

**ERASMUS UNIVERSITY ROTTERDAM**

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**MSc. Financial Economics**

**Master Thesis Financial Economics**

## **The Value of Corporate Social Responsibility**

### **A Study on the Effect of Social Capital and Trust on Firm Performance During and After the Financial and Euro Crisis in Europe**

**Abstract:** This paper examines whether social capital investments, measured by CSR activities, payoff for European firms during the financial crisis and the Euro crisis. The findings show that pre-crisis CSR activities pay off during the credit crunch, the financial crisis, the post crisis period and the Brexit. Although I find no effect of a firm's environmental and governance score on stock returns, social score has a positive effect on abnormal stock returns during and surrounding the crisis periods, as well as during the Brexit. Moreover, this effect appears to be most pronounced during the financial crisis. Furthermore, social capital is found to have a negative effect on stock returns during the financial and Euro crisis for firms headquartered in PIIGS countries. In addition, I show that the effect of social capital on stock returns is slightly greater for firms headquartered in high-trust countries, compared to firms headquartered in low-trust countries. This evidence suggests that social capital built through social CSR investments especially pay off when overall trust levels are low and confirms the findings of Lins et al. (2017).

**Key Words:** social capital, corporate social responsibility, trust, financial crisis, Euro crisis

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## 1. Introduction

A series of events including the trade war between the US and China, the Brexit, and Trump's withdrawal from the Paris Climate accord decreased trust levels and poses 'significantly higher risks' to the world economy, business and prosperity of society (Mayeda & Kennedy, 2019). As stated by Edelman (2018, 2019), the world is plagued by distrust and there is a major expectation of CEO's to fill the gap left by government for the prosperity of society. Moreover, 'the organisation's contribution for the betterment of society' is labelled as the most important factor in building employer trust and most people (73%) believe that firms can take actions that both increase profits and enhance the economic and social conditions in the communities where they operate (Edelman, 2019). In addition, the view that companies should strive to maximise shareholder welfare instead of shareholder value is becoming increasingly popular (e.g., Mayer, 2018). This trend, together with the 'plague of distrust', increasing uncertainty and risks to the world economy, make it important to investigate the effects of social capital, built through corporate social responsibility (CSR) investments, on firm performance.

This paper adds to the limited literature on the micro-economic effects of social capital and contributes to the scientific inconclusiveness and rich social debate on firm-level social capital and CSR. The main contribution of this paper is that it extends the empirical findings of Lins, Servaes and Tamayo (2017), by investigating whether trust between a firm and both its stakeholders and investors built through pre-crisis CSR investments pays off for European firms during and after crisis periods. Most studies on firm-level social capital and CSR focus on the effects for US firms, while the effects in other countries remain relatively unexplored. This research also provides information on the effects of individual CSR elements on firm performance. Furthermore, this paper adds to existing literature by examining whether there is a difference in the effect of CSR investments on stock returns between firms headquartered in low-trust versus high-trust countries. Additionally, I provide information on the effect of CSR\*\* on stock returns during and surrounding the financial and Euro crisis for firms headquartered in Portugal, Ireland, Italy, Greece and Portugal (PIIGS).

While the worldwide financial crisis emphasized the value of trust for the functioning of markets and economic stability (Lins et al., 2017; Sapienza & Zingales, 2012), the importance of trust has been acknowledged by both academics and practitioners for almost 50 years, since Arrow (1972) stated that trust is an essential feature of virtually all commercial transactions; and that a considerable amount of economic underdevelopment may be attributed to the inadequacy of mutual confidence. Confirming these notions, Putnam (1993) demonstrates that high social capital societies (with high-trust levels), enjoy greater economic development. He argues that an absence of trust causes cooperation to break down, financial markets to fail and investments to halt. Moreover, Fukuyama (1995) states that trust enhances the performance of all institutions, including business.

Most existing research examined trust and social capital from a macro-economic perspective, while their micro-economic effects remain relatively unexplored. Based on Putnam's (1993) idea that social capital builds stakeholder trust and cooperation, Lins et al. (2017) postulate that CSR investments build firm-level social capital that pays off when trust levels are low and show that high social capital firms outperformed low social capital firms during the financial crisis in the United States.

