table 14. Summary statistics ESG variables based on Bloomberg data.

	Obs	Mean	Std. Dev.	Min	Max
ESG rating	684	32.00	14.35	3.51	64.88
Environmental	574	26.86	14.59	2.33	72.09
Social	602	39.09	15.79	3.51	78.95
Governance	684	52.13	10.87	14.29	76.79

Compared to the variables based on the data from Thomson Reuters, the maximum scores for the variables constructed with Bloomberg data is lower. This has an effect on the standard deviation for each of the variables which is smaller compared to the other variables. In Table 15 the correlations between the main variables are presented.

Table 15. Correlations between ESG variables based on Bloomberg data. An asterisks (*) is an indication for a statistically significant coefficient at a 1 % level.

	Tobin's q	ESG rating	Env	Social	Gov	ROA	R&D	Sales	Size
Tobin's q	1								
ESG rating	-0.14	1							
Env	-0.17*	0.95*	1						
Social	-0.09	0.84*	0.70*	1					
Gov	0.01	0.53*	0.35*	0.32*	1				
ROA	0.26	-0.08	-0.10	-0.08	0.09	1			
R&D	0.02	-0.01	0.03	-0.05	-0.07	-0.11	1		
Sales	0.03	-0.11	-0.12	-0.12	0.03	0.03	-0.01	1	
Size	0.24	0.05	0.04	0.06	-0.01	-0.07	0.23	-0.01	1

Compared to the positive correlation found based on the Thomson Reuters data the correlation between Tobin´s q and ESG rating based on Bloomberg data is negative. The sing of the correlations between Tobin´s q and the environmental, social and governance performance is consistent with the correlations as presented in Table 4. In Table 16 the results of the regressions based on the Bloomberg data are presented. In contrast to the results as presented in Table 10 the coefficient for ESG rating indicates a negative relationship. Next to this, the

sign of the social performance coefficient indicates a negative relationship. This negative relation is inconsistent with the coefficient as presented in Table 10. The coefficients of the environmental and governance performance are consistent with previous results.

Table 16. Two-stage least square results robustness test.

This table reports the empirical results of the robustness test. Tobin's q is used as a dependent variable. In all models the natural logarithm of firm size, return on assets, sales growth (%) and R&D expenses are used as control variables. The Newey-West standard errors are reported between brackets.

	(1)	(2)
Constant	21.47**	-5.43
	(7.42)	(3.94)
ESG Rating *(x100)*	-0.60**	
	(0.19)	
Environmental *(x100)*		-0.02*
		(0.01)
Social *(x100)*		-0.01
		(0.03)
Governance *(x100)*		0.08
		(0.04)
Control variables	Yes	Yes
#Observations	684	450
F-value	49.76	3.39

significant at 10% level, ** at 5%, * at 1%*

5.4 Concluding remarks empirical results

This section discusses whether or not the empirical results of this study provide evidence in favor of the hypothesizes as mentioned in section 2.4. The first hypothesis is tested with the two-stage least square methodology. For this model the percentage of institutional ownership is used as the instrumental variable. A positive relationship whereby a one standard deviation increase in ESG rating increases Tobin's q with 0.9661 is found. This result provide evidence in favour of hypothesis one.

In model two the Wu-Hausman test indicates corporate governance performance and corporate social performance as endogenous variables. To test hypothesis two the two-stage least square methodology is used whereby the percentage of independent board members and the score for 'community' are used as instrumental variables. For corporate governance performance and corporate social performance a positive relationship is found. In contrast to these positive relations, corporate environmental performance is negatively related with Tobin's q. This negative relationship is consistent with the results of the robustness analysis. This relationship between corporate environmental performance and Tobin's q provide evidence against hypothesis two.

In model three emission reduction and resource reduction are endogenous variables. The industry average for these variables are used as instrumental variables. All estimators indicate a negative relationship between the environmental sub divers and Tobin's q. The relationship between product innovation and Tobin's q is statistically significant at 10%. This negative estimator provide evidence against hypothesis three.

