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**"IS THERE A RELATIONSHIP BETWEEN CSR PERFORMANCE AND  
CORPORATE FINANCIAL PERFORMANCE? AN EMPIRICAL  
INVESTIGATION OF STOXX 600 EUROPE"**

**RELATORE:**

**CH.MO PROF. RICCERI FEDERICA**

**LAUREANDO/A: AGOSTINIS UMBERTO**

**MATRICOLA N. 1113684**

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# I Introduction

This thesis investigates the existence of the relationship between the Corporate Social Responsibility Performance and the Corporate Financial Performance through an empirical investigation on a sample of European companies<sup>1</sup>.

Corporate social responsibility (CSR) can be defined as the corporate actions that go beyond the firm's legal and contractual obligations and support the societal good (McWilliams and Siegel, 2001).

In the past, the idea that a company can act in a social responsible way was debated by many scholars, for instance Friedman (1962) claimed that every objectives that divert the company's resources from the goal of making profit should be not performed by the managers, moreover he sustained that if the managers purse some action that divert company's resources, they are "stealing".

However, in the late '90 *Stakeholder Theory* provided a new theoretical framework inspiring a renewed interest on the relevance of the CSR activities and on the impact on financial performance. *Stakeholder theory* (Freeman, 1984), sustains that the company is not only influenced by the shareholders only, but by a number of different forces, represented by the different stakeholders (e.g. employees, customers, local community, government, debtholders and suppliers); each of these may have different goals and relevance company's operations. Freedman stated that the stakeholders may have positive or negative impact on the Corporate Financial Performance (CFP); for instance, if a company systematically fails to meet their expectations (i.e. provide quality goods and services that are in line with customers' health and safety or fail to provide development opportunity for their Workforce, among others), as stated by Moura and Leite (2012 p 1215) "*stakeholders might withdraw their support from the firm*". The Stakeholder of a company are: the employees, the customers, the local community in which the company operates, the government, the debtholders and the suppliers; each one of these stakeholders may have different goals and could affect in a different ways the company's operation.

Another relevant contribution to the CSR topic was provided by Carroll (1999), he pointed out that the goals of a company is not the only the profitability of the firm itself, but goals also include the obedience to the laws and the ethical behavior and philanthropic responsibilities.

In the more recent years, Porter and Kramer (2006, 2011) argued that the social responsible activities should be shifted from the periphery of the company to the core activities, in this way,

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<sup>1</sup> The source of data used in this analysis is the Eikon database.

these activities could be able to create “sharing value “that represent both economical value for the stockholders and value for all the other stakeholders and the whole society.

The CSR issues related to firms’ activities are now becoming parts of the agenda of main national and international institutions.

The European Commission has started in the 2000 with the Green Paper a discussion about sustainability issues Green Paper (2000)<sup>2</sup>, afterwards it has published a paper about the European strategy for the CSR, that states: “*The 2011 Commission Communication invited Member States to “develop or update by mid-2012 their own plans or national lists of priority actions to promote CSR in support of the Europe 2020 strategy, with reference to recognized CSR principles and guidelines and in cooperation with enterprises and other stakeholders...”* (EC 2011, 2014), also the International Organization for Standardization (ISO) have implemented a new certification named ISO 26000 that helps the entrepreneurs and managers to act in a more responsible way.

The European Union has recently published the guidelines for DIRECTIVE 2014/95 / EU<sup>3</sup>, the aforementioned guidelines OJ C215 5/07/2017 (p 8) states: "*Material information on certain categories of issues explicitly reflected in the Directive should be disclosed as a minimum These include: environmental, social and employee matters, respect of human rights, anti-corruption and bribery matters. Companies should also disclose any other material information. "*

The Organization for Economic Co-Operation and Economic Development (OECD) has published in 2011 a paper that drawn the guidelines of responsible business ( Guidelines for Multinational Enterprises), following this example also the United States of America provided a publication to support the OECD guidelines in which they affirm “*The Economic and Business Affairs’ Bureau’s Responsible Business Conduct (RBC) team works with companies and other stakeholders to promote responsible business practices globally, based on the international best practices found in the OECD Guidelines for Multinational Enterprises*

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<sup>2</sup> In particular the Green Paper (2000) states about the Environment “**Environmental** concerns, which are nowadays shared by the majority of the public and which include damage caused by the energy supply system, whether such damage is of accidental origin (oil slicks, nuclear accidents, methane leaks) or connected to emissions of pollutants, have highlighted the weaknesses of fossil fuels and the problems of atomic energy. As for the struggle against climate changes, this is a major challenge.....the Green Paper is calling for a real change in consumer behavior. It highlights the value of **taxation measures** to steer demand towards better-controlled consumption which is more respectful of the environment. Taxation or parafiscal levies are advocated with a view to penalising the harmful environmental impact of energies.”

<sup>3</sup> Directive 2014/95 / EU is an amendment to Directive 2013/34/EU that regards disclosure of non-financial and diversity by certain large undertaking groups.

(“*OECD Guidelines*”). *The OECD Guidelines are the most comprehensive set of government-backed guidance on responsible business, dating back 40 years, and covering a range of topics which include human rights, labor rights, supply chain due diligence, the environment, anti-corruption, and more.*” (Guidance and Support for Responsible Business) and as it was stated in the paper they have established an organism to support this process.

Recently a growing number of US companies (around the 60% of the Fortune 500 companies) and also European companies have implemented a voluntary CSR reporting to provide an account of their activities, moreover some of them have obtained external certification for ESG standard (Kitzmueller, M., Shimshack, J., 2012). This highlights how much the CSR is becoming a crucial issue for firms all around the world.

This phenomenon is extended not only to the traditionally industrialized countries but also in other part of the world, even if more slowly, in fact Waworuntu et al, (2014) have found that an increasing number of companies, in the South East of Asia, are concerned about the importance of the CSR and in particular of the disclosure about their policies according to the Global Reporting Initiative (GRI).

For example, Nike Inc., one of the most famous manufactures of sportswear and footwear, released an application, called Making, that provides to the customers but also to the designers all the necessary information about the sustainability of the product. They have set up a database with 75000 items and they have assigned a score to every component of their products, that is based on the environmental impact and the long-term sustainability. This was an enormous step forward, Nike Inc. is the first mover in this direction because no one before has done a similar project (Vanhemert 2013).

Moreover other aspects of the CSR are taken into account from the companies around the world, the BMW group is engaged in many different initiatives to promote the employees right and protection but also satisfaction, the BMW group is performing activities such as: structure to support the work-life that provides help beyond the legal requirement for maternity leave, family leave and car giver leave ( children facilities, mobile working and part time working options), initiatives to overcome the cultural and religious barriers ( *Intercultural Innovation Awards*), training programs for the aging workforce in order to maintain the capability, a program of mix age recruiting to maintain a well balance age distribution to exploit the better potentially of the different age group (BMW Group - Responsibility – Employees), however if and how these activities are related to companies profitability of companies is still under debate. Nowadays however the relationship, between Corporate Social Performance (CSP) and CFP, is far to be well understood, in fact the literature is still inconclusive. Therefore there is some space for investigating empirically if the CSP and CFP relationship is a trade-off relationship

or, vice versa, implementing CSR activities is just a different, and possibly more profitable, way of doing business.

This work is organized in five chapters. Chapter one which reconstructs very briefly the historical development of the CSR concept and the gradual assimilation of these practices in the agenda of the most important companies and institutions around the world. Chapter two defines CSP for this study and presents the theoretical framework that support the possible relationship between the Corporate Social Responsibility Performance and the Corporate Financial Performance. The work will then review most relevant literature about the CSP-CFP relationship, starting from the most common benefits and detriments of CSR initiatives, and expose the different relationships tested across the years; this Chapter also presents the results of previous studies on this topic. The final part of the second Chapter is about the formulation of the hypothesis tested in this study, accordingly with the literature examined.

Chapter three presents the research methods and it is divided in three sections. In section one the sample used is presented, section two deals with the dependent variables and related measures adopted in this work. The third section is about the independent variables, the proxy measures that will be used in the statistical analysis, in this paragraph it will be explained, how the independent variables are constructed by the data provider. The fourth paragraph deals with the control variables that are essential to properly define the relationship.

The last section of Chapter three is about the statistical methods applied in the empirical analysis.

Chapter four presents the results of the analysis and Chapter five will highlight the conclusion, limitations of this research and possible avenues for future research.

## II Literature Overview

### II. 1 CSR and CSP Definitions

The CSR has been defined many times in the literature and sometimes the definitions were different from each other. However, this work will be used as a reference definition that provided by Davis (1973, p. 312) “*the firm’s considerations of, and response to, issues beyond the narrow economic, technical, and legal requirements of the firm to accomplish social (and environmental) benefits along with the traditional economic gains which the firm seeks.*”.

Dahlsrud (2008) after a critical review of the CSR literature has found that the CSR is generally divided in dimensions, which have homogeneous characteristics and are also directed towards the same beneficiaries.

It seems necessary to make a terminological differentiation in order to clarify the different terminology used in the paper. The CSR is not a quantitative variable that could be measure, but it is more suitable for the principles and responsibilities of a company towards environment, society and investors (Wang et al., 2016). Instead CSP is used as a representation of the efforts of the corporate social responsible actions and of their outcomes (Marom, 2006; Van Beurden and Gössling, 2008 ). It is important to specify that it is more appropriate to consider the performance obtained rather than the investments in CSR or the activities pursued as it is only through the effectiveness in achieving the objectives that a company can meet the interests of the various stakeholders and therefore be able to obtain benefits deriving from CSR.

It widely accepted in the literature and by the rating agency (that provide proxy of CSP) in their evaluation process the division the CSR, both in terms of performance and activities, in three main dimensions: *Environmental*, *Social* and *Governance* (the so called ESG<sup>4</sup>).

The *Environmental* dimension of the CSR mainly refers to the reduction of polluting emissions that can be either gaseous or wastewater with chemical pollutants, reduction of waste in the production process - in other world a more efficient use of the basic resources - and to the development of environmentally friendly products and services.

The *Social* dimension of the CSR includes an employee-related part that refers to the commitment of the company to reach the best standard of employment quality but also health and safety workspace and provide opportunity of personal growth inside the company itself, human rights protection in the business operation and the community safeguard both on the overall society than or in the local communities where the companies have their production facilities that are therefore more exposed to the improper behavior that companies can put into

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<sup>4</sup> Consistently with the measures used in this study, see below III.3 Independent Variable

practice Sanchez et al., (2017). The responsibility that companies have towards their customers, especially they expect to receive a product or service with some important characteristic (e.g. quality, safety, integrity and data privacy) is also part of the Social dimension.

The last dimension of the ESG is represented by the *Corporate Governance* that is used to measure the level of corporate transparency in their management system as well as the power distribution across the hierarchy and the board member composition; all these features are extremely important to ensure that company and directors are acting in the best interest of their stakeholders and they are not pursuing some opportunistic behaviors that could distract resources from the maximization of the long-term value of the company (Jamali et al., 2008).

Until now it is discussed only the positive dimension of the CSR, but it not yet introduced the negative events that could also be a threat for the company's operation.

The dimensions discussed before speak about how much a positive behavior is pursued, but they do not imply that some opposite action is implement by the company both consciously or for a wrong assessment of the risks of some actions. This premise then introduces a presentation of the negative CSR and therefore of the negative CSP.

Many previous studies have used indexes that do not distinguish between negative and positive CSP (Crifo et al., 2016, Maria-Gaia Soana, 2011 , Philipp Schreck, 2011, Saeidi et al., 2015, Waworuntu et al., 2014 Lee et al., 2013) because they used an aggregate index. In this way perhaps is probable to produce less precise results about the relationship and confound the impact on financial performance. This problem is based on a psychological issue, psychologists spoke about two different tendencies that people have to react on events, negativity and positivity. The first behavior attaches more weight to negative events and the second one makes the opposite when people are evaluating behaviors or processing information. The negativity effects is supported by (Fiske, 1980; Hamilton and Huffman, 1971, Ahluwalia et al., 2000) have sustained that negative effect is more suitable to diagnostic problems and categorize the behavior evaluated, this negativity bias could be seen to a cautelative patterns, once people receive a negative information over-react negatively to minimize the possible risk and negative outcome. The reaction on the negative events could be also associated with the age of the companies' stakeholders. This is supported by some psychological studies of Charles et al. (2001), Mather and Carstensen (2005)<sup>5</sup>.

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<sup>5</sup> They have analyzed the reaction to negative events over four different generations and they have finds out that young people have more negative reaction to events and this negativity tend to decrease with age, moreover they also find out that the positive reactions are fairly stable over the generations. The second study states that adults tend to be more emotional controlled compared to young and this is the reason for a more rationale evaluation of

For these reasons, on the basis of perception about positive and negative information about company behavior, the reaction could be asymmetrical. The stakeholder could attach different weights to negative behaviors rather than positive, therefore the effect on CFP could be different.

The companies have incentive to publicize their positive behavior on CSR activities because this should have positive impact on value, given the fact that the stakeholders became more aware of their efforts, while they could try to minimize (or even to hide) the negative behaviors or activities that they are pursuing Rhou et al., (2016). This should result in a different reaction by the public and also by the regulator and government.

The negative CSR activities and social and environmental scandals have higher visibility and more disruptive effects. The general media provides extensive time and efforts to documents this fact and this increases the impact of them.

They could lead to fines that could have immediate impact on the CFP, but also to long and dangerous legal proceedings and to image losses that may result in strong reductions in sales.

It is also possible that environmental and social scandals make the virtuous initiatives that companies have put in place less relevant; for instance especially, consumers may think that positive efforts are only implemented for reputation or are a way to wash their hands and show themselves as environmental-friendly when they are not Dans (2015)<sup>6</sup>.

There are many examples of how scandals for companies could be extremely disastrous. Below three examples will be provided: these will help to explain how these events can put companies if not even in serious danger, in extremely difficult situations.

The Toshiba scandal arised in the in 2015, the company has reported more 780 millions of Pounds of net profit that in reality did not exist<sup>7</sup>. This problem is related to corporate governance sphere, in fact the senior management set unrealistic target of profits and the subordinates could not argue about them. After the investigation, it became public knowledge that not only was the practice widespread within the company but that the CEO and the Chairman were aware of these practices and did not oppose them. All these facts have entail not only in a fine ,40 millions

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two different situations This information could be useful for the company and together with their target customers should be used to managed very carefully the information that is publicized.

<sup>6</sup> Dans (2015) sustained: *“We are talking about an engine here, a lump of metal, not some interpretation or shade of meaning. Volkswagen did all it could to hide the fact that its diesel engines were highly contaminating. How can the head of CSR deny he knew anything about what was going on? Either that person wasn’t doing their job, or they were colluding. The conclusion can only be that for Volkswagen, CSR is a marketing exercise.”*

<sup>7</sup> The greater one was however the financial crisis of 2007 and 2008 that was triggered by the American investment’s banks, that fail to control or moreover that known which kind of products they were selling to the market.

of pounds, but also share price reduction of 40% and also a big restructuring process that brought a lot of layoffs, almost 7000.

The most recent big scandal that have invested the Environmental sphere of the CSR (and nowadays is far from the full archiving) was the Diesel Gate<sup>8</sup>. The company that broke the scandal was Volkswagen, it had been considered one of the leader in corporate social responsibility but in the end, they have fraud their customers and they have broken the environmental regulation. The effect on the company was, and still is, extremely serious. In 2015 after more than 20 years of positive Net Profit the company have registered a loss, after have accounted for the cost due to the scandal 12,2 billion of € (mainly the buy-back of the car vehicles and settlement with the USA authorities ), however in 2016 there was more than 1400 lawsuit in the regional court where the company has its registered office, investors asked for more 8,2 billions € because they think they was cheated by the company and moreover that the company was not sufficiently timely to communicate to the shareholders this issues. Following these hypothesis and according with previous studies (Chan et al. 2017, Rhou et al. 2016, Pătări et al. 2014, Kang et al. 2010, Callan and Thomas 2009), in this paper the negative components will be kept separate to see which of the two components can have a greater impact on financial performance.

## II. 2 Theoretical framework

*Stakeholder Theory (Freeman 1984)*, is the foundation on which a number of studies supporting a positive relation, between CSP and CFP, are based, for instance Kang et al., (2010 p 73) states “*CSR activities, which encompass all legitimate stakeholders’ implicit claims as stakeholder theory suggests, can improve firm value by (1) immediate cost saving, (2) enhancement of firm reputation, and (3) dissuasion of future action by regulatory bodies including governments which might impose significant costs on the firm*”.

Other theoretical approaches that may provide a basis for investigation of the relationship between CSP and CFP are: *Transaction cost economic theory* and the *Resource based view of*

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<sup>8</sup> The Diesel Gate was a scandal that involve Volkswagen but also others great automotive companies ended up in the newspapers because of a series of behaviors that are legal adherents that are at least debatable these companies are: Mercedes-Benz, Honda, Mazda, Mitsubishi, Volvo, Renault, Hyundai, Citroën and Fiat. Although they did not use any devices to alter the result of the European test, their cars have extremely different results in the emission test performed in the laboratory rather than in the real-word usage (even 20 times the limit required in laboratory tests). In this way the fail to provide to the market less polluting vehicles, disregarding the expectations of the regulator. It seems to be an industry practices, and this fact is line with the previous chapter that speaks about the industry- specific patterns and the adverse selection Carrington (2015).



*the firm.*

The *Transaction cost theory* states companies to satisfying stakeholders experience lower transaction costs. It is important to highlight that stakeholders do not have the same claims on the company, especially there are the shareholders and debtholders that have specific and explicit claims, but also other categories (community, governments and customers) that have implicit claims that it is not always well understandable Rodgers et al, (2013)<sup>9</sup>.

If the firm is not able to satisfy the claims of a category of stakeholders (act in a social responsible way helps the company to pay attention and try to solve different stakeholders issues), the other categories could argue that they are not able to satisfy even their claims (Rodgers et al., 2013, p 609).

This could increase the transactions cost because the many different implicit claims, that are also low-cost claims, of the stakeholders could become high cost explicit claims, thus a company with high CSP should have less high cost explicit claims and more low cost implicit one, for the low CSP companies should be happen the contrary (Rodgers et al., 2013).

The other theory that support the presence of a positive CSP and CFP relationship is the *Resource based view*, it suggest that meeting stakeholders demands represents a strategic investment (Rodgers et al, 2013, Russo and Fouts, 1997) for the firm point of view and for these reasons the company is able to develop new assets that are rare, valuable, non-substitutable and also unique, this improve the competitive advantages of the company that and thus helps to achieve higher financial returns. In the end the CSR activities is useful for the company because it helps firms to develop unique skills and intangible assets that are, especially nowadays, one of the most important sources and generator of value for the companies.

Garriga and Melé, (2004) have presented a classification of different theories about the role of Corporate Social Responsibility, in other words, which is the function and for is relevant the CSR. In their work they have divided the theories in four macro class that are: *instrumental theories, political theories, integrative theories* and *ethical theories*.

For the *Instrumental theory* CSR is seen as instruments for firm to achieve their goals (economic), clearly the ultimate aim of the companies is to reach the goals that they have set for themselves (generally survive and make profit should be the ultimate goals of the firms, any other intermediate goals are tools to achieve the last one). Thus, socially responsible actions

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<sup>9</sup> The relationship between the customers and firm is quite complex. The quality of the products is one of the features that customers expect to receive from the company in the purchasing process. From the company point of view, it has the implicit duty to provide customers with good quality products, at the same time customers have the implicit claims on firms if the product doesn't satisfy the minimum quality standard requirements (example: safety concerns) Rodgers et al., (2013).

acquire relevance for the company only as they represent an instrument for the achievement of an end, and this is corporate profit. There are therefore no other reasons that could push companies to perform socially responsible acts.

The *Political theories* sustain that firms are social institutions and they must use power responsibly Davis (1960)<sup>10</sup>. The power of companies derived, as stated by Davis (1960), from their ability to influence the market conditions. Donaldson (1982) sustains that exist a social contract between the business and society (following the philosophical thought of Locke), therefore business has implicit obligations towards society. While for the political consideration, Garriga and Melé, (2004) stated that as a result of the Welfare state crisis, the deregulation process and the globalization, large multinational companies are obtaining greater power (both economic and social) than the government and thus they have responsibility towards the society.

The *Integrative theories* are based on the fundamental assumption that the society and business are two entities that coexist in the same environment and that they need to interact to survive. The satisfaction of social demands could provide to the business the legitimacy and prestige to operate within that. The integrative theories sustain that there are no specific action that management must pursue, but it should constantly monitor the social demands and provides response to achieve social legitimacy, acceptance and prestige.

Finally, there is the *Ethical theories* that sustain that the responsibility of the firms is not only survive and make profit, but to be social responsible has the same importance, so it could explain why in certain situation the company choose what is Ethically acceptable rather than what is economically convenient.

This view could be useful to explain certain sentence of company's managers for example a The Home Depot's manager said "*Recycling program for black plastic plant buckets costs more money but it is the right thing to do*" and moreover "*At Nissan North America, even though expensive, some decisions are mandated, such as the achievement of the 95 percent recycling in plants. Plant groups are tasked with this environmental challenge. They use creativity and innovation to achieve this global goal.*" Epstein et al., (2015, p 38-39).

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<sup>10</sup> Garriga and Melé, (2004) have analyzed previous studies and it was found particularly interesting Davis (1960) that addresses the relationship between responsibility of the business and their power. In this study two general principles have been stated about how to manage social power, the "*social power equation*" and the "*iron law of responsibility*" and they said respectively : "*social responsibilities of businessmen arise from the amount of social power that they have*" (Davis, 1967, p. 48) and "*Whoever does not use his social power responsibly will lose it. In the long run those who do not use power in a manner which society considers responsible will tend to lose it because other groups eventually will step in to assume those responsibilities*" (Davis, 1960, p. 63).

The theoretical contributions that instead argue that Corporate Social Responsibility is useless if not detrimental to a company are founded on the contribution of Friedman (1970 p 1) <sup>11</sup>, based on *Agency Theory*, he argued that everything that is not strictly related to the maximization of profit for shareholders falls beyond the mandate that managers receive and therefore to be considered not to be pursued.

The crucial issue is that the managers are bounded by their responsibility to the shareholders, moreover the interest of the shareholders do not always overlap the interests of the other stakeholders, for example some shareholders could be ready to accept level of emission that is far from the desirable level from the local community in which the company operates, so they may prefer a scenario with more emission if this could enhance the corporate profits despite the preferences of other kind of stakeholders, for these reasons the scholars theorized that the CSR issues create tension inside the company and they are also time-consuming.

For these reasons many scholars have posited, that the CSR issues are outside of the management span of attention because they are not oriented to the shareholder wealth maximization (Friedman, 1970; Poitras, 1994).

Now, in regards to the implementation process of the CSR activities, Margolis and Walsh (2003) highlighted five different dimensions that represent the decision-making process of companies when they have to choose whether to implement CSR initiatives. The first dimension was the identification of the social problem to which it was necessary to respond, the second step that a company has to face is assessing whether there is the possibility for the company to solve a given social problem.

The third dimension is represented by the decision-making process that evaluate the possible alternatives, the fourth is the practical way in which the company implement the idea of being socially responsible and the last one is the evaluation of the impact the social behavior of the company has on the company itself.

A framework has been proposed to help managers complete the last part of the analysis proposed Margolis and Walsh (2003). In order to better evaluate the impact of a CSR initiative

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<sup>11</sup> Friedman (1970 p 1) states: “*In a free-enterprise, private-property system, a corporate executive is an employee of the owners of the business. He has direct responsibility to his employers. That responsibility is to conduct the business in accordance with their desires, which generally will be to make as much money as possible while conforming to the basic rules of the society, both those embodied in law and those embodied in ethical custom..... In either case, the key point is that, in his capacity as a corporate executive, the manager is the agent of the individuals who own the corporation or establish the eleemosynary institution, and his primary responsibility is to them.*”

on the company Burke and Logsdon (1996) proposed a five-dimensional analysis that are fundamental for the evaluation: centrality, specificity, proactivity, voluntarism, and visibility. Centrality represents the alignment of the CSR actions with the core business and the ultimate mission of the company, the second one, specificity, regards the specific benefits the company could obtain from CSR. Proactivity, as previously exposed, refers to the attitude of the company to anticipate the turns rather than to react, in other words the ability to pursue a proactive behavior, the fourth, Voluntarism, to the freedom of choice of the firms, so if the CSR actions are a result of new regulations or external market force or it is in line with the company view and objectives. The final component, visibility, is related to the company ability to highlights their CSR activities in order to reach the awareness of important stakeholders and to build an internal culture about it Lee et al (2013).

## II. 3 Detriments of CSR Initiatives

Starting from the Social dimension of the ESG (Environmental, Social and Governance), previous researches point out that the CSR activities are sunk cost especially when they are related with social issues Hillman and Keim (2001)<sup>12</sup>. Some others scholars have found that social initiatives are cost that should be sustained immediately (Riahi-Belkaoui, 1992) but they do not generate increases in revenues in the short term, for this reason the CSR activities reduce the Stock price (Vance 1975).

The Environmental dimension of the CSR initiatives is not free from critical issues, the scholars have stated that reduction in emission of polluting gas or reduction in waste of the production process is associated with more cost(Lu et al., 2016; Park and Tucker, 2016), this probably due to the use of more costly materials for the production and also the implementation of emission filtering procedures (both gaseous and wastewater) that are more complicated, which therefore entails a waste of time and ultimately a higher cost.

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<sup>12</sup> The social Issues of this studies are not related with the employees, they have used a different form of separation between the dimensions of the CSR, in particular everything concerning employees is not included within the Social dimension but in the stakeholders managements.

## II. 4 Benefits Associated to CSR initiatives

There are also some scholars that pointed out that is a firm duty to be social responsible, even if it could reduce the overall performance of the company. In particular, based on *Stewardship theory* (Donaldson and Davis 1991) states that there is a moral obligation that should drive the managers behaviors in regard of the Corporate Social Responsibility given that they must choose the ‘right thing’<sup>13</sup> despite it could be in contrast with the shareholders interest, this is also in line with the *Ethical theories* stated by Garriga and Melé, (2004).

It is crucial to prove that despite the previous considerations there are a lot of support to the CSR activities as a complementary activity to the core business of the company and not a substitutable one, in fact they help the company develop some important skills that are necessary to survive in the competitive field.

It is provided a table (Table 1), that summarize theorized benefits, then in the following section it will be presented the studies that have tested these hypotheses.

Direct Benefits		Indirect Benefits	
Internal	External	Internal	External
<ul style="list-style-type: none"> <li>• Enhance Employees commitments</li> <li>• Attraction of the better applicants in the job market</li> <li>• Operational effectiveness improvements</li> </ul>	<ul style="list-style-type: none"> <li>• Enhance the Reputation of the firms</li> <li>• Improve the relationship with stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>• Reduction of recruitments and turnover cost</li> <li>• Reduce cost of labour disputes</li> <li>• Reduce supervision cost</li> <li>• CSR activities stimulate the innovation inside the companies</li> <li>• Reduce after sales cost</li> <li>• Reduce Compliance cost</li> <li>• Increase efficiency</li> </ul>	<ul style="list-style-type: none"> <li>• Better access to capital, CSR as a signal of transparency</li> <li>• Increase customers satisfaction</li> <li>• Increase company’s reputation</li> <li>• Risk reduction and avoidance of conflicts between different class of stakeholders</li> <li>• Synergic relationship between all the previous mentioned factors.</li> </ul>

*Table 1, present the most common theorized benefits of CSR efforts*

Many scholars posited that firms may benefit from the CSR activities, it creates a competitive advantage against the competitors especially through the development of intangible assets or

<sup>13</sup> See also the review made by McWilliam et al., (2006), in a table (p 7) he summarize the theoretical papers speaks about the CSR.

more specifically intangible resources that are extremely difficult to replicate<sup>14</sup>, for a more precise list of the intangible resources see the Appendix 1 (table n.1).

For example, previous research have found that CSR activities tend to increase the purchase intention of the customers (Mohr & Webb, 2001) and moreover customers are willing to pay an higher price for product that incorporate social responsible features rather than the products of the competitors that do not incorporate social responsible features (Kang et al., 2012), this would result in an increase in Revenues. Another study confirms these results but highlights how the social responsible features represent an added value only if the functional attributes are maintained constant respect to the other products<sup>15</sup> (P. Auger et al, 2008). Gupta, (2002) has found that the CSR helps company to build positive brand image and this results in higher corporate reputation. Company reputation represents a very important intangible resource, that is very difficult to replicate by the competitors.

The positive effect of CSR on customers' satisfaction has been found by (Brown and Perry (1994); McGuire et al., 1998), moreover Saeidi et al., (2015) found that CSP increases the company reputation and competitive advantages through the in customers satisfaction.

Moreover, an increased attention by firms on the employees' conditions may provide great benefit to the company under different forms. A first benefit may be related with the reduction of risks, for example the CSR initiatives may help to reduce accidents in the workspace, this could turn in a reduction of litigation with employees thus a reduction in damages paid to workers who suffer an accident at work and by reducing the rate of accidents the company is not forced to replace at least temporarily injured employees with consequent cost savings or at least without having to suffer a reduction in productivity (Lu et al., 2015).

An accident and can also cause material damage to production facilities, in this case, in addition to the damage itself there is also a general slowdown in production due to the time needed for

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<sup>14</sup> Nowadays the greater sources of value for a company are becoming the Intangible Resources. These are generally not reported in the Assets of a company due to problems related to their accountability and moreover the lack of regulatory rules to be able to represent them properly in the financial accounts. Despite these problems, their uniqueness is a source of competitive advantage because they are not easily replicable.

<sup>15</sup> The sample is certain limited and not representative of the population in general, in fact they took into account only two countries (Hong Kong and Australia) and only university, graduated student and Amnesty international component. It is particularly interesting the results of the Hypothesis two of their study, in fact they found that when they ask to the respondent to choose between two products, one with good social and good functional features and another one with good functional quality but not social features most of the respondents were dispoable to pay a price premium in order to buy the social responsible products. The percentage of respondents that were available to pay the price premium drop dramatically if there is a dilemma (social product vs functional product) P. Auger et al, (2008).

repairing and re-establishing the machinery, resulting in an increase in costs for the society but also increase the health of the work force.

Moreover, the attitude to CSR practices related to employees may increase the employees commitment (Dögl and Holtbrügge, 2013), in addition they show as the corporate environmental responsibility is becoming one of the most relevant determinant for the level of employer attractiveness, this result implies that company with higher (Corporate Environmental Performance) CEP tend to attract more skilled workers<sup>16</sup>. The acquisition of more competent staff than competitors, which is one of the intangible resources, as previously argued, could create a strong and long lasting competitive advantage<sup>17</sup>. Turban and Greening (1997) suggest also that not only the Environmental Performance tend to increase the attractiveness of the company for new employees, but also the level of quality of product and service and the company's behavior towards diversity issues.

Brammer et al., (2007) show as the CSR initiatives that regards the Social dimension enhance the employees commitment<sup>18</sup>, thus Social dimension helps firms to improving the relationship with employees and enhance their level of satisfaction (Turban and Greening 1997).

As suggested by Kim et al., (2010), An increased employees' satisfaction may therefore lead to a lower rate of abandonment of the company, thus reducing employees' recruitment and training costs.

From the point of view of the investors CSR activities could improve the company reputation in financial markets and it facilitates the relationship and the access to capital (Orlitzky et al., 2003).

It is widely accepted that in general investors pay a lot of attention to the corporate reputation of the firms. For example, they tend to evaluate as less risky a company, clearly with the same financial performance, with higher CSR reputation than another one (Helm, 2007). It should be noted that (Starks, 2009) who have analyzed the results of (Helm, 2007) have found that companies with a high level of CSR are perceived as less risky by investors, but this is true only for institutional investors, who then turn more attention to these features, this is not true for general investors. An empirical research made by El Ghouli et al., (2011) has found that high level of CSP brings to a reduction of the cost of equity. The CSR efforts, is seen by the investors as a signal of transparency of the firm, so it could be useful to provide additional information to the market and consequently reduce the asymmetry of information between internal

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<sup>16</sup> They have conducted an empirical study on 215 company in China, Germany, USA and India.

<sup>17</sup> The work capabilities of the employees and the employees competences is a part of human capital, moreover also the attitude to innovativeness represent an important part of the human capital.

<sup>18</sup> Their study is conducted over 4712 employees that come from financial service.

stakeholders and external one, this contribute to reduce the cost of capital for the company.

A proactive approach of the Environmental dimension of CSR could provide different benefits to the company. It helps the companies to contain the amount of waste and, through this, to reduce the cost of the raw materials in general and achieve a better degree of efficiency Muhammad et al., (2015).

A proactive approach to the Environment helps not only to contain the cost but it could also to drive the company to redesign the productive process and obtain improvements in the product's quality Fisman et al., (2006). Moreover, a proactive environmental approach is useful to anticipate the change in regulation that could occur during the years, moreover helps company to avoid possible fines from the public authorities and where possible to achieve reduction in taxation due to governments incentive. It could be seen as a source of innovation, in order to meet the environmental target, the production process is forced to change and adapt.

The developing of new environmental friendly products it can bring the company into previously unused markets or represent a source of differentiation within the market itself and may also lead to the identification of new markets still to be found that represent one of the major sources of growth (Hart, 1995).

It is also generally accepted that a company with higher level of CSP in the Environmental Sphere as well as a positive effect on company reputation, this because the improved quality of the product, that are resulted from the redesigned process could satisfy better than before the expectation of the customers, this lead to an increased customers satisfaction that will ultimately result in more customers loyalty<sup>19</sup>.

## II. 5 Different kinds of relationship in the literature

The extensive body of literature about the relationship between the CSP and the CFP has investigated the relationship under many different point of view. In this section will be presented the most common kinds of relationship that are analyzed by scholars. In the Fig.3 there is brief a summary table of the contributions that have been analyzed in this paragraph is presented. According to previous reviews of the literature, made by Margolis and Walsh, (2003), there were more than 127 studies in the period from 1972 to 2003, they found mixed

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<sup>19</sup> High level of customers loyalty will ultimately drive customers to repeat the purchase, this is a source of revenues for the company. The organic growth of revenues is one of the most important sources of value for the company itself.



results<sup>20</sup> so they were not able to identify a precise sign in the relationship.