Studying the effects of trust that is earned through social capital investments is of particular interest, given its discretionary nature. Social capital can accrue at the individual, societal and organisational levels, which implies that firms can invest to increase their social capital (e.g., Leana & Van Buren, 1999; Glaeser, Laibson & Sacerdote, 2002). Endowed<sup>1</sup> social capital can not easily be modified, however, a firm can adapt its degree of internally generated social capital (Amiraslani et al., 2018). In line with Lins et al. (2017), I build on the notion that social capital facilitates the interactions between a firm and its stakeholders, through fostering cooperation and reducing the need for formal contracts (Putnam, 1993); and argue that social capital investments help to build stakeholder trust and cooperation, which is of particular importance when overall trust levels are low. Hence, I postulate that social capital investments pay off for European firms during the financial crisis, Euro crisis and Brexit periods, when trust in corporations and markets was low. This research examines the effects of trust and social capital from a micro-economic perspective, by addressing the following research question for fourteen European countries:

*Do investments in firm-level social capital pay off for European firms during the 2008/2009 global financial crisis and the Euro crisis?*

To investigate whether firm-level social capital acts as an insurance when overall trust levels are low, I examine the performance during and after the crisis of 508 non-financial European firms with CSR data available on the Thomson Reuters ESG database. I run multiple cross-sectional and panel regression models that control for various factors and firm characteristics. In these regressions, I use a firm's CSR score as a social capital measure in line with Lins et al. (2017) and Amiraslani et al. (2018). First, I perform several baseline regressions using CSR as independent variable and crisis period raw and abnormal stock returns as independent variable. To compare the effects of social capital on firm performance in Europe with the findings of Lins et al. (2017) in the United States, I use the same time period for the financial crisis: August 2008 to March 2009, during which overall levels of trust in corporations and markets suffered a negative shock. Besides using financial crisis stock returns as dependent variable, I examine the effect of CSR on a firm's Euro crisis stock returns, as the financial crisis was followed by the Euro crisis, which was also accompanied by a significant shock to trust. Lastly, I perform the baseline regression using overall crisis period stock returns (including the financial crisis,

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<sup>1</sup> Endowed trust -externally acquired trust- is enjoyed by a firm located in a high-trust environment (Amiraslani et al, 2018)

Euro crisis and period between the crises) since it could be argued that investors trust trust did not fully recover in the period between the crises.

To further investigate the effect of social capital on stock returns, I conduct three supplementary tests. First, I provide information on the costs associated with CSR activities by investigating the relation between a firm's CSR scores and its selling, general and administrative (SG&A) expenses, using both a linear and a quartile CSR measure. Second, I examine the relation between social capital investments and stock returns before, during and several years after the crises including the Brexit period (2007 to 2018), using panel regression models with continuous treatment, including both firm and time fixed effects. Moreover, I investigate whether the superior performance of high-CSR firms is stronger in countries where overall levels of trust are higher, using cross-sectional variation in trust levels between countries. For this analysis, I re-estimate the regression model by allowing the effect of CSR on returns to be dependent on the level of trust of the country (high-trust or low-trust) the firm is headquartered in.

Furthermore, I investigate whether there is a difference in the effect of individual CSR elements on firm performance by running the regression models with the disaggregated CSR measures: *Internal Stakeholder CSR* and *External Stakeholder CSR*, and the CSR pillars: *Environmental*, *Social* and *Governance*. In addition, I examine whether firm-level social capital pays off in terms of operating performance, which may provide insights into the potential channels through which excess stock returns may be generated.

The results of the analyses show that social capital investments pay off for European firms in terms of abnormal returns during the credit crunch, the financial crisis, the post crisis and the Brexit period. Overall the effects are slightly greater for firms headquartered in high-trust countries. For firms headquartered in PIIGS countries, pre-crisis CSR scores have a positive effect on stock returns during the financial crisis, and the Brexit period, in contrast CSR negatively affected raw returns during the Euro crisis and raw and abnormal returns during the between crises period. Overall, the findings show that environmental and governance CSR activities have no significant effect on abnormal and raw stock returns during and surrounding the crisis periods, whereas investments in social CSR activities pay off in terms of abnormal returns during and surrounding the crises periods and the Brexit. Nevertheless, I find no effect of CSR on operating performance and I remain inconclusive regarding the channels through which the excess returns are earned by high-CSR firms.

This research provides insights for both executives and investors on the importance of social capital and the value of CSR activities for European firms during and after crisis periods. Furthermore, the outcomes of this research provide insights for policy discussions related to the social responsibility of businesses. In addition, this paper provides information on the effect of firm-level social capital and CSR for European firms, unlike most studies on the topic, which focus on the US.

To come to an extensive answer to the research question, the remainder of the paper is organised as follows: section 2 contains the theoretical background, where the most relevant concepts, theories and literature on trust, social capital and CSR with a focus on the financial crisis are discussed.

Subsequently, section 3 states the hypotheses. Section 4 provides a description of the data and describes how the sample is constructed. Section 5 describes the methodology. Next, the results are analysed and discussed in section 6, after which section 7 provides a conclusion, discusses the limitations of this thesis and provides suggestions for future research.

## 2. Theoretical Framework

In this section, the most relevant concepts and theories are described. Also, a summary of existing literature on social capital, CSR and the value of firm-level social capital is discussed.