The variables compensation policy and shareholder rights are the endogenous variables in model four. The two-stage least square methodology is used whereby the industry averages of the endogenous variables are used as instrumental variables. For the governance drivers board structure, board function, compensation policy and shareholder rights positive relations are found. In contrast to this positive relationship for visions and strategy a negative relationship is found. Although the estimator indicates a negative relationship the coefficient is statistically insignificant. Therefore, hypothesis four cannot be rejected.

The results of model five indicate both positive and negative relations. Since product responsibility is indicated as an endogenous variable the two-stage least square methodology is used whereby the industry average of product responsibility is used as an instrumental variable.

For the sub driver human rights a negative estimator is found which is statistically significant at 10%. This provides evidence against hypothesis five.

In model six the interaction effect of firm size on the relationship between ESG and corporate financial performance is studied. Before the statistically significance of the difference between the different size groups is studied the first- and second stage regression for each size group is conducted. These results indicates differences among the three groups. Finally, the results of model six provide evidence in favor of a moderation effect of firm size between the smallest and medium size group. This result is consistent with results of Guest (2009) and Kruger (2015) and provide evidence in favour of hypothesis six.

6. Conclusion

Given the growing amount of awareness of investors and academics towards the effect of ESG on corporate financial performance this study examines the relationship between ESG and corporate financial performance whereby it focuses on small capitalized European firms. Previous empirical work finds mixed results. For the effect of ESG rating on corporate financial performance in most of the cases statistically insignificant results are found. In contrast to this, empirical work that focuses on the effect of the sub groups environmental performance, governance performance and social performance finds positive relations between an increase in performance and financial performance. In case of environmental performance, Derwall et al. (2005) find that this positive effect strengthened in recent years. Next to the effect of ESG and the sub groups various studies examines the effect of an individual sub driver on financial performance. For emission reduction, board size, diversity and human resources positive relationships are found.

In contrast to previous empirical work this study finds a positive relationship between ESG performance and corporate financial performance. When the relationships between the sub groups and corporate financial performance is examined this study finds mixed results. An increase in environmental performance affects the corporate financial performance in a negative way which is inconsistent with most of the results of previous empirical work. In contrast to this negative relationship, the corporate governance performance has a positive influence on the financial performance of small capitalized European firms. This positive relationship is consistent with the results of previous literature as described in section two. The results of the third stage provide mixed results. An increase in the performance of the sub drivers board function and compensation policy results in an increase of corporate financial performance while product innovation and human rights are negatively related with corporate financial performance. Finally, the empirical analysis provides evidence for the moderating effect of firm size on the relationship between ESG and corporate financial performance which is consistent with previous results.

The results of this study have several theoretical implications. First, by examining the relationship between ESG and corporate financial performance for European small capitalized firms this study contributes to previous empirical work since it provides results in a subarea with almost no empirical coverage. Second, the results in this study provide evidence for the hypothesis of the moderating role of firm size in the ESG-CFP relationship. These results are consistent with work of Guest (2009) and Kruger (2015) who find the same effect among large

firms. Third, this study is the first that examines the effect of the drivers behind the environmental, governance and social performance on corporate financial performance from an ESG perspective. From a financial perspective this results indicate that it is worth to make a distinction between them.

Next to these theoretical implications the results of this study do have practical relevance. As discussed in section one, institutional investors are willing to contribute to society but at the same time they have to meet several financial obligations. For these investors, it is important to distinguish ESG factors that have both a positive effect on financial performance as on society. The results of this study indicate that these types of investors can implement an ESG strategy where a focus on ESG-rating, corporate governance, board function and compensation policy results in a positive effect for society and financial performance. In contrast to this, these investors should avoid companies who are willing to increase their environmental performance, product innovation and human rights.