<i>Authors</i>	<i>Methodology</i>	<i>Independent Variable</i>	<i>Sample</i>	<i>Key Results</i>
Auger et al., (2008)	Ethical disposition survey (EDS) and a choice experiment.	Probability of Buying Ethical Products, Price Premium	1253 people: 396 undergraduate Hong Kong, 357 MBA Australia, and 500 Amnesty International Australia	High level of importance on the social attributes, the sample consumers under consideration are willing to pay a premium for social attributes but will not sacrifice product functionality.
Kang et al., (2010)	Regression Analysis	KLD STATS data as Proxy for ESG	Hotel, Casino, Restaurant and Airlines Industry maintained separately	The effect of the Positive and negative CSP on Corporate Financial Performance depend on the Industry
Lee et al., (2013)	Regression Analysis	KLD STATS data as proxy for ESG	Airlines Industries, from S&P 500 and Domini 400, 157 companies	They found a positive effect of operation related CSR on the CFP and the positive moderation of the oil price in the relationship
Waworuntu et al., (2014)	Regression Analysis	Australian PRTR data (Pollutant Release and Transfer Register) as a proxy for CEP.	Australian companies, 76 firms, from different industry.	They found that CEP is associated to CFP and that the sign of the relationship is positive in the time of economic growth, while no significant relationship during crisis.
Pätäri et al., (2014)	Regression Analysis	The ratings provided by MSCI ESG Research, formerly KLD Research & Analytics, Inc., is used to measure CSP.	Energy Industry Companies, 14 firms.	(1) CSR strengths and concerns have differing effects (2) the effect depends on the performance measure (3) the effects appear after different delays; (4) CFP does not seem to Granger-cause CSP in most of the model specifications.
Lu et al., (2014)	Review of the Litterature	Type of relationship Found in the articles	84 review study from 2002 to 2011	Inconclusive results in the overall sample but highlight some trends in the researches: decomposed CSP to CFP, specific back ground and lagged relationship.
Epstein et al., (2015)	Semi-Structured Interviews	Perception of tension about managing Environmental, Social, Corporate Governance and firm performance simultaneously	Nike, P&G, Nissan North America and The Home Depot	Managers view the social and environmental vs. financial performance not as competing, but as complementary, tension is seen as a source of innovation rather than a decision-making problem.
Youn et al., (2015)	Regression Analysis	MSCI database for CSR data including aggregate CSR, positive CSR and negative CSR	264 annual restaurant firm observations	Larger firms have more resources, better organizational structures, and procedures than smaller firms, thus they tend to develop and implement CSR initiatives better than smaller firms.
Saeidi et al., (2015)	Structural Equation Modelling	Firm's perception of the CSR dimension	Iranian Companies, 205 firms.	CSR is associated with firm performance; the association is a fully mediated relationship; and (3) reputation and competitive advantage followed by higher customer satisfaction are mediators in the relationship.
Sayekti, (2015)	Regression Analysis	Strategic CSR and Non-strategic CSR own developed measures based on the annual reports	Indonesian companies quoted in the Indonesia Stox Exchange, 136 companies	Strategic CSR affect positively the company's financial performance, while the non-strategic CSR affects negatively the company's financial performance.
Nollet et al., (2016)	Regression Analysis	Bloomberg's ESG Disclosure score	Firm Listed in the S&P 500	No significant relationships, while evidence of U-shaped relationship between CSR performance and accounting-based CFP.
Wang et al., (2016)	Regression Analysis	MSCI Environmental, Social and Governance Intangible Value Assessment index.	International Costruction Industries, 30 companies.	They found a linear relationship with ROA and EPS and also a curvilinear relationship for the same financial measures
Rhou et al., (2016)	Regression Analysis	KLD STATS as a proxy of CSP while for CSR awareness log of the number of articles that cited the companies for a CSR activity	Restaurant firms, 53 companies	Positive CSR activities add financial value only if publicize. Negative CSR activities significantly and adversely affect firm performance with the Increasing of the CSR awareness.
Sanchez et al., (2017)	Regression Analysis	Asset4 (A4) ESG indicators	154 Financial Entities from all around the world	Corporate governance and labor performance have a clear positive effect on corporate financial performance.

*Table 2, Reviewed Literature*

Another relevant review of the literature, Orlitzky et al. (2003) have reported a certain positive

<sup>20</sup> To a deeper comprehension of the Margolish and Walsh work it is suggested to read both Margolis and Walsh, (2001;2003). The second one is an integration of the first one that expanded the sample.

correlation between CSP and CFP<sup>21</sup>, this study has used a meta-analysis method<sup>22</sup>.

Finally, the most recent reviewed, Lu et al., (2014), analyzed 84 empirical studies on the CSP-CFP relationship from 2002 to 2012, and confirmed the results of Margolis and Walsh, (2003), in their study they have found inconclusive results for the general relationship, but they have noted some clear trends in the researches that could be useful to better understand and explain a so complex relationship.

In particular, Lu et al., (2014) suggested that the analysis of decomposed aspect of CSP (such as the dimensions or even the component of these dimensions) is crucial to better understand the phenomenon. This idea is in line with the presence of multiple stakeholders, or, in other words, multiple interests that can refer to the different CSR dimensions. Moreover, it seems necessary to take into account the specific background in which each company operates in order to standardize the risk specific factor of the various company. In the Fig 1 is presented an elaboration made by Lu et al., (2014) about the number of studies about CSP and CFP relationship in the recent past.

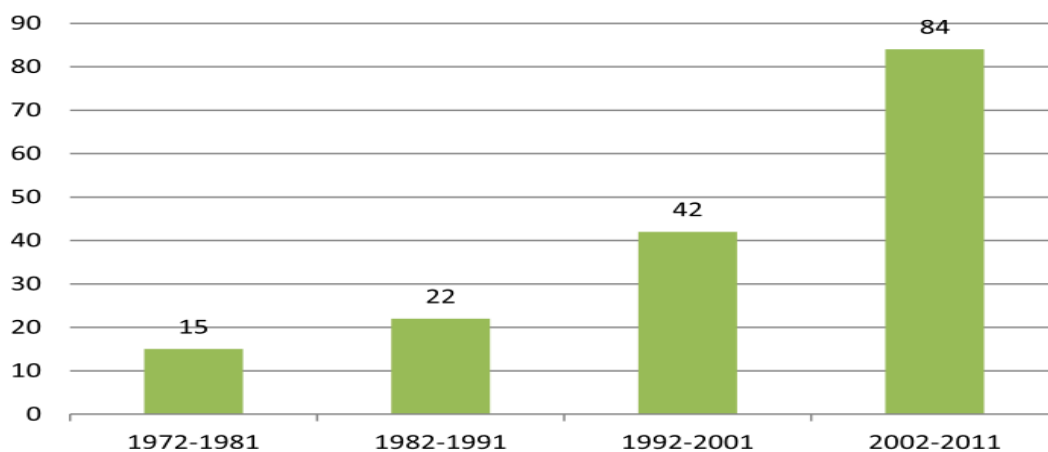


Fig. 1 Number of studies about the CSP-CFP relationship an elaboration made by Lu et al., (2014)<sup>23</sup>

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<sup>21</sup> Particularly Orlitzky et al. (2003) conclusion are very important, they have affirmed “*This meta-analysis has shown that (1) across studies, CSP is positively correlated with CFP, (2) the relationship tends to be bidirectional and simultaneous, (3) reputation appears to be an important mediator of the relationship, and (4) stakeholder mismatching, sampling error, and measurement error can explain between 15 percent and 100 percent of the cross-study variation in various subsets of CSP–CFP correlations.*”

<sup>22</sup> Orlitzky et al. (2003) have affirmed that Margolis and Walsh, (2001;2003) they have used a methodological analysis that could provide misleading results. In fact, they have applied the vote counting methods, they have affirmed that was a statistical method disavowed by many previous studies. For this reason, they use the psychometric meta-analysis is more consistent because it helps the researchers to correct sampling and measurement errors, so it could provide less biased results and more in general great precision.

<sup>23</sup> This is a graph based on data of Allouche and Laroche (2005) from the decade 1972-1981, 1982-1982-

## Liner Relationship

The first type of relationship that the researchers have analyzed is the linear one. The possible benefits that could result by CSR activities, previously exposed in the section II.1, were tested by the researchers and they formulated various hypothesis about the relationship and the factor that could create interference in the relation. It was considered in the linear relationship also the study that consider the presence of a moderator or mediator variable<sup>24</sup>.

moderator variable is a variable that could have effect in the relationship between the predictor variable (CSP) and the dependent variable (CFP), the moderator effect could change the direction of the relationship or the strength see Baron and Kenny (1986).

A mediator variable as stated by Baron and Kenny (1986, p 1176) is "*In general, a given variable may be said to function as a mediator to the extent that it accounts for the relationship between the predictor and the criterion. When certain effects will hold, mediators speak to how or why such effects occur.*". In other word a variable is a mediator in a relationship if:

- Exist a statistically significant relation between predictor variable in this case indicated as  $x$  and the mediator  $z$  exists
- Exist a statistically significant relation between predictor variable  $x$  and the dependent variable  $y$  exists
- Once the it is controlled for the mediator's variable  $z$  the relationship between  $x$  and  $y$  result less significant.

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1991,1992-2001, while the last part was added by Lu et al., (2014).

<sup>24</sup> N. Muhammad et al (2012) did not refer precisely to the economic cycle, but they have spoken about the great financial crisis. They take into account this variable by build a dummies variable that was set to 1 during the year of financial crisis and was set to 0 in the other years. Moreover its theory is that when there is abundance of resources, the investments in CSR could provide benefits because it does not preclude other kind of investments ( more business related), while during the financial crisis and period of financial constrains investments in CSR can be made in place of other investments, more related to the core business of the company, which are necessary to maintain or increase corporate profitability and raise the value of the company.

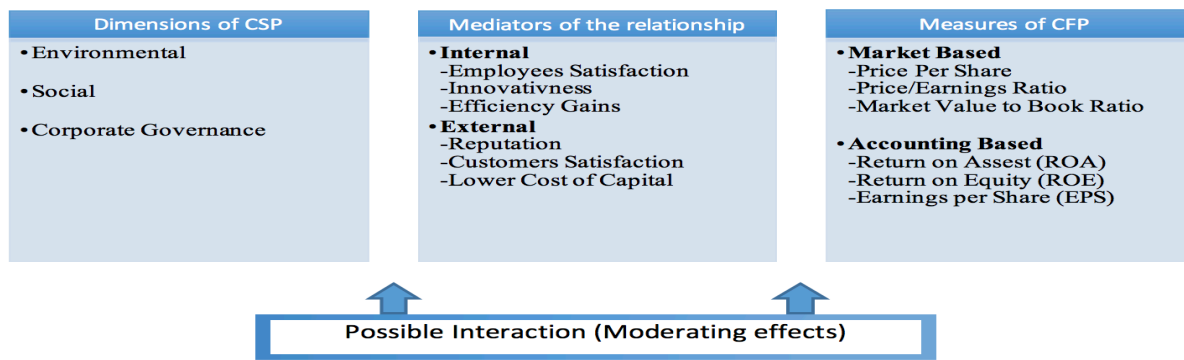


Fig. 2 Possible Links between CSP and CFP

In the Fig. 2, it is represented a brief summary of the theorized possible linear relationship that was analyzed in the previous literature.

The general linear relationship could be represented in the formula:

$$CFP = \alpha + \beta_1CSP + \beta_iX_i + \mu_i$$

Where for CFP is a proxy of financial performance, CSP is proxy for corporate social performance and  $X_i$  is a vector of control variables.

The following graph summarizes the possible negative or positive linear relationship between CSP and CFP (Fig 3).

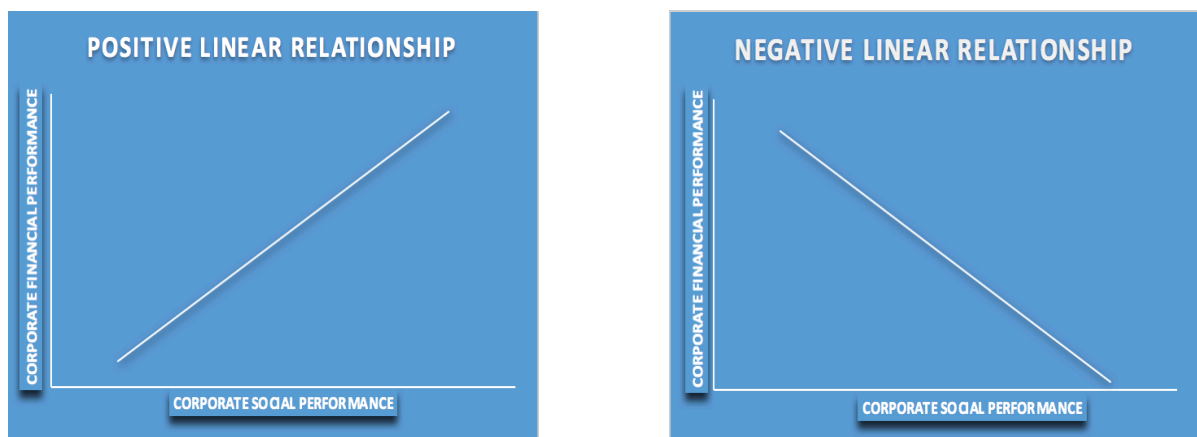


Fig. 3 Positive and negative linear relationship

For example, N. Muhammad et al (2012), have analyzed the Australian listed company, and they established a relationship between the CEP (Corporate Environmental Performance) and the CFP, they asserted that these two measures are related in period of growth but they are not in crisis period. In other word the economic cycle is a moderator of the relationship.

The basis of their assertion was the *slack resource theory*, they thought that in a period of resources constrains, like the financial crisis, the scarce availability of resources could modify the relationship itself. The empirical evidence seems to confirm their hypothesis, although with some limitations. It is worthwhile to explain that their sample is made mainly by basic materials company, so this could have greater influence on the results, the idea should be tested with a greater sample and in addition it is useful to test, as they suggested, if in different industries would have the same results.

Others authors posited that not only the CSR activities are not sufficient to generate positive financial returns, but it is necessary that the stakeholders are aware of the efforts of the company, a low level of CSR awareness lower the positive effects of the CSR activities. (McWilliams and Siegel, 2001).

For example, Y. Rhou et al. (2016) have analyzed the moderating role that the CSR awareness in the restaurant industry, they have used as a proxy of the CSR awareness the CSR media coverage, the results showed how the positive CSR awareness enhances the effects of CSR activities on CFP, while the negative CSR activities had negative impact when the negative CSR awareness increases, this seems to reinforce the hypothesis of the presence of moderator in the relationship.

$$CFP = \alpha + \beta_1CSP + \beta_2CSP * Moderator + \beta_3Moderator + \beta_i X_i$$

In this linear equation that is used to check the hypothesis of the existence of a moderator variable there is the moderating effect that it is represented by the coefficient  $\beta_3$ , it could happen that the moderator variable is included in the vector of control variable.

Other relevant moderators used in previous studies were the firm size, as researchers has affirmed that CSR activities could be influence by the size of the firm (McWilliams and Siegel, 2001; Udayasankar, 2008). The basis assumption is that the small firms have less resources and especially financial ones, and for this reason they should pay more attention to the discretionary expense such as CSR (Brammer and Millington, 2006). Whilst larger firms have not only more resources (Gupta, 1969) but also management capabilities and well defined organizational procedures that helps managers to set goals, evaluate the results and in the end, achieve a greater efficiency (Donaldson, 2001). A previous study has analyzed the moderating role of size, measured as (log[ total revenues]), and they found that the moderating role of size was statically insignificant for the aggregate measures, while has a positive influence on the relationship when they have considered positive and negative component of the CSP separately (only for the positive one), H. Youn et al., (2015).

The hypothesis the CSP and CFP relationship is a mediated one, was tested among other by (Saeidi et al., 2015) they have tested the presence of a mediator's effect caused by competitive advantage, customer satisfaction and reputation. The hypothesis was tested on a sample of 205 Iran companies and they found positive support, in their study the relationship is fully mediated by the competitive advantage. They have found that high level of CSP have positive and statistically significant effect on both reputation and competitive advantage, that will ultimately bring to better performance.

### Bidirectional Relationship

There are many authors that have tried to find out a bidirectional relationship or a virtuous circle. They thought that not only the CSR has positive effect on the CFP but also a higher level of CFP brings to more investment in CSR.

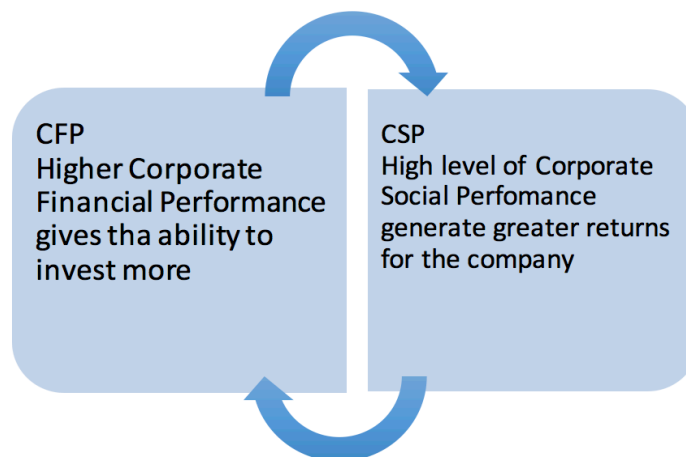


Fig. 4 Interrelationships between CSP and CFP

This hypothesis is based on the *Slack resource theory*, the slack resources is the amount of resources that a company has in surplus to the resources needed to fulfil its obligations (Cyert and March, 1963, p. 42). In their work Waddock and Graves, (1997) sustains that the better financial performance could results in an increased availability of slack resource, thus they are able to invest more in social performance domains this also in line with McGuire et al., (1988). Waddock and Graves, (1997) after have conducted a regression analysis found that better CFP is associated with better CSP but at the same time better CSP may lead to better CFP.

While (S. Pätäri et al.,2014) test the Granger causality between CSP and CFP on a sample made by 14 energy companies, they find out that the CFP do not seem to Granger cause CSP in most of their model even with great lag.

According to a previous study that (Martínez-Campillo et al., 2013) that have analyzed 11 studies that test this particular hypothesis, the results are still inconclusive. The 6 of these studies finds a moderate positive relationship while the other 5 are no statistically significant.

#### Non-linear Relationship or U-shaped

Other scholars argued that the CSR and CFP relationship could be not linear. Particularly they thought that the relationship could be represented by a U-shaped curved.

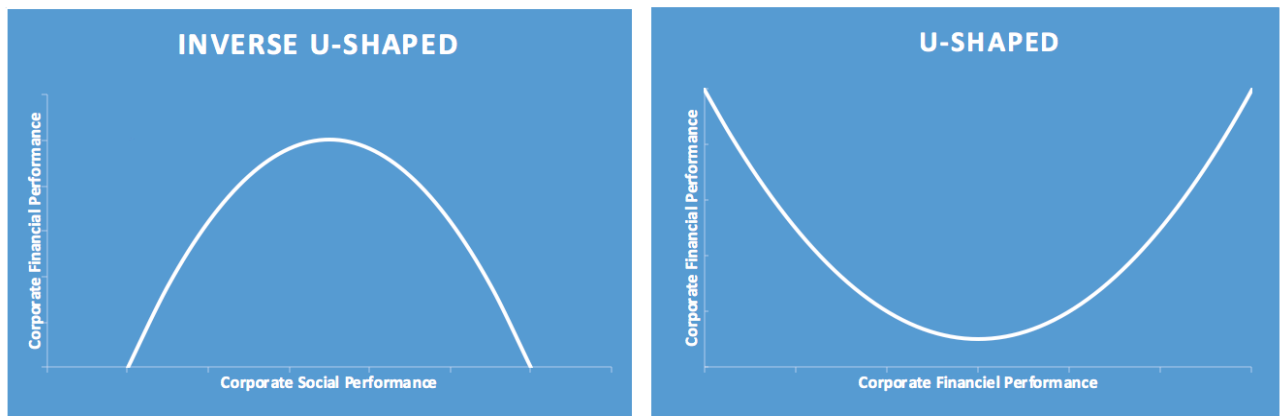


Fig. 5 Possible U-Shaped Relationships

The relative model is expressed in the following equation, the quadratic term gives to this model the non-linear shape:

$$CFP = \alpha + \beta_1 CSP + \beta_2 CSP^2 + \beta_i X_i + \mu$$

The first U-shaped graph (Fig 7) may be explained by the idea that until a certain level, the increase in CSP can provide the benefits previously mentioned and therefore increase the financial performance, but, when the company passes this level, the costs sustained to increase the level of CSP are greater than the possible benefits, as due to agency cost and stakeholders constrains, for this reason the CFP will decline soon, Wang et al. (2008), under this hypothesis theoretically it should be possible to find the optimum level of CSR activities.

Others authors have find the inverse U-shaped relationship (Fig 7), they sustain that given the fact that the initial output of the CSR initiatives are intangible, their effects should have a lag in their tangible manifestation so company will face an initial decrease in the Corporate Financial Performance, but after a certain level of CSR initiatives the slope of the curve change and the CFP will improve (Wang et al., 2016). This hypothesis was tested by (Wang et al., 2016) on a sample made by 30 companies from International Construction Industry, the results

confirm the existence of a positive curvilinear relationship for both EPS ( Earnings per Share ) and ROA ( Return on Asset) , this research found also a linear relationship for the ROA and EPS, the proxy of CSP used in the study was MSCI Environmental, Social and Governance Intangible Value Assessment index.

The U-shaped relationship is found in other previous research which analyzed the social fund markets and they found that the financial returns initially decline and then after a critical point raise, Barnett and Salomon (2012), is the first study that analyze this relationship and the hypothesis that was at the basis of the reasoning is that the CSR activities could generate some returns only after is reached a certain amount of SIC (stakeholders influence capacity).

Some others authors affirm that there are two class of stakeholders and they have not equal importance for the firms. Particularly Clarkson's (1995) have made a classification that divide the stakeholders in primary class and secondary class. The first class's needs should be satisfied by the company because this class have the possibility to highly influence the firm environment and thus also company's financial performance. Moreover, he has listed the first class:

- Shareholders
- Investors
- Employees
- Government
- Comunities

The second class was not precisely defined, but it was stated that they are *“the stakeholders groups who influence or affected, or are influenced or affected by the corporation, but they are not engaged in transactions with the corporation and are not essential for its survival* “Clarkson's (1995).

Interesting is the conception that there are stakeholders who are more likely to influence the performance of a company than others. It is thought that this varies especially from one industry to another for the specific risks that belong to an industry.

#### Industry effects

The industry characteristics are supposed to be one of the key factors that influence the Corporate Social Responsibility (McWilliams and Siegel, 2000). Moura Leite et al, (2012 p 1204) states:” *Industry plays a moderating role in social responsibility intensity because of the presence of industry-specific stakeholder pressures for improved social responsiveness.*”.



In order to remain competitive and to continue the business the company within the same industry tend reach a state of competitive parity because this help the survival Barney, (1991). Managers of the companies within an industry tend to use as a benchmark the best performer in the same competitive field in order to replicate the most successful strategies and decrease the gap (Chen 2005). There are several different theories about the industry from different business schools, starting from the classical one, Harvard School, that view the market structure of an industry as exogenous and more or less stable (Porter, 1981).

Nowadays instead the industry structure is a more dynamic concept, given the multiple forces that influence the competitive field, in line with the Schumpeterian school and Chicago schools in an industry there is a general tendency to converge over the long term to same competitive patterns and skills, but at the same time may happen that some disruptive innovation<sup>25</sup> change completely the industry structure and the peer's positions ( generally acquire in the long term with high level of investment ) became rapidly obsolete Conner, (1991). Nevertheless, literature tend to use the industry as a level of analysis, assuming that the firms are similar in the structure and in the patterns of actions. These facts are also in line with the *Institutional theory*, which this assumes that, inside an industry, social and economic relationships across the companies tend to be similar it should generate isomorphism and conformity and this is the ultimate reasons that bring to uniformity and homogeneity of the company Moura Leite et al, (2012).

The Isomorphic pressures as affirmed by Di Maggio and Powell, (1983) are the rules for the socially accepted economic behavior that are set by the external constituent of the companies. These pressures bring to previously exposed homogeneity, that is useful to provide to the company the legitimacy that it need to operate, reduce the uncertainty in the market (Jennings and Zandbergen 1995; Dimaggio and Powell,1983). Another factor that uniforms the company within an industry is the so called "*Reputation Commons Problem*". It could happen that, within an industry, a company is affected by an irresponsible behavior of some competitors (King et al, 2002) this is true especially for the dimensions that the stakeholders have difficulties to measure or they are too costly to be monitored separately<sup>26</sup>. For these reasons is not uncommon

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<sup>25</sup> In 2007 Nokia was the most famous and the bigger telephone producer all over the word, it achieved the first billion of telephone sold in 2005 its market Capitalization reached 150 billion. Despite that in 2007 started its decline in the telephone manufacturer market, a disruptive innovation was just happened. Steve Jobs has presented the first iPhone, this device rapidly acquired market share a become one of the most famous and sold product of the last 10 years. The traditional telephone Nokia or Blackberry that were the leaders in the phone market, did not react quickly to this change and they were forced at the margins of the market. In the end Nokia was sold for only 7 billion dollars to Microsoft that was far below the valuation of few years before (Linda Yueh, 2014, BBC News).

<sup>26</sup> King et al, (2002) made an example, about pollution, he affirmed that given the fact that it is difficult to check the impact that every firms have, because it requires a lot of information, time and resources, generally this

that a group of companies could associate to set up a stricter regulation in order to prevent possible damage to the industry overall reputations and the possible fallout on the firm's specific reputation (King and Lenox, 2000). This association could prevent the opportunistic behavior of company inside an industry <sup>27</sup>, or at least minimize the negative effect of the *Reputation Common Problem*.

Moreover some dimensions or even sub-dimension of CSP, but also any other business factor could be relevant in an industry even crucial, at the same time they could be irrelevant or marginal in another one, furthermore given that the industrial structure is not stable over time, but it could be affected by market force that redesign the common patterns or the necessary skills and investment to be successful, for these reason there is also a time effect, in other words the importance of the competitive factors could vary over time within the same industry. In line with this theoretical framework there is empirical evidence that highlights how the CSR effort (for example the CSR investments) vary across industries according with the specific risk and the relative importance of the stakeholders (Brammer and Pavelin, 2006; McWilliams et al., 2006).

Company that is engaged with natural resources such as mining are generally more concern about the environmental issues or health and safety issues about the employees conditions rather than corporate governance concerns, this because the visibility their operation focus more on certain aspect but less on others and also because the focus lens of the government pay more attention on some critical aspects as suggested by Jones (1995), other industries for example are highly sensible to social issues and they must manage very carefully their image ( such as Tobacco, alcohol and army industries). For example, Waworuntu et al., (2014) found that different industries are required different contents in their sustainability report according with their specific risk<sup>28</sup>.

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dimension is calculated over the industry and not at the firm level. It could happen that a company suffer a loss in reputation because the overall industry reputation is reduced.

<sup>27</sup> If the companies within an industry know that there is incentive to pursue an irresponsible behavior, threaten by the fact that another company could act in this manner, they anticipate them and act itself in an irresponsible manner, this could bring to a situation in which every company follow only the minimum requirement of the law without paying attention to other issues because they are conditioned by the actions of every other companies in the same industry.

<sup>28</sup> Waworuntu et al., (2014) have analyzed the ASEAN (Association of South East Asia Nation) listed companies and among them, they have analyzed more in details four Industry. They have tried to find out a positive correlation between CSR disclosure and CFP. The findings highlight how the industry specific risk drives or at least should drive the company sustainability report. In particular they posited that the energy industry should provide a consistent disclosure about the environmental issues, the banking industry that is not involved directly with

Another relevant important factor that justify the importance of the industry effect is related the corporate financial performance that is strictly related with the industry. In fact, Koller et al., (2015 pp 110) have showed as the Return on Invested Capital (ROIC) is related with the industry, even if there is variability within the industry<sup>29</sup>.

## II. 6 Measurability of the Corporate Social Performance

The problems related with dimension of the CSR are also present with the measurability of the CSP, in fact in the literature there were a lot of different indicators to assess the level of the CSP.

According to Igalens and Gond (2005), there were five types of measures: the analysis of the annual report or different kinds of CSP disclosure, surveys between managers about the CSP level, one-dimensional indicators and CSP reputation ratings, the last one kind of measures are published by third party and the measures provided are generally multidimensional.

It will be summarizing the previously used CSP measurement accordingly with the review made by Soana (2011):

- **CSP Disclosures:** it consists in the analysis of annual report, letters to shareholders and 10Ks and any other kind of corporate disclosure, this method is performed through the content analysis (Lu et al., 2014, Soana, 2011, Orlitzky et al. 2003). As stated by Orlitzky et al., (2003, p 408):” *Content analysis is employed to compare units of text against particular CSP themes in order to draw inferences about the organization’s underlying social performance* “. There are many type of measures for this aggregate, the simplest is to count the lines, sentences or even words that mention social information or another technique is the quality analysis<sup>30</sup>. There many studies that use this technique, and the results are mixed. Some of them for example (Bowman and

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environment, should focus its sustainability reporting more on the social and economic aspects of the business. Finally, for the telecommunication industry is crucial the disclosure about the social and economic aspects.

<sup>29</sup> In the Appendix 1(table n. 3) there is the graph of Koller et al., (2015 p 112)

<sup>30</sup> This paper does not use the CSR disclosures as a reliable source of information, the CSR disclosures may be misrepresenting the real CSP. Moreover, we think that disclosures is more related to the engagements in CSR issues and the general cost that company have sustained to purse these action. Moreover it is thought that there is no clear mechanism to link the input to actual performance of the company, view could be in line with Ullmann (1985) that have analyzed seven quantitative studies about the relationship between the CSP and the social disclosures and he found that only two of them presented a relationship between these variable, it is impossible to exclude that this relationship exists, it is though that could be dangerous rely on this type of measures.

Haire, 1975), found a mixed relationship between CSP and CFP whilst others, (Blacconiere and Northcut, 1997; Verschoor, 1998) found a negative one and (Freedman and Jaggi, 1986 Cowen et al. 1987; Patten 1990, Patten 1991, Crifo et al., 2016) have found instead a positive relationship.

- **Survey-based measures focused on managers perception:** These measures are built by the scholars, through a survey that is administered to the managers and directors. They analyzed the answer and build the level of corporate social performance. The most common problem of this kind of measures is the subjectivity associate to the managers' evaluation of corporate social responsibility. On the studies reviewed Christmann (2000) has found positive relationship while O'Neill et al. (1989) have found no significant relationships between CSP and CFP.
- **Reputational Measures:** This kind of measure<sup>31</sup> could be provided by independent organization but also developed by scholars, according with Orlitzky et al., (2003, p 408) many previous studies have developed their own reputational measures through the use of survey. These measures are developed by specialized journal such as Fortune Magazine that develop the Corporate Reputational Index (the sub section of 'responsibility to the community and environment') according to Soana, (2011). These measures are based on the Moskowitz work, but it is not the same, in fact different studies have used these two different measures alternatively. The first underlying hypothesis is that CSP reputation can be a good proxy for the underlying CSP according with (Soana, 2011 and Orlitzky et al. 2003)<sup>32</sup>. This was used by many authors such as (Moskowitz 1972; Cochran and Wood 1984) that have found positive relationship and Vance (1975) that has found a negative correlation between CSP and CFP.
- **One dimensional Indicators:** These measures are about a particular dimension of CSR and moreover only a particular aspect of the dimension, for example Emission level of Sulfure Dioxide, and do not represent a comprehensive evaluation of the company behavior. These should be very useful when the objective of the study is to establish the

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<sup>31</sup> Developed by Moskowitz (1972)

<sup>32</sup> As found by Brown and Perry (1994), the past financial results affect the corporate reputation ratings, so the first important hypothesis is not validated by previous research.

particular effect of one dimension rather than another, but they are not suitable for testing general reports that take into account all the dimensions of the ESG. For example (Muhammad et al., 2015, Ogden and Watson 1999) have found a negative relationship between CSP and CFP using the One dimensional indicators as a proxy, instead (Porter and Van Der Linde 1995; Gompers et al. 2003) have found positive relationship.

- **Ethical ratings:** These are multi-dimensional measures. They are generally developed by specialized agency such as Vigeo, Kinder Lydenberg and Domini (KLD), Thomas Reuters and others. Clearly there is not a perfect comparability of these measures because every agency has developed a proprietary valuation system. They generally evaluated the impact of company behavior towards different classes of stakeholders, and then weighted every dimension to the specific impact on the company or industry in order to build the general evaluation. The studies that uses this kind of measures are the most recent, so this could be seen as a general tendencies, in particular Rhou et al., (2016) Lee et al., (2013), Callan and Thomas (2009), Potin et al., (2014) have found positive relationship in their empirical analysis, while Baird et al., (2012) and Brammer et al. (2006) have found negative relationship and other find no significant result Maria-Gaia Soana, (2011) or mixed results Ding et al., (2016) Philipp Schreck, (2011).

A number of previous studies have used only an overall indicators of CSP indicators, without distinguish between dimension, but this confound the effects of the various component, moreover different dimension of CSR could have different impact on the performance (Rehbein et al., 2004; Hillman and Keim, 2001). For these reasons, a study that uses only overall measures could provide biased results or conclude that there is no significant relationship only because the mixture of different effects cofounds the relationship.

Given the multidimensionality of the CSR and, as a result, of the CSP which the measure of success of CSR efforts, the idea of keeping the components separate to test the effect of the various dimensions on financial performance seems irremediable, in line with the presence of multiple stakeholders that are affected at different rate from one dimension rather than another one.

In addition also the industry effects, introduced in the previous chapter, suggests that could exist different patterns of behaviors in different industries, in the mining industry, the environmental issues could have greater importance than Corporate Governance, for the

banking industry instead could be exactly the opposite. In order to avoid bias given by the mixture effects of different dimensions they should be considered separately.

It is not possible to establish, and it is not even the goal of this study, to define the most suitable approximation to represent the Corporate Social Performance, but according to Orlitzky et al. (2003), the most frequent measures used in the studies was the CSP external Ethical ratings provided by specialized companies, Lu et al., (2014) found that this measures was used in the 49% of studies in their research.

Considering that is the most used proxy measures for the CSP, the availability of data, the professionalism of the external rating agencies, the Ethical ratings was chosen as the measures that will be employed in this study.

## II. 7 Hypothesis Development

The most general hypotheses will be formulated and tested initially, so as to provide support to be able to descend into the specifics of the relationship.

The first question of this study seeks to answer is whether there is a relationship between a CSP and company's financial performance.

This in agreement with previous studies that have revealed the existence of this link even if on different samples and with the use of different approximations for CSP (Wang et al., 2016; Callan and Thomas 2009), despite they positive relation found, other study has found no linear relationship (Nollet et al., 2016).

Moreover, the proxy measures used for CSP are different<sup>33</sup> and also the samples were different, for these reasons it is important to test whether this relation is present also in the sample of this study and moreover if changing the proxy measures used for the CSP could affect the results.

### ***H1: There is a positive relation (overall) measure of CSP and CFP.***

After that it will be investigated if there is a difference between the effects of the negative and positive components of the ESG and in particular it is considered fundamental to demonstrate how the reduction of the negative components of the CSR is associated with an increase in financial performance, therefore contrary to what found by could Ding et al., (2016), and

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<sup>33</sup> Both the studies use the same Ethical ratings even if in different period of time. The first one use Morgan Stanley Capital International Environment Social and Corporate Governance (MSCI ESG) and the other study use KLD ratings that now is MSCI ESG.

moreover that the composite measure effect tested in the previous hypothesis could be statistically insignificant due to two opposite effect.

These hypotheses are consistent with previous studies such as Pätäri et al., (2014) Callan and Thomas (2009), Hillman and Keim (2001). The first studies mentioned in the previous section finds that positive and negative CSP have different effect on the CFP and moreover that this effect depends on which kind of measures are used for CFP (accounting vs market). Second one instead, finds out that the effect of positive and negative CSP are different in strength.

***H2: There is positive relation between the Positive CSP score and Corporate Financial Performance***

***H3: There is a negative relation between Negative CSP score and Corporate Financial Performance***

Given the multidimensionality of the CSR as well as the CSP, this will be tested through another regression equation that will keep each dimension separate from the other the effect of each dimension on the firm performance, this is in line with suggestion provided by Lu et al., (2014)<sup>34</sup>.