### 2.1 Trust and social capital

The concepts social capital and trust are often used indistinctly, and their definitions remain ambiguous. Trust is defined as ‘the expectation that a person (institution) will perform actions that are beneficial (at least not detrimental) to us regardless of our ability to monitor these actions’ (Sapienza & Zingales, 2012, p.124). Three concepts are fundamental to this definition: probability, as trust can be seen as a threshold on a probabilistic distribution of expectations (Gambetta, 2000), cooperation (e.g., Fukuyama, 1995), and the inability to monitor other’s actions ex-ante. Moreover, Integrity—consistently honouring your word—is also related to trust, as establishing integrity provides an actionable pathway to earn trust and allows for superior performance and competitive advantage (Erhard et al., 2009).

Social capital is more complex to define due to its multidimensional nature; it consists of several notions (civic norms, ethical values, cooperation, reciprocity and trust) and a valid academic definition does basically not exist. Putnam’s (2000) definition of social capital as ‘a propensity of people in a society to cooperate to produce socially efficient outcomes’ (La Porta et al. 1997, p. 333), emphasizes the norms of reciprocity and trust. Moreover, Coleman (1990) defined social capital as — ‘a resource of individuals emerging from social ties’. As noted by Guiso, Sapienza & Zingales (2004) the question that arises from this definition is: Why is someone willing to make resources available without any compensation? There are two answers: i) because of people’s strongly internalised norms (e.g., donating to charity as they feel obligated to do so) and ii) because of instrumental reasons. In the latter case, social capital affects an individual’s behaviour, as it increases the level of social punishment of a society.

These two theories both predict that high social capital levels generate high levels of trust in a society. Scrivens and Smith (2013) show that social capital can be conceptualised in four ways: i) personal relationships, ii) social network support, iii) civic engagement, and iv) trust and cooperative norms. In line with existing literature (e.g., Guiso, Sapienza & Zingales, 2008; Lins et al. 2017), the social capital concept studied in this thesis is most closely related to *civic engagement* — ‘the activities and networks through which people contribute to civic and community life (such as volunteering)’ — and *trust and cooperative norms*— ‘the trust, social norms and shared values that underpin societal functioning and enable mutually beneficial cooperation’ (Scrivens & Smith, 2013).

### 2.1.1 Corporate social responsibility as social capital measure

It is challenging to find a measure of social capital, due to its multifaceted nature and inclusion of aspects that hard to quantify (i.e., trust between a firm and its stakeholders). Solow (1995) states that for social capital to be more than a “buzzword”, its stock should be measurable, even inexactly, and the level of social capital should correspond to investments and depreciation in the social capital stock (Knack & Keefer, 1997).

Following recent research, (e.g., Lins et al., 2017; Servaes & Tamayo, 2013), I use a firm’s CSR activities as a proxy for firm-level social capital investments. Despite its limitations, CSR is acknowledged by academics and practitioners to be an appropriate measure of firm-level social capital. As noted by Sacconi and Degli Antoni (2011), firms build social capital through CSR and social capital aspects (e.g., civic engagement and trust). This implies that a firm’s CSR score is a good proxy of social capital. Moreover, Lins et al. (2017) argue that stakeholders are more inclined to trust and cooperate with high-CSR firms, which leads to outperformance. This idea is supported by various recent studies. First, Eccles et al. (2014) show that high-CSR firms are more likely to have established processes to engage with stakeholders, which leads to superior performance. Second, stakeholder engagement via CSR can decrease the likelihood of opportunistic behaviour by managers, and executives of high-CSR firms are less likely to engage in insider trading (Bénabou & Tirole, 2010; Gao, Lisic & Zhang, 2014). Furthermore, socially responsible firms are less likely to control earnings, manipulate operating activities or be subject of SEC investigations (Kim, Park & Wier, 2012).

Corporate managers also believe that CSR increases a firm’s social capital. Surveys show that CEOs plan to restore stakeholder trust by increasing CSR and that executives and investors believe that CSR programs improve financial performance, especially in the long term (Bonini et al., 2009; PwC, 2013, 2014). Moreover, the Accenture CEO study (Hayward et al., 2014) shows that ‘trust, reputation and brand’ is the top driver for CEO’s to take action on sustainability issues. Other drivers include revenue growth, customer demand, employee engagement, and stakeholder pressure.

To define the boundaries of CSR-activities for this research, CSR needs to be defined: ‘CSR is the commitment of a business to contribute to sustainable economic development, working with employees, their families, local community and the society at large to improve quality of life in ways that are good for business and development’ (Holme & Watts, 2000). CSR is also referred to as CSR behaviour, a firm’s social performance and socially responsible behaviour. These are used interchangeably (Carroll, 1979).

### 2.1.2 Cross-country differences in trust levels

Although trust levels are relatively stable, there have been significant shocks to trust during crisis periods, which differ between countries. In contrast to the US, European countries exhibit low average trust in business. The fraction of people who trusted corporations less in 2009 compared to the year before, was highest in the US (77%), but also substantial in most European countries (e.g., 67% in the



UK and 73% in Germany). PIIGS-countries experienced especially sharp declines in trust (