The results of this study have both theoretical as practical implications. However, due to data limitations these results are based on a relatively small cross sectional and time series sample. It will be interesting to see if the results of this study hold when more firms for a longer period are studied. Next to this, data limitations result in the fact that it was only possible to conduct a robustness check for the first and second stage analysis. Finally, further research will be necessary to examine the moderating effect of firm size on the relationship between ESG and corporate financial performance. Empirical work of Guest (2009) and Kruger (2015) find evidence for an interaction affect among large firms while this study provide evidence for a moderating effect among small capitalization firms. A dataset that consist of both small and large capitalisation firms will be needed to conclude upon this.

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Appendix A. Results Wu-Hausman, first stage regression and Wald test.

Table 1. Results Wu-Hausman test.

Variable	F-score	P-value
ESG Rating	14.9818	0.0001
Corporate environmental performance	1.4273	0.2326
Corporate governance performance	5.3570	0.0209
Corporate social performance	16.1126	0.0001
Emission reduction	7.1090	0.0078
Resource reduction	3.1809	0.0049
Product innovation	1.7326	0.1885
Board structure	2.2110	0.1375
Board function	0.5417	0.4620
Compensation Policy	17.5125	0.0000
Shareholder Rights	9.2050	0.0025
Vision and Strategy	0.5260	0.4685
Employment Quality	0.9733	0.3242
Health & Safety	1.9776	0.1601
Training & Development	1.1036	0.2938
Diversity	2.1425	0.1437
Human Rights	1.9776	0.1601
Community	0.0437	0.8408
Product Responsibility	4.1074	0.0431

Table 2. Regression results first stage of two-stage least square technique.

	1	2	3	4	5	6	7	8
Intercept	60.97	43.60	22.39	-10.63	-7.91	-12.34	-5.21	-4.79
	(1.55)	(2.04)	(6.41)	(9.15)	(8.71)	(8.78)	(8.42)	(7.82)
Institutional holding	0.11***							
	(0.02)							
Independent Board		36.84***						
		(3.85)						
Community			0.70***					
			(0.02)					
Emission Reduction IA				1.16***				
				(0.14)				
Resource Reduction IA					1.14***			
					(0.13)			
Compensation Policy IA						1.19***		
						(0.15)		
Shareholder Rights IA							1.10***	
							(0.15)	
Product Responsibility IA								1.07***
								(0.13)
# Observations	737	562	737	737	737	737	737	737
R-squared	0.0368	0.1404	0.5667	0.0813	0.0901	0.0832	0.0706	0.0824
F-test	28.08	91.49	86.21	65.03	72.74	66.67	55.83	65.96

significant at 10% level, ** at 5%, * at 1%*

Table 3. Results 5% Wald-test for weak instruments.

		Critical values			
5% Wald-test	F-value	10%	15%	20%	25%
Institutional holdings	26.7727	16.38	8.96	6.66	5.53
Board Independence	98.9473	16.38	8.96	6.66	5.53
Community	889.973	16.38	8.96	6.66	5.53
Emission Reduction industry average	62.6389	16.38	8.96	6.66	5.53
Resource Reduction industry average	73.2577	16.38	8.96	6.66	5.53
Compensation Policy industry average	79.5568	16.38	8.96	6.66	5.53
Shareholder Rights industry average	49.5201	16.38	8.96	6.66	5.53
Product Responsibility industry average	63.1589	16.38	8.96	6.66	5.53

Appendix B. Variable definitions

Abbreviation	Definition
Board_F	Board function
Board_S	Board structure
CFP	Corporate financial performance
CSR	Corporate social responsibility
Com	Community
Comval	Value of a company
Com_P	Compensation Policy
Diver	Diversity
DS2	Dummy of medium size firms
DS3	Dummy of large size firms
EPA	Environmental Protection Agency
Emis_R	Emission reduction
Employ_Q	Employment quality
Env	Environmental performance
ESG	Environmental, social and governance
ESG_Rating	Score on environmental, governance, social and economic performance
Gov	Governance performance
Health_S	Health and safety
Human_R	Human rights
OLS	Ordinary Least Squares
Prefval	Value of preferred dividends
Prod_I	Product innovation
Prod_R	Product responsibility
Res_R	Resource reduction
R&D	Research and development
ROA	Return on assets
Share_R	Shareholder rights
Sbond	The book value of long term debt
Soc	Social performance
Src	The value of total assets
Stdebt	The book value of short term debt
Train_D	Training and development
Vision_S	Vision and strategy

Appendix C. Overview drivers sub-factors.