It is expected a different impact of the of ESG dimensions, according to the idea of multiple stakeholders, it is also useful to provide a guidance to managers about which could be the more relevant dimension in their fields. For these reasons it can be formulated the following hypothesis:

***H4: The Environmental Performance is positively related to Corporate Financial Performance***

***H5: The Social Performance is positively related to Corporate Financial Performance***

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<sup>34</sup> He said (p 204): “A clear trend is observed in the increasing focus of research into CSP-CFP relationships on exploring the links between specific aspects of the two constructs. The previously reported positive relationships between the decomposed CSP and CFP in dual directions are confirmed by most of the studies examined in this paper, while some did argue for a non-significant or a negative relationship. Exploring the decomposed CSP and CFP relationships is observed as a promising direction for future research”

***H6: The Corporate Governance Performance is positively related to Corporate Financial Performance***

Then, given the industry specificity of company performances and behaviors, all the relationship previously exposed will be tested between two different sub-sample, the industrial sample and the financial sample in order to understand if:

***H7: The relations between CSP dimensions and CFP are industry specific.***

In the end, it could be interesting to go more in details and try to find out if inside a dimension there could be different tendencies, in line with the idea of multiple stakeholders, the sub-components<sup>35</sup> of the dimension should represent more precisely than the dimension themselves the different class of stakeholders. The Hypothesis 8 would find which subcategories have the greater impact on different industries. For this reason, it will be performed another regression in which the independent variable will be the subcategories of the CSP measures by the Thomas Reuters ESG scores. This will be done because it is expected that not every subcategory has the same impact on the CFP, some could be more important rather than another one, accordingly to Sanchez et al., (2017), Philipp Schreck, (2011).

***H8: Investigated the effect of each dimension's (Environmental, Social and Governance) subcategories on CFP***

An additional analysis will be conducted on the previous hypothesis, tested on a sub sample that divided the two general samples and took two industries for every sample, it will be chosen two industries with High Environmental Impact and other two with Low Environmental Impact. It is expected that the relevance of the Environmental dimension is greater for the first sample rather than for the second one, due to their operational risks.

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<sup>35</sup> For the definitions of subcategories and their measurements see below Sub Categories Measures



### III Research Methods

#### III. 1 Sample and Data sources

The European Union represents the second economic area of the world for GDP and accounts for the 22% of the World GDP<sup>36</sup>, Table 3 provides some details about on each country GDP.

Ranking	Country Name	GDP 2010	GDP 2011	GDP 2012	GDP 2013	GDP 2014	GDP 2015	GDP 2016	GDP % 2016
0	European Union	\$16.977.855,8	\$18.340.538,6	\$17.271.716,0	\$18.002.706,3	\$18.588.239,2	\$16.334.844,0	\$16.397.979,8	100,00%
1	Germany	\$3.417.094,6	\$3.757.698,3	\$3.543.983,9	\$3.752.513,5	\$3.879.276,6	\$3.363.599,9	\$3.466.756,9	21,14%
2	United Kingdom	\$2.429.680,4	\$2.608.824,7	\$2.646.002,6	\$2.719.509,5	\$2.998.833,6	\$2.861.090,7	\$2.618.885,7	15,97%
3	France	\$2.646.837,1	\$2.862.680,1	\$2.681.416,1	\$2.808.511,2	\$2.849.305,3	\$2.433.562,0	\$2.465.454,0	15,04%
4	Italy	\$2.125.058,3	\$2.276.292,5	\$2.072.823,1	\$2.130.491,3	\$2.151.732,8	\$1.824.902,2	\$1.849.970,5	11,28%
5	Spain	\$1.431.587,6	\$1.488.017,2	\$1.335.945,7	\$1.361.775,9	\$1.375.856,1	\$1.192.955,5	\$1.232.088,2	7,51%
6	Netherlands	\$836.389,9	\$893.757,3	\$828.946,8	\$866.680,0	\$879.635,1	\$750.318,1	\$770.845,0	4,70%
7	Switzerland	\$581.208,6	\$696.278,7	\$665.054,1	\$684.835,0	\$702.705,5	\$670.789,9	\$659.827,2	4,02%
8	Sweden	\$488.377,7	\$563.109,7	\$543.880,6	\$578.742,0	\$573.817,7	\$495.694,4	\$510.999,8	3,12%
9	Poland	\$479.321,1	\$528.819,9	\$500.344,3	\$524.214,8	\$545.151,8	\$477.336,8	\$469.508,7	2,86%
10	Belgium	\$483.548,7	\$527.008,0	\$497.884,1	\$520.117,1	\$531.750,9	\$454.991,3	\$466.365,7	2,84%

Table 3, European Countries GDP<sup>37</sup> (data are in millions of \$)

The aim of this study and to take the European economy as a reference population, in order to achieve this, it was chosen as an approximation of the European economy the European single market areas has been chosen and not the European union or the euro area.

In the single European market areas, companies can trade goods and services without being subject to customs duties or tariff barriers in general. Moreover, the states that are members of the Single Market are obliged to transpose European standards with regard to products that can freely be traded within the Union without the need for further controls by the competent state bodies. Moreover, all the states that are members of the Single Market can benefit from the tight tariff agreements from the Union with external countries Cadman and Tetlow, (2017). The four fundamental pillars of the European single market are<sup>38</sup> :

- Freedom of movements of Goods (no limitation such as quota but also no tariffs barrier)

<sup>36</sup> See the Appendix 3 (table 1) for the GDP ranking, data came from: <http://databank.worldbank.org/data/reports.aspx?source=2&series=NY.GDP.MKTP.CD>

<sup>37</sup> The data come from the Word Bank database. The entire table is available in the Appendix 3(table 2). Source of data are : <http://databank.worldbank.org/data/reports.aspx?source=2&series=NY.GDP.MKTP.CD&country=EUU -advancedDownloadOptions>

<sup>38</sup> Detailed list of the features of single market available at: <http://ec.europa.eu/growth/single-market/>

- Freedom of movements of people
- Freedom of movements of capital for personal but also for business purposes.
- Freedom of establishment of business in another member state.

The choice of the European single market is due to the benefits it creates for the economy that belong to, in fact a research made by OECD have found that the trade in good is 60 % higher than if the countries have used other external rules such as the World Trade organization rules Cadman and Tetlow, (2017).

Cadman and Tetlow, (2017) highlight how in the modern era, in which just in time delivery and integrated supply chain are becoming an essential competitive factor, the free movements of goods without borders<sup>39</sup> could represent a source of competitive advantage for companies.

Thank to this choice, for the reference population also Swiss<sup>40</sup> and Norwegian<sup>41</sup> companies can be included in the sample.

The United Kingdom seems to represent a problem for the Brexit. In other words, there is legislative framework which is to date still to be defined, so it is impossible to know with certainty whether there will be economic conditions in the future that will allow us to use the results presented in this study. However, this is not a problem in the analysis because the data refer to the 2016 year in which the United Kingdom was still part of the European Union. Fails

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<sup>40</sup> For Swiss companies, it is necessary to make some clarifications. Switzerland is not a member of European Union and neither has signed the EEA agreement with EU, however it is also true that the European Union has bilateral agreements with Swiss Confederation. These agreements signed with the Switzerland cover the following subjects: the seven agreements are on free movement of people, air transport, land transport, trade in agricultural products, technical trade barriers, public procurement and research cooperation. These agreements relate to Switzerland's participation in Schengen and Dublin, agreements on taxation savings, processed agricultural products, statistics and combating fraud, participation in the EU's MEDIA program and the European Environment Agency, and Swiss financial contributions to economic and social cohesion in the new EU Member States. Despite some rigidity in the agreements and lack of mechanism of adaptation, the conditions of Swiss companies operating in Europe are to be considered similar to those of other European companies and for this reason it is also possible to include them in the sample Bartczak and Fayos, (2017).

<sup>41</sup> The Norway is not part of the European single market directly, it is not a formal member of the European Union like other countries such as Lichtenstein, Iceland, Switzerland. In order to achieve the benefits provided by the single market, that is one of crucial part of the European Union, they have signed (not the Switzerland) the EEA (European Economic Area), that extend the conditions of the European internal market to those countries Bartczak and Fayos, (2017).

to represent the UK and Swiss companies could represents fail to analyze properly the European market.

Stoxx 600 Europe has been chosen as the reference sample for European companies. This index is made 600 components between European company, not only the companies that have their registered office in Euro zone but all the company of the EEA and it is a sub-component of the Dow Jones Stoxx 1800 Index. The companies of the Stoxx 600 index are the greatest company for capitalization in the European market and they came from 16 European countries<sup>42</sup>. It represents the 95 % of the capitalization of these market therefore could be possible to consider it as a representative index of European companies and also sufficiently adequate to represent European companies in general, clearly with regard to large listed companies. The initial sample is about 6000 firm-year-observations, the time period of the analysis goes from 2007 to 2016 there are 600 companies in the stocks.

The most representative European country in the sample is the United Kingdom, the British companies are 169, followed by the French firms 87 and the German ones 65, as exposed in the Table 4.

Country	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total Obs.	% on Total
United Kingdom	169	169	169	169	169	169	169	169	169	169	1690	28.17%
France	87	87	87	87	87	87	87	87	87	87	870	14.50%
Germany	75	75	75	75	75	75	75	75	75	75	750	12.50%
Switzerland	48	48	48	48	48	48	48	48	48	48	480	8.00%
Sweden	45	45	45	45	45	45	45	45	45	45	450	7.50%
Italy	32	32	32	32	32	32	32	32	32	32	320	5.33%
Netherlands	31	31	31	31	31	31	31	31	31	31	310	5.17%
Spain	28	28	28	28	28	28	28	28	28	28	280	4.67%
Denmark	22	22	22	22	22	22	22	22	22	22	220	3.67%
Finland	16	16	16	16	16	16	16	16	16	16	160	2.67%
Belgium	14	14	14	14	14	14	14	14	14	14	140	2.33%
Norway	12	12	12	12	12	12	12	12	12	12	120	2.00%
Ireland	9	9	9	9	9	9	9	9	9	9	90	1.50%
Austria	7	7	7	7	7	7	7	7	7	7	70	1.17%
Portugal	3	3	3	3	3	3	3	3	3	3	30	0.50%
Czech Republic	2	2	2	2	2	2	2	2	2	2	20	0.33%

Table 4, Total Number of Firm Observation for each Year.

<sup>42</sup> Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

If the sample had not included the Switzerland, the United Kingdom and Norway it would have been necessary to exclude 40% of the companies present in the Stoxx 600 Europe from the sample and for this reason only a partial representation of the effect of the phenomenon being investigated would have been provided.

Although the Italian economy represents the fourth European economy by GDP in absolute terms, it is underrepresented in the index of most European capitalized companies, being in sixth place. It is positioned for companies represented in the index even behind Sweden, which in terms of GDP represents one third of the Italian one.

<i>Industry</i>											<i>%</i>	
	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>	<i>2016</i>	<i>Tot.Obs.</i>	<i>Tot</i>
Banking & Investment Services	71	71	71	71	71	71	71	71	71	71	710	11.83%
Industrial & Commercial												
Services	46	46	46	46	46	46	46	46	46	46	460	7.67%
Industrial Goods	44	44	44	44	44	44	44	44	44	44	440	7.33%
Insurance	33	33	33	33	33	33	33	33	33	33	330	5.50%
Cyclical Consumer Services	32	32	32	32	32	32	32	32	32	32	320	5.33%
Cyclical Consumer Products	29	29	29	29	29	29	29	29	29	29	290	4.83%
Chemicals	28	28	28	28	28	28	28	28	28	28	280	4.67%
Real Estate	28	28	28	28	28	28	28	28	28	28	280	4.67%
Pharmaceuticals & Medical	27	27	27	27	27	27	27	27	27	27	270	4.50%
Telecommunications Services	25	25	25	25	25	25	25	25	25	25	250	4.17%
Utilities	25	25	25	25	25	25	25	25	25	25	250	4.17%
Food & Beverages	24	24	24	24	24	24	24	24	24	24	240	4.00%
Energy - Fossil Fuels	23	23	23	23	23	23	23	23	23	23	230	3.83%
Transportation	23	23	23	23	23	23	23	23	23	23	230	3.83%
Mineral Resources	20	20	20	20	20	20	20	20	20	20	200	3.33%
Software & IT Services	19	19	19	19	19	19	19	19	19	19	190	3.17%
Automobiles & Auto Parts	18	18	18	18	18	18	18	18	18	18	180	3.00%
Healthcare Services &												
Equipment	18	18	18	18	18	18	18	18	18	18	180	3.00%
Retailers	16	16	16	16	16	16	16	16	16	16	160	2.67%
Food & Drug Retailing	13	13	13	13	13	13	13	13	13	13	130	2.17%
Technology Equipment	11	11	11	11	11	11	11	11	11	11	110	1.83%
Applied Resources	9	9	9	9	9	9	9	9	9	9	90	1.50%
Personal & Household P & S	9	9	9	9	9	9	9	9	9	9	90	1.50%
Investment Holding Companies	4	4	4	4	4	4	4	4	4	4	40	0.67%
Industrial Conglomerates	3	3	3	3	3	3	3	3	3	3	30	0.50%
Renewable Energy	2	2	2	2	2	2	2	2	2	2	20	0.33%

Table 5, The Industry compositions of the sample

For the Industry classification it is used the Thomson Reuters classification, this choice was made because, the Thompson Reuters industry classification is consistent with the weighting scheme that is used to form the ESG evaluation that will be the interest variables in this study, and in particular the level of aggregation is the Business Sector level<sup>43</sup>. It is important to present the industry composition of our sample (Table 5) in order to provide the necessary information to understand from which industry come from the companies in our analysis.

The most represented Business sector are the Banking and Investment service that account for the 12% of the total observation, followed by the Industrial & Commerce Service and the Industrial Goods with a weight of 7.5% of the total sample.

The data used in these studies came from the Thomson Reuters database, Thomson Reuters is one of the leading company in the information industry especially the financial ones, together with Bloomberg.

The data are collected from Thomson Reuters through the Eikon database. It was used both for the Corporate Financial Data than the Corporate Social Performance Data. The Corporate Social performance data are summarized by the three main categories in which is generally divided particularly the Environmental, Social and Corporate Governance. These ESG indicators are developed by Thomas Reuters, these ratings enhance and replace the ASSET4<sup>44</sup> ratings. It is already used in the literature, previous studies that used the same database are for example by Sanchez et al. (2017) Miras-Rodríguez et al. (2015), Cheng et al. (2014), Ioannou and Serafeim (2012). In fact, according to Miras-Rodríguez et al. (2015) *“its being much employed by investors to build their sustainability reports.”*

### III. 2 Dependent Variable

There are several possible solutions for financial performance measures, the CFP measures similarly CSP measures could provide information about different aggregates (for example profitability or firm value). In the literature basically, there are three main measures of Corporate Financial Performance:

- Accounting-based Measures
- Market-based Measures
- Perceptual-based Measures

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<sup>43</sup> For more details about the Thomson Reuters classification it is suggested to look at <https://financial.thomsonreuters.com/content/dam/openweb/documents/pdf/financial/trbc-fact-sheet.pdf>

<sup>44</sup> ASSET4 a Thomson Reuters's business specialized in the evaluation process of Environmental, Social and Governance Issues.

This trichotomy was used in some important reviews of the literature such as the work of Orlitzky et al. (2003) and Lu et al. (2014). However, Lu et al. (2014) suggested that in order to achieve better results researchers should look for a more objective as possible kind of measures, Figure 6 provides a count of studies that used these different measures.

		Year										Total
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	
CFP Type	1) Market-based	0	1	0	1	5	2	10	5	9	6	39
	2) Accounting-based	2	1	2	1	1	5	13	12	12	7	56
	3) Perceptual measures	0	0	0	1	0	1	0	5	1	2	10

*Fig 6, Count of studies that used different proxy for the Corporate Financial Performance (Lu et al.,2014)*

### Accounting-Measures used as a proxy of Financial Performance

The accounting-based measures are the most used CFP proxy in the literature in fact Lu et al. (2014), identified 56 studies that uses accounting measures among a sample of 105 studies. Moreover, the Accounting-based measures is the types of measures that seems to provide better results under the correlation point of view<sup>45</sup>. Despite this, many other scholars argued that the accounting-based measures have a lot of limitations some linked to their information power regarding financial performance, others linked to the type of relationship we are going to analyze.

The most used arguments against these types of measures are:

- The accounting measures fail to represent the effects of CSP over the CFP because the expenditure for CSR activities are generally sustained in the short term, while the possible benefits provided by the stakeholders' reaction should take even long time to manifest. They are more historical because they try to represent the past performance of the companies and not the future one. However, this represents a relative problem with a lagged value of the variables it is possible to overcome this issue.
- These measures fail to truly represent the value of particular type of assets that are not fully represented in the Financial Statements such as some intangible assets and also the intangible resources not explicitly included in the IAS (Hillman and Keim 2001).

<sup>45</sup> "CSP appears to be more highly correlated with accounting-based measures of CFP than with market-based indicators" Orlitzky et al. (2003)

- Accounting-based measures are susceptible to be managed in order to reach some personal objective of the management, even if in line with the firm's accounting principle<sup>46</sup>, so these indicators could be biased. This phenomenon is called Earnings Management<sup>47</sup>
- They measure only some pieces of the overall company, so they can provide only a partial portrait of the firm value. For these reasons, some scholars state that the Accounting Based Measures are more suited to represent the profitability of the company rather than the firm value, so how much the company is able to generate starting from the initial resources rather than their value.

It seems to be a more internal representation of the company, because it could be associated more with the efficiency of the company rather than to the effectiveness Lu et al. (2014)<sup>48</sup>. The most used in the literature are: Return on Assets (ROA), Return on Equity (ROE), the EPS (Earnings per Share) and Return on Sales (ROS).

#### Market-Based Measures used as a proxy of Financial Performance

The Market-based measures seem to be free from the limitations that regards the accounting ones. These kind of measures are generally more oriented to the future value of the company rather than the historical one<sup>49</sup>, based on the semi-strong efficiency hypothesis about the capital market Fischel (1989), it implies that every CSR activities that a company has pursued in the

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<sup>46</sup> It is not necessary that managers pursue fraudulent behavior to perform the earnings management.

<sup>47</sup> Healy and Wahlen (1999) sustained that “earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers”.

<sup>48</sup> In the sense that given the economic efficiency as “the ability of a company to accomplish a task with the minimum effort, or cost “or in other word to maximize the output with a given input, the accounting measures (ROA, ROE, EPS) seems to be well suited for this definition. For example, an increase in efficiency could increase the ROA, so a company is able to generate more resources with a certain basis.

<sup>49</sup> The theory about the efficient market says that the stock prices quickly incorporated every information, so there are no bias in the value of the stock. There is however three different position about the market efficiency: weak, semi- strong and strong. The first one sustains that that the stock prices incorporate all the past movements of the stock (so all the past information is reflected in the price), the second hypothesis sustains that the stock price reflects all the publicly information, the last one posits that stock's price reflects the value of all the information, no matter what are the sources.

past should be public and for these reason the expectation about the value of the company is immediately reflected in the stock prices. Moreover, Market measures seem to be less influenced by the earnings management although a certain grade of manipulation could lead to false information to the market and for these reasons the price could be manipulated.

Despite all this positive characteristic of the market-based measures, many previous studies failed to find a correlation with these measures of corporate performance, while at the same time found significant results for the accounting measures. For example, the research that have analyzed the return on mutual funds and normal funds have found that the first category did not earn a statistically significant excess return, performance of these two class are similar Hamilton et al., (1993).

Other studies focused more on the stock price rather than the funds or index return have highlighted that lower social performance's companies have higher return than the higher social one Brammer et al. (2006).

This point could be in line with the concept previously expressed, a company that pursues CSR activities and for this reason have a higher CSP ratings, should be perceived by investors as less risky and for this reason the expected return should be lower.

In another study Wang et al., (2016) try to prove the correlation between CSP and CFP in the international construction industry<sup>50</sup>, they have used three accounting measures and two market-based measures, while for the accounting measures there are evidence of positive correlation for Market based measures it was not found any evidence of significance correlation with the CSP measures.

In recent studies a very frequents market's measures for the financial performance is the Tobin's Q. This measures is defined as ratio between the market value of the assets and the replacement cost of assets (Chung and Pruitt, 1994), clearly if the Tobin's Q value is greater than one they company market value exceed the book value, the market is accounted for something that is not represented in the book value of the company, instead in the Tobin's is lower than one the company could be undervalued. It was used in many studies such as Muhammad et al, (2015), Rhou et al, (2016), Youn et al, (2015), Lee et al, (2013), Kang et al, (2010). For example, Ding et al, (2016) that have found that the CSR activities is correlated to the Tobin's Q and moreover

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<sup>50</sup> Both linear and non-linear. They have used the ROA, ROE, EPS, SR (Stock Returns) and P/E ratio. They found linear relationship only for EPS and non-linear relationship for both EPS and ROA.



not only the positive CSR but also the negative one and more surprisingly they are both positive correlated with Tobin's Q<sup>51</sup>.

Notwithstanding also the market-based measures have some shortfall, especially when the market is passing through some extreme events, that in some sense are "two faces of the same coin":

- Financial bubbles, when the market is faced a financial bubble generally overvalue the price of the stocks, this could lead to biases in the market measures, so it seems necessary to sterilize this effect.
- Financial Crisis, similarly to the previous situations but opposite. The market undervalues the stock price and the investors tend to be over pessimistic. This could result in stock price that does not fully reflects the real value of the company and so it could bias the possible correlation with the CSR activities.

### Perceptual Measures

Perceptual measures are generally constructed with survey. The researchers ask to managers of the company to evaluate the CFP, generally they should be base their analysis on some objective indicators (ROA, ROE and EPS) and make a comparison with the competitor's situations Saeidi et al, (2015). The most common problem of this kinds of measures is that the valuation is generally subjective and Lu et al, (2014) suggest that the most important factor when researchers have to choose the CFP measures is the objectivity of the measures itself

After this important specification, it was decided to exclude the Perceptual one in line with the trend highlighted by the literature these are the less used measures but also the less reliable measures because they are based on a personal evaluation (generally by the managers of a society) that despite could provide a useful insight, they are generally partial and not free from conditioning. These measures are generally when accounting or market-based measures are not available.

There are not sufficient evidences to believe that one measures (between the market and the accounting one) is superior for our purposes, since both have possible shortcomings, so in this

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<sup>51</sup> In particular they created three groups of peer inside every industries in which they have divided the company according to their position among the other companies. They showed that above average positive behavior and above average negative behavior have both positive effects on the firm's value. They start their reasoning that the stakeholders do not evaluate the absolute value of the CSR but they evaluate it in regards to other competitors.

paper will be used both market and accounting measures in order to take into account all the possible effects of the CSP on the CFP.

Starting from the accounting measures the choice fell on three different measures: The Return on Asset used also by (Wang et al., 2016) ,Muhammad et al., (2015) Nollet et al., (2016) Sanchez et al., (2017)), the Return on Common Equity accordingly with (Wang et al., (2016) Sanchez et al., (2017) Kang et al.,(2010) and the Return on Sales Callan and Thomas (2009). The Return on Asset (ROA) used in this paper is calculated as follow:

$$ROA = \frac{\text{Earning before Interest and Tax}}{\text{Total Assets}}$$

This should indicate the ability of the company of generate resources with a given amount of resources invested.

The other accounting measures is the Return on Equity (ROE), it measures how much the company is able to produce for every unit of investment of the shareholders. the formula that was used to calculate the ROE is as follows:

$$ROE = \frac{\text{Net Income}}{\text{Shareholder's Common Equity}}$$

The last accounting measures that is used in this paper to be a proxy of the Financial Performance of a company is the Return on Sales (ROS) and it is calculated with the following formula:

$$ROS = \frac{\text{Operating Margin}}{\text{Sales}}$$

For the market-based measures instead it was chosen the Tobin's Q according to the more recent development on the literature Rhou et al., (2016) ,Muhammad et al., (2015) Youn et al., (2015) Lee et al., (2013), and particularly it was used the simplified formula proposed by Chung and Pruitt, (1994), because the more precise formula provided by Lindenberg and Ross (L-R) (1981)<sup>52</sup> needs some information that are too difficult to acquire and moreover the

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<sup>52</sup> The precise formula is the following one :  $L - Rq = \frac{PREFST+VCOMS+LTDEBT+STDEBT-ADJ}{TOTASS-BKCAP+NETCAP}$ . Where the PREFST is equal to outstanding preferred stock value, VCOMS is equal to common shares' price times the share outstanding, LTDEBT is equal to the firm's long term debt adjusted for the age structure of debt, is the book value of current liabilities that is assumed equal to the market value of them, ADJ is the book value of current assets (

computational efforts is also very high, for these reasons it was decided to use the approximation of Tobin's Q:

$$\text{Approximated } Q = \frac{MVE + PS + DEBT}{TASSETS}$$

Where the Market Value of Equity is equal to:

$$MVE = \text{Common Share Outstanding} \times \text{Share Price}$$

the TASSETS is the value of total assets, the DEBT is the book value of long term liabilities of the company plus the short-term liabilities net of the short-term assets and the PS is represented by liquidating value of outstanding preferred stock<sup>53</sup>. The greater benefit of this technique is that all the relevant data is provided in the balance sheet of the company, and for this reason they are easy to find.

The last measure is a market-based one, according to previous studies Wang et al, (2016) and Kang et al, (2010), particularly Kang et al, (2010) have affirmed that "*PER (P/E) represents long-term performance by reflecting investors' perceptions from the stock market relative to a firm's accounting value – earnings-per-share (book value).*".

The earnings that is used in the formula is the earnings at the end of fiscal year and the market share price is the price of the last trading days in the fiscal year.

The formula for the calculation is the following:

$$\frac{P}{E} = \frac{\text{Market current Share price}}{\text{Earnings of the last 12 month}}$$

It could be also see as the amount of money that investors will pay for one unit of actual earnings. Generally high value of P/E is associated with the investors' expectation that company will generate higher earnings respect to company that have lower P/E, while a low P/E could be mean that the company is perfectly in line with the past expectation and moreover than the

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same assumption of the current liabilities), TASSET is equal to book value of total assets, BKCAP is the book value of firm's net capital stock and finally the NETCAP is firm's inflation adjusted net capital stock.

<sup>53</sup> The most important distinction between the two formulations of Tobin's Q is about the valuation of the property, plant and equipment (PPE), in Chung and Pruitt, (1994), calculation is supposed to be equal to the book value.

future expectations is equal to the past one, or that the company is undervalued by the investor, the Price do not fully reflect the actual value of the future earnings.

### III. 3 Independent Variables

It seems necessary to provide a reference framework of how the CSP indicator are computed by the provider in order to show that these are well suited for our analysis.

The proxy for Corporate Social Performance are the following:

- Sub-categories Measures
- Dimensional Measures
- Positive and Negative CSP Score
- Positive CSP Score
- Comprehensive CSP score

Although the order of the independent variable is exactly the opposite of the order in which the hypotheses were presented, however, it seems the best way, as it allows us to explain how the measures are collected starting from the fundamental ones and then proceeding by aggregation, until the most summarizing indexes are constructed.

#### Sub Categories Measures

These measures are the fundamental of the dimension and represent the deepest level of analysis present in these studies, in Table 6 provides the description of subcategories. In order to build the KPI Thomson Reuters searches for more than 400 ESG measures in very different sources in order to reach an extremely high level of data quality, the main sources use to find data are Annual Reports, Company Websites, Non-Government Organization Web sites, Stock Exchange Filings, CSR reports of the companies and New Sources. This method is consistent with the evaluation approach proposed by EFFAS KPI for ESG 3.0, (2010, p 8) <sup>54</sup>.

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<sup>54</sup> "KPIs for ESG reflect requirements of economic stakeholders in general and investment professionals in particular. DVFA [Deutsche Vereinigung für Finanzanalyse und Asset Management] and EFFAS [European Federation of Financial of Financial Analysts Societies] as professional associations represent investment professionals i.e. individuals who manage or evaluate investments or credit risks as professionals." They have designed a framework to report the CSP of the company, in order to ensure comparability within the same industry. In fact, they said "the authors encourage investors, financial analysts, credit rating agencies and other vital functions in capital markets to integrate KPIs for ESG 3.0 into their valuation models and use individual KPIs or ESGs in their dialogue with companies. "

<i>Score Types</i>	<i>Description of the Sub Categories</i>
Resource Use Score	The Resource Use Score reflects a company's performance and capacity to reduce the use energy or water and to find more eco-efficient solutions by improving supply chain management
Emissions Score	The Emission Reduction Score measures a company's commitment and effectiveness towards reducing environmental emission in the production and operational processes.
Innovation Score	The Innovation Score reflects a company's capacity to reduce the environmental costs and burdens for its customers and thereby creating new market opportunities through new environmental technologies and processes or eco-designed products.
Workforce Score	The Workforce Score measures a company's effectiveness towards job satisfaction a healthy and safe workplace maintaining diversity and equal opportunities and development opportunities for its workforce.
Human Rights Score	The Human rights category score measures a company's effectiveness towards respecting the fundamental human rights conventions.
Community Score	The Community Score measures the company's commitment towards being a good citizen protecting public health and respecting business ethics.
Product Responsibility Score	The Product Responsibility Score reflects a company's capacity to produce quality goods and services integrating the customer's health and safety integrity and data privacy.
Management Score	The Management Score measures a company's commitment and effectiveness towards following best practice corporate governance principles.
Shareholders Score	The Shareholders Score measures a company's effectiveness towards equal treatment of shareholders and the use of anti-takeover devices.
CSR Strategy Score	The CSR Strategy Score reflects a company's practices to communicate that it integrates the economic (financial) social and environmental dimensions into its day-to-day decision-making processes.

*Table 6, Thomson Reuters sub-categories of the dimensional Measures of ESG*<sup>55</sup>

After this research Thomson Reuters chooses for each company the more relevant Key Performance Indicators (KPI), they take into account 178 KPI for the computation of the sub-categories. The KPI that is considered in the evaluation of each category is different between the companies and it depends on considerations about materiality, data availability, and industry relevance<sup>56</sup>, however their number remain stable for each category evaluated.

<sup>55</sup> The table provided by Thomson Reuters about the sub-categories measures is Appendix 3 (table 2)

<sup>56</sup> For more information about the weight system of each pillars, it is strongly suggested to read the paper of Thomson Reuters Responsibility Ratings, 2013 , they have provided all the relevant information for the Industry KPI, the weighting scheme and the process of standardization of the ratings.

The score of each sub-category ranges from 0 to 100, where a higher score has meant a higher performance. The number of KPI taken into account for the computations of each subcategories is summarize the following table (Table 7)

<i>Dimension</i>	<i>Category</i>	<i>Indicators in Scoring</i>
Environmental	Resource Use	20
	Emission	22
	Innovation	19
Social	Workforce	29
	Human Right	8
	Community	14
	Product Responsibility	12
Governance	Management	34
	Shareholders	12
	CSR Strategy	8
Total		178

*Table 7, Number of KPI for each Sub Categories*

### Dimensional Indicators

As exposed in the paper the CSP is generally divided in three macro categories that reflect three different dimensions of the efforts of companies. These dimensions are: Environmental, Social and Corporate Governance (ESG). Thomson Reuters does not provide the singular dimensional indicators, so they are computed in this study based on their weight on the comprehensive ESG score<sup>57</sup>. Although it may seem that this study is creating an arbitrary measure, it is important to note that the value of the three dimension (ESG) is simply the aggregation of sub-components provided by Thomson Reuters according to their weight scheme within the ESG Score. The weight of every single sub-categories (presented in Table 8) in the dimensional score in simply computed with this formula:

$$\text{Sub – Categories weight} = \frac{\text{Weight over ESG Score} * 100}{\text{Weight of Dimension over ESG Score}}$$

<sup>57</sup> The data, on which the percentages shown in table are based, are derived from the weighting scheme of the ESG Score provided by Thomson Reuters and is available in Appendix 3

<i>Dimension</i>	<i>Sub-Categories</i>	<i>Weight</i>
Emission	Resource Use	32,35%
	Emission	35,30%
	Innovation	32,35%
Total		100,00%
Social	Workforce	45,07%
	Human Right	12,68%
	Community	22,54%
	Product Responsibility	19,72%
Total		100,00%
Governance	Management	62,30%
	Shareholders	22,95%
	CSR Strategies	14,75%
Total		100,00%

Table 8, Weight of sub categories in the Dimensional Score

The formula applied to finds the Dimensional Score is the following one:

$$PosDimension (E, S, G) = \sum_{i=1}^n CategoryScore_i * CategoryWeight_i$$

The value of the Dimensional Score is ranged in the same way of the subcategories so from 0 to 100, the higher is the value the better are the performance of the company in each dimension. For example, the Environmental Social and Corporate Governance value for Royal Dutch Shell in 2016 is computed as follow:

$$Environment = 0,3235 \times 99,36 + 0,3530 \times 88,81 + 0,3235 \times 97,04$$

$$Social = 0,4507 \times 76,16 + 0,1268 \times 88,81 + 0,2254 \times 93,03 + 0,1972 \times 96,61$$

$$Corporate Governance = 0,6230 \times 34,31 + 0,2295 \times 83,03 + 0,1475 \times 78,95$$

#### Positive and Negative Composite Score

The first two macro indicators that will be used are the ESG score for the positive CSP and the ESG controversies score for the Negative ESG. These two measures are computed in two different ways, the first one ESG score, is simply the weighted sum of all the subcategories that were presented before, the weight for the calculation of the ESG Score are:

$$ESG Score = 0.34 * Environmental + 0.355 * Social + 0.305 * Corporate Governance$$

It is interesting to note that the categories do not have the same weight within the general index. The ESG Controversies is divided in 23 subcategories<sup>58</sup>, every categories score is simply the count of controversies in this field. Clearly the higher the count of controversies and worsen should be the performance of the companies, because it was involved in more scandal rather than the other. The count of controversies is benchmarked with the Industry Group by Thomson Reuters.

The formula for the computation of the ESG Controversy Score provided by Thomson Reuters is:

Group<sub>i</sub> = Companies with the same Number of Controversies

Group<sub>i+1</sub> = Companies with 1 Controversies more than the group *i*

$$ESG\ Controversy\ Score\ Group\ i = \frac{\sum_{j=i+1}^n Group_j + \frac{Group_i}{\sum_{j=i+1}^n Group_j}}{Total\ BenchMark\ Companies}$$

Despite the idea that an index representing a negative performance should have a low value because the company is performing well, the ESG Controversies score works exactly the opposite, so for very low values it means that the company has been involved in many scandals, while higher values mean that it has been involved in fewer scandals or if it exceeds 0.50 this company has not been involved in any scandal in the year in question.

Given this weighting scheme all the companies with a value greater then 0,50 are companies with no controversies in the year in examination. Even if the categories score the greater they are the worst they are the comprehensive negative evaluation score improve with higher value.

### Comprehensive CSP Score

Finally, there will be the comprehensive score of the CSP that is computed with the ESG Score and the ESG Controversies Score. This measure represents the total performance of a company, this Score takes into to account both positive and negative behavior.

Thomson Reuters formula for the calculation of the ESG Combined Score is the following:

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<sup>58</sup> The complete list of all controversies with a description on what is taken into account is provided in the Appendix 3



Case 1:

*If ESG Score > ESG Controversies Score      ESG Combined Score = ESG Score*

Case 2:

*If 0,5 > Controversies Score > ESG Score      ESG Combined Score = ESG Score*

Case 3:

*If ESG Controversies Score < 0.5  $\wedge$  ESG Score > ESG Controversies Score*

$$ESG \text{ Combined Score} = \frac{(ESG \text{ Score} + ESG \text{ Controversies Score})}{2}$$

This is the last CSP indicators that are used in the analysis.