Environmental drivers

Emission Reduction	
Emissions Reduction Policy	Does the company have a policy to reduce emissions?
CO2 Equivalents Emission Total (tonnes)	Total CO2 and CO2 equivalents emission in tonnes.
CO2 Equivalents Emission Direct (tonnes)	Direct CO2 and CO2 equivalents emission in tonnes.
CO2 Equivalents Emission Indirect (tonnes)	Indirect of CO2 and CO2 equivalents emission in tonnes.
CO2 Equivalent Indirect Emissions, Scope Three (tonnes)	Total CO2 and CO2 Scope Three equivalent emission in tonnes.
Commercial Risks and/or Opportunities Due to Climate Change	Is the company aware that climate change can represent commercial risks and/or opportunities?
CO2 Reduction	Does the company show an initiative to reduce, reuse, recycle, substitute, phased out or compensate CO2 equivalents in the production process?
Ozone-Depleting Substances Reduction	Does the company report on initiatives to recycle, reduce, reuse or substitute ozone-depleting (CFC-11 equivalents, chlorofluorocarbon) substances?
NOx and SOx Emissions Reduction	Does the company report on initiatives to reduce, reuse, recycle, substitute, or phase out SOx (sulphur oxides) or NOx (nitrogen oxides) emissions?
NOx Emissions (tonnes)	Total amount of NOx emissions emitted in tonnes.
SOx Emissions (tonnes)	Total amount of SOx emissions emitted in tonnes.
VOC Emissions Reduction	Does the company report on initiatives to reduce, substitute, or phase out volatile organic compounds (VOC)?
VOC Emissions (tonnes)	Total amount of volatile organic compounds (VOC) emissions in tonnes.
Waste Total (tonnes)	Total amount of waste produced in tonnes.
Non-Hazardous Waste (tonnes)	Total amount of non-hazardous waste produced in tonnes.
Hazardous Waste (tonnes)	Total amount of hazardous waste produced in tonnes.
Waste Recycling Ratio	Total recycled and reused waste produced in tonnes divided by total waste produced in tonnes.
Water Pollutant Emissions (tonnes)	Total weight of water pollutant emissions in tons.
Waste Reduction Initiatives	Does the company report on initiatives to recycle, reduce, reuse, substitute, treat or phase out total waste?
Environmental Management System Certified Percent	The percentage of company sites or subsidiaries that are certified with any environmental management system.
Sustainable Transportation	Does the company report on initiatives to reduce the environmental impact of transportation of its products or its staff?

Resource Reduction	
Energy Efficiency Policy	Does the company have a policy to improve its energy efficiency?
Toxic Chemicals or Substances Reduction	Does the company report on initiatives to reduce, reuse, substitute or phase out toxic chemicals or substances?
Energy Use Total (GJ)	Total direct and indirect energy consumption in gigajoules.
Direct Energy Purchased (GJ)	Direct energy purchased in gigajoules.
Direct Energy Produced (GJ)	Direct energy produced in gigajoules.
Coal Energy Purchased (GJ)	Coal energy purchased in gigajoules.
Coal Energy Produced (GJ)	Coal energy produced in gigajoules.
Natural Gas Energy Purchased (GJ)	Natural gas energy purchased in gigajoules.
Oil Energy Purchased (GJ)	Oil energy purchased in gigajoules.
Oil Energy Produced (GJ)	Oil energy produced in gigajoules.
Electricity Purchased (GJ)	Electricity purchased in gigajoules.
Electricity Produced (GJ)	Electricity produced in gigajoules.
Renewable Energy Use	Does the company make use of renewable energy?
Water Use Total (m3)	Total water withdrawal in cubic meters.
Water Recycled (m3)	Amount of water recycled or reused in cubic meters.
Environmental Supply Chain Management	Does the company use environmental criteria (ISO 14000, energy consumption, etc.) in the selection process of its suppliers or sourcing partners?

Product innovation	
Energy Footprint Reduction	Does the company describe initiatives in place to reduce the energy footprint of its products during their use?
Environmental R&D Expenditures	Total amount of environmental R&D costs (without clean up and remediation costs).
Renewable/Clean Energy Products	Does the company develop products or technologies for use in the clean, renewable energy (such as wind, solar, hydro and geo-thermal and biomass power)?
Water Technologies	Does the company develop products or technologies that are used for water treatment, purification or that improve water use efficiency?
Product Innovation/ Product Impact Minimization	Does the company reports about take-back procedures and recycling programmes to reduce the potential risks of products entering the environment? OR Does the company report about product features and applications or services that will promote responsible, efficient, cost-effective and environmentally preferable use?

Social drivers

Employment Quality	
Policy	Does the company have a competitive employee benefits policy or ensuring good employee relations within its supply chain? AND Does the company have a policy for maintaining long term employment growth and stability?
Employment Satisfaction	The percentage of employee satisfaction as reported by the company.
Salaries	Average salaries and benefit in US dollars (Salaries and Benefits (US dollars) /Total Number of Employees).
Salaries Distribution	Total salaries and benefits divided by net sales or revenue.
Bonus Plan for Employees	Does the company claim to provide a bonus plan to most employees?
Generous Fringe Benefits	Does the company claim to provide its employees with a pension fund, health care or other insurances?
Employment Awards	Has the company won an award or any prize related to general employment quality or "Best Company to Work For"?
Trade Union Representation	Percentage of employees represented by independent trade union organizations or covered by collective bargaining agreements.
Employees Leaving	Number of employees who left the company during the year.
Turnover of Employees	Percentage of employee turnover.

Health & Safety	
Policy	Does the company have a policy to improve employee health & safety within the company and its supply chain?
Total Injury Rate	Total number of injuries and fatalities including no-lost-time injuries relative to one million hours worked.
Lost Time Injury Rate	Total number of injuries that caused the employees and contractors to lose at least a working day relative to one million hours worked.
Lost Days	Number of lost working days of the employees and contractors.
HIV-AIDS Programme	Does the company report on policies or programmes on HIV/AIDS for the workplace or beyond?

Training & Development	
Policy	Does the company have a policy to support the skills training or career development of its employees?
Average Training Hours Per Employee	Average hours of training per year per employee.
Training Costs Total	Total training costs from all the training performed by all employees.
Internal Promotion	Does the company claim to favour promotion from within?
Management Training	Does the company claim to provide regular staff and business management training for its managers?

Diversity	
Policy	Does the company have a work-life balance policy? AND Does the company have a diversity and equal opportunity policy?
Women Employees	Percentage of women employees.
Women Managers	Percentage of women managers.
Positive Discrimination	Does the company promote positive discrimination?

Flexible Working Hours	Does the company claim to provide flexible working hours or working hours that promote a work-life balance?
Day Care Services	Does the company claim to provide day care services for its employees?

Human Rights	
Policy	Does the company have a policy to guarantee the freedom of association universally applied independent of local laws? AND Does the company have a policy for the exclusion of child, forced or compulsory labour?
Human Rights Contractor	Does the company report or show to use human rights criteria in the selection or monitoring process of its suppliers or sourcing partners?
Human Rights Breaches Contractor	Does the company report or show to be ready to end a partnership with a sourcing partner if human rights criteria are not met?

Community	
Policy	Does the company have a policy to strive to be a good corporate citizen or endorse the Global Sullivan Principles? AND Does the company have a policy to respect business ethics or has the company signed the UN Global Compact or follow the OECD guidelines?
Donations Total	Total amount of all donations by the company.
Cash Donations	Total amount of cash donations.
In-Kind Donations	Total amount of other donations (in kind, volunteer work, research funded through the company's foundations, shares).
Donations	Does the company make donations in cash or in kind?
Crisis Management Systems	Does the company report on crisis management systems or reputation disaster recovery plans to reduce or minimize the effects of reputation disasters?