### III. 4 Control Variables

In order to better specify a model is necessary to absorb the variability that depends from other factors different from our variable of interest. More specifically it is far from true that the level of Corporate Financial Performance could be described only by level of Corporate Social Performance.

A control variable is a variable that is related with the dependent variable that could explain a part of variability. Especially when the control variable is important for the depended one the risk is to overestimate but also under estimate the parameter of another variable, for example the variable of interest.

They assume particular importance with the Ordinary Least Square (OLS) methods, one of the relevant assumption of the OLS is that the error term is uncorrelated with the regressor, the presence of omitted variables leads to a violation of this assumption and for these reasons the estimated parameter will be biased and inconsistent. Based on the review made by Lu et al., (2014, p 200) the most common control variables<sup>59</sup>(Table 9) used in the previous studies are

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<sup>59</sup> Lu et al., (2014) has found other control variables but they are rarer and for this reason they have been excluded from the table. However, it was decided to present the remaining control variable in this note, and they are: Market Conditions, Frequency of nomination in rating list, Management support, Dividend payout ratio, Corporate Liquidity, Capital gearing, Business Cycle, Geographic location (National or international), Horizontal and vertical export market scope, Equator or Wolfsberg Principles measures and Time invariant firm idiosyncratic characteristic.

Control Variable	Frequency of Appearance
Firm Size	50
Industry	38
Capital Structure	24
Financial Returns	15
Risk	14
R&D Intensity	9
Firm Age	8
Growth Rate	6
Ownership	6
Advertising Intensity	3
Community Size/Population	3
Country and Country-based features	3

Table 9, Frequency of different control variables in studies about CSP-CFP relationship between 2002-2011 by Lu et al., (2014)

According to them it was chosen the control variable:

- **Industry:** As It was previously exposed in section II.5 Different kinds of relationship in the literature , the industry specific factors have greater impact on financial performance, it is crucial in order to have a less biases results to control for the belonging to an industry, this methodology is in line with previous studies such as Wang et al., (2016) Philipp Schreck, (2011) Baird et al., (2012). There is a lot of different industry classifications, the most famous are North America Industry Classification System (NAICS)<sup>60</sup>, the Global Industry Classification Standards (GICS)<sup>61</sup>, Industry Classification Benchmark (ICB) and Thomas Reuters Business Classification (TRBC). The classification that this study has used to cluster the industry was the TRBC classification that are also consistent with the ESG measures collected
- **Firm size** is one of the most important control variables, its relationship with the corporate financial performance has been widely studied in the literature. Generally

<sup>60</sup> This is the new classification that have substituted the Standard Industry Classification (SIC) in the United States of America, while the SIC is still used in the United Kingdom.

<sup>61</sup> This was founded in 1999 by Standard and Poor's and Morgan Stanley Capital International (MSCI).

greater firms have more financial resources so they are able to pursue more investments than the smaller company, so they could be able to obtain greater financial return. The internal structure of the bigger company is more well defined and this helps managers and employees to be oriented towards the goals and so they could be more effectively. Some other authors posited that the firm size has also negative effect on the company performance, a more rigid structure forced by the necessity of control could limit the innovation and fast reaction to new challenges. Moreover, the number of stimuli inside a big company is far greater than in a small one, the human ability to process information is limited but also the span of attention is limited, for this reason larger firms could suffer from diluted managers attention. For this reason, it was decided to insert this variable as a control one, because it is surely useful to better specify the model, despite although it will be formulated no specific hypothesis on the influences that it could have on the relationship. In the reviewed literature it was met this control variables most of times, the most used approximation for this control variable was the Total Assets  $\ln(\text{Total Assets})$  Muhammad et al., (2015), Lee et al., (2013) Ding et al., (2016) Callan and Thomas (2009), others authors instead used the Market Capitalization,  $\ln(\text{Market Cap})$  Wang et al., (2016) or the total revenues,  $\ln(\text{Total Revenues})$  Rhou et al., (2016) Philipp Schreck, (2011). Which one of these could represent better than others the firm size? Both Total Asset<sup>62</sup> and Market Capitalization<sup>63 64 65</sup> have some shortcomings to correct measuring the size of a company. According to previous

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<sup>62</sup> The main problem is associated with what total assets represent, total assets reflects what the IFRS permit them to account. For example, the Brand internally created are not recordable into the assets, so this undervalued them, at the same time the value generated by the assets is incorporated in the *Operating Income* and for this reason the *ROA* could biases, more precisely it will be greater than the real one. The same problem could happen in company that is mainly knowledge-based, they have low level of Assets compared to the operating income they are able to generated and for these reasons the *ROA* could be biased

<sup>63</sup> Do not truly represents the actual size of a company, in fact the market capitalization generally reflects also the market capitalization of a company usually also includes considerations of the future value of a company

<sup>64</sup> The intrinsic value of a company is represented by the actual value of the future cash flow generated by the company. There are many different valuation techniques, but the concept is more or less equal. Theoretically if the market is fully efficient the quoted price should be equal to the intrinsic value because all the information is reflected in the price. The market capitalization is theoretically equal to the sum of all the expectations of the market's players. As showed there is future expectation reflected in the market capitalization so it is not completely reliable as a proxy of the actual size.

<sup>65</sup> For a more detailed description of the different valuation methods Koller et al., (2015) represents a great book in which are presented all the most important valuation techniques.

literature the most used proxy for Firm Size is the  $\ln [Total Asset]$  and it will be also used in this work.

- **Industry:** As It was previously exposed in section II.5 Different kinds of relationship in the literature, the industry specific factors have greater impact on financial performance, it is crucial in order to have a less biased results to control for the belonging to an industry, this methodology is in line with previous studies such as Wang et al., (2016) Philipp Schreck, (2011) Baird et al., (2012). There is a lot of different industry classifications, the most famous are North America Industry Classification System (NAICS)<sup>66</sup>, the Global Industry Classification Standards (GICS)<sup>67</sup>, Industry Classification Benchmark (ICB) and Thomas Reuters Business Classification (TRBC). The classification that this study has used to cluster the industry was the TRBC classification that are also consistent with the ESG measures collected.
- **Leverage:** It was used in many previous studies Wang et al., (2016) Muhammad et al., (2015) Nollet et al., (2016) although with some differences in fact some studies used the Debt To Assets ratio and other used the Debt To Equity Ratio. It could be an extremely powerful tool to increase the corporate profitability but at the same time it may have an extremely dangerous impact on company survival. The advantages are mainly related to the tax shield effect of debt Youn et al., (2015) this helps firm to enhance value until some point, after that the risk associated to the firm increases and investors perceived a company with a high leverage as too risky. It is expected that the sign of the control variable is positive until a certain threshold and then it became negative. In this study it is used the Debt to Asset ratio as a proxy for the firm leverage.
- **Crisis:** The effects of financial crisis surely have an impact on the corporate financial performance of the firm. The uncertain in the capital market during the financial crisis brings to a reduction of financial resources of firm and for this reason lowering the firm's capabilities to put in place investments. The financial crisis also affects the general demands on goods market and so the company have faced a reduction in their profitability. For this reason, it was decided to take into account the effect of the crisis on CFP. The financial crisis in Europe has been longer than in the rest of the world, in fact after having been initially spread by the US financial crisis, Europe has gone through a period connected to the sovereign debt crisis. The period considered as a crisis

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<sup>66</sup> This is the new classification that have substituted the Standard Industry Classification (SIC) in the United States of America, while the SIC is still used in the United Kingdom.

<sup>67</sup> This was founded in 1999 by Standard and Poor's and Morgan Stanley Capital International (MSCI).

within the study ranges from 2007 to 2012. The crisis will be entered as a dummy variable, assuming therefore the value 0 when not present and the value 1 when present.

- **EBITDA Margin:** A control variable for profitability is taken into account according to Youn et al., (2015), it is used in this study the EBITDA Scaled on Total Asset. This choice is made to control for operating profitability.

### III. 5 Statistical Methods

Due to the lack of some data inside initial sample, it was necessary to eliminate many observations because there was not the information about our interest variables as the level of ESG performance.

After this preliminary operation due to missing values, the data sample was divided in two sections: the financial companies and the other companies in the sample. These two samples were divided according to Thompson Reuters Business Classification at the Economic sector level.

The financial sector was kept separate from the other side of the index. It is clear that within what is called in this study "Industrial Sample" (that is, all the companies that are not part of the Economic Sector Financial<sup>68</sup>) there is a lot of heterogeneity between different sectors nevertheless, it will be noticed later, it is useful for dividing companies that have substantial differences in the performance index but also in the control variable.

This was done because the ESG sub-components as well as the ESG dimension can have different effects depending on the type of company that is taken into consideration. Particularly it is expected that the Industrial companies are subjected to different effects on the CFP financial performance especially for the Environmental dimension, this dimension is less related to financial companies and for this reason they should be less affected by this dimension. Furthermore there is another distinction that was made between the first three financial measures ( TBQ, ROA and ROE) and the second one P/E and ROS, this choice was made because there was a great amount of data about the first three measures, 3970 years observations for 397 different firms ( all firm should have the entire period of data for enter in the analysis),

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<sup>68</sup> In the Financial Sector defined by Thomson Reuters there are: Banking and Investments Service, Insurance, Real Estate, Collective Investment and Investment Holding Companies. The Thomson Reuters Business Classification is available at:

<https://financial.thomsonreuters.com/content/dam/openweb/documents/pdf/financial/trbc-fact-sheet.pdf>

while for the other two measures the sample was more restricted with only 1760 years observation for the industrial companies.

After that, two samples were obtained:

1. Industrial Companies
  - 1.1. TBQ, ROE and ROA panel data 3060 firm year observations.
  - 1.2. PE and ROS panel data 1750 firm year observations.
2. Financial Companies
  - 2.1. TBQ, ROE and ROA panel data 910 firm year observations.
  - 2.2. PE and ROS panel data 110 firm year observations.

The presence of outliers was treated with the Tukey's technique. The Tukey's technique was used to identify outliers Tukey's (1977). The Tukey's rule is implemented by the construction of a boxplot over a series of continuous univariate data, and it shows the lower quantile, upper quantile, the median value and the extreme value<sup>69</sup>, After that it finds the possible outliers and the probable outliers<sup>70</sup>. After the identification all the possible and probable outliers were removed from the sample, then the observations were removed. In the end our data sample results in an unbalanced panel data.

The statistical tool used in this study is the *Panel data* analysis accordingly with many previous study such as Sanchez et al., (2017), Wang et al., (2016), Rhou et al., (2016), Ding et al., (2016), Nollet et al., (2016), Muhammad et al., (2015).

A panel data is a collection of cross sectional observations over several times periods. The main advantages of the panel data analysis are listed by Baltagi, (2005) and they are: the possibility to control for individual heterogeneity, the more informative data respect both cross sectional and time series data and also enhance the availability of data, generally there are less affected by collinearity problems, allow scholars to model more complicated models

Before performing the panel data analysis, the stationarity of the variable is tested through a unit root test consistent with the method applied by Wang et al., (2016). The null hypothesis of the test is that the variables are non-stationary (has a unit root), if the test fails to reject to null

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<sup>69</sup> This rule has the advantages to be less sensitive to the extreme value given that it is not influenced by the mean and the standard deviation. Moreover, it is useful because it does not make any assumption about the distribution of the data Iglewicz and Hoaglin (1993).

<sup>70</sup> It used the interquartile range IQR that is made by Q1 (First Quantile) and Q3 (Third Quantile). After that rule identifies as possible outliers (inner fences) the value of the distribution that falls outside this range  $[Q1-1.5*IQR ; Q3+1.5*IQR]$ , instead the probable outliers are all the values that falls outside  $[Q1-3*IQR ; Q3+3*IQR]$  Songwon Seo, (2006).

a remedy could be used the first difference of the non-stationary variable. However, after have performed the Augmented Dick Fuller Test suggested by Said and Dickey (1984), all the variables result to be stationary so there is no need of remedies.

Another problem that could affect our analysis is the multicollinearity between the independent variables. The multicollinearity is the presence of one or more independent variables that could be predicted by other independent variables present in the model. This could bring to a wrong estimation of the parameter so it is advisable to test the presence of multicollinearity and correct it if present.

The literature suggests that the VIF (Variance Inflation Factor) greater than 10 (rule of thumb) suggest problem of multicollinearity (O'Brien, 2007) in our dependent variables, while the a VIF value lower then 4 suggest that there is no multicollinearity in our data (Belsley et al., 1980).

Then were constructed the equations that will be used to prove the hypothesis of the chapter 2 all the interest variable in the model was computed in the regression equation with a lag of two years, in order to avoid problems related to endogeneity consistent with Nollet et al., (2016). The first model proposed, consistently with the H1:” *There is a general positive relation between an overall measure of CSP and CFP.*” is:

$$\text{Model 1: } CFP_{it} = \alpha + \beta_1 \times ESG \text{ Combined Score}_{it-2} + \beta_2 \times LN(\text{Total Asset})_{it} + \beta_3 \times \frac{Debt}{Asset}_{it} + \beta_4 \times EBITDA \text{ Margin}_{it-2} + \beta_5 \times Crisis_t + \beta_6 \times Industry_i + \varepsilon_{it}$$

This is used to prove a general positive relationship between the CSP and the CFP, without any focus on which are the most important dimension that could affect the profitability or the firm value.

Than the second regression equation keeps the Positive efforts of the company separate by the negative components, this model is useful to test the H2:” *There is Positive relation between the Positive CSP score and Corporate Financial Performance*” but also H3 :” *There is a negative relation between Negative CSP score and Corporate Financial Performance*”

$$\text{Model 2: } CFP_{it} = \alpha + \beta_1 \times ESG \text{ SCORE}_{it-2} + \beta_2 \times ESG \text{ Controversies}_{it-2} + \beta_3 \times LN(\text{Total Asset})_{it} + \beta_4 \times \frac{Debt}{Asset}_{it} + \beta_5 \times EBITDA \text{ Margin}_{it-2} + \beta_6 \times Crisis + \beta_7 \times Industry_i + \varepsilon_{it}$$

The third model, focus instead on the different relevance of the ESG dimension on the CFP and moreover, it is expected that the two different samples are influenced differently by the dimensions, this because of the specific risk of the businesses are different, Model 3 is:

$$\text{Model 3: } CFP_{it} = \alpha + \beta_1 \times Environment_{it-2} + \beta_2 \times Social_{it-2} + \beta_3 \times Governance_{it-2} + \beta_4 \times ESG\ Controversies_{it-2} + \beta_5 \times LN(Total\ Asset)_{it} + \beta_6 \times \frac{Debt}{Asset}_{it} + \beta_7 \times EBITDA\ Margin_{it-2} + \beta_8 \times Crisis + \beta_9 \times Industry_i + \varepsilon_{it}$$

The last equation is necessary to find out which components inside the dimensions have more relevance for the CFP, for example the Emission Reduction could have a different impact respect to Environmental Innovation, or moreover in the Social dimension the Employees satisfaction could be more important rather than the Communities score, so it is advisable to look at the micro components level.

$$\text{Model 4: } CFP_{it} = \alpha + \beta_1 \times Emission_{it-2} + \beta_2 \times Resource\ Use_{it-1} + \beta_3 \times Environmental\ Inn._{it-2} + \beta_4 \times WorkForce_{it-2} + \beta_5 \times Human\ Right_{it-2} + \beta_6 \times Communities_{it-2} + \beta_7 \times Product\ Resp_{it-2} + \beta_8 \times Management_{it-2} + \beta_9 \times Shareholders_{it-2} + \beta_{10} \times CSR\ Strategy_{it-2} + \beta_{11} \times ESG\ Controversies_{it-2} + \beta_{12} \times LN(Total\ Asset)_{it} + \beta_{13} \times \frac{Debt}{Asset}_{it} + \beta_{14} \times EBITDA\ Margin_{it-2} + \beta_{15} \times Crisis + \beta_{16} \times Industry_i + \varepsilon_{it}$$

The panel data methods provide three different models to estimate the parameter, and these are the Pooled regression, Fixed effect model and the Random effect model. All these three methods have their advantages but also some pitfalls.

The *Pooled Regression Method* assumes that all the observations are independent, generally, as suggested by Mertens et al, (2017), this model biases the coefficient and underestimates the standard error this because it supposed the independence of the information, that in panel data have instead some relationship. The second methodology is the *Fixed Effect Method*, this allow the researcher to take into account the unobserved effect of the time invariant components. In fact, it does not assume the independence of the observation across individuals as does the pooled regression model in which the effect of non-observable variables time invariant is included in the error term.

The problem with the Fixed Effect model (FE) is that it does not model the observable time invariant components, so it does not estimate any parameter for the them.

The last model is the Random Effect model (RE), it provides an efficient estimation of all the parameters, so it provides an estimation also for the time invariant variable. The choice between the FE and RE depends on how many unobservable time invariant variables are omitted in the statistical model Mertens et al, (2017).



Given the fact that all the interest variables of this studies are cross sectional and time variant the use of the FE and RE does not impact the interpretation of the results, the only variable that could be omitted in the study could be the Industry variable that are time invariant in our sample. The choice of the proper model is conducted through a series of test that highlight which the best model to analyze the sample. It was conducted three tests:

- The Breusch Pagan Lagrange Multiplier Test this test check for the variance between individual observation, if it is similar across the sample it could be possible to ignore the nestedness of data and treat the observation as independent and for this reason it is possible to use the Pooled OLS. Instead if the  $H_0$  is rejected the Pooled OLS is not the proper tools and for this reason it is advisable to choose between the RE and FE.
- The F test compares the Fixed Effect Model and the Pooled OLS model, the Null hypothesis is that Pooled OLS method is superior to Fixed Effect methods, if the Null is rejected than the Fixed Effect Methods should be used.
- The Hausman Test is used to compare the Random Effect with the Fixed Effect Model. The null hypothesis of the Hausman Test is: there is a no significant difference in the coefficient estimation. If the null hypothesis cannot be rejected the Random effect model is preferable because it is more efficient, there is no risk of biases result.

There are other two problems related to panel data, and these are: the *cross-sectional dependence* and the *serial correlation* or time series correlation.

The first one, *Cross-Sectional Dependence*, suggest that different individual are correlated at the same points in time, this could be related for example to some financial or macroeconomic variable. This variables that are omitted in the data sample are generally time variant and could affect all the cross-sectional unit at the same time. The presence of a not properly treated *Cross Sectional Dependence* could lead to many limitations in the result such as: biases estimation coefficient, underestimation of the standard error, overestimations of the t-statistics and rejection of the null hypothesis Mertens et al, (2017).

The second one, *Serial Correlation*, is related with the correlation over time inside the same cross-sectional unit, for example the observation  $x_{it}$  are correlated with  $x_{it+1}$  or with  $x_{it-1}$ . This problem could be linked to some characteristic of the companies that tend to remain stable over time or do not change too much. These two problems should be solved in order to achieve consistent estimation results Mertens et al, (2017) provides some remedies to take into account and solve this kind of problems and those are: Rodgers Standard Errors, Fama-MacBeth cross sectional estimation, Fama-MacBeth time series estimations, Newey-West Estimation, One

way clustering and Two-ways clustering.

The One-way clustering for individual was chosen to take into the times series dependence.

A panel data analysis was conducted with all three methods available, then Pooled Regression, Fixed effect model and random effect model. Then the models were submitted to the Breusch Pagan Lagrange Multiplier test, to an F test to compare the results of the Fixed effect model and finally to the Hausman test to see if the Random Effect or the Fixed Effect model is more appropriate.

Given the Results of the Breusch Pagan Lagrange Multiplier test, pooled regression was excluded for all model specifications, while for the other two methodologies the Fixed effect Methods was found to be the most suitable in most cases in analysis (for example for the entire sample of industrial companies) while the Random effect model turns out to be a superior estimation method only for the companies of the financial sample specifically to: Model 1 ROA, ROE, P / E and ROS, Model 2 ROA, ROE, P / E and ROS, Model 3 ROA and ROE and finally for Model 4 ROA and ROE.

After that two tests were conducted:

- The first one to control for the presence of cross sectional dependence. Pesaran's (Pesaran 2004) CD test, was conducted for cross-sectional dependences, it was chosen this test instead of the Breusch-Pagan (Breusch and Pagan 1980) LM test, because the first one is consistent also for large N, while the second one is consistent for fixed N and large T Croissant and Millo, (2008).
- The second one to control for the presence of heteroscedasticity. It was used the Breusch-Pagan test<sup>71</sup> under the Null hypothesis of homoscedasticity, test's results show the presence of heteroscedasticity that should be corrected before the presentation of the results.

This study in order to solve the problem related to heteroscedasticity and cross-sectional dependence used a robust standard error for both cross-sectional dependence and heteroscedasticity the method that was used is the Driscoll and Kray estimators Hoechle (2007).

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<sup>71</sup> The Breusch Pagan test provided in the packages `lmtest` of R studio.

## IV Results and Discussion

### IV. 1 Descriptive Statistics

The following tables will summarize the descriptive statistics about the two samples in our analysis.

In the industrial sample (*Table 10*) the average ROA is 7.6% with a maximum of 23.4% and a minimum of -7.7%, while the ROE has a greater range from -13.4% to 44.1% with a mean of 14.8%. The companies with the highest value of TBQ worth 5.531 times their total assets, while the less valued company is perceived to value less than its assets, around 0.2.

VARIABLE	N	MEAN	SD	MEDIAN	MIN	MAX	RANGE	SE
Approximated Tobin's Q	3022	1.876	1.180	1.522	0.203	5.733	5.531	0.020
ROA	2915	0.076	0.056	0.069	-0.077	0.234	0.311	0.001
ROE	2847	0.148	0.102	0.141	-0.134	0.441	0.575	0.002
Historic P/E	1665	17.983	7.627	17.063	0.940	41.667	40.727	0.134
ROS	1680	0.119	0.085	0.107	-0.126	0.368	0.494	0.001
ESG Combined Score	3060	52.287	15.312	49.621	10.255	94.093	83.838	0.247
ESG Score	3060	62.426	15.506	64.389	10.255	96.085	85.830	0.250
ESG Controversies Score	3060	44.061	24.252	58.333	0.171	76.563	76.392	0.391
Environmental	3060	66.893	18.843	69.576	6.817	98.911	92.094	0.304
Resource Use Score	3060	70.986	23.179	76.563	0.410	99.836	99.426	0.374
Emissions Score	3060	69.280	23.476	74.200	0.463	99.831	99.368	0.379
Environmental Innovation Score	3060	59.798	26.039	60.872	0.450	99.815	99.364	0.420
Social	3060	65.786	19.457	68.997	6.539	99.202	92.663	0.314
Workforce Score	3060	70.894	23.235	76.742	0.694	99.836	99.141	0.375
Human Rights Score	3060	70.845	25.557	80.466	9.821	99.747	89.926	0.412
Community Score	3060	56.073	29.311	57.143	0.253	99.818	99.565	0.473
Product Responsibility Score	3060	61.403	27.593	65.205	0.893	99.792	98.899	0.445
Corporate Governance	3060	53.829	20.897	54.821	1.648	97.857	96.209	0.337
Management Score	3060	53.985	28.351	55.812	0.157	99.872	99.715	0.458
Shareholders Score	3060	50.283	29.106	50.000	0.383	99.840	99.458	0.470
CSR Strategy Score	3060	58.526	27.603	63.291	0.164	99.875	99.711	0.445
EBITDA Margin	3060	0.190	0.105	0.172	-0.107	0.513	0.620	0.002
Debt/Asset	3060	0.250	0.148	0.243	0.000	0.779	0.779	0.002
Company Market Cap	3060	21,097 €	31,311 €	9,935 €	1,426 €	232,661 €	231,235 €	505 €
Total Revenue	3060	21,883 €	42,024 €	6,978 €	-211 €	470,171 €	470,382 €	678 €
Total Asset, Reported	3060	21,977 €	39,425 €	7,216 €	46 €	409,732 €	409,686 €	636 €
Total Debt	3060	6,159 €	12,430 €	1,690 €	- €	162,106 €	162,106 €	201 €

*Table 10, Descriptive Statistics about the Industrial Sample, the data for Company Market Cap, Total Asset and Total Revenue are in €/millions.*

The Max value of Historic P/E 41.667, while the minimum of 0.940, the mean value around 17.983, instead ROS ranges from -12.6% to 36.8% with a mean of 11.9%. The interest variable so the various ESG measures have different mean values that range from 44.06 of the ESG Controversies to the 70.98 of the Resource Use Score. The dimension that have the greater

value for the industrial companies is the Environmental one with a mean score of 66.893 while the Corporate Governance has the lower mean value between dimension of 53.985 all these three dimensions present the same pattern for the median.

If we move our focus to the financial sample (*Table 11*), it is possible to see how the main indices of performance have a lower range compared with the industrial company, the ROA ranges from -4.7% to 8.9% with a mean of 1.5%, also the TBQ is less distributed, in fact its maximum is 2.095 and its minimum is around 0.025 a very low value, the ROE as in the industrial sample is the higher index, the mean is about the 9.5% and a maximum value of 31.8% and a minimum of -12.1%.

VARIABLE	N	MEAN	SD	MEDIAN	MIN	MAX	RANGE	SE
Approximated Tobin's Q	910	0.530	0.475	0.310	0.025	2.095	2.071	0.014
ROA	781	0.015	0.023	0.008	-0.047	0.089	0.136	0.001
ROE	837	0.095	0.080	0.090	-0.121	0.318	0.440	0.002
Historic P/E	106	12.484	5.786	11.263	0.683	30.695	30.012	0.191
ROS	110	0.749	1.596	0.546	-0.897	16.772	24.789	0.078
ESG Combined Score	910	53.833	17.334	51.306	13.542	93.678	80.136	0.507
ESG Score	910	62.834	17.846	66.440	13.542	94.800	81.258	0.522
ESG Controversies Score	910	44.891	22.972	58.779	0.096	63.924	63.828	0.672
Environmental	910	71.454	21.183	79.440	5.026	99.244	94.218	0.620
Resource Use Score	910	72.817	25.409	82.547	0.246	99.904	99.658	0.744
Emissions Score	910	74.632	22.216	81.688	1.052	99.904	98.853	0.650
Environmental Innovation Score	910	66.315	26.309	73.282	11.111	99.839	88.728	0.770
Social	910	61.627	20.820	63.893	5.571	98.000	92.429	0.609
Workforce Score	910	69.885	24.296	76.374	0.316	99.809	99.493	0.711
Human Rights Score	910	66.288	25.911	75.000	25.472	99.809	74.337	0.758
Community Score	910	47.637	30.622	43.125	0.307	99.886	99.579	0.896
Product Responsibility Score	910	54.883	30.108	52.581	0.159	99.779	99.620	0.881
Corporate Governance	910	54.974	21.942	57.169	3.177	97.896	94.719	0.642
Management Score	910	56.564	29.250	60.204	0.526	99.875	99.348	0.856
Shareholders Score	910	50.747	28.513	50.656	0.158	99.521	99.363	0.835
CSR Strategy Score	910	54.593	28.657	58.612	1.042	99.840	98.799	0.839
EBITDA Margin	910	0.382	0.288	0.315	-0.476	1.272	1.749	0.008
Debt/Asset	910	0.184	0.169	0.143	0.000	0.712	0.712	0.005
Company Market Cap	910	17,979 €	22,891 €	8,702 €	1,410 €	167,627 €	166,217 €	670 €
Total Revenue	910	13,019 €	23,230 €	1,788 €	-31,644 €	127,827 €	159,471 €	860 €
Total Asset, Reported	910	270,319 €	458,429 €	51,613 €	147 €	2,513,004 €	2,512,857 €	13,420 €
Total Debt	910	38,633 €	82,077 €	4,622 €	- €	1,228,939 €	1,228,939 €	2,403 €

*Table 11, Descriptive Statistics about the Financial Sample, the data for Company Market Cap, Total Asset and Total Revenue are in €/millions.*

The ESG measures do not show great differences, the only thing to note is that the minimum level of performance in the human right category is higher than in industrial companies, thus indicating, unexpectedly, a particular attention of companies in the financial industries to this particular category. The pattern of the three ESG dimensions is however confirmed also in this

sample, because the Environmental dimension has the greatest value and the Corporate Governance has the lowest value but, differently to what it is expected, the mean of the Environmental score is 10 points higher in the financial sample rather than in the industrial one. The ROS has mean value of 79% that is quite high compared to industrial sample in which the mean is 11.9%, the minimum value for the ROS in the financial sample is of -89.7% while for the Industrial is only -12.6% these different in the summary statistics reinforce the decision to keep these two separate samples. The Historic P/E ranges from 30.695 to 0.683 with a mean of 12.484, also for the financial sample before the outlier's detection and elimination the Historic P/E present some extreme values due to the calculation techniques<sup>73</sup>.

In the sample six variables were transformed to enhance the normality. The dependent variables are log transformed<sup>74</sup> and they are Approximated Tobin's Q, Historic P/E and Total Assets, while for the ROS, ROE and ROA in order not to lose the information of the negative value, it was added 1 to ROA ROE and ROS and then they were log transformed according to Youn et al., (2015) and Kang et al., (2010).

Independent Variable	TBQ Industrial	TBQ Finance	ROA Industrial	ROA Financial	ROE Industrial	ROE Financial	PE Industrial	PE Financial	ROS Industrial	ROS Financial
Emissions Score	1.94	2.63	1.96	2.64	1.94	2.67	2.04	2.65	2.05	2.69
Resource Use Score	2.39	4.09	2.40	3.96	2.39	4.24	2.80	3.72	2.80	3.69
Environmental Innovation Score	1.25	2.19	1.26	2.22	1.26	2.24	1.33	2.30	1.34	2.29
Workforce Score	1.64	2.60	1.63	2.73	1.66	2.72	1.84	3.85	1.83	3.65
Human Rights Score	1.80	1.92	1.82	1.98	1.82	1.95	1.97	2.69	1.95	2.75
Community Score	1.56	1.80	1.57	1.85	1.56	1.80	1.75	1.96	1.74	1.96
Product Responsibility Score	1.50	1.61	1.50	1.72	1.52	1.65	1.48	2.21	1.49	2.17
Management Score	1.21	1.36	1.20	1.40	1.21	1.39	1.26	2.40	1.25	2.38
Shareholders Score	1.08	1.11	1.08	1.11	1.09	1.14	1.18	2.29	1.17	2.22
CSR Strategy Score	1.78	2.25	1.78	2.41	1.76	2.25	1.85	2.31	1.84	2.05
ESG Controversies Score	1.43	1.45	1.43	1.53	1.44	1.51	1.51	1.20	1.49	1.16
Ln [Total Asset]	2.07	3.87	2.07	4.29	2.08	4.27	2.29	1.98	2.40	1.96
Debt/Asset	1.43	2.08	1.48	2.18	1.47	2.11	1.67	2.01	1.51	1.94
Crisis	1.04	1.08	1.04	1.06	1.04	1.08	1.06	1.52	1.06	1.54
EBITDA Margin	1.52	1.03	1.57	1.03	1.52	1.04	1.70	2.17	1.61	2.20
Industry	1.07	1.73	1.07	1.66	1.07	1.81	1.09	2.21	1.10	2.09

Table 12, VIF estimations on Model 4

<sup>73</sup> It could be possible that a company does not realize earnings in a year so it has a very low value of EPS (0.01) but the market has expectations on the future growth of the company and for this reason it accounts for a very high price for example 100€ per share. The calculation brings to  $EPS = \text{Price per Share} / \text{Earnings per Share} = 100/0.01 = 10000$ . Although it is not frequent it can happen so it is important to treat the data in order to avoid bias due to this phenomenon.

<sup>74</sup> However, in Appendix 4 is provided the results of the same models with dependent variables non-log transformed for the Industrial Sample and Financial Sample.

In Table 12, is presented the VIF analysis performed on the Model 4 , and the results suggest that all the VIF estimated is sufficiently lower than the acceptance limit of 10, moreover, the great majority are even below the four<sup>75</sup>.

The correlation matrix, Table 13 and 14 (following page), do not highlight significant problem in the pairwise correlation. The Pearson correlation does not exceed the limit of  $r > 0.75$  for all the variable, in the different models. The parameters that exceed the threshold are the ESG dimension, with their sub-components, however this is consistent with their definition, they are linear combination of the sub-components, however it is not a problem in the statistical evaluation, because they are used in different regression equation model.

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<sup>75</sup> The tables represent the results of all the other VIF analysis are available in Appendix 4.

Panel II Financial Companies																			
	COMB.S	ESG S	CONTR.S	ENV.S	RES.U.S	EMIS.S	ENVINN	SOCIAL	WORK.F	HUM.RS	COMMU	PROD.RES	CORP.G.S	MANG.S	SHAREH	CSR.STRA.LNTA	EBITDA	D/A	
COMB.S	1																		
ESG S	0.63***	1																	
CONTR.S	0.46***	-0.36***	1																
ENV.S	0.58***	0.87***	-0.29***	1															
RES.U.S	0.58***	0.81***	-0.24***	0.90***	1														
EMIS.S	0.53***	0.74***	-0.21***	0.87***	0.73***	1													
ENVINN.S	0.41***	0.71***	-0.30***	0.82***	0.59***	0.54***	1												
SOCIAL	0.58***	0.90***	-0.31***	0.76***	0.74***	0.64***	0.59***	1											
WORK.F.S	0.58***	0.76***	-0.18***	0.69***	0.62***	0.48***	0.48***	0.86***	1										
HUM.RS	0.33***	0.67***	-0.34***	0.59***	0.57***	0.45***	0.51***	0.69***	0.52***	1									
COMMU.S	0.38***	0.64***	-0.26***	0.48***	0.47***	0.36***	0.42***	0.73***	0.39***	0.45***	1								
PROD.RES	0.33***	0.62***	-0.29***	0.49***	0.45***	0.42***	0.41***	0.70***	0.40***	0.39***	0.45***	1							
CORP.G.S	0.43***	0.74***	-0.31***	0.40***	0.40***	0.33***	0.36***	0.47***	0.35***	0.39***	0.39***	0.32***	1						
MANG.S	0.34***	0.63***	-0.29***	0.31***	0.30***	0.23***	0.27***	0.37***	0.26***	0.28***	0.28***	0.32***	0.28***	1					
SHAREH.S	0.22***	0.24***	-0.02	0.09**	0.09**	0.10**	0.06*	0.12**	0.10**	0.17***	0.05	0.09**	0.41***	0.94***	1				
CSR.STRA.LNTA	0.42***	0.74***	-0.32***	0.69***	0.63***	0.56***	0.59***	0.67***	0.55***	0.53***	0.53***	0.44***	0.49***	0.41***	0.32***	1			
LNTA	0.08**	0.54***	-0.45***	0.46***	0.40***	0.29***	0.51***	0.48***	0.29***	0.52***	0.45***	0.37***	0.41***	0.35***	0.07*	0.50***	1		
EBITDA	0.14***	0.02	0.12***	0.05	0.05	0.09**	-0.01	0.04	0.10***	0.02	0.02	-0.11***	-0.05	-0.10***	0.10**	0.05	-0.24***	1	
D/A	0.11***	-0.01	0.09**	0.05	0.04	0.10***	-0.01	0	0.06	-0.02	0.03	-0.14***	-0.08**	-0.12***	0.05	0.02	-0.24***	0.46***	1

Notes: (t) \* denotes significance at 10% (p < 0.10), \*\* denotes significance at 5% (p < 0.05), \*\*\* denotes significance at 1% (p < 0.01).

Table 14 shows the Pearson Correlation Matrix for the Financial Sample

Panel I Industrial Companies																			
	COMB.S	ESG S	CONTR.S	ENV.S	RES.U.S	EMIS.S	ENVINN	SOCIAL	WORK.F	HUM.RS	COMMU	PROD.RES	CORP.G.S	MANG.S	SHAREH	CSR.STRA.LNTA	EBITDA	D/A	
COMB.S	1																		
ESG S	0.55***	1																	
CONTR.S	0.53***	-0.38***	1																
ENV.S	0.45***	0.82***	-0.31***	1															
RES.U.S	0.42***	0.75***	-0.28***	0.83***	1														
EMIS.S	0.37***	0.68***	-0.27***	0.82***	0.65***	1													
ENVINN.S	0.26***	0.48***	-0.18***	0.68***	0.33***	0.27***	1												
SOCIAL	0.47***	0.87***	-0.35***	0.67***	0.68***	0.58***	0.31***	1											
WORK.F.S	0.41***	0.71***	-0.27***	0.55***	0.57***	0.51***	0.22***	0.85***	1										
HUM.RS	0.33***	0.66***	-0.29***	0.55***	0.57***	0.45***	0.27***	0.70***	0.47***	1									
COMMU.S	0.30***	0.61***	-0.27***	0.40***	0.43***	0.31***	0.21***	0.70***	0.34***	0.47***	1								
PROD.RES	0.33***	0.61***	-0.24***	0.51***	0.47***	0.45***	0.29***	0.68***	0.40***	0.42***	0.36***	1							
CORP.G.S	0.37***	0.68***	-0.23***	0.26***	0.26***	0.21***	0.14***	0.36***	0.26***	0.29***	0.32***	0.23***	1						
MANG.S	0.33***	0.58***	-0.18***	0.18***	0.18***	0.15***	0.09**	0.25***	0.19***	0.21***	0.26***	0.18***	0.93***	1					
SHAREH.S	0.12***	0.20***	-0.05***	0	-0.02	-0.01	0.03	0.05**	0.05**	0.05***	0.03	0.03	0.41***	0.10***	1				
CSR.STRA.LNTA	0.27***	0.63***	-0.34***	0.53***	0.54***	0.45***	0.26***	0.56***	0.43***	0.49***	0.43***	0.35***	0.40***	0.21***	0.08***	1			
LNTA	-0.01	-0.50***	-0.48***	0.47***	0.40***	0.41***	0.28***	0.48***	0.34***	0.41***	0.38***	0.37***	0.24***	0.17***	0.01	0.46***	1		
EBITDA	0.02	-0.04*	-0.07***	-0.09***	-0.05***	0	-0.16***	-0.03	-0.01	-0.07***	0	-0.05**	-0.05**	0.02	0.05**	-0.04**	-0.04**	1	
D/A	0.03	0.03*	0.01	0.01	0.01	0.01	0.01	0.04*	0.01	-0.01	0.05**	0.08***	0.03	0.02	0.01	0.06***	0.25***	0.21***	1

Notes: (t) \* denotes significance at 10% (p < 0.10), \*\* denotes significance at 5% (p < 0.05), \*\*\* denotes significance at 1% (p < 0.01).

Table 13 shows the Pearson Correlation Matrix for the Industrial Sample

## IV. 2 Main Results

The Table 15 reports the regression result for the first equation that investigates the existence of a linear relationship between the ESG Combined score and the Accounting based measures. The results of the first model show that the ESG Combined Score is statistically significant and has a positive effect on two accounting measures (ROA and ROE) over three for the Industrial sample, while in regards to the financial sample, ESG Combined Score seems to be positively correlated and statistically significant only with ROE. This supports, at least in a partial way, the first hypothesis of this study, i.e. there is a general positive correlation between the CSP level and the Corporate Financial Performance, measured with accounting measures.

<i>Accounting-Based Measures</i>													
<b>Model</b>	ROA				ROE				ROS				
	Industrial		Financial		Industrial		Financial		Industrial		Financial		
<b>1</b>	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	
(Intercept)			1.3E-01	0.000 ***			2.3E+00	0.000 ***			8.1E-01	0.000 ***	
ESG Combined Score	1.3E-04	0.001 ***	3.6E-05	0.137	3.1E-05	0.016 *	4.2E-05	0.003 **	2.2E-05	0.383	-9.0E-05	0.840	
LNTA	-1.5E-02	0.004 **	-4.5E-03	0.000 ***	-3.4E-03	0.000 ***	-1.2E-03	0.000 ***	-4.6E-03	0.005 **	-2.1E-03	0.583	
Debt/Assets	-1.3E-01	0.000 ***	-3.9E-03	0.650	-7.2E-03	0.001 ***	-5.4E-03	0.258	-2.0E-02	0.000 ***	-1.1E-01	0.019 *	
EBITDA Margin	3.3E-01	0.000 ***	1.5E-04	0.501	6.2E-02	0.000 ***	1.9E-04	0.308	4.3E-01	0.264	3.1E-01	0.000 ***	
Crisis	6.5E-03	0.002 **	-2.3E-03	0.008 **	1.2E-03	0.005 **	-1.5E-04	0.877	2.4E-03	0.000 ***	-9.9E-03	0.152	
Insurance			4.1E-03	0.131			4.2E-04	0.738					
Investment Holding Companies			1.6E-03	0.953			8.2E-04	0.871					
Real Estate			1.1E-02	0.026 *			-1.8E-03	0.565			4.5E-02	0.192	
Model R-Squared:	Fixed		Random		Fixed		Random		Fixed		Random		
	0.244		0.189		0.159		0.987		0.568		0.326		
N	2915		781		2847		837		1680		110		
Goodness of the Fit	***		***		***		***		***		***		

Notes: (1) + denotes significance at 10% ( $p < 0.10$ ), \* denotes significance at 5% ( $p < 0.05$ ), \*\* denotes significance at 1% ( $p < 0.01$ ), \*\*\* denotes significance at 0.1% ( $p < 0.001$ )

Table 15, The effect of the ESG Combined Score on Accounting-Based Measures (LnROA, LnROE and LnROS)

Looking at the Control variables, Size as measured by LN Total Assets, negatively and statistically significant for almost all the specification in this model, ROS of financial sample it is not statistically significant.

These results are in contrast with Kang et al., (2010) that argues that the larger size of a company should be associated with a greater availability of financial resources and a more effective and efficient organization, therefore producing a greater return if compared to a smaller company.



The control variable for the companies' leverage, in this study measured as Debt / Asset, is significant and negatively correlated with financial performance accounting-based measures for the industrial sample in the Model 1, while for the financial sample it is significant and negatively correlated for ROE and ROS.

The presence of the crisis measured by the dummy variable Crisis is statistically significant for both the samples when the focus is on ROA, while for the other two accounting-based measures it shows significant results only for the industrial sample.

However, differently from what was expected, the effect of the crisis on financial performance is positive in the industrial sample, in fact for all three measures of CFP in the industrial sample the presence of the crisis is significant and positive, while the effect of Crisis on the financial sample is negative.

For what concerns the market-based measures the results are presented in Table 16.

<i>Market-Based Measures</i>											
<b>Model 1</b>	TBQ					PE					
	Industrial		Financial			Industrial		Financial			
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )			
(Intercept)							4.3E+00	0.000	***		
ESG Combined Score	-6.9E-05	0.326	1.1E-03	0.000	***	2.2E-05	0.083	+	6.8E-03	0.132	
LNTA	-8.2E-01	0.000	***	-6.4E-01	0.000	***	-4.6E-03	0.005	**	-6.7E-02	0.013
Debt/Assets	7.2E-01	0.000	***	2.9E+00	0.000	***	-2.0E-02	0.000	***	7.4E-02	0.833
EBITDA Margin	-4.1E-03	0.765		-4.5E-04	0.648		4.3E-01	0.338		-5.3E-02	0.838
Crisis	2.5E-02	0.000	***	-2.8E-02	0.015	*	2.4E-03	0.000	***	-3.5E-01	0.000
Insurance											
Investment											
Holding Companies											
Real Estate										-6.7E-02	0.746
Model		Fixed		Fixed		Fixed		Random			
R-Squared:		0.94528		0.78379		0.21685		0.21203			
N		3022		910		1665		106			
Goodness of the Fit		***		***		***		***			

Notes: (1) + denotes significance at 10% (p < 0.10), \* denotes significance at 5% (p < 0.05), \*\* denotes significance at 1% (p < 0.01), \*\*\* denotes significance at 0.1% (p < 0.001)

Table 16, The effect of ESG Combined Score on Market-Based Measures (LnTBQ and Ln P/E)

The marked based measures show a positive and significant correlation between the TBQ and ESG Combined Score for what concern the financial sample while the same result is found for the P/E for the industrial sample. This supports, also for the market-based measures, H1 and interestingly no negative results are found with accounting or market-based measures for what concern the overall CSP score.

The Size (Ln Total Asset) is again significant in most of the specification like in the Model 1 with accounting measures and the sign of relationship is negative.

The Leverage, measured by Debt/Asset shows significant results for TBQ in both the sample, while it seems to have no significant effect on the model with P/E.

Differently from what it is found for the accounting measures the TBQ is positively correlated with Debt/Asset. This is in line with the formulation of the measures, the TBQ has in fact the

company's debt to the numerator of the formula, and the total Asset in the denominator, thus assuming constant the market value of the company and the preferred stock, with increasing Debt/Assets ratio the TBQ should be increase.

For the crisis dummy variables, it is observable as it is statistically significant for both the measures (TBQ and P/E) but differently from the previous model (Table 16), it shows negative relation with P/E (both industrial and finance) while for TBQ the results are mixed (positive for industrial sample and negative for financial sample).

The next model analyzed is Model 2, to test the presence of opposite effects in the two components (Positive and Negative) that could have made the general CSP index statistically insignificant. The results of the Model 2 are presented in Table 17 and Table 18 respectively for ROA, ROE and ROS in the first one and TBQ and P/E in the second one.

**Accounting-Based Measures**

Model 2	ROA				ROE				ROS			
	Industrial		Financial		Industrial		Financial		Industrial		Financial	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )
(Intercept)			1.1E-01	0.000 ***			2.3E+00	0.000 ***	5.2E-05	0.341	8.0E-01	0.000 ***
ESG Score	3.0E-04	0.032 *	-9.8E-06	0.867	7.3E-05	0.002 **	4.7E-05	0.031 *	5.2E-05	0.250	-1.7E-04	0.844
ESG Controversies Score	3.8E-05	0.157	4.4E-05	0.049 *	9.6E-06	0.221	2.2E-05	0.025 *	6.1E-07	0.971	4.4E-05	0.753
LNTA	-1.6E-02	0.001 ***	-4.1E-03	0.000 ***	-3.7E-03	0.000 ***	-1.3E-03	0.000 ***	-5.0E-03	0.002 **	-2.0E-03	0.554
Debt/Assets	-1.3E-01	0.000 ***	-3.6E-03	0.678	-6.9E-03	0.001 ***	-5.4E-03	0.309	-1.9E-02	0.001 ***	-9.4E-02	0.015 *
EBITDA Margin	3.2E-01	0.000 ***	1.7E-04	0.399	6.1E-02	0.000 ***	1.9E-04	0.405	4.3E-01	0.000 ***	3.1E-01	0.000 ***
Crisis	7.0E-03	0.001 **	-2.5E-03	0.003 **	1.4E-03	0.001 ***	-1.6E-04	0.886	2.4E-03	0.000 ***	-1.1E-02	0.095 +
Insurance			4.3E-03	0.088 +			4.0E-04	0.738				
Investment Holding Companies			1.4E-03	0.958			8.7E-04	0.864				
Real Estate			1.2E-02	0.018 *			-1.8E-03	0.562			4.1E-02	0.2163
Model	Fixed		Random		Fixed		Random		Fixed		Random	
R-Squared:	0.245		0.192		0.161		0.987		0.568		0.347	
N	2915		781		2847		837		1680		110	
Goodness of the Fit	***		***		***		***		***		***	

Notes: (1) + denotes significance at 10% (p < 0.10), \* denotes significance at 5% (p < 0.05), \*\* denotes significance at 1% (p < 0.01), \*\*\* denotes significance at 0.1% (p < 0.001)

*Table 17 ESG Score and Controversies on Accounting-Based Measures (LnROA, LnROE and LnROS)*

For the accounting measures, the positive CSP measured by the ESG score has a positive and significant results on ROA for the industrial sample and on ROE for both samples.

For what concerns the “negative behavior” of companies, measured by ESG Controversies Score, results show as a higher level of negative behavior is related to lower ROA and ROE for the financial sample<sup>76</sup>. The ESG Controversies Score represents the “negative behavior” of companies, its value range from 0 to 100, when it is near 0 companies are involved in many “negative behavior” therefore a positive parameter for this regressor variable means that a reduction in negative behavior is positively related with CFP.

The control variables Size and Leverage are statistically significant for most of the specifications and show the same patterns of Model 1. The crisis dummy variable shows similar pattern as in Model 1. When the ESG Controversies is considered, instead, it seems to have no statistical effect on the industrial sample for all the Model, so a greater attention for the industrial companies in avoiding scandal seems to be not linked with their performance. While in the financial sample the ESG Controversies score is related with the CFP for all the three proxy measures, reduction in the controversies (that reflects in an increase in the ESG Controversies index) could result in greater CFP for all the financial measures in the sample.

<i>Market-Based Measures</i>										
<b>Model 2</b>	TBQ						PE			
	Industrial			Financial			Industrial		Financial	
	Estimate	Pr(> t )		Estimate	Pr(> t )		Estimate	Pr(> t )	Estimate	Pr(> t )
(Intercept)									4.1E+00	0.000 ***
ESG Score	-3.8E-04	0.001 **		2.6E-03	0.000 ***		6.2E-05	0.927	6.4E-03	0.329
ESG Controversies Score	4.1E-05	0.267		4.9E-04	0.005 **		7.0E-04	0.070 +	2.8E-03	0.050 *
LNTA	-8.2E-01	0.000 ***		-6.5E-01	0.000 ***		5.7E-02	0.366	-6.8E-02	0.008 **
Debt/Assets	7.2E-01	0.000 ***		2.9E+00	0.000 ***		2.6E-02	0.891	-3.5E-02	0.889
EBITDA Margin	-2.6E-03	0.853		-6.1E-04	0.517		-1.7E+00	0.000 ***	-1.5E-03	0.994
Crisis	2.5E-02	0.000 ***		-2.5E-02	0.029 *		-2.8E-01	0.000 ***	-3.4E-01	0.000 ***
Insurance									-3.1E-02	0.829
Investment Holding Companies										
Real Estate									-3.1E-02	0.843
Model	Fixed			Fixed			Fixed		Random	
R-Squared:	0.945			0.786			0.217		0.209	
N	3022			910			1665		106	
Goodness of the Fit	***			***			***		***	

Notes: (1) + denotes significance at 10% (p < 0.10), \* denotes significance at 5% (p < 0.05), \*\* denotes significance at 1% (p < 0.01), \*\*\* denotes significance at 0.1% (p < 0.001)

*Table 18 ESG Score and Controversies on Market-Based Measures (LnTBQ and LnP/E)*

Table 18 shows that for the Industrial sample the ESG score has a negative effect on the Approximated Tobin’s Q, while for financial companies it is exactly the opposite, so a greater level of ESG score has positive effect of Tobin’s Q; the positive CSP it shows no significant results in the P/E model.

The ESG Controversies Score has positive effect on both the financial sample for the TBQ The results for the ESG Controversies score are in line with the same model tested on the accounting

<sup>76</sup> A reduction in negative behavior corresponds to an increase in the ESG Controversies Score index

measures. The ESG Controversies Score has a positive effect on the CFP for 2 over 3 accounting measures and for all the market measures when the model is tested on the financial sample, while there only significant results on the industrial sample is for P/E (positive and significant). This seems to provide support to H3, as the ESG Controversies Score is negatively related with CFP. A specification here is needed as ESG Controversies Score indicates the company's involvement in many scandals and negative attitudes when the score is low, while as the index score increases, the company has fewer controversies in place.

In regards to Model 3, Table 19, presents results for the accounting-based measures while Table 20 for the market-based measures.

In this model the ESG Score is divided in its three fundamental dimensions in order to assess if the H4-H5 and H6 could be validated but also to understand if there are significant differences between these two sample.

For the Industrial sample the effects of the Social and Corporate Governance dimensions, are both statistically significant and positively correlated with ROA. This suggests that a greater attention to social issues and to transparent processes inside the company can enhance ROA.

#### *Accounting-Based Measures*

Model 3	ROA				ROE				ROS			
	Industrial		Financial		Industrial		Financial		Industrial		Financial	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )
(Intercept)			1.3E-01	0.000 ***			2.3E+00	0.000 ***				
Environmental	-2.2E-05	0.729	2.6E-05	0.559	8.1E-06	0.539	4.4E-05	0.104	-3.7E-05	0.163	3.7E-04	0.344
Social	1.7E-04	0.001 **	7.9E-06	0.795	2.4E-05	0.138	-1.9E-05	0.315	3.3E-05	0.133	1.3E-03	0.036 *
Corporate Governance	1.4E-04	0.011 *	-1.6E-05	0.233	1.2E-05	0.171	1.1E-05	0.439	4.6E-05	0.019 *	7.3E-05	0.763
ESG Controversies												
Score	8.2E-06	0.664	1.4E-05	0.448	-2.1E-06	0.630	1.7E-05	0.157	-1.1E-05	0.573	-2.8E-04	0.179
LNTA	-5.9E-03	0.291	-4.8E-03	0.000 ***	-1.6E-03	0.223	-1.1E-03	0.002 **	-3.7E-03	0.159	-1.9E-02	0.286
Debt/Assets	-1.4E-01	0.000 ***	-4.0E-03	0.508	-5.6E-03	0.009 **	-6.3E-03	0.200	-1.5E-02	0.044 *	-5.2E-01	0.000 ***
EBITDA												
Margin	3.1E-01	0.000 ***	7.6E-03	0.000 ***	6.3E-02	0.000 ***	3.3E-03	0.003 **	4.3E-01	0.000 ***	2.9E-01	0.000 ***
Crisis	5.5E-03	0.034 *	-1.8E-03	0.004 **	9.8E-04	0.032 *	-1.3E-03	0.097 +	1.7E-03	0.047 *	-8.9E-03	0.322
Insurance			5.7E-03	0.075 +			2.1E-03	0.001 **				
Investment Holding												
Companies			1.2E-02	0.008 **			2.6E-04	0.957				
Real Estate			1.2E-02	0.011 *			-3.5E-04	0.892				
Model	Fixed		Random		Fixed		Random		Fixed		Fixed	
R-Squared:	0.216		0.270		0.147		0.998		0.509		0.344	
N	2915		781		2847		837		1680		110	
Goodness of the Fit	***		***		***		***		***		***	

Notes: (1) + denotes significance at 10% (p < 0.10), \* denotes significance at 5% (p < 0.05), \*\* denotes significance at 1% (p < 0.01), \*\*\* denotes significance at 0.1% (p < 0.001)

*Table 19, Dimensional Score and Controversies over Accounting-Based Measures (LnROA, LnROE and LnROS)*

Surprisingly, the ROE Model 3 does not highlight any significant results for the three-dimensional score, nor for the ESG Controversies. When the focus moves on the ROS instead, there are two significant results, the first one is that Corporate Governance performance is

positively related with ROS for the Industrial Sample, while the second one is that Social performance is positively related with ROS for the Financial Sample.

Contrary to what was found for the previous model, the ESG Controversies score does not show any significant result.

The Crisis dummy shows significant effect in almost all the measures, it is not significant only for ROS of the financial sample. The opposite effect of this variable between one sample and another remains, even in this case it is positively correlated with the financial performance indices of the industrial companies while it negatively affected the companies belonging to the financial industry.

Table 20, as previously stated, presents the results for market-based measures. Dimensional ESG Scores (Environmental, Social and Governance) show no significant result on the TBQ for the financial sample, while show negative relation between both Environmental and Social dimension on the TBQ for Industrial Sample.

<i>Market-Based Measures</i>										
<b>Model 3</b>	TBQ						PE			
	Industrial		Financial				Industrial		Financial	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )		
(Intercept)										
Environmental	-4.6E-04	0.000 ***	-3.7E-04	0.390	-4.0E-05	0.938	4.2E-03	0.625		
Social	-2.5E-04	0.000 ***	7.7E-04	0.126	-4.0E-04	0.639	-8.4E-03	0.011 *		
Corporate Governance	8.1E-05	0.238	-4.4E-04	0.151	-5.8E-04	0.130	1.6E-03	0.560		
ESG Controversies Score	7.8E-05	0.010 *	4.2E-04	0.080 +	2.0E-04	0.447	6.3E-03	0.000 ***		
LNTA	-8.2E-01	0.000 ***	-6.9E-01	0.000 ***	6.8E-02	0.257	-2.7E-01	0.002 **		
Debt/Assets	6.8E-01	0.000 ***	3.0E+00	0.000 ***	3.2E-01	0.110	3.5E+00	0.038 *		
EBITDA Margin	-1.2E-02	0.396	1.2E-02	0.100 +	-2.1E+00	0.000 ***	6.9E-01	0.326		
Crisis	1.9E-02	0.000 ***	-3.7E-02	0.010 *	-2.4E-01	0.000 ***	-4.8E-01	0.000 ***		
Model		Fixed		Fixed		Fixed		Fixed		
R-Squared:		0.94306		0.79407		0.244		0.425		
N		3022		910		1665		106		
Goodness of the Fit		***		***		***		***		

Notes: (I) + denotes significance at 10% (p < 0.10), \* denotes significance at 5% (p < 0.05), \*\* denotes significance at 1% (p < 0.01), \*\*\* denotes significance at 0.1% (p < 0.001)

Table 20, Dimensional Score and Controversies over Market-Based Measures (LnTBQ and LnP/E)

In the same model (Industrial TBQ), it can be observed that the ESG Controversies score is statistically significant also for the Industrial sample and it has a positive effect on the Approximated Tobin's Q, this is the only model tested on the Industrial sample that show a significance for the ESG Controversies.

The more interesting results are in the financial sample regressed on the P/E, the Social dimension seems to have a negative impact on the P/E, while the ESG Controversies again have a positive impact on P/E in the same sample.

With regard to the control variables, the variable that takes into account the crisis remains valid for all the specifications and for both the industrial sample and the financial sample, while for the TBQ it follows the result of the accounting-based measures, for P/E the presence of Crisis

has a negative effect. Control variables regarding the Size of the company and the Capital Structure, intended as leverage, are also significant. The effects of the latter two variables do not change compared to the models analyzed previously, therefore remaining negative in the case of  $LN [Total Asset]$  and with opposite sign instead of the leverage, positive for the market measures and negative for the accounting measures.

The last model that will be presented tests the effect of each subcomponent of the ESG dimensions on Corporate Financial Performance, in order to assess if the relevance of sub-components is masked in the dimension analysis by the presence of opposite effect of the other and moreover if there are sub-components negatively related to CFP or non-statistically significant.

Table 21 and Table 22 present the result of Model 4 respectively for accounting-based and market-based measures.

<i>Accounting-Based Measures</i>													
<b>Model 4</b>	ROA				ROE				ROS				
	Industrial		Financial		Industrial		Financial		Industrial		Financial		
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	
(Intercept)			2.3E+00	0.000 ***			2.3E+00	0.000 ***					
Emissions													
Score	1.6E-04	0.000 ***	1.0E-05	0.776	2.8E-05	0.000 ***	1.0E-05	0.776	-1.7E-05	0.156	-4.6E-04	0.222	
Resource Use													
Score	-5.8E-05	0.487	2.2E-06	0.940	-8.5E-06	0.635	2.2E-06	0.940	1.2E-05	0.602	-1.0E-03	0.031 *	
Environmental													
Innovation													
Score	-9.7E-05	0.000 ***	-2.2E-06	0.906	-1.4E-05	0.000 ***	-2.2E-06	0.906	-1.8E-05	0.114	-3.3E-04	0.187	
Workforce													
Score	1.9E-04	0.000 ***	2.1E-05	0.146	3.1E-05	0.000 ***	2.1E-05	0.146	3.9E-05	0.097 +	-5.8E-04	0.105	
Human Rights													
Score	-1.0E-04	0.085 +	1.5E-05	0.379	-1.6E-05	0.032 *	1.5E-05	0.379	8.5E-06	0.598	1.1E-03	0.002 **	
Community													
Score	-3.5E-05	0.243	-6.0E-06	0.542	-1.6E-05	0.009 **	-6.0E-06	0.542	-7.5E-06	0.483	1.0E-03	0.000 ***	
Product													
Responsibility													
Score	3.9E-05	0.284	-3.8E-06	0.759	2.2E-05	0.030 *	-3.8E-06	0.759	1.8E-05	0.244	2.6E-04	0.042 *	
Management													
Score	3.7E-05	0.172	1.7E-05	0.131	1.8E-05	0.006 **	1.7E-05	0.091 +	4.1E-06	0.809	4.1E-05	0.774	
Shareholders													
Score	8.6E-05	0.002 **	-9.6E-06	0.458	1.0E-05	0.083 +	-9.6E-06	0.458	2.6E-05	0.105	3.5E-04	0.014 *	
CSR Strategy													
Score	7.0E-06	0.885	-4.8E-06	0.602	-2.6E-06	0.816	-4.8E-06	0.602	-1.2E-05	0.619	-6.9E-04	0.001 ***	
ESG													
Controversies													
Score	3.4E-05	0.149	2.4E-05	0.034 *	9.3E-06	0.240	2.4E-05	0.034 *	-2.5E-07	0.988	3.8E-06	0.983	
LNNTA	-1.6E-02	0.000 ***	-1.2E-03	0.000 ***	-3.5E-03	0.000 ***	-1.2E-03	0.000 ***	-4.8E-03	0.008 **	-1.1E-02	0.186	
Debt/Assets	-1.3E-01	0.000 ***	-5.0E-03	0.327	-6.8E-03	0.001 ***	-5.0E-03	0.327	-2.0E-02	0.001 ***	-4.0E-01	0.017 *	
EBITDA													
Margin	3.2E-01	0.000 ***	1.9E-04	0.332	6.1E-02	0.000 ***	1.9E-04	0.332	4.3E-01	0.000 ***	2.8E-01	0.000 ***	
Crisis	6.3E-03	0.002 **	-1.4E-04	0.882	1.2E-03	0.001 ***	-1.4E-04	0.882	2.3E-03	0.000 ***	-1.7E-02	0.147	
Insurance			5.9E-04	0.613			5.9E-04	0.613					
Investment													
Holding													
Companies			9.1E-04	0.859			9.1E-04	0.859					
Real Estate			-1.7E-03	0.557			-1.7E-03	0.557					
Model	Fixed		Random		Fixed		Random		Fixed		Fixed		
R-Squared:	0.258		0.203		0.171		0.988		0.571		0.397		
N	2915		781		2847		837		1680		110		
Goodness of the Fit	***		***		***		***		***		***		

Notes: (1) + denotes significance at 10% ( $p < 0.10$ ), \* denotes significance at 5% ( $p < 0.05$ ), \*\* denotes significance at 1% ( $p < 0.01$ ), \*\*\* denotes significance at 0.1% ( $p < 0.001$ )

Table 21, Sub-categories score and Controversies over Accounting-Measures (LnROA, LnROE and LnROS)

Focusing on ROA in Table 21, we can notice, for industrial companies, how the containment of polluting emissions (Emission Score) and the Workforce score are positively correlated with ROA. Finally, there is also a positive correlation with sub-component of Corporate Governance and this is the Shareholders Score. Moving to the negative correlation instead, Environmental Innovation and Human Rights are significant and negatively correlated with the ROA in the Industrial sample.

For financial companies, the ROA model presents only a statistically significant result, which do not concern the control variables, ESG controversies Scores are positively related with the variable representing financial performance.

On the other hand, observing the ROE results, it can be seen that for the Industrial sample almost all the components are significant for the model, even if with a different sign. In fact, the Emission Score positively correlated with the ROE while the Environmental Innovation score has a negative correlation.

Regarding the sub-components of the Social dimension in the Industrial Sample, it is possible to observe two that are positively related and two that are negative related with CFP. In fact, the panel results show that the Workforce Score has a positive effect on ROE but also the Product Responsibility. The Human Right score and the Community Score are both significant and negatively correlated with ROE. Looking at the Corporate Governance sub-components, we can notice that the only two significant components are both positively correlated, Management Score and Shareholders Score. Furthermore, all the variables controlling the model are significant for the purpose of identifying a relationship.

Finally, the ROE for the sample of the financial companies does not seem to have particular significant parameters in the variables of interest, if not the Management Score that is positively related with ROE and once again with the same sign the ESG Controversies. It is also important to underline that once again the ESG Controversies is positively related with the financial performance of the company for both ROA and ROE, (a trend that is evident in most of the models that use the financial companies as a sample).

Moving to the results of the ROS sub-model it is noted that for the Industrial sample the only variable of interest that is statistical significant is Workforce Score,

For the financial sample the Resources Use Score is negatively correlated with ROS and inside the Social dimension both Human Right, Community and Product Responsibility Scores are all significant and positively correlated with ROS.

In the Corporate Governance Dimension, the CSR Strategy Score, that measure performance of company in integration of CSR practices in day to day decision-making profit, shows negative correlation with ROS while Shareholders Score is positively correlated with ROS.

The ESG Controversies is again positively correlated with both ROE and ROA for the accounting measures.

Table 22 shows the effects of the sub-categories on the last two financial performance measures, P/E and TBQ. Even in this latter case results are mixed.

When TBQ as CFP proxy is taken into account, it is notable that in the industrial sample there are two opposite effects within the Environmental dimension: the Emission and Resource Use Score is negatively correlated to the TBQ, while the Environmental Innovation is positively correlated with TBQ and also statistically significant.

<i>Market-Based Measures</i>										
<b>Model 4</b>	TBQ					PE				
	Industrial		Financial			Industrial		Financial		
	Estimate	Pr(> t )		Estimate	Pr(> t )	Estimate	Pr(> t )		Estimate	Pr(> t )
(Intercept)										
Emissions Score	-1.4E-04	0.054	+	-2.4E-04	0.246	-4.6E-04	0.047	*	2.9E-03	0.250
Resource Use Score	-2.5E-04	0.047	*	2.6E-04	0.399	2.8E-03	0.007	**	9.5E-03	0.001 **
Environmental										
Innovation Score	1.2E-04	0.002	**	4.4E-04	0.008	**	2.0E-04	0.713	1.3E-03	0.750
Workforce Score	-3.0E-04	0.000	***	8.7E-04	0.001	***	-1.7E-03	0.000	-1.5E-03	0.714
Human Rights Score	-2.3E-04	0.011	*	4.7E-04	0.095	+	-1.3E-05	0.986	-3.9E-03	0.061
Community Score	3.5E-05	0.643		-9.0E-05	0.571		1.3E-03	0.009	-9.5E-03	0.000
Product Responsibility										
Score	1.2E-04	0.011	*	2.2E-04	0.314		-5.5E-04	0.038	1.5E-03	0.254
Management Score	2.1E-04	0.007	**	-3.6E-04	0.180		-3.1E-04	0.446	1.9E-03	0.373
Shareholders Score	-1.9E-04	0.000	***	-2.7E-04	0.248		-5.1E-04	0.002	9.5E-04	0.407
CSR Strategy Score	-9.7E-06	0.885		2.2E-03	0.000	***	2.7E-04	0.644	2.0E-03	0.329
ESG Controversies										
Score	5.4E-05	0.088	+	5.0E-04	0.004	**	7.0E-04	0.052	3.9E-03	0.000
LNTA	-8.2E-01	0.000	***	-6.5E-01	0.000	***	2.9E-02	0.623	-6.9E-02	0.234
Debt/Assets	7.2E-01	0.000	***	2.9E+00	0.000	***	4.3E-02	0.806	1.3E+00	0.185
EBITDA Margin	-5.5E-03	0.714		1.8E-04	0.814		-1.7E+00	0.000	-5.7E-01	0.100
Crisis	2.5E-02	0.000	***	-2.3E-02	0.025	*	-2.7E-01	0.000	-3.5E-01	0.000
Model		Fixed			Fixed			Fixed		Fixed
R-Squared:		0.947			0.799			0.231		0.365
N		3022			910			1665		106
Goodness of the Fit		***			***			***		***

Notes: (1) + denotes significance at 10% ( $p < 0.10$ ), \* denotes significance at 5% ( $p < 0.05$ ), \*\* denotes significance at 1% ( $p < 0.01$ ), \*\*\* denotes significance at 0.1% ( $p < 0.001$ )

*Table 22 Sub-categories score and Controversies over Market-Based Measures (LnTBQ and LnP/E)*

Also within the Social dimension there are again mixed results: both the Workforce and Human Right Scores are negatively related with TBQ but there is also a sub-component of the Social dimension that seems to have a positive effect on the Corporate Financial performance (TBQ) and this is Product Responsibility.

Corporate Governance dimensions also shows mixed results: while Managements Score is positively and statistically significant correlated with TBQ, Shareholders Score is negative and statistically significant.



If we move the focus to TBQ sub-model and financial companies, we notice that each dimension has statistically significant sub-components.

In fact, for the Environmental Dimension, Environmental Innovation has positive and statistically significant effect, for the Social Dimension, instead, the relevant subcomponent seems to be the Workforce score and Human Right Score, also statistically significant and positively correlated with the TBQ, finally even within the last dimension of the ESG it is found a subcomponent that has a positive effect on TBQ and it is the CSR Strategy.

Starting from the P / E model on the Industrial sample, it was found that the Emission Score is negatively correlated while the Resource Use Score is positively correlated with the dependent variable.

Within the Social dimension, it was found that the Workforce Score is significant and negatively correlated with the P / E, while the Community Score seems to have a positive and significant influence . Moreover, unlike the results obtained from the same model on TBQ, in this case the Product Responsibility seems to be negatively correlated with the P / E.

Moving on to analyze the sub-categories of Corporate Governance, it is possible to observe that there is only one relevant category, the Shareholders Score and this is negatively correlated with the reference financial variable.

Looking at the model with the financial sample always referring to the P / E as an independent variable it is found that there are three significant parameters in the sub-categories, the first is the Resource Use Score which is positively correlated to the P/E, the second is the Human Right that is negatively related with P/E and the last one Community Score that is negatively and significant related to P / E.

Finally, in the financial sample, the ESG Controversies, in this case too it is positively correlated with the financial performances for both TBQ and P/E. The effect of the crisis consistently of all previous P / E has a significant and negative correlation, while the same variable for TBQ has a positive effect on the industrial sample and a negative effect on the financial sample. The other two control variables, Size and for Leverage, are significant only for the sub-model with TBQ and not for the P/E.

## Summary

Hypothesis	Model	Sample	Results
H1: Positive relationship between the Overall CSP and CFP.	1	Industrial	It is found a general positive relationship for two accounting measures ROA and ROE. For what concern the Market measures, the overall CSP shows a Positive correlation with P/E. No statistical evidence of negative relationship.
		Financial	It is found a general positive relationship for ROE. For what concern the Market measures, the overall CSP shows a positive correlation with TBQ
H2: Positive relationship between Positive CSP and CFP	2	Industrial	It is found a positive relationship with both ROA and ROE. While for the market measures, it is found a negative relationship between ESG Score and TBQ
		Financial	It is found a positive relationship between ROE for the accounting measures and with TBQ for the market measures.
H3: Negative relationship between Negative CSP and CFP	2	Industrial	No significant results for both accounting and market measures.
		Financial	It is found a negative relationship between ROA and ROE and ESG Controversies score. The same results are found also for TBQ and P/E
H4: Positive relationship between Environmental Dimension and CFP	3	Industrial	It is found a negative relationship between Environmental Dimension and TBQ.
		Financial	No significant results for both accounting and market measures.
H5: Positive relationship between Social Dimension and CFP	3	Industrial	It is found a positive relationship between ROA and Social dimension, while a negative effect on TBQ.
		Financial	It is found a positive effect on ROS and a negative effect on P/E.
H6: Positive relationship between Corporate Governance Dimension and CFP	3	Industrial	It is found a positive relationship between ROA and ROS for Corporate Governance.
		Financial	No significant results for both accounting and market measures.
H7: The relationship between CFP and dimension of CSP vary at the variation of the Industry	3	Industrial	Partial confirmation, relevant dimensions in one sample are not relevant in the other one
		Financial	No significant result.
H8: Investigated the effect of each dimension's (Environmental, Social and Governance) subcategories on CFP	4	Industrial	Generally mixed results but with a general positive relation between accounting measures and Workforce and Shareholder (ROA and ROE), while negative on market measures. Positive effect of Environmental Innovation on TBQ.
		Financial	Mixed Results for the accounting and market measures. Positive effect of Environmental Innovation on TBQ. Positive effect of Workforce Score on TBQ. Mixed result for Product Responsibility.

*Table 23 Main result for the hypothesis tested*

The results for the Model 1, that tests H1, show for the industrial sample a positive correlation between CSP and 3 (ROA ROE and P/E) over 5 financial performance measures used while for the financial sample positive correlations are found between CSP and TBQ and ROE; and no negative and statistically significant results is found in this model, therefore, it seems possible not to reject Hypothesis 1.

These results may suggest that managing carefully the efforts in CSR and try to avoid scandals or involvements in controversial business issues can enhance the corporate profitability, i.e. a well-balanced policy about CSR could help company to be more profitable.

The H2, "*Positive relation between Positive CSP and CFP*", is confirmed for the accounting measures for both industrial and financial sample, this implies that the Positive CSP helps companies to enhance at least their profitability ratio, while seems to be rejected for the market-based measures.

For what concern H3 that states: "*There is a negative relation between Negative CSP score and Corporate Financial Performance*", surprisingly, the results provide support to H3 but only for the financial sample, and it is relevant for different type of measures; the industrial sample does not show any significant results. The existence of negative relation between negative CSP and CFP means that a reduction in the controversial business issues could enhance companies' financial performance. For financial companies, the focus on the containment of scandals could be the result of the financial crisis.

In the industrial sample, the lack of significance of ESG Controversies Score could be due to the structure of the sample (it is heterogeneous and it comprises industries that are very different one from the other), an analysis at industry level could provide more reliable results. In fact, industrial companies could have the possibility to carry out business initiatives that, although ethical reprehensible, have a high profit potential, and for this reason they can sustain the costs associated with the involvement in scandals related to their operations.

The results of H4, "*there is a positive relation between Environmental Performance and CFP*", suggest how in the Industrial Sample the Environmental dimension is negatively associated with TBQ; this implies that the cost of reducing emissions or containing the usage of resources as well as innovation or processes to reduce the environmental impact could be associated to greater costs than the benefits provided, and therefore reduce the CFP.

For what concerns H5, "*there is a positive relationship between Social Performance and CFP*", the results show positive significant results for the accounting measures (ROA industrial sample and ROS financial) while negative for market-based. This provide a partial confirmation to H5 for accounting-based measures and rejection of H5 for market-based.

The Corporate Governance, seems to have positive impact on the accounting-based measures for the Industrial Sample, this provide confirmation to H6.

It seems interesting to highlight how the accounting measures are positively influenced by the different dimensions of the CSP, (a part from Environmental) and do not show any significant negative result. The market measures instead, except for Model 1, are most of time influenced negatively, this could be related to the perception of investors about the CSR practices. It could be possible that evaluation process of these activities is not well developed and for this reason most of time is perceived as a waste of resources.

For what concerns H7, “*the relations between CSP dimension and CFP varies across industries*” the two general samples (Industrial and Financial) are possibly not well suited to analyze phenomenon, although there is a partial insight about the differences of the dimensional effects in the two sample. Industrial and Financial samples, according to their definitions are composed by many industries, for this reason it is not possible to observe if there is difference in the relations between CSP dimensions and CFP at the industry level.

For Hypothesis 8, “*Investigated the effect of each dimension’s (Environmental, Social and Governance) subcategories on CFP*”, mixed results were found. However the Management Score is the only sub-component which seems significantly and positively correlated, without distinction of sample or type of variable taken into consideration. Therefore, the effective commitment and dedication of the managers in carrying out effective and efficient Corporate Governance practices seems to be a relevant factor in the creation of value in all fields, it can therefore be assumed that the creation of a culture between management oriented towards transparency, the implementation of clear and effective processes and guidelines is considered a valuable driver.

The Product Responsibility Score shows mixed results: for the market measures, a positive relation with TBQ and negative with P/E (Industrial sample) for the accounting measures a negative relation with ROA and ROA (Industrial sample). The same pattern is followed by Environmental Innovation that results positively related to TBQ while negatively related with ROA and ROE.

In the analysis developed at sub-categories level it is also found that Workforce Score has positive effect on industrial companies for what concerns the accounting-based measures, it positively related with all the accounting measures, but negative when the focus is on the market measures.

The Human Right Score seems to have negative effect in the industrial sample for both accounting and market-based measures, so it seems that, at least for industrial companies, the compliance of the human right convention does not add value, but it decreases both profitability

and value. Also the Shareholders Score is positively related with accounting measures ( ROA and ROE for the industrial sample and ROS for financial sample, but it seems negatively correlated with market measures for the industrial sample ( both TBQ and P/E).

#### IV. 3 Additional Analysis

For the additional analysis four different industries were chosen. This choice was made to test if there is a substantial difference in the results especially in regards the sub-components of the CSP dimensions. Moreover, Hypothesis 7, argues that there are substantial differences between the different dimensions of the CSP and the CFP as the industry changes.

In this study it was decided to take two industries from the previous financial sample and two from the industrial sample. This choice was made for two reasons, the first is the ability to test if the relations found in the main analysis hold at the industry level , in other word if the effect of CSP positively affect the CFP also at industry level, and the second instead is to compare industries that have impacts risk profiles regarding in particular the environment extremely different. The four selected industries are: Bank, Insurance, Chemicals and Energy- Fossil Fuels. For what concerns the environmental impact Chemical and Energy-Fossil Fuels, given their operation, are surely more involved .

Particularly as stated by IEA, (2016): “*At the world level, energy-related emissions of nitrogen oxides continue to increase. They stood at 107 Mt in 2015, ..... power (14%)*” moreover the paper states that more than one third of the world emission of Sulfure dioxide is due to the power generation. It is useful, for a better understanding, to recall the hypothesis and relative model before presenting the results.

The first hypothesis, positive relationship between overall CSP and CFP, is tested through the Model 1a, hypothesis 2 and 3, respectively investigate the existence of a positive relationship between the positive CSP and CFP and negative relationship between negative CSP and CFP are tested through Model 2a. Model 3a is used to test hypothesis 4,5,6, that supposed a positive relationship between dimensions of CSP and CFP. Hypothesis 7 sustains that the effect of CSP dimension vary across industry will be tested through a comparison between the industry result. Finally, Hypothesis 8 sustains that there are positive relations between the Workforce, Product Responsibility and Environmental Innovation and Corporate Financial Performance this will be tested with Model 4a.

## Insurance Industry

Table 24 presents results of all the models tested on the Insurance Industry with TBQ as dependent variable.

<i>TBQ/Insurance</i>	<i>Model 1a</i>		<i>Model 2a</i>		<i>Model 3a</i>		<i>Model 4a</i>	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )
(Intercept)								
ESG Combined Score	1.1E-03	0.103						
ESG Score			-3.0E-04	0.755				
Environmental					-4.0E-04	0.245		
Social					1.1E-03	0.010 **		
Corporate Governance					-7.0E-04	0.035 *		
Emissions Score							3.0E-04	0.661
Resource Use Score							-1.1E-03	0.209
Environmental								
Innovation Score							6.0E-04	0.117
Workforce Score							3.0E-03	0.000 ***
Human Rights Score							-7.0E-04	0.054 +
Community Score							-1.0E-03	0.015 *
Product Responsibility								
Score							1.3E-03	0.001 ***
Management Score							-1.2E05	0.980
Shareholders Score							-2.0E-04	0.671
CSR Strategy Score							1.5E-03	0.024 *
ESG Controversies								
Score			3.0E-04	0.278	1.0E-04	0.801	1.0E-04	0.728
LNTA	-7.1E-01	0.000 ***	-7.2E-01	0.000 ***	-9.7E-01	0.000 ***	-7.2E-01	0.000 ***
Debt/Assets	5.1E+00	0.000 ***	4.9E+00	0.000 ***	4.0E+00	0.000 ***	4.5E+00	0.000 ***
EBITDA Margin	-4.0E-04	0.744	-7.0E-04	0.476	3.8E-02	0.622	-6.0E-04	0.553
Crisis	7.2E-02	0.112	7.4E-02	0.112	-5.9E-03	0.501	5.0E-02	0.147
Model		Fixed		Fixed		Fixed		Fixed
R-Squared:		0.805		0.811		0.946		0.840
N		220		220		220		220
Goodness of the Fit		***		***		***		***

Notes: +, denotes significance at 10% (p < 0.10), \* denotes significance at 5% (p < 0.05), \*\* denotes significance at 1% (p < 0.01), \*\*\* denotes significance at 0.1% (p < 0.001)

*Table 24 shows the results for TBQ on the Insurance Industry*

Looking at the first model tested, for hypothesis 1, the Insurance Industry does not show any significant relation between overall CSP (ESG Combined Score) and TBQ.

Also Model 2 does not provided any significant element about the variables of interest. Looking at Model 3 it is observable that in the Insurance industry the Corporate Governance is negatively related with TBQ, while the Social dimension has a positive effect. Finally, the relevant sub-components for TBQ are, for Social dimension, Workforce and Product Responsibility which have a positive effect on TBQ, while Community and Human Right Score have a negative effect, instead for Corporate Governance the only relevant dimension is the CSR strategy that is positively related with TBQ. The ESG Controversies Score shows no significant results for any model with TBQ as dependent variable.

Table 25 reports results of four models test on Insurance Industry with ROA as dependent variable.

This accounting measure seem to be positively correlated with the ESG Combined Score, also at the industry level. The Model 2a shows that the ESG Controversies for Insurance Industry

has a positive effect, while the Positive CSP has no significant results. The Model 3a shows a negative correlation between the Corporate Governance and ROA of Insurance Company, while the other two dimensions (Environmental and Social) do not have significant effects.

<i>ROA/Insurance</i>	<i>Model 1a</i>		<i>Model 2a</i>		<i>Model 3a</i>		<i>Model 4a</i>	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )
(Intercept)	1.7E-01	0.000 ***	1.5E-01	0.001 **	1.1E-01	0.000 ***	1.6E-01	0.000 ***
ESG Combined Score	1.0E-04	0.034 *						
ESG Score			5.1E-06	0.691				
Environmental					1.0E-04	0.101		
Social					-5.0E-05	0.2620		
Corporate Governance					-8.0E-05	0.020 *		
Emissions Score							1.0E-04	0.198
Resource Use Score							1.0E-04	0.343
Environmental Innovation								
Score							-1.3E-05	0.705
Workforce Score							-1.0E-04	0.072 +
Human Rights Score							3.2E-05	0.345
Community Score							1.6E-05	0.399
Product Responsibility								
Score							-1.6E-05	0.972
Management Score							-1.8E-05	0.442
Shareholders Score							-3.9E-05	0.401
CSR Strategy Score							-4.8E-05	0.220
ESG Controversies Score			1.0E-04	0.004 **	4.0E-05	0.190	1.0E-04	0.008 **
LNTA	-6.1E-03	0.000 ***	-5.3E-03	0.004 **	-3.9E-03	0.001 ***	-5.9E-03	0.001 ***
Debt/Assets	1.3E-02	0.643	1.7E-02	0.504	4.7E-02	0.078 +	3.4E-02	0.184
EBITDA Margin	-2.3E-05	0.585	1.9E-05	0.636	3.7E-02	0.000 ***	4.3E-05	0.334
Crisis	-3.6E-03	0.006 **	-3.7E-03	0.003 **	-3.4E-03	0.005 **	-3.0E-03	0.023 *
Model	Random		Random		Random		Random	
R-Squared:	0.171		0.184		0.302		0.247	
N	210		210		210		210	
Goodness of the Fit	***		***		***		***	

Notes: +, denotes significance at 10% (p < 0.10), \* denotes significance at 5% (p < 0.05), \*\* denotes significance at 1% (p < 0.01), \*\*\* denotes significance at 0.1% (p < 0.001)

Table 25 show the results for ROA on the Insurance Industry

Finally, the sub-components that are relevant for ROA of the Insurance industry seem to be only the Workforce and moreover it seems to have a negative impact on the CFP. For what concern negative CSP, it is observable that for both Models 2a and 4a the reduction of negative CSP (an increase in the ESG Controversies Score) is positively associated with ROA.

Table 26 presents the results for ROE of the Insurance Companies.

The Overall CSP has a positive effect on CFP as shown in Model 1a, while Model 2a highlights how the positive CSP has no significant effect on the CFP while it is the ESG Controversies that has a positive effect on CFP. Model 3a shows that no dimensions of CSP have a significant effect for ROE of Insurance companies, while the containment of negative behavior (ESG Controversies) maintain a positive effect on CFP. The only subcomponent of ESG dimension that is statistically significant is the Community Score that is positively related with ROE, also in the Model 4a, the ESG Controversies seems to have a positive effect on ROE. For what concerns control variables, the Size proxy (Ln Total Asset) has a negative effect in most of the

specification, consistently with the results of general sample, the Crisis dummies is negatively related with CFP and finally Debt/Asset (proxy for Leverage) has positive effect on TBQ.

<i>ROE/Insurance</i>	<i>Model 1a</i>		<i>Model 2a</i>		<i>Model 3a</i>		<i>Model 4a</i>	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )
(Intercept)	2.3E+00	0.000 ***	2.3E+00	0.000 ***	2.3E+00	0.000 ***	2.3E+00	0.000 ***
ESG Combined Score	3.9E-05	0.033 *						
ESG Score			-3.24E-05	0.463				
Environmental					1.0E-05	0.774		
Social					-4.0E-05	0.334		
Corporate Governance					1.0E-05	0.671		
Emissions Score							6.0E-05	0.112
Resource Use Score							1.0E-05	0.827
Environmental Innovation Score								
Workforce Score							-2.0E-05	0.443
Human Rights Score							-2.0E-05	0.441
Community Score							-2.0E-05	0.610
Product Responsibility Score							3.0E-05	0.067 +
Management Score							-1.0E-05	0.552
Shareholders Score							-1.0E-05	0.134
CSR Strategy Score							-2.0E-05	0.491
ESG Controversies Score							-1.0E-05	0.805
LNTA	-1.3E-03	0.021 *	4.8E-05	0.002 **	4.0E-05	0.019 *	4.0E-05	0.072 +
Debt/Assets	-1.4E-02	0.395	-6.0E-04	0.448	2.9E-04	0.679	-6.7E-04	0.376
EBITDA Margin	-2.6E-05	0.491	-1.0E-02	0.500	-2.3E-02	0.276	-1.2E-02	0.409
Crisis	-2.6E-05	0.491	2.3E-02	0.892	2.3E-02	0.002 **	-2.0E-05	0.635
	-5.0E-04	0.638	-5.0E-04	0.571	-8.2E-04	0.269	6.0E-05	0.955
Model	Random		Random		Random		Random	
R-Squared:	0.875		0.875		0.984		0.864	
N	188		188		188		188	
Goodness of the Fit	***		***		***		***	

Notes: +, denotes significance at 10% (p < 0.10), \* denotes significance at 5% (p < 0.05), \*\* denotes significance at 1% (p < 0.01), \*\*\* denotes significance at 0.1% (p < 0.001)

Table 26 shows the results for ROE on the Insurance Industry

## Bank Industry

Table 27, 28 and 29 present results for Bank Industry, and the dependent variables are respectively: TBQ, ROA and ROE. Model 1a shows no significant effects of overall CSP over TBQ. Model 2a shows that positive CSP is associated with higher TBQ in Bank Industry, and also ESG Controversies is associated with higher CFP. When the focus is moved on the Model 3a the effect of different dimensions of CSP seems to be statistically insignificant, for Environment and Social dimension while Corporate Governance seem to be negatively related with CFP. Focusing on sub-components, there is positive relationship between TBQ and Resource Score, Community Score and CSR Strategy, while a slightly significant and negative correlation between Workforce, Product Responsibility and both Management and Shareholders Score. The ESG Controversies is positively associated with CFP also in Model 3a and 4a.



<i>TBQ/Bank</i>	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>			<i>Model 4</i>	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )		Estimate	Pr(> t )
(Intercept)									
ESG Combined Score	2.5E-04	0.676							
ESG Score			3.6E-03	0.027 *					
Environmental					-6.3E-04	0.568			
Social					-7.4E-04	0.400			
Corporate Governance					-2.1E-03	0.000 ***			
Emissions Score								-2.3E-04	0.712
Resource Use Score								2.1E-03	0.011 *
Environmental Innovation Score								-5.7E-04	0.274
Workforce Score								-1.1E-03	0.045 *
Human Rights Score								3.0E-04	0.437
Community Score								6.9E-04	0.050 +
Product Responsibility Score								3.8E-04	0.337
Management Score								-1.2E-03	0.003 **
Shareholders Score								-7.0E-04	0.011 *
CSR Strategy Score								1.7E-03	0.005 **
ESG Controversies Score			5.2E-04	0.086 +	6.4E-04	0.036 *		6.8E-04	0.014 *
LNTA	-6.3E-01	0.000 ***	-6.3E-01	0.000 ***	-6.6E-01	0.000 ***		-6.4E-01	0.000 ***
Debt/Assets	3.4E+00	0.000 ***	3.4E+00	0.000 ***	3.5E+00	0.000 ***		3.3E+00	0.000 ***
EBITDA Margin	-3.3E-02	0.011 *	-3.4E-02	0.016 *	-3.6E-02	0.128		-9.9E-03	0.468
Crisis	-6.5E-02	0.000 ***	-6.8E-02	0.000 ***	-5.6E-02	0.013 *		-6.0E-02	0.003 **
Model		Fixed		Fixed		Fixed			Fixed
R-Squared:		0.809		0.810		0.809			0.824
N		480		480		480			480
Goodness of the Fit		***		***		***			***

Notes: +, denotes significance at 10% (p < 0.10), \* denotes significance at 5% (p < 0.05), \*\* denotes significance at 1% (p < 0.01), \*\*\* denotes significance at 0.1% (p < 0.001)

Table 27 shows the results for TBQ on the Bank Industry

For what concerns ROA of the Bank sample the results are presented in Table 28. The results of Model 1a shows no relevance of overall CSP on ROA, the result of Model 2a is consistent with the result of previous model and shows no significant results, also the Model 3a shows the same patterns.

<i>ROA/Bank</i>	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>			<i>Model 4</i>	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )		Estimate	Pr(> t )
(Intrcept)	1.2E-01	0.000 ***	1.2E-01	0.000 ***	1.2E-01	0.000 ***		1.2E-01	0.000 ***
ESG Combined Score	5.2E-06	0.855							
ESG Score			-1.1E-05	0.855					
Environmental					5.8E-05	0.137			
Social					-5.1E-05	0.199			
Corporate Governance					2.1E-05	0.346			
Emissions Score								-1.3E-04	0.031 *
Resource Use Score								1.2E-04	0.060 +
Environmental Innovation Score								-9.4E-05	0.003 **
Workforce Score								4.0E-05	0.217
Human Rights Score								5.2E-05	0.034 *
Community Score								-3.2E-05	0.042 *
Product Responsibility Score								-1.1E-05	0.488
Management Score								2.6E-07	0.989
Shareholders Score								-1.4E-06	0.943
CSR Strategy Score								5.7E-05	0.046 *
ESG Controversies Score			1.3E-05	0.470	-1.0E-05	0.281		1.7E-05	0.336
LNTA	-4.5E-03	0.000 ***	-4.3E-03	0.000 ***	-4.4E-03	0.000 ***		-4.6E-03	0.000 ***
Debt/Assets	-1.5E-03	0.782	-1.4E-03	0.800	2.2E-03	0.688		-2.0E-03	0.676
EBITDA Margin	7.2E-03	0.000 ***	7.2E-03	0.000 ***	6.5E-03	0.000 ***		6.8E-03	0.000 ***
Crisis	-6.5E-04	0.575	-7.4E-04	0.512	-5.4E-04	0.587		-1.2E-03	0.299
Model		Random		Random		Random			Random
R-Squared:		0.180		0.181		0.209			0.226
N		454		454		454			454
Goodness of the Fit		***		***		***			***

Notes: +, denotes significance at 10% (p < 0.10), \* denotes significance at 5% (p < 0.05), \*\* denotes significance at 1% (p < 0.01), \*\*\* denotes significance at 0.1% (p < 0.001)

Table 28 shows the results for ROA on the Bank Industry

While one it is analyzed Model 4a, ROA is positively affected by Resource Score but also Human Right and CSR Strategy, while Emission, Environmental Innovation and Community Score has a negative effect on the ROA. The ESG Controversies shows no significant result in the all the model for ROA in the Banking Industry.

Table 29 presents the results for ROE model. The ESG Combined Score has a positive effect on ROE (Model 1a), Model 2a shows that the positive CSP (ESG Score) has a positive and significant effect on ROE, Model 3a have two significant dimensions, the first one is Environment that is positively correlated with ROE and second one Social dimension that has a negative effect on ROE. The relevant sub-components are: Workforce, Human Right and CSR Strategy for what concern the positive effect, while Environmental Innovation, Community have negative effects.

In regards to the Control variables for all the three measures: Size, consistently with the general sample, maintains a negative and significant relation with CFP. Leverage is significant only for the TBQ specification and it is positively correlated. The Crisis dummies, have a significant negative effect on the TBQ, while no significant result for the accounting measures.

<i>ROE/Bank</i>	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 4</i>	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )
(Intercept)	2.3E+00	0.000 ***	2.3E+00	0.000 ***	2.3E+00	0.000 ***	2.3E+00	0.000 ***
ESG Combined Score	3.7E-05	0.056 +						
ESG Score			6.2E-05	0.074 +				
Environmental					7.7E-05	0.000 ***		
Social					-7.9E-05	0.003 **		
Corporate Governance					3.0E-05	0.195		
Emissions Score							-3.1E-05	0.193
Resource Use Score							1.1E-05	0.789
Environmental Innovation Score							-3.9E-05	0.077 +
Workforce Score							5.1E-05	0.004 **
Human Rights Score							6.4E-05	0.002 **
Community Score							-3.6E-05	0.045 *
Product Responsibility Score							9.3E-06	0.551
Management Score							1.2E-05	0.450
Shareholders Score							-2.1E-05	0.125
CSR Strategy Score							4.2E-05	0.073 +
ESG Controversies Score			1.8E-05	0.418	4.4E-06	0.748	1.8E-05	0.109
LNTA	-1.1E-03	0.000 ***	-1.4E-03	0.001 ***	-9.0E-04	0.022 *	-1.6E-03	0.000 ***
Debt/Assets	-1.5E-03	0.763	-1.7E-03	0.728	9.4E-04	0.789	-2.4E-03	0.596
EBITDA Margin	4.5E-03	0.000 ***	4.5E-03	0.000 ***	2.6E-03	0.000 ***	4.7E-03	0.000 ***
Crisis	1.5E-03	0.312	1.7E-03	0.249	6.5E-04	0.315	1.5E-03	0.272
Model	Random		Random		Random		Random	
R-Squared:	0.994		0.994		0.999		0.994	
N	410		410		410		410	
Goodness of the Fit	***		***		***		***	

Notes: +, denotes significance at 10% (p < 0.10), \* denotes significance at 5% (p < 0.05), \*\* denotes significance at 1% (p < 0.01), \*\*\* denotes significance at 0.1% (p < 0.001)

Table 29 shows the results for ROE on the Bank Industry

## Chemical Industry

Tables 30, 31 and 32 show the results for Chemicals companies respectively for TBQ, ROA and ROE.

<i>TBQ/Chemicals</i>												
	<i>Model 1</i>			<i>Model 2</i>			<i>Model 3</i>			<i>Model 4</i>		
	Estimate	Pr(> t )		Estimate	Pr(> t )		Estimate	Pr(> t )		Estimate	Pr(> t )	
(Intercept)	2.0E+01	0.000	***	2.0E+01	0.000	***	2.0E+01	0.000	***	2.0E+01	0.000	***
ESG Combined Score	2.9E-04	0.033	*									
ESG Score				3.4E-04	0.017	*						
Environmental							1.2E-04	0.553				
Social							-4.0E-04	0.012	*			
Corporate Governance							3.5E-04	0.027	*			
Emissions Score										9.6E-05	0.460	
Resource Use Score										-1.2E-04	0.735	
Environmental Innovation												
Score										-5.7E-05	0.787	
Workforce Score										3.5E-04	0.113	
Human Rights Score										-3.6E-04	0.084	+
Community Score										2.2E-05	0.882	
Product Responsibility Score										1.6E-04	0.189	
Management Score										-5.3E-05	0.724	
Shareholders Score										2.0E-04	0.061	+
CSR Strategy Score										-1.3E-05	0.947	
ESG Controversies Score				1.3E-04	0.180		1.0E-04	0.399		8.2E-05	0.442	
LNTA	-8.7E-01	0.000	***	-8.8E-01	0.000	***	-8.7E-01	0.000	***	-8.6E-01	0.000	***
Debt/Assets	5.9E-01	0.000	***	5.9E-01	0.000	***	7.1E-01	0.000	***	5.9E-01	0.000	***
EBITDA Margin	-5.1E-02	0.000	***	-5.2E-02	0.000	***	-3.2E-02	0.001	***	-5.6E-02	0.000	***
Crisis	5.9E-03	0.120		6.0E-03	0.114		4.6E-03	0.226		9.4E-03	0.038	*
Model	Random			Random			Random			Random		
R-Squared:	0.986			0.986			0.985			0.984		
N	208			208			208			208		
Goodness of the Fit	***			***			***			***		

Notes: +. denotes significance at 10% ( $p < 0.10$ ), \* denotes significance at 5% ( $p < 0.05$ ), \*\* denotes significance at 1% ( $p < 0.01$ ), \*\*\* denotes significance at 0.1% ( $p < 0.001$ )

*Table 30 shows the results for TBQ on the Chemical Industry*

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The results in Table 30 highlight how TBQ of Chemical companies is positively affected by overall CSP. Moreover, also the Positive CSP (ESG Score) positively affect TBQ; when, instead, the focus is on Model 3a we can notice how Corporate Governance has a positive effect on TBQ while Social dimension has a negative effect. In regards to Model 4a the relevant sub components are: Shareholders Score (positive effect) and Human Right (negative effect).

Looking at ROA in Chemical Industry in Table 31 results show, again, that the ESG Composite Score is positively related with CFP and also, consistently with the TBQ specification, the Positive CSP (measured by ESG Score) has a positive relation with ROA. The Dimensional Scores seems to have no significant impact on ROA, as highlighted in Model 3a. However, many sub-components are relevant for ROA, these are, with positive effect: Emission, Workforce and Shareholders Score while and with a negative impact: Community, Management and CSR Strategy Score.

<i>ROA/Chemical</i>	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 4</i>	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )
(Intercept)	3.4E-01	0.044 *	4.4E-01	0.005 **	4.7E-01	0.004 **	3.6E-01	0.025 *
ESG Combined Score	3.3E-04	0.068 +						
ESG Score			7.0E-04	0.017 *				
Environmental					3.0E-04	0.370		
Social					2.0E-04	0.406		
Corporate Governance					2.0E-04	0.228		
Emissions Score							2.0E-04	0.006 **
Resource Use Score							3.0E-04	0.108
Environmental Innovation Score							-1.0E-04	0.484
Workforce Score							4.0E-04	0.011 *
Human Rights Score							-1.0E-04	0.792
Community Score							-2.0E-04	0.021 *
Product Responsibility Score							1.0E-04	0.269
Management Score							-2.0E-04	0.027 *
Shareholders Score							5.0E-04	0.000 ***
CSR Strategy Score							-1.0E-04	0.027 *
ESG Controversies Score			1.1E-04	0.287	1.1E-04	0.309	-9.0E-06	0.720
LNTA	-1.1E-02	0.139	-1.6E-02	0.016 *	-1.7E-02	0.013 *	-1.3E-02	0.088 +
Debt/Assets	-1.8E-01	0.000 ***	-1.9E-01	0.000 ***	-2.0E-01	0.000 ***	-1.7E-01	0.000 ***
EBITDA Margin	3.4E-02	0.168	3.0E-02	0.172	-7.1E-03	0.758	2.6E-02	0.098 +
Crisis	-3.7E-03	0.608	-3.0E-03	0.673	7.2E-04	0.922	-4.0E-03	0.536
Model	Random		Random		Random		Random	
R-Squared:	0.172		0.188		0.204		0.325	
N	202		202		202		202	
Goodness of the Fit	***		***		***		***	

Notes: +, denotes significance at 10% (p < 0.10), \* denotes significance at 5% (p < 0.05), \*\* denotes significance at 1% (p < 0.01), \*\*\* denotes significance at 0.1% (p < 0.001)

*Table 31 shows the results for ROA on the Chemical Industry*

Table 32, refers to ROE of Chemical companies. In this specification there is no statistical evidence of positive or negative effects of the ESG Combined Score over the ROE, while ESG Score is positively correlated with CFP.

Consistently with the TBQ specification, the Corporate Governance Dimension has a positive effect on financial performance while other dimensions are not significant. The sub-components that are statistically significant are: Resource Use, Workforce and Shareholders Score with a positive effect on CFP, while Management and CSR Strategy Score, that measures performance of company in integration of CSR practices in day to day decision-making profit, shows a negative and significant effect on ROE. For all the specification in Chemical Industry the ESG Controversies Score show no significant result, accordingly with the results achieved in the Industrial sample.

The control variables are significant in most of the specifications; in particular, Size has a negative effect on all models, Leverage is positively related with TBQ, while negatively related to accounting measures (both ROE and ROA).

The Crisis dummy variable shows no significant result for accounting measures, while it is significant and positively correlated with TBQ for Model 4a.

<i>ROE/Chemical</i>	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 4</i>	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )
(Intercept)	2.4E+00	0.000 ***	2.4E+00	0.000 ***	2.4E+00	0.000 ***	2.4E+00	0.000 ***
ESG Combined Score	6.3E-05	0.102						
ESG Score			1.4E-04	0.005 **				
Environmental					9.3E-05	0.191		
Social					3.6E-05	0.393		
Corporate Governance					6.2E-05	0.091 +		
Emissions Score							2.4E-05	0.233
Resource Use Score							6.4E-05	0.077 +
Environmental Innovation Score							-7.0E-06	0.714
Workforce Score							1.0E-04	0.008 **
Human Rights Score							-3.9E-05	0.428
Community Score							-1.5E-05	0.316
Product Responsibility Score							2.3E-06	0.904
Management Score							-3.8E-05	0.076 +
Shareholders Score							8.6E-05	0.000 ***
CSR Strategy Score							-2.5E-05	0.015 *
ESG Controversies Score			1.9E-05	0.366	1.8E-05	0.431	-9.0E-06	0.601
LNTA	-1.7E-03	0.191	-2.6E-03	0.030 *	-3.0E-03	0.009 **	-3.1E-03	0.000 ***
Debt/Assets	-1.3E-02	0.044 *	-1.5E-02	0.013 *	-1.8E-02	0.030 *	-1.3E-02	0.097 +
EBITDA Margin	6.2E-03	0.372	5.6E-03	0.405	8.5E-03	0.279	4.7E-03	0.487
Crisis	1.2E-05	0.993	2.3E-04	0.858	1.1E-03	0.346	-1.1E-04	0.925
Model	Random		Random		Random		Random	
R-Squared:	0.970		0.972		0.996		0.984	
N	203		203		203		203	
Goodness of the Fit	***		***		***		***	

Notes: +, denotes significance at 10% (p < 0.10), \* denotes significance at 5% (p < 0.05), \*\* denotes significance at 1% (p < 0.01), \*\*\* denotes significance at 0.1% (p < 0.001)

*Table 32 shows the results for ROE on the Chemical Industry*

## Energy-Fossil Fuels

This section presents results for the Energy-Fossil Fuels Industry . Table 33 presents the result for TBQ. Differently for all previous results both in the general sample and at in industry level analysis, in this industry the overall CSP Score seems to have a significant negative influence on CFP as highlighted in Model 1a.

Then if we consider Model 2, we can observe how the ESG Score is positively related to TBQ while the ESG Controversies has a negative impact on TBQ for Energy-Fossil Fuels Industry. This is the first results in all the analysis both the main one and the additional one where a reduction in Negative Behavior seems to have a negative effect on the CFP

The only relevant dimension for this Industry is the Social dimension (Model 3a), looking at the last model the relevant sub-components are: Environmental Innovation and Management Score with a positive effect on TBQ, while Resource Use, Shareholder and CSR Strategy have negative effect on TBQ. It is significant that also in Model 4a the ESG Controversies is negatively correlated with corporate financial performance.

<i>TBQ/Fossil Fuels</i>	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 4</i>	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )
(Intercept)								
ESG Combined Score	-5.0E-04	0.092 +						
ESG Score			8.0E-04	0.065 +				
Environmental					-8.0E-04	0.222		
Social					7.0E-04	0.008 **		
Corporate Governance					2.0E-04	0.477		
Emissions Score							-2.0E-04	0.693
Resource Use Score							-1.0E-03	0.019 *
Environmental Innovation Score							7.0E-04	0.023 *
Workforce Score							2.0E-04	0.587
Human Rights Score							-1.9E-05	0.937
Community Score							3.0E-04	0.591
Product Responsibility Score							1.0E-04	0.851
Management Score							2.0E-04	0.091 +
Shareholders Score							-5.0E-04	0.007 **
CSR Strategy Score							-6.0E-04	0.003 **
ESG Controversies Score							-5.0E-04	0.010 *
LNTA	-8.4E-01	0.000 ***	-5.0E-04	0.029 *	-2.0E-04	0.532	-5.0E-04	0.010 *
Debt/Assets	1.3E+00	0.000 ***	-8.5E-01	0.000 ***	-8.3E-01	0.000 ***	-8.4E-01	0.000 ***
EBITDA Margin	7.9E-02	0.632	1.3E+00	0.000 ***	1.3E+00	0.000 ***	1.3E+00	0.000 ***
Crisis	1.3E-02	0.028 *	1.0E-01	0.565	1.5E-01	0.374	9.9E-02	0.557
Model		Fixed		Fixed		Fixed		Fixed
R-Squared:		0.949		0.950		0.937		0.955
N		170		170		170		170
Goodness of the Fit		***		***		***		***

Notes: +, denotes significance at 10% ( $p < 0.10$ ), \* denotes significance at 5% ( $p < 0.05$ ), \*\* denotes significance at 1% ( $p < 0.01$ ), \*\*\* denotes significance at 0.1% ( $p < 0.001$ )

Table 33 shows the results for TBQ on the Energy-Fossil Fuel Industry

Looking at the ROA specification, Table 34 presents the results.

<i>ROA/Fossil Fuel</i>	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 4</i>	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )
(Intercept)								
ESG Combined Score	-5.9E-05	0.687						
ESG Score			5.9E-04	0.296				
Environmental					4.0E-05	0.839		
Social					4.1E-04	0.152		
Corporate Governance					9.4E-04	0.002 **		
Emissions Score							9.1E-05	0.741
Resource Use Score							-3.1E-04	0.179
Environmental Innovation Score							-3.0E-04	0.003 **
Workforce Score							1.8E-04	0.411
Human Rights Score							-6.4E-04	0.010 *
Community Score							1.5E-04	0.389
Product Responsibility Score							1.1E-04	0.592
Management Score							4.9E-04	0.001 **
Shareholders Score							1.2E-04	0.546
CSR Strategy Score							4.4E-04	0.076 +
ESG Controversies Score							-8.7E-05	0.319
LNTA	-3.0E-02	0.000 ***	-1.1E-04	0.209	-1.6E-04	0.094 +	-1.4E-02	0.183
Debt/Assets	-1.1E-01	0.098 +	-3.0E-02	0.000 ***	-1.2E-02	0.215	-1.4E-02	0.183
EBITDA Margin	3.7E-01	0.000 ***	-9.4E-02	0.130	-1.1E-01	0.292	-1.9E-01	0.002 **
Crisis	4.0E-02	0.002 **	3.9E-01	0.000 ***	2.6E-01	0.000 ***	3.4E-01	0.000 ***
Model		Fixed		Fixed		Fixed		Fixed
R-Squared:		0.465		0.472		0.433		0.538
N		165		165		165		163
Goodness of the Fit		***		***		***		***

Notes: +, denotes significance at 10% ( $p < 0.10$ ), \* denotes significance at 5% ( $p < 0.05$ ), \*\* denotes significance at 1% ( $p < 0.01$ ), \*\*\* denotes significance at 0.1% ( $p < 0.001$ )

Table 34 shows the results for ROA on the Energy-Fossil Fuel Industry

Model 1a and 2a do not show significant results for the variable of interest, while Model 3a shows how the Corporate Governance has a positive effect on the ROA of this Industry.

Moreover ESG Controversies Score is negatively correlated with CFP this implies that a reduction in the Controversies reduce the ROA.

Finally moving to Model 4a, we can observe that the positive sub-components in the relationship: Management and CSR Strategy Score. The Human Right and Environmental Innovation are instead negatively correlated with ROA.

Finally, Table 35 presents results for ROE, Model 1a and Model 2a do not highlight significant results, while Model 3a shows how Social and Corporate Governance are both positively related with ROE in the Energy-Fossil Fuels Industry.

Model 4a shows that Emission Score is positively correlated with ROE as well as Management Score, while Environmental Innovation and Human Right is negatively correlated with ROE. The ESG Controversies Score for the ROE specification does not highlight any significant result.

For what concerns the control variables, Size is relevant for almost all the model (TBQ, ROA and ROE) and negatively correlated. Leverage instead has positive impact on TBQ and negative impact on the accounting measures although it is not significant for all the specification. Surprising the Crisis dummy variable is positively and statistically significant for all the specifications in the Energy-Fossil Fuels Industry.

<i>ROE/Fossil Fuel</i>	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 4</i>	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )
(Intercept)								
ESG Combined Score	-4.8E-06	0.915						
ESG Score			1.6E-04	0.221				
Environmental					-8.4E-07	0.982		
Social					8.5E-05	0.048 *		
Corporate Governance					1.4E-04	0.003 **		
Emissions Score							1.0E-04	0.061 +
Resource Use Score							-5.5E-05	0.139
Environmental Innovation Score							-3.8E-05	0.068 +
Workforce Score							-1.0E-05	0.818
Human Rights Score							-1.5E-04	0.004 **
Community Score							2.3E-05	0.546
Product Responsibility Score							2.6E-05	0.478
Management Score							1.0E-04	0.000 ***
Shareholders Score							-4.2E-07	0.990
CSR Strategy Score							1.2E-05	0.719
ESG Controversies Score			-2.4E-05	0.316	-3.4E-05	0.156	-2.6E-05	0.250
LNTA	-6.6E-03	0.000 ***	-6.8E-03	0.000 ***	-2.6E-03	0.160	-3.1E-03	0.063 +
Debt/Assets	-1.3E-02	0.250	-1.1E-02	0.322	-2.4E-02	0.226	-2.7E-02	0.023 *
EBITDA Margin	7.3E-02	0.000 ***	7.7E-02	0.000 ***	4.9E-02	0.000 ***	7.5E-02	0.000 ***
Crisis	6.0E-03	0.000 ***	6.4E-03	0.001 ***	6.8E-03	0.000 ***	7.1E-03	0.000 ***
Model		Fixed		Fixed		Fixed		Fixed
R-Squared:		0.433		0.447		0.375		0.503
N		165		165		165		165
Goodness of the Fit		***		***		***		***

Notes: +. denotes significance at 10% (p < 0.10), \* denotes significance at 5% (p < 0.05), \*\* denotes significance at 1% (p < 0.01), \*\*\* denotes significance at 0.1% (p < 0.001)

*Table 35 shows the results for TBQ on the Energy-Fossil Fuel Industry*

## Summary of results of the additional analysis

<i>Hypothesis</i>	<i>Model</i>	<i>Sample</i>	<i>Results</i>
H1: Positive relationship between the Overall CSP and CFP.	1	Insurance	Positive relationship with accounting measures.
		Bank Chemical	Positive relation with ROE Positive effect on TBQ and ROE
H2: Positive relationship between Positive CSP and CFP	2	Energy-Fossil Fuels	Negative relation with TBQ
		Insurance Bank	No significant relation Positive relationship for TBQ and ROE
		Chemical	Positive relationship for all the measures
H3: Negative relationship between Negative CSP and CFP	2	Energy-Fossil Fuels	Positive relation for TBQ
		Insurance	Negative relationship for ROA and ROE
		Bank Chemical Energy-Fossil Fuels	Negative relation for TBQ No significant relation It is found a positive between negative CSP and TBQ
H4: Positive relationship between Environmental Dimension and CFP	3	Insurance	No significant relation.
		Bank	Positive effect of ROE.
		Chemical	No significant relation.
		Energy-Fossil Fuels	No significant relation.

*Table 36 shows the relevant results for hypothesis 1 to 4*

The H1 is confirmed also at the industry level analysis for 3 over 4 industries, while seems to have opposite effect on Energy-Fossil Fuels Industry.

Analyzing the effects of positive and negative CSP, it is found that all the industries financial performance, except the Insurance, are positively related with positive CSP and, differently from the main analysis at the industry level, also the market measures are positively affect by higher positive CSP.

Looking at the negative CSP, the reductions of controversies has positive effect of both Insurance and Bank Industry, in line with findings of the general sample, while it is found that the Energy–Fossil fuels industry is positively affected by the negative CSP at least for TBQ. The last result is particularly interesting, as it implies that also the effect of the Controversies depends on the industry and therefore it could not be generalized that their reduction improves Corporate Financial Performance.

For H4 also in the industry level analysis there are few significant result: Environmental Dimension seems to be relevant only for Banks (positive) and, contrary from what is supposed in the hypothesis, High Environmental Impact Industries seems to not obtain financial benefits with High level of Environmental Score.

H5 and H6 seems to highly depend on which industry it is under analysis. This provide confirmation to H7 so the effect of ESG dimension is strongly related with the Industry.



<i>Hypothesis</i>	<i>Model</i>	<i>Sample</i>	<i>Results</i>
H5: Positive relationship between Social Dimension and CFP	3	Insurance	Positive effect on TBQ
		Bank	Negative effect on ROE
		Chemical	Negative effect on TBQ
		Energy-Fossil Fuels	Positive effect on TBQ and ROE
H6: Positive relationship between Corporate Governance Dimension and CFP	3	Insurance	Negative effect on TBQ and ROA
		Bank	Negative effects on ROE
		Chemical	Positive effect on ROE and TBQ
		Energy-Fossil Fuels	Positive effect on ROA and ROE
H7: The relationship between CFP and dimension of CSP vary at the variation of the Industry	3	Insurance	Confirmed
		Bank	Confirmed
		Chemical	Confirmed
		Energy-Fossil Fuels	Confirmed
H8: Investigated the effect of each dimension's (Environmental, Social and Governance) subcategories on CFP	4	Insurance	Mixed Results
		Bank	Mixed Results
		Chemical	Mixed Results
		Energy-Fossil Fuels	Mixed Results

*Table 37 shows the relevant results for hypothesis 5 to 8*

The industry level analysis as stated before was built to re-test H7 and the results seem to confirm H7, in fact it is observable that, although there are some common patterns, the dimensional effect vary at the industry variation.

Corporate Governance has a negative effect on both Insurance and Banks, while the same dimension seems to have positive effect on Chemical and Fossil Fuel company. The other dimensions' effect varies with the variation of the industry, the Social dimension is positively correlated with the TBQ for Insurance and Energy-Fossil Fuel Industry, while has a negative effect on the Chemical Industry. Moving to ROE the same dimension affects negatively Banks and positively again the Fossil fuel companies. Therefore, it is possible to accept t H7 and affirm that the effect of CSP dimension on the Corporate Financial Performance is strictly related with the industry.

Looking at H8 that, investigates the effect of each dimension's (Environmental, Social and Governance) subcategories on CFP.

Some interesting results can be identified, for example the Resource Use Score looks like an ESG variable that positively influences the accounting measures for at least 3 industries out of 4 (Bank, Chemical and Fossil Fuel)

Workforce Score seems to have a significant and positive effect on accounting-based performance measures for Banks and Chemical companies while for Insurance Industries the

results are mixed, significant and Positive effect for TBQ and Negative for ROA) in the end Workforce Score does not show significant effect on Energy-Fossil Fuels Industries. Product Responsibility seems to have no relevance in almost all the industries analyzed unless for a positive effect on TBQ for Insurance Industry.

Environmental Innovation has a negative effect on accounting measures for both Bank and Energy-Fossil Fuels, while it is not statistically significant for the other two industries.

Furthermore, it can be noted that the three sub-components belonging to the Corporate Governance (Management Score, Shareholders Score and CSR strategy) are positively correlated in the previous order with Fossil Fuel, Chemical and Bank for all the three performance measures that we are considering.

On the other hand, as regards the negative effects, it is noted that the Environmental Innovation Score is significant both for Banks and surprisingly also for companies in the Chemical industry for all accounting measures. On the contrary, always observing the negative correlations (statistically significant), it is observed that for the chemical industries, two sub-components of Corporate Governance (Management Score and CSR Strategy) have negative effects on accounting-based measures.

## V Conclusions

The reasons why companies commit both financial and human resources to carry forward initiatives, related to the Corporate Social Responsibility seem nowadays to be sufficiently supported by solid theoretical bases, however the empirical confirmations are neither concordant nor definitive.

The objective of this study is to contribute to a better understanding of the relationship between Corporate Social Performance (CSP) and Corporate Financial Performance (CFP) by performing an empirical analysis on a sample based on the Stoxx 600 Europe.

More in detail this study attempts to provide an answer to 8 different hypotheses.

Hypothesis 1, Supposed that there is a positive linear relationship between the overall CSP and the CFP.

In line with many previous studies such as Callan and Thomas (2009), Margolis & Walsh, (2003), Waddock and Graves (1997), H1 is supported.

In line with Callan and Thomas (2009) and Waddock and Graves (1997) it is found that overall CSP Score is positively related with ROA and also with TBQ Callan and Thomas (2009).

This result is, however, in contrast with previous findings of Philipp Schreck, (2011) that find no significant relation between overall CSP Score and TBQ, this difference may be due to the fact that he did not divide the sample and keep all the industries. The industries level analysis reinforces this conclusion, it is also confirmed at the industry level for accounting-based measures while for the market-based measures the results are mixed.

Differently from what was stated by of Orlitzky et al. (2003, p. 403) who found that “CSP appears to be more highly correlated with accounting-based measures of CFP than with market-based indicators” it was found that both these two different kind of measures seems to be correlated with the CSP, with no particular differences in the overall analysis.

Hypothesis 2 tested the existence of a positive linear relationship between Positive CSP (i.e. the positive component of the CSP overall score) and CFP and results partially confirm it. In the two general samples (Financial and Industrial), Positive CSR Performance has a significant impact on the accounting-based CFP, in line with the findings of Wang et al., (2016) and Callan and Thomas (2009).

Moreover, in the additional analysis at the industry level, in three industries over the four analyzed H2 is also confirmed for at least one market measures (TBQ), in fact positive CSR performance has positive effect on the TBQ. Moreover, also at the industry level analysis, there no significant result of negative association between Positive CSP and CFP for all the accounting measures.

It seems possible to state, at least for the industries that were taken into account in this study, that the positive CSR performance increases financial performance.

Hypothesis 3 stated that there is a negative relation between the Negative CSP and CFP, in other words, an increase in negative behavior of the company brings to a reduction of CFP.

H3 is confirmed in the financial sample, and it is also validated by the additional analysis of the single industries as for both the Insurance companies and the banks (which were part of the financial sample) it maintains its positive effect on all financial performance indicators.

Instead, it is noted that the H3 does not seem valid for the additional analysis of the industrial sample, in fact the existence of a Negative CSP and CFP relationship is not supported for the chemical industry and even has a significant negative effect on companies operating with fossil fuels.

This finding is partially in line with findings of Callan and Thomas (2009)<sup>77</sup> the slight difference in the results can be attributed to the distinction made on the sample between industrial and financial companies. This study also confirms the findings of Kang et al., (2010), in which it was found that negative CSR effects on Corporate Financial Performance depend on the industry into consideration<sup>78</sup>.

This suggests that companies that want to contain the scandals and the involvement in controversial businesses issues must take into account the average behavior of the industry they belong to, as it, at least partially, determines the effect on corporate financial performance. The negative results of the Fossil fuels company could be related to the *Reputation Common Problems*<sup>79</sup> as suggested by King et al, (2002).

Hypothesis 4 stated that there is a positive linear relationship between the Environmental dimension of CSP and the CFP and this hypothesis is rejected; results suggest that Environmental dimension seems to have low relevance in the general sample especially for accounting-based measures, and moreover it has negative effects for the TBQ of Industrial companies. In the additional analysis, the Environmental dimension shows positive and significant result only for Bank (ROE). This result is clearly not sufficient to validate the hypothesis but it may be useful to highlight that at the industry level there is no evidence of significant negative relationship.

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<sup>77</sup> They found a positive effect of ESG disputes (although they used another index developed by KLD), however they kept all the companies in the sample deepening the analysis and creating more homogeneous sub-samples.

<sup>78</sup> They built four different sample from the “*Hospitality Industry*”, and they are: Airlines, Restaurant, Casino and Hotel.

<sup>79</sup> See The Industry Specific effects

Hypothesis 5 asserts that there is a positive relation between the Social dimension of CSP and CFP.

The H5 is rejected, in line with previous study such as Sanchez et al., (2017), Nollet et al., (2016), given the mixed result of the study in the general sample (Industrial and Financial). Social dimension shows positive effect on accounting measures for both the sample, while shows negative results for the market measures in both the sample.

In regards to this Social dimension, the industry level (additional) analysis add some important findings, in fact it is positively associated with CFP for Insurance (TBQ) and Energy-Fossil Fuels (both TBQ and ROE) industries while it is negatively related with Chemical and Bank industries. Given these results, H5 should be rejected.

Hypothesis 6 tested the existence of a positive relation between the Corporate Governance dimension of CSP and the CFP.

Corporate Governance in the main Industrial sample is positively related with the accounting measures while there is no evidence of significant results for market measures of for the financial sample. These results are confirmed in the additional analysis; in fact the two selected industries from the industrial sample (Chemical and Energy-Fossil Fuels) highlight the same positive association, while in the two industries of the financial sample (Insurance and Bank) a negative relation between Corporate Governance and CFP emerges. Thus, it is possible to affirm that, at least for the general industrial sample, the Corporate Governance enhance CFP and moreover also for Energy-Fossil Fuels and Chemical Industries.

Hypothesis 7 states that the relations between CSP dimensions and CFP are depend on the industry considered, this is strongly confirmed by the model, there is no homogeneity in the results between different industries therefore there are some industry specific factors that influence the relation between the CSP and CFP.

Finally, the H8 Investigated the effect of each dimension's subcategories on CFP. At the main analysis level, Management Score seems positively related with both accounting and market measures

It is found that the Workforce score is positively related with the accounting measures in the industrial sample, but negatively related with the market measures (TBQ and P/E, industrial sample) differently for Philipp Schreck, (2011), it found no significant relationship between Workforce Score and TBQ. Industry analysis for the same variable of interest shows a positive effect only on accounting measures in Chemical industry and, for the accounting measures, other industries show mixed results. This evidence is partially in contrast with Philipp Schreck, (2011), in fact he has found no significant relationship although he has conducted the analysis only on a mixed sample made by 13 different industries.

The Environmental Innovation shows positive results for what concerns TBQ (both general sample) consistent with Philipp Schreck, (2011), but negative for accounting measures in the industrial sample. The Industry analysis do not provide support to the hypothesis, the results shows negative relation in the Energy-Fossil Fuels and Bank industry.

Finally, the Product Responsibility shows some positive results: positive for ROE in Industrial sample, positive for ROS in the financial sample, positive for TBQ in the Industrial sample and negative for P/E in the industrial sample. However, it is not possible to make any inference given the dispersion of results between different sample and also different measures. Moreover, it seems to be not relevant in almost all the models at the industry level analysis.

An interesting result that emerge from the analysis is, at the industry level: when the model uses the composite positive score of CSP the results show positive relation for all the significant results (Model 2), while when the positive index is decomposed into its 3 components (Environment, Social and Governance) the results became mixed (Model 3), this could suggest the existence of a synergy relationship between the different dimension. This result may be considered in line with the assumption of *Stakeholder Theory*: a company able to satisfy multiple stakeholders the need of multiple may achieve greater profits.

The H7 confirmation suggest that the CSR effect is industry specific according with McWilliams and Siegel (2000) and Moura and Leite (2012) and for this reason implies that managers should carefully evaluate if the CSR initiatives pursued are in line with the industry structure. Moreover, differently from what is found by Waworuntu et al., (2014) , the more relevant dimensions, that have positive and significant effect on CFP for industries, seem to be the less related to the operational profile of the industries difference in the results may be due to the fact that in its analysis it used the quantity of CSP disclosure as a proxy . Chemical and Energy-Fossil Fuels industries are more involved in Environmental issues for what concerns their operation. In fact, their production process produces significant levels of polluting emissions both at a gaseous and waste water level. Furthermore, talking about Energy-Fossil Fuels are also involved in mining fossil fuel activities. On the other hand, as regards the banks and insurance companies are less exposed to environmental issues.

This could be the result of two distinct factors, the first that achieving better levels of CSP in the size that has greater relevance to the industry could be too costly and of consequences the effort associated with achieving high CSP is not counterbalanced by benefits in growth of the CFP. The second is that as previously indicated the companies may be subject to the so-called "reputational common problem".

## V. 1 Limitations and Suggestion for future research

It must however be taken into account that even if the initial sample was sufficiently large for the analysis, the results cannot be generalized as the companies that are part of the sample are all companies that belong to Stoxx 600 Europe, for this reason the results obtained they can be generalized to companies that come from other macro areas such as the United States, Asia or South America. Moreover, when the analysis goes down into the details and consider the industry level, the size of the samples is greatly reduced, so it would be advisable for future research to extend the sample size to achieve more consistent result. Another possible limitation of this study may be in not having tested the possibility that the relationship is non-linear, as suggested by Wang et al., (2016) Barnett and Salomon (2012).

A particularly interesting area for further analysis could be the identification of possible mediators or moderator that are industry-specific and that could enhance predictive power of the model and that may be more appropriate in identifying the sub-components relevant to each industry, thereby increasing the usefulness of the results for the managers themselves. Thanks to increasingly precise guidelines, they can more precisely identify the activities that bring value to the company even in a context of scarce resources. Another interesting field for future research could be to investigate the effect of different component of ESG Controversies<sup>80</sup>, this could have different relationship with the CFP.

The addition of other control variables may have interesting results in the results, for example could be interesting to control for market risk, R&D, Advertising Expense or even for the specific country. Given that the benefits of the CSR are mostly related to the intangible assets the horizon could be greater than the lag value used in this study, for this reason could be interesting to find out which could be the more appropriate time horizon to describe this relationship.

Another interesting field of analysis could be tested the relationship with other statistical techniques, although the statistical methodology used in this analysis is robust and supported by literature, which have the potential to investigate more in depth, such as the SEM (Structural Equation Modeling).

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<sup>80</sup> ESG Controversies Score, similar to positive CSP (ESG Score), is based on different sub-components as stated in Positive and Negative Composite Score.





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# Appendix

## Appendix 1

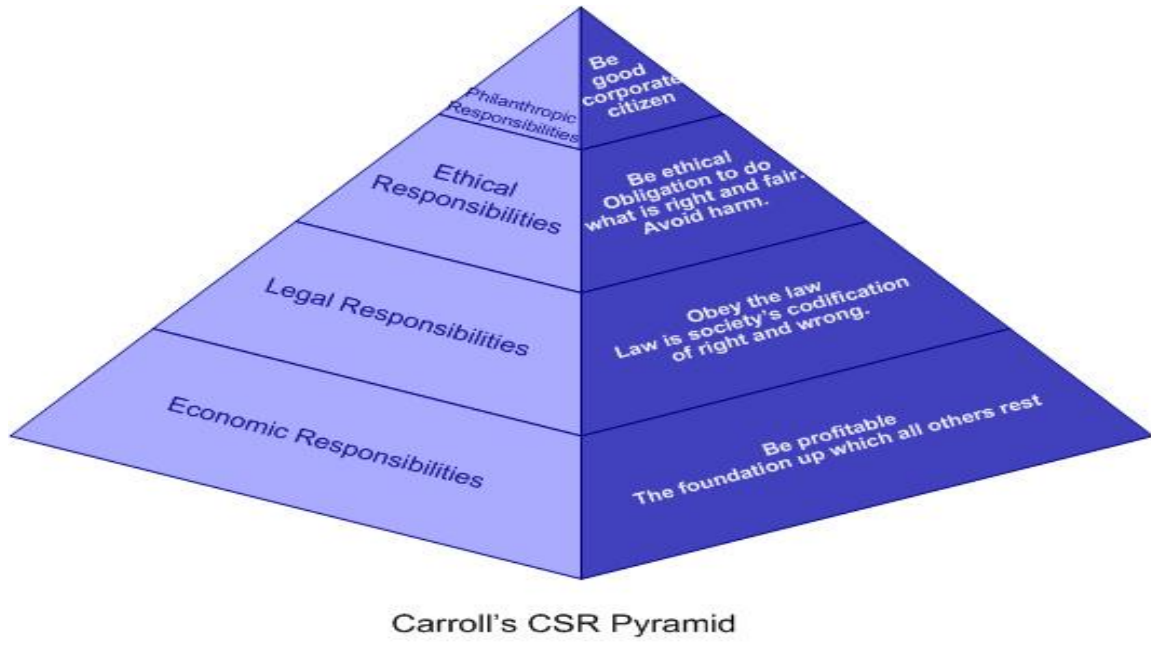


Fig. 1 Carroll's CSR Pyramid Carroll (1999)

Structural Capital	Relational Capital	Human Capital
<ol style="list-style-type: none"> <li>1. Intellectual Properties                             <ol style="list-style-type: none"> <li>1.1. Patents</li> <li>1.2. Copyrights</li> <li>1.3. Trademarks</li> </ol> </li> <li>1. Infrastructure Assets                             <ol style="list-style-type: none"> <li>1.1. Corporate Culture</li> <li>1.2. Management's philosophy</li> <li>1.3. Managerial's process</li> <li>1.4. Information system</li> <li>1.5. Networking systems</li> <li>1.6. Financial Relations</li> <li>1.7. Research Projects</li> </ol> </li> </ol>	<ol style="list-style-type: none"> <li>1. Brands</li> <li>2. Customers</li> <li>3. Customer's loyalty</li> <li>4. Company names</li> <li>5. Business collaborations</li> <li>6. Distribution Channel</li> <li>7. Licensing agreements</li> <li>8. Franchising agreements</li> </ol>	<ol style="list-style-type: none"> <li>1. Know-How</li> <li>2. Education</li> <li>3. Vocational qualification</li> <li>4. Work Knowledge</li> <li>5. Work competences</li> <li>6. Entrepreneurial Spirit</li> <li>7. Proactive and Reactive capabilities</li> </ol>

Table 38 Most common Intangible Resources



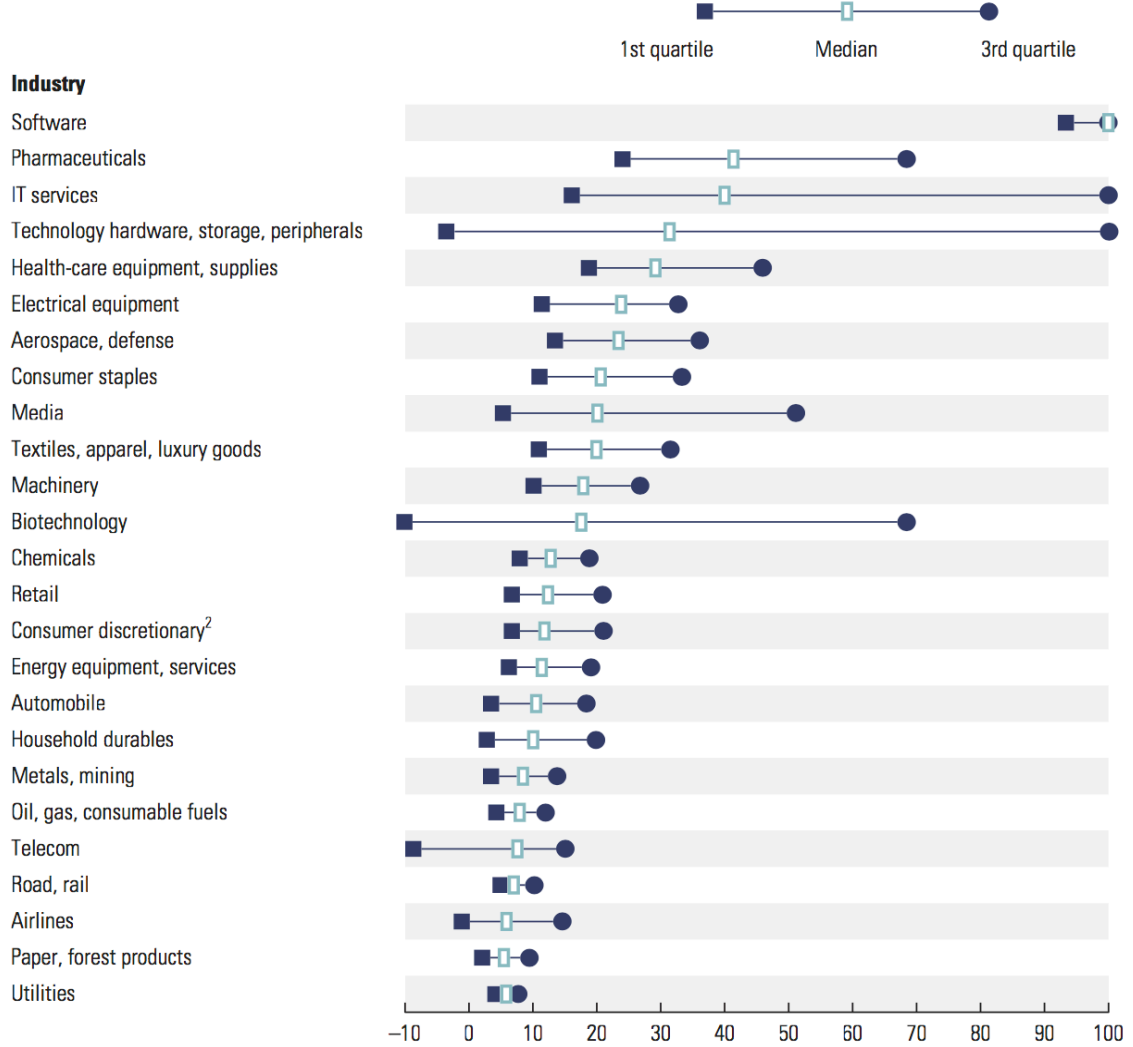
EXHIBIT 7.2 **Value of Major Types of Growth**

<b>Value created<sup>1</sup></b>	<b>Type of growth</b>	<b>Rationale</b>
↑ Above average ↓	<ul style="list-style-type: none"> <li>• Create new markets through new products</li> <li>• Convince existing customers to buy more of a product</li> <li>• Attract new customers to the market</li> </ul>	<ul style="list-style-type: none"> <li>• No established competitors; diverts customer spending</li> <li>• All competitors benefit; low risk of retaliation</li> <li>• All competitors benefit; low risk of retaliation</li> </ul>
↑ Average ↓	<ul style="list-style-type: none"> <li>• Gain market share in fast-growing market</li> <li>• Make bolt-on acquisitions to accelerate product growth</li> </ul>	<ul style="list-style-type: none"> <li>• Competitors can still grow despite losing share; moderate risk of retaliation</li> <li>• Modest acquisition premium relative to upside potential</li> </ul>
↑ Below average ↓	<ul style="list-style-type: none"> <li>• Gain share from rivals through incremental innovation</li> <li>• Gain share from rivals through product promotion and pricing</li> <li>• Make large acquisitions</li> </ul>	<ul style="list-style-type: none"> <li>• Competitors can replicate and take back customers</li> <li>• Competitors can retaliate quickly</li> <li>• High premium to pay; most value diverted to selling shareholders</li> </ul>

Table 39 Sources Of Growth Koller et al., (2015)

EXHIBIT 6.6 **Variation in ROIC within Industries, 1995–2013**

ROIC,<sup>1</sup> excluding goodwill, %



<sup>1</sup> Scale limited to -10% to +100% for presentation purposes.

<sup>2</sup> Hotels, restaurants, and leisure.

Source: McKinsey Corporate Performance Analysis Tool

Table 40 Different ROIC dynamic between Industries Koller et al., (2015)

## Appendix 2

Pillar	Category	Indicators in Scoring	Weights
Environmental	Resource Use	20	11%
	Emissions	22	12%
	Innovation	19	11%
Social	Workforce	29	16%
	Human Rights	8	4.50%
	Community	14	8%
	Product Responsibility	12	7%
Governance	Management	34	19%
	Shareholders	12	7%
	CSR Strategy	8	4.50%
TOTAL		178	100%

*Table 41 Weighting Scheme of Thomson Reuters for the ESG Score*

Score	Definition
TRESG Resource Use Score	The Resource Use Score reflects a company's performance and capacity to reduce the use of materials, energy or water, and to find more eco-efficient solutions by improving supply chain management.
TRESG Emissions Score	The Emission Reduction Score measures a company's commitment and effectiveness towards reducing environmental emission in the production and operational processes.
TRESG Innovation Score	The Innovation Score reflects a company's capacity to reduce the environmental costs and burdens for its customers, and thereby creating new market opportunities through new environmental technologies and processes or eco-designed products.
TRESG Workforce Score	The Workforce Score measures a company's effectiveness towards job satisfaction, a healthy and safe workplace, maintaining diversity and equal opportunities, and development opportunities for its workforce.
TRESG Human Rights Score	The Human rights category score measures a company's effectiveness towards respecting the fundamental human rights conventions.
TRESG Community Score	The Community Score measures the company's commitment towards being a good citizen, protecting public health and respecting business ethics.
TRESG Product Responsibility Score	The Product Responsibility Score reflects a company's capacity to produce quality goods and services integrating the customer's health and safety, integrity and data privacy.
TRESG Management Score	The Management Score measures a company's commitment and effectiveness towards following best practice corporate governance principles.
TRESG Shareholders Score	The Shareholders Score measures a company's effectiveness towards equal treatment of shareholders and the use of anti-takeover devices.
TRESG CSR Strategy Score	The CSR Strategy Score reflects a company's practices to communicate that it integrates the economic (financial), social and environmental dimensions into its day-to-day decision-making processes.

*Table 42 Description of the ESG sub-categories*

Category	Name (n)	Label (l)	Description (d)
Community	TR.ControvAntiCompetition	Anti-Competition Controversy	Number of controversies published in the media linked to anti-competitive behavior (e.g., anti-trust and monopoly), price-fixing or kickbacks.
Community	TR.ControvBusinessEthics	Business Ethics Controversies	Number of controversies published in the media linked to business ethics in general, political contributions or bribery and corruption.
Community	TR.ControvCopyrights	Intellectual Property Controversies	Number of controversies published in the media linked to patents and intellectual property infringements.
Community	TR.ControvCriticalCountries	Critical Countries Controversies	Number of controversies published in the media linked to activities in critical, undemocratic countries that do not respect fundamental human rights principles.
Community	TR.ControvPublicHealth	Public Health Controversies	Number of controversies published in the media linked to public health or industrial accidents harming the health & safety of third parties (non-employees and non-customers).
Community	TR.ControvTaxFraud	Tax Fraud Controversies	Number of controversies published in the media linked to tax fraud, parallel imports or money laundering.
Human Rights	TR.ControvChildLabor	Child Labor Controversies	Number of controversies published in the media linked to use of child labor issues.
Human Rights	TR.ControvHumanRights	Human Rights Controversies	Number of controversies published in the media linked to human rights issues.
Management	TR.ControvMgtComp	Mgt Compensation Controversies Count	Number of controversies published in the media linked to high executive or board compensation.
Product Responsibility	TR.ControvConsumer	Consumer Controversies	Number of controversies published in the media linked to consumer complaints or dissatisfaction directly linked to the company's products or services.
Product Responsibility	TR.ControvCustomerHS	Controversies Customer Health & Safety	Number of controversies published in the media linked to customer health & safety.
Product Responsibility	TR.ControvPrivacy	Controversies Privacy	Number of controversies published in the media linked to employee or customer privacy and integrity.
Product Responsibility	TR.ControvProductAccess	Controversies Product Access	Number of controversies published in the media linked to product access.
Product Responsibility	TR.ControvRespMarketing	Controversies Responsible Marketing	Number of controversies published in the media linked to the company's marketing practices, such as over marketing of unhealthy food to vulnerable consumers.
Product Responsibility	TR.ControvResponsibleRD	Controversies Responsible R&D	Number of controversies published in the media linked to responsible R&D.
Resource Use	TR.ControvEnv	Environmental Controversies	Number of controversies related to the environmental impact of the company's operations on natural resources or local communities.
Shareholders	TR.ControvAccounting	Accounting Controversies Count	Number of controversies published in the media linked to aggressive or non-transparent accounting issues.
Shareholders	TR.ControvInsiderDealings	Insider Dealings Controversies Count	Number of controversies published in the media linked to insider dealings and other share price manipulations.
Shareholders	TR.ControvShareholders	Shareholder Rights Controversies Count	Number of controversies linked to shareholder rights infringements published in the media.
Workforce	TR.ControvDiversityOpportunity	Diversity and Opportunity Controversies	Number of controversies published in the media linked to workforce diversity and opportunity (e.g., wages, promotion, discrimination and harassment).
Workforce	TR.ControvEmployeesHS	Employees Health & Safety Controversies	Number of controversies published in the media linked to workforce health and safety.
Workforce	TR.ControvWorkingCondition	Wages Working Condition Controversies Count	Number of controversies published in the media linked to the company's relations with employees or relating to wages or wage disputes.
Workforce	TR.MgtDepartures	Management Departures	Has an important executive management team member or a key team member announced a voluntary departure (other than for retirement) or has been ousted?

*Table 43 Description of Controversial Categories*

Appendix 3

<i>Country Name</i>	<i>Country Code</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>	<i>2016</i>	<i>% on Total</i>
World	WLD	\$74,890	\$76,991	\$79,049	\$74,758	\$75,845	100.00%
United States	USA	\$16,155	\$16,692	\$17,393	\$18,121	\$18,624	24.56%
European Union	EUU	\$17,290	\$18,027	\$18,632	\$16,411	\$16,487	21.74%
China	CHN	\$8,561	\$9,607	\$10,482	\$11,065	\$11,199	14.77%
Japan	JPN	\$6,203	\$5,156	\$4,849	\$4,383	\$4,940	6.51%
Germany	DEU	\$3,544	\$3,753	\$3,891	\$3,376	\$3,478	4.59%
United Kingdom	GBR	\$2,662	\$2,740	\$3,023	\$2,886	\$2,648	3.49%
France	FRA	\$2,681	\$2,809	\$2,849	\$2,434	\$2,465	3.25%
India	IND	\$1,828	\$1,857	\$2,035	\$2,090	\$2,264	2.98%
Italy	ITA	\$2,073	\$2,130	\$2,152	\$1,832	\$1,859	2.45%
Brazil	BRA	\$2,465	\$2,473	\$2,456	\$1,804	\$1,796	2.37%
Canada	CAN	\$1,824	\$1,843	\$1,793	\$1,553	\$1,530	2.02%
Korea, Rep.	KOR	\$1,223	\$1,306	\$1,411	\$1,383	\$1,411	1.86%
Russian Federation	RUS	\$2,210	\$2,297	\$2,064	\$1,366	\$1,283	1.69%
Spain	ESP	\$1,336	\$1,362	\$1,377	\$1,198	\$1,237	1.63%
Australia	AUS	\$1,538	\$1,567	\$1,460	\$1,345	\$1,205	1.59%
Mexico	MEX	\$1,187	\$1,262	\$1,298	\$1,152	\$1,047	1.38%
Indonesia	IDN	\$918	\$913	\$891	\$861	\$932	1.23%
Turkey	TUR	\$874	\$951	\$934	\$860	\$864	1.14%
Netherlands	NLD	\$829	\$867	\$880	\$758	\$777	1.02%
Switzerland	CHE	\$668	\$689	\$709	\$679	\$669	0.88%
Saudi Arabia	SAU	\$736	\$747	\$756	\$652	\$646	0.85%
Argentina	ARG	\$546	\$552	\$526	\$585	\$545	0.72%
Sweden	SWE	\$544	\$579	\$574	\$498	\$514	0.68%
Poland	POL	\$500	\$524	\$545	\$477	\$471	0.62%
Belgium	BEL	\$498	\$521	\$531	\$455	\$468	0.62%
Iran, Islamic Rep.	IRN	\$599	\$467	\$434	\$386	\$419	0.55%
Thailand	THA	\$398	\$421	\$407	\$399	\$407	0.54%
Nigeria	NGA	\$461	\$515	\$568	\$481	\$405	0.53%
Austria	AUT	\$409	\$430	\$442	\$382	\$391	0.52%
Norway	NOR	\$510	\$524	\$499	\$387	\$371	0.49%
United Arab Emirates	ARE	\$375	\$390	\$403	\$358	\$349	0.46%
Egypt, Arab Rep.	EGY	\$279	\$289	\$306	\$333	\$333	0.44%

Hong Kong SAR, China	HKG	\$263	\$276	\$291	\$309	\$321	0.42%
Israel	ISR	\$257	\$292	\$308	\$299	\$318	0.42%
Denmark	DNK	\$327	\$344	\$353	\$301	\$307	0.40%
Philippines	PHL	\$250	\$272	\$285	\$293	\$305	0.40%
Ireland	IRL	\$226	\$239	\$258	\$291	\$305	0.40%
Singapore	SGP	\$289	\$303	\$308	\$297	\$297	0.39%
Malaysia	MYS	\$314	\$323	\$338	\$296	\$297	0.39%
South Africa	ZAF	\$396	\$367	\$351	\$318	\$295	0.39%
Colombia	COL	\$370	\$380	\$378	\$292	\$282	0.37%
Pakistan	PAK	\$224	\$231	\$244	\$271	\$279	0.37%
Chile	CHL	\$267	\$278	\$261	\$243	\$247	0.33%
Finland	FIN	\$257	\$270	\$273	\$232	\$239	0.31%
Bangladesh	BGD	\$133	\$150	\$173	\$195	\$221	0.29%
Vietnam	VNM	\$156	\$171	\$186	\$193	\$205	0.27%
Portugal	PRT	\$216	\$226	\$230	\$199	\$205	0.27%
Czech Republic	CZE	\$207	\$209	\$208	\$187	\$195	0.26%
Greece	GRC	\$246	\$240	\$237	\$196	\$193	0.25%
Peru	PER	\$193	\$201	\$201	\$189	\$192	0.25%
Romania	ROU	\$172	\$192	\$199	\$178	\$188	0.25%
New Zealand	NZL	\$176	\$191	\$201	\$176	\$185	0.24%
Iraq	IRQ	\$218	\$235	\$235	\$180	\$171	0.23%
Algeria	DZA	\$209	\$210	\$214	\$166	\$159	0.21%
Qatar	QAT	\$187	\$199	\$206	\$165	\$152	0.20%
Kazakhstan	KAZ	\$208	\$237	\$221	\$184	\$137	0.18%
Hungary	HUN	\$128	\$135	\$140	\$123	\$126	0.17%
Kuwait	KWT	\$174	\$174	\$163	\$115	\$111	0.15%
Morocco	MAR	\$98	\$107	\$110	\$101	\$104	0.14%
Ecuador	ECU	\$88	\$95	\$102	\$99	\$99	0.13%
Sudan	SDN	\$68	\$72	\$82	\$97	\$96	0.13%
Angola	AGO	\$115	\$125	\$127	\$103	\$95	0.13%
Ukraine	UKR	\$176	\$183	\$134	\$91	\$93	0.12%
Slovak Republic	SVK	\$93	\$98	\$101	\$88	\$90	0.12%
Sri Lanka	LKA	\$68	\$74	\$79	\$81	\$81	0.11%

*Table 44, World GDP and Countries GPD, Data are in billions of \$, countries with less than 0,1% are eliminated from the table*

<b>Country Name</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>% of Total Value 2016</b>
European Union	17,272 €	18,003 €	18,588 €	16,335 €	16,398 €	100.00%
Germany	3,544 €	3,753 €	3,879 €	3,364 €	3,467 €	21.14%
United Kingdom	2,646 €	2,720 €	2,999 €	2,861 €	2,619 €	15.97%
France	2,681 €	2,809 €	2,849 €	2,434 €	2,465 €	15.04%
Italy	2,073 €	2,130 €	2,152 €	1,825 €	1,850 €	11.28%
Spain	1,336 €	1,362 €	1,376 €	1,193 €	1,232 €	7.51%
Netherlands	829 €	867 €	880 €	750 €	771 €	4.70%
Switzerland	665 €	685 €	703 €	671 €	660 €	4.02%
Sweden	544 €	579 €	574 €	496 €	511 €	3.12%
Poland	500 €	524 €	545 €	477 €	470 €	2.86%
Belgium	498 €	520 €	532 €	455 €	466 €	2.84%
Austria	407 €	428 €	438 €	377 €	386 €	2.36%
Norway	510 €	523 €	498 €	387 €	371 €	2.26%
Denmark	327 €	344 €	352 €	301 €	306 €	1.87%
Ireland	226 €	239 €	256 €	284 €	294 €	1.79%
Finland	257 €	270 €	273 €	232 €	237 €	1.44%
Portugal	216 €	226 €	230 €	199 €	205 €	1.25%
Greece	246 €	240 €	236 €	195 €	195 €	1.19%
Czech Republic	207 €	209 €	208 €	185 €	193 €	1.18%
Romania	172 €	192 €	199 €	178 €	187 €	1.14%
Hungary	127 €	135 €	139 €	122 €	124 €	0.76%
Slovak Republic	93 €	98 €	101 €	87 €	90 €	0.55%
Luxembourg	57 €	62 €	66 €	58 €	60 €	0.37%
Bulgaria	54 €	56 €	57 €	50 €	52 €	0.32%
Croatia	56 €	58 €	57 €	49 €	50 €	0.31%
Lithuania	43 €	46 €	49 €	41 €	43 €	0.26%
Latvia	28 €	30 €	31 €	27 €	28 €	0.17%
Iceland	14 €	15 €	17 €	17 €	20 €	0.12%
Cyprus	25 €	24 €	23 €	20 €	20 €	0.12%

Table 45 Europe GD and Countries GDP, data are in billions of €

## Appendix 4

Independent Variable	TBQ	TBQ	ROA	ROA	ROE	ROE	PE	PE	ROS	ROS
	Industrial	Finance	Industrial	Finance	Industrial	Finance	Industrial	Finance	Industrial	Finance
ESG Combined										
Score	1.06	1.14	1.06	1.09	1.06	1.12	1.10	1.24	1.08	1.24
Ln[Total Asset]	1.30	1.88	1.30	1.75	1.31	1.96	1.38	1.23	1.43	1.23
Debt/Assets	1.39	1.94	1.45	2.01	1.44	1.98	1.54	1.26	1.38	1.23
EBITDA										
Margin	1.45	1.01	1.51	1.01	1.46	1.02	1.60	1.11	1.53	1.09
Crisis	1.02	1.01	1.03	1.01	1.02	1.01	1.04	1.02	1.04	1.01
Industry	1.04	1.47	1.04	1.47	1.04	1.52	1.05	1.40	1.05	1.32

*Table 46 shows the VIF for Model 1*

Independent Variable	TBQ	TBQ	ROA	ROA	ROE	ROE	PE	PE	ROS	ROS
	Industrial	Finance	Industrial	Finance	Industrial	Finance	Industrial	Finance	Industrial	Finance
ESG Score	1.50	1.82	1.50	1.89	1.51	1.83	1.57	1.74	1.58	1.72
ESG Controversies										
Score	1.41	1.38	1.41	1.44	1.42	1.43	1.49	1.06	1.46	1.06
Ln[Total Asset]	1.98	3.36	1.97	3.61	1.99	3.76	2.18	1.52	2.27	1.52
Debt/Assets	1.40	1.95	1.46	2.01	1.45	1.99	1.58	1.26	1.41	1.23
EBITDA										
Margin	1.45	1.01	1.51	1.01	1.46	1.02	1.60	1.13	1.53	1.11
Crisis	1.03	1.02	1.03	1.02	1.03	1.03	1.04	1.08	1.04	1.07
Industry	1.04	1.53	1.04	1.55	1.04	1.60	1.05	1.53	1.05	1.44

*Table 47 shows the VIF for Model 1*

Independent Variable	TBQ	TBQ	ROA	ROA	ROE	ROE	PE	PE	ROS	ROS
	Industrial	Finance	Industrial	Finance	Industrial	Finance	Industrial	Finance	Industrial	Financial
Environmental	1.95	2.79	1.95	2.71	1.96	2.80	2.00	1.96	2.01	2.03
Social	2.03	2.85	2.04	3.00	2.03	2.92	2.14	2.04	2.13	1.99
Corporate Governance										
ESG	1.25	1.42	1.24	1.47	1.24	1.45	1.30	1.69	1.30	1.66
ESG Controversies										
Score	1.42	1.39	1.42	1.45	1.42	1.43	1.50	1.14	1.47	1.12
Ln[Total Asset]	2.01	3.39	2.01	3.65	2.02	3.79	2.19	1.56	2.28	1.56
Debt/Assets	1.41	1.96	1.46	2.01	1.45	1.99	1.61	1.35	1.45	1.34
EBITDA										
Margin	1.46	1.02	1.52	1.02	1.47	1.02	1.63	1.13	1.55	1.12
Crisis	1.03	1.02	1.03	1.02	1.03	1.03	1.04	1.11	1.04	1.11
Industry	1.04	1.58	1.04	1.58	1.04	1.67	1.06	1.62	1.06	1.56

*Table 48 shows the VIF for Model 1*



Accounting-Based Measures

Model 1	ROA			ROE			ROS		
	Estimate	Pr(> t )		Estimate	Pr(> t )		Estimate	Pr(> t )	
ESG									
Combined									
Score	1.36E-04	0.0004 ***		3.12E-04	0.0183 *		5.54E-04	0.3535	
LNTA	-1.65E-02	0.0030 **		-3.48E-02	0.0002 ***		-6.91E-02	0.0727 +	
Debt/Assets	-1.41E-01	0.0000 ***		-7.35E-02	0.0008 ***		-4.74E-03	0.0000 ***	
EBITDA									
Margin	3.48E-01	0.0000 ***		6.26E-01	0.0000 ***		6.76E+00	0.0000 ***	
Crisis	7.03E-03	0.0020 **		1.20E-02	0.0080 **		3.58E-02	0.0133 *	
Model	Fixed			Fixed			Fixed		
R-Squared:	0.242			0.159			0.355		
N	2915			2847			1680		
Goodness of the Fit	***			***			***		

*Table 49 shows results for Model 1 with dependent variable (non-log) for the Accounting Measures in the Industrial Sample*

Market-Based Measures

Model 1	TBQ			PE		
	Estimate	Pr(> t )		Estimate	Pr(> t )	
ESG Combined Score	-8.32E-04	0.0161 *		1.12E-02	0.1797	
LNTA	-1.38E+00	0.0000 ***		1.54E+00	0.1659	
Debt/Assets	1.23E+00	0.0000 ***		-3.47E-02	0.2985	
EBITDA Margin	-2.60E-01	0.0000 ***		-2.80E+01	0.0000 ***	
Crisis	9.55E-02	0.0002 ***		-4.59E+00	0.0000 ***	
Model	Fixed			Fixed		
R-Squared:	0.735			0.237		
N	3022			1665		
Goodness of the Fit	***			***		

*Table 50 shows results for Model 1 with dependent variable (non-log) for the Market Measures in the Industrial Sample*

## Accounting-Based Measures

Model 2	ROA		ROE		ROS	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )
ESG Score	3.2E-04	0.0350 *	7.41E-04	0.0020 **	1.1E-03	0.2298
ESG Controversies Score	4.2E-05	0.1465	9.4E-05	0.2410	1.0E-04	0.7495
LNTA	-1.8E-02	0.0005 ***	-3.8E-02	0.0000 ***	-7.6E-02	0.0338 *
Debt/Assets	-1.4E-01	0.0000 ***	-7.0E-02	0.0005 ***	-4.6E-03	0.0000 ***
EBITDA Margin	3.4E-01	0.0000 ***	6.2E-01	0.0000 ***	6.7E+00	0.0000 ***
Crisis	7.6E-03	0.0010	1.34E-02	0.0012	3.7E-02	0.0092
Model	Fixed		Fixed		Fixed	
R-Squared:	0.244		0.161		0.355	
N	2915		2847		1680	
Goodness of the Fit	***		***		***	

Table 51 shows results for Model 2 with dependent variable (non-log) for the Accounting Measures in the Industrial Sample

## Market-Based Measures

Model 2	TBQ		PE	
	Estimate	Pr(> t )	Estimate	Pr(> t )
ESG Score	-3.00E-03	0.0000 ***	3.72E-03	0.7805
ESG Controversies Score	5.06E-05	0.7795	7.71E-03	0.1626
LNTA	-1.36E+00	0.0000 ***	1.60E+00	0.1407
Debt/Assets	1.21E+00	0.0000 ***	-3.54E-02	0.2810
EBITDA Margin	-2.49E-01	0.0001 ***	-2.80E+01	0.0000 ***
Crisis	8.89E-02	0.0002	-4.60E+00	0.0000
Model	Fixed		Fixed	
R-Squared:	0.737		0.237	
N	3022		1665	
Goodness of the Fit	***		***	

Table 52 shows results for Model 2 with dependent variable (non-log) for the Market Measures in the Industrial Sample

Accounting-Based Measures

Model 3	ROA		ROE		ROS	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )
Environmental	-2.0E-05	0.7743	3.1E-05	0.8312	3.2E-05	0.8312
Social	2.0E-04	0.0006 ***	2.7E-04	0.0887 +	2.7E-04	0.0887 +
Corporate Governance	1.1E-04	0.0527 +	2.0E-04	0.0192 *	2.0E-04	0.0192 *
ESG Controversies Score	7.4E-06	0.7519	-1.7E-05	0.7053	-1.8E-05	0.7053
LNTA	-7.8E-03	0.2005	-1.6E-02	0.1532	-1.6E-02	0.1532
Debt/Assets	-1.5E-01	0.0000 ***	-1.0E-01	0.0002 ***	-1.0E-01	0.0002 ***
EBITDA Margin	3.4E-01	0.0000 ***	6.41E-01	0.0000 ***	6.4E-01	0.0000 ***
Crisis	6.4E-03	0.0224 *	1.18E-02	0.0180 *	1.1E-02	0.0180 *
Model	Fixed		Fixed		Fixed	
R-Squared:	0.239		0.150		0.332	
N	2915		2847		1680	
Goodness of the Fit	***		***		***	

*Table 53 shows results for Model 3 with dependent variable (non-log) for the Accounting Measures in the Industrial Sample*

Market-Based Measures

Model 3	TBQ		PE	
	Estimate	Pr(> t )	Estimate	Pr(> t )
Environmental	-9.79E-04	0.0040 **	-1.99E-03	0.8761
Social	-2.13E-03	0.0000 ***	1.89E-04	0.9910
Corporate Governance	1.89E-04	0.2515	-1.14E-02	0.3216
ESG Controversies Score	3.12E-04	0.0000 ***	1.12E-03	0.8012
LNTA	-1.46E+00	0.0000 ***	1.05E+00	0.3403
Debt/Assets	9.42E-01	0.0000 ***	4.45E-02	0.1446
EBITDA Margin	-1.67E-01	0.0007 ***	-3.71E+01	0.0000 ***
Crisis	5.40E-02	0.0000 ***	-4.29E+00	0.0000 ***
Model	Fixed		Fixed	
R-Squared:	0.747		0.244	
N	3022		1665	
Goodness of the Fit	***		***	

*Table 54 shows results for Model 3 with dependent variable (non-log) for the Market Measures in the Industrial Sample*

## Accounting-Based Measures

Model 4	ROA		ROE		ROS	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )
Emissions Score	1.6E-04	0.0000 ***	2.7E-04	0.0002 ***	-7.0E-05	0.8259
Res Use Score	-5.5E-05	0.5735	-8.8E-05	0.6330	-3.3E-04	0.5683
Env. Inn. Score	-1.1E-04	0.0000 ***	-1.5E-04	0.0000 ***	-6.4E-04	0.0027 **
Workforce Score	2.0E-04	0.0000 ***	3.1E-04	0.0000 ***	9.0E-04	0.0740 +
Human Rights						
Score	-1.1E-04	0.0637 +	-1.6E-04	0.0232 *	-5.9E-04	0.1088
Community Score	-3.5E-05	0.2492	-1.6E-04	0.0056 **	3.8E-04	0.0630 +
Product						
Responsibility						
Score	5.5E-05	0.2039	2.3E-04	0.0179 *	1.2E-04	0.7551
Management						
Score	4.5E-05	0.0979 +	1.9E-04	0.0043 **	5.8E-05	0.8127
Shareholders						
Score	9.8E-05	0.0003 ***	1.0E-04	0.0609 +	1.1E-03	0.0019 **
CSR Strategy						
Score	-1.8E-05	0.7154	-3.9E-05	0.7391	-1.2E-04	0.8257
ESG						
Controversies						
Score	3.7E-05	0.1478	9.2E-05	0.2603	8.6E-05	0.7822
LNTA	-1.7E-02	0.0003 ***	-3.5E-02	0.0000 ***	-6.6E-02	0.0592 +
Debt/Assets	-1.3E-01	0.0000 ***	-6.9E-02	0.0005 ***	-4.7E-03	0.0000 ***
EBITDA Margin	3.4E-01	0.0000 ***	6.2E-01	0.0000 ***	6.7E+00	0.0000 ***
Crisis	6.8E-03	0.0012 **	1.2E-02	0.0012 **	3.6E-02	0.0097 **
Model	Fixed		Fixed		Fixed	
R-Squared:	0.257		0.171		0.363	
N	2915		2847		1680	
Goodness of the						
Fit	***		***		***	

Table 55 shows results for Model 4 with dependent variable (non-log) for the Accounting Measures in the Industrial Sample

Market-Based Measures

Model 4	TBQ		PE	
	Estimate	Pr(> t )	Estimate	Pr(> t )
Emissions Score	-9.38E-04	0.0323 *	-7.96E-03	0.0508 +
Res Use Score	-1.55E-03	0.0000 ***	2.25E-02	0.0753 +
Environmental Innovation Score	3.81E-04	0.1089	5.01E-03	0.5553
Workforce Score	-1.27E-03	0.0027 **	-1.13E-02	0.1654
Human Rights Score	-3.82E-04	0.1140	-4.22E-04	0.9749
Community Score	-9.56E-04	0.0000 ***	9.58E-03	0.1026
Product Responsibility Score	4.53E-04	0.1162	-5.10E-03	0.3806
Management Score	8.59E-04	0.0003 ***	-5.03E-03	0.4878
Shareholders Score	-3.42E-04	0.2264	-4.21E-03	0.4836
CSR Strategy Score	-5.52E-04	0.1886	1.58E-02	0.0480 *
ESG Controversies Score	9.16E-05	0.5395	7.87E-03	0.1232
LNTA	-1.34E+00	0.0000 ***	1.36E+00	0.1838
Debt/Assets	1.20E+00	0.0000 ***	-3.35E-02	0.2823
EBITDA Margin	-2.30E-01	0.0000 ***	-2.76E+01	0.0000 ***
Crisis	8.82E-02	0.0002 ***	-4.59E+00	0.0000 ***
Model		Fixed		Fixed
R-Squared:		0.744		0.243
N		3022		1665
Goodness of the Fit		***		***

*Table 56 shows results for Model 4 with dependent variable (non-log) for the Market Measures in the Industrial Sample*

Accounting-Based Measures

Model 1	ROA		ROE		ROS	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )
(Intercept)	1.29E-01	0.0000 ***	3.80E-01	0.0000 ***	3.80E-01	0.0000 ***
ESG Combined Score	2.58E-05	0.3739	4.56E-04	0.0007 ***	-1.53E-03	0.2595
LNTA	-4.67E-03	0.0000 ***	-1.21E-02	0.0000 ***	-1.24E-02	0.0092 **
Debt/Assets	-1.77E-03	0.8424	-4.87E-02	0.2834	-8.56E-04	0.1311
EBITDA Margin	1.58E-04	0.5008	1.98E-03	0.2975	8.86E-01	0.0000 ***
Crisis	-2.36E-03	0.0044 **	-2.29E-03	0.8223	-2.39E-02	0.1177
Insurance	4.61E-03	0.0976 +	5.40E-03	0.6396		
Investment						
Holding Companies	1.83E-03	0.9453	1.01E-02	0.8392		
Real Estate	1.02E-02	0.0738 +	-1.96E-02	0.5415	2.63E-02	0.2220
Model	Random		Random		Random	
R-Squared:	0.188		0.051		0.717	
N	781		837		110	
Goodness of the Fit	***		***			

Notes: (1) + denotes significance at 10% ( $p < 0.10$ ), \* denotes significance at 5% ( $p < 0.05$ ), \*\* denotes significance at 1% ( $p < 0.01$ ), \*\*\* denotes significance at 0.1% ( $p < 0.001$ )

Table 57 shows results for Model 1 with dependent variable (non-log) for the Accounting Measures in the Financial Sample

Market-Based Measures

Model 1	TBQ		PE	
	Estimate	Pr(> t )	Estimate	Pr(> t )
(Intercept)				
ESG Combined Score	-2.38E-04	0.3292	1.96E-01	0.0001 ***
LNTA	-3.21E-01	0.0000 ***	4.09E-01	0.6348
Debt/Assets	1.19E+00	0.0000 ***	4.67E-01	0.0066 **
EBITDA Margin	-1.69E-03	0.0030 **	-4.79E+00	0.6634
Crisis	3.92E-02	0.0000 ***	-4.40E+00	0.0000 ***
Model	Fixed		Fixed	
R-Squared:	0.662		0.258	
N	910		106	
Goodness of the Fit	***			

Notes: (1) + denotes significance at 10% ( $p < 0.10$ ), \* denotes significance at 5% ( $p < 0.05$ ), \*\* denotes significance at 1% ( $p < 0.01$ ), \*\*\* denotes significance at 0.1% ( $p < 0.001$ )

Table 58 shows results for Model 1 with dependent variable (non-log) for the Market Measures in the Financial Sample

## Accounting-Based Measures

Model 2	ROA		ROE		ROS	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )
(Intercept)	1.17E-01	0.0000 ***	3.86E-01	0.0000 ***		
ESG Score	-2.69E-05	0.5683	4.89E-04	0.0283 *	-1.03E-03	0.5450
ESG Controversies Score	4.06E-05	0.1421	2.45E-04	0.0131 *	-2.00E-04	0.6244
LNTA	-4.14E-03	0.0001 ***	-1.30E-02	0.0000 ***	6.71E-03	0.5434
Debt/Assets	-1.36E-03	0.8783	-4.92E-02	0.2803	-2.11E-03	0.4281
EBITDA Margin	1.87E-04	0.4012	1.93E-03	0.2939	7.07E-01	0.0001 ***
Crisis	-2.55E-03	0.0013 **	-2.37E-03	0.8170	-1.21E-02	0.3499
Insurance	4.92E-03	0.0573 +	5.21E-03	0.6532		
Investment Holding Companies	1.58E-03	0.9522	1.06E-02	0.8320		
Real Estate	1.17E-02	0.0545 +	-1.96E-02	0.5188		
Model	Random		Random		Fixed	
R-Squared:	0.191		0.051		0.348	
N	781		837		110	
Goodness of the Fit	***		***			

Notes: (1) + denotes significance at 10% ( $p < 0.10$ ), \* denotes significance at 5% ( $p < 0.05$ ), \*\* denotes significance at 1% ( $p < 0.01$ ), \*\*\* denotes significance at 0.1% ( $p < 0.001$ )

Table 59 shows results for Model 2 with dependent variable (non-log) for the Accounting Measures in the Financial Sample

## Market-Based Measures

Model 2	TBQ		PE	
	Estimate	Pr(> t )	Estimate	Pr(> t )
(Intercept)				
ESG Score	-2.98E-05	0.9722	1.79E-01	0.1014
ESG Controversies Score	-1.23E-04	0.3565	9.56E-02	0.0000 ***
LNTA	-3.22E-01	0.0000 ***	2.60E-01	0.7749
Debt/Assets	1.19E+00	0.0000 ***	4.48E-01	0.0103 *
EBITDA Margin	-1.64E-03	0.0093 **	-4.50E+00	0.6942
Crisis	3.97E-02	0.0000 ***	-4.38E+00	0.0000 ***
Model	Fixed		Fixed	
R-Squared:	0.662		0.255	
N	910		106	
Goodness of the Fit	***			

Notes: (1) + denotes significance at 10% ( $p < 0.10$ ), \* denotes significance at 5% ( $p < 0.05$ ), \*\* denotes significance at 1% ( $p < 0.01$ ), \*\*\* denotes significance at 0.1% ( $p < 0.001$ )

Table 60 shows results for Model 2 with dependent variable (non-log) for the Market Measures in the Financial Sample

Accounting-Based Measures

Model 3	ROA		ROE		ROS	
	Estimate	Pr(> t )	Estimate	Pr(> t )	Estimate	Pr(> t )
(Intercept)	1.27E-01	0.0000 ***	3.14E-01	0.0000 ***		
Environmental	7.51E-05	0.0304 *	6.68E-04	0.0040 **	-3.64E-04	0.7808
Social	-1.23E-05	0.6378	-4.41E-04	0.0009 ***	5.54E-04	0.6174
Corporate Governance	-5.39E-05	0.0262 *	9.54E-05	0.3922	-5.03E-04	0.1859
ESG Controversies Score	9.67E-06	0.7055	2.05E-04	0.1085	-7.00E-04	0.0910 +
LNTA	-4.73E-03	0.0001 ***	-1.03E-02	0.0024 **	-8.81E-03	0.6185
Debt/Assets	-8.06E-03	0.2888	-7.27E-02	0.1177	-5.34E-03	0.0356 *
EBITDA Margin	1.08E-02	0.0000 ***	1.70E-02	0.0066 **	8.59E-01	0.0000 ***
Crisis	-2.40E-03	0.0001 ***	-1.00E-02	0.2460	-7.50E-03	0.4987
Insurance	7.02E-03	0.0139 *	1.52E-02	0.0593 +		
Investment Holding Companies	1.92E-02	0.0019 **	3.31E-02	0.4193		
Real Estate	8.87E-03	0.2422	5.59E-03	0.8287		
Model	Random		Random		Fixed	
R-Squared:	0.251		0.092		0.421	
N	781		837		110	
Goodness of the Fit	***		***		***	

Notes: (1) + denotes significance at 10% ( $p < 0.10$ ), \* denotes significance at 5% ( $p < 0.05$ ), \*\* denotes significance at 1% ( $p < 0.01$ ), \*\*\* denotes significance at 0.1% ( $p < 0.001$ )

*Table 61 shows results for Model 3 with dependent variable (non-log) for the Accounting Measures in the Financial Sample*



Market-Based Measures

Model 3	TBQ			PE		
	Estimate	Pr(> t )		Estimate	Pr(> t )	
(Intercept)						
Environmental	-1.19E-03	0.0000 ***		2.99E-02	0.3525	
Social	3.10E-05	0.8883		-7.79E-02	0.0786	+
Corporate Governance	-3.30E-04	0.3789		5.51E-02	0.2351	
ESG Controversies Score	-1.14E-04	0.5986		1.11E-01	0.0000 ***	
LNTA	-3.38E-01	0.0000 ***		7.09E-01	0.5946	
Debt/Assets	1.24E+00	0.0000 ***		6.50E-01	0.0000 ***	
EBITDA Margin	2.09E-02	0.0377 *		-2.15E+01	0.0160 *	
Crisis	2.95E-02	0.0000 ***		-4.13E+00	0.0000 ***	
Model		Fixed			Fixed	
R-Squared:		0.716			0.385	
N		910			106	
Goodness of the Fit		***			***	

Notes: (1) + denotes significance at 10% ( $p < 0.10$ ), \* denotes significance at 5% ( $p < 0.05$ ), \*\* denotes significance at 1% ( $p < 0.01$ ), \*\*\* denotes significance at 0.1% ( $p < 0.001$ )

*Table 62 shows results for Model 3 with dependent variable (non-log) for the Market Measures in the Financial Sample*

Accounting-Based Measures							
Model 4	ROA			ROE		ROS	
	Estimate	Pr(> t )		Estimate	Pr(> t )	Estimate	Pr(> t )
(Intercept)	1.24E-01	0.0000 ***		3.58E-01	0.0000 ***		
Emissions Score	-5.96E-05	0.4663		1.75E-04	0.6341	-1.32E-03	0.0365 *
Res Use Score	-3.45E-07	0.9934		6.71E-05	0.8144	-1.26E-03	0.0508 +
Env Inn Score	-8.62E-06	0.7992		-3.67E-05	0.8374	2.59E-04	0.3970
Workforce Score	3.05E-05	0.3444		1.81E-04	0.1920	4.67E-04	0.1901
Human Rights Score	3.70E-05	0.2798		1.55E-04	0.3922	1.57E-03	0.0004 ***
Community Score	3.14E-05	0.0537 +		-4.78E-05	0.6275	6.57E-04	0.0841 +
Product Responsibility							
Score	-8.28E-06	0.5317		-5.87E-05	0.6245	1.52E-04	0.3672
Management Score	-2.12E-05	0.2196		1.78E-04	0.1173	-3.73E-04	0.0733 +
Shareholders Score	8.37E-06	0.5972		-9.18E-05	0.4796	2.66E-04	0.1016
CSR Strategy Score	-7.40E-06	0.7661		-9.38E-05	0.3335	-5.33E-04	0.0712 +
ESG Controversies Score	3.88E-05	0.1297		2.59E-04	0.0116 *	-1.25E-04	0.5894
LNTA	-4.44E-03	0.0000 ***		-1.21E-02	0.0000 ***	-1.86E-03	0.7932
Debt/Assets	-1.35E-03	0.8877		-4.52E-02	0.3546	-3.81E-03	0.0031 **
EBITDA Margin	1.47E-04	0.5642		1.93E-03	0.3052	4.47E-01	0.0000 ***
Crisis	-2.46E-03	0.0018 **		-1.82E-03	0.8526	-2.87E-02	0.0516 +
Insurance	5.13E-03	0.0339 *		6.76E-03	0.5287		
Investment Holding							
Companies	1.36E-03	0.9560		1.12E-02	0.8250		
Real Estate	1.08E-02	0.0667 +		-1.88E-02	0.5316		
Model	Random			Random		Fixed	
R-Squared:	0.201			0.055		0.496	
N	781			837		110	
Goodness of the Fit	***			***		***	

Notes: (1) + denotes significance at 10% ( $p < 0.10$ ), \* denotes significance at 5% ( $p < 0.05$ ), \*\* denotes significance at 1% ( $p < 0.01$ ), \*\*\* denotes significance at 0.1% ( $p < 0.001$ )

*Table 63 shows results for Model 4 with dependent variable (non-log) for the Accounting Measures in the Financial Sample*

Market-Based Measures				
Model 4	TBQ		PE	
	Estimate	Pr(> t )	Estimate	Pr(> t )
(Intercept)				
Emissions Score	-2.62E-04	0.6050	6.51E-02	0.1857
Res Use Score	-9.43E-04	0.0074 **	1.92E-01	0.0000 ***
Env. Inn. Score	8.28E-04	0.0000 ***	1.22E-02	0.8578
Workforce Score	4.86E-04	0.0148 *	2.29E-02	0.7028
Human Rights Score	-1.21E-03	0.0002 ***	-6.60E-02	0.1262
Community Score	7.41E-05	0.4367	-1.67E-01	0.0000 ***
Product Responsibility				
Score	6.01E-05	0.6361	3.24E-02	0.1811
Management Score	-1.35E-04	0.5329	6.21E-02	0.1864
Shareholders Score	1.72E-04	0.1152	2.69E-02	0.3546
CSR Strategy Score	3.01E-04	0.2065	-1.09E-02	0.6470
ESG Controversies				
Score	-1.76E-04	0.1099	9.26E-02	0.0000 ***
LNTA	-3.15E-01	0.0000 ***	-5.27E-01	0.3826
Debt/Assets	1.19E+00	0.0000 ***	4.55E-01	0.0037 **
EBITDA Margin	-2.25E-03	0.0070 **	-8.85E+00	0.3360
Crisis	3.10E-02	0.0001 ***	-4.64E+00	0.0014 **
Model		Fixed		Fixed
R-Squared:		0.680		0.424
N		910		106
Goodness of the Fit		***		***

Notes: (1) + denotes significance at 10% ( $p < 0.10$ ), \* denotes significance at 5% ( $p < 0.05$ ), \*\* denotes significance at 1% ( $p < 0.01$ ), \*\*\* denotes significance at 0.1% ( $p < 0.001$ )

*Table 64 shows results for Model 4 with dependent variable (non-log) for the Market Measures in the Financial Sample*