Product Responsibility	
Product Responsibility/ Policy	Does the company have a policy to protect customer health & safety? AND Does the company have a products and services quality policy?
Customer Satisfaction	The percentage of customer satisfaction as reported by the company
Product Access Low Price	Does the company distribute any low-priced products or services specifically designed for lower income categories (e.g., bridging the digital divide, telecommunications, low cost cars and micro-financing services)?
Healthy Food or Products	Does the company reportedly develop or market products and services that foster specific health and safety benefits for the consumers (healthy, organic or nutritional food, safe cars, etc.)?

Corporate Governance drivers

Board Structure	
Board Structure/ Policy	Does the company have a policy for maintaining a well-balanced membership of the board?
Experience / Average years serving on Board	Average number of years each board member has been on the board.
% Non-Executive Board Members	Percentage of non-executive board members.
% Independent Board Members	Percentage of independent board members as reported by the company.
CEO-Chairman Separation	Does the CEO simultaneously chair the board? AND Has the chairman of the board been the CEO of the company?
Background and Skills	Does the company describe the professional experience or skills of every board member? OR Does the company provide information about the age of individual board members?
Size of Board (Number of Board Members)	The total number of board members at the end of the fiscal year.
Board Diversity (% Women on Board)	Percentage of women on the board of directors.

Board Function	
% Audit Committee Independence	Percentage of independent board members on the audit committee as stipulated by the company.
% Audit Committee Management Independence	Percentage of non-executive board members on the audit committee as stipulated by the company.
Audit Committee Expertise	Does the company have an audit committee with at least three members and at least one "financial expert" within the meaning of Sarbanes-Oxley?
% Compensation Committee Independence	Percentage of independent board members on the compensation committee as stipulated by the company.
% Compensation Committee Management Independence	Percentage of non-executive board members on the compensation committee as stipulated by the company.
% Nomination Committee Independence	Percentage of non-executive board members on the nomination committee.
% Nomination Committee Management Independence	Percentage of non-executive board members on the nomination committee as stipulated by the company.
Number of Board Meetings	The number of board meetings during the year.
% Board Meeting Attendance Average	The average overall attendance percentage of board meetings as reported by the company.

Compensation policy	
Compensation Policy	Does the company have a policy for performance-oriented compensation that attracts and retain the senior executives and board members?
Highest Remuneration Package	Highest remuneration package within the company in US dollars.
Total Board Member Compensation	Total compensation of the non-executive board members in US dollars.
Stock Option Program	Does the company's statutes or by-laws require that stock-options are only granted with a vote at a shareholder meeting?
Senior Executive Long-term Compensation incentives	The maximum time horizon of targets to reach full senior executives' compensation.

Vesting of Stock Options/Restricted Stock	The number of years that the company's most recently granted stock options or restricted stocks take to fully vest (since the date of the grant).

Shareholder Rights	
Shareholder Rights/ Policy	Does the company have a policy for ensuring equal treatment of minority shareholders, facilitating shareholder engagement or limiting the use of anti-takeover devices?
Voting Rights	Are all shares of the company providing equal voting rights?
Ownership	Is the company owned by a reference shareholder who has the majority of the voting rights, veto power or golden share?
Classified Board Structure	Does the company have a classified board structure?
Staggered Board Structure	Does the company have a staggered board structure?

Vision and Strategy	
Integrated Vision and Strategy Challenges and Opportunities	Is the company openly reporting about the challenges or opportunities of integrating financial and extra-financial issues, and the dilemmas and trade-offs it faces?
CSR Sustainability Committee	Does the company have a CSR committee or team?
GRI Report Guidelines	Is the company's CSR report published in accordance with the GRI guidelines?
CSR Sustainability Report Global Activities	Does the company's extra-financial report take into account the global activities of the company?
CSR Sustainability External Audit	Does the company have an external auditor of its CSR/H&S/Sustainability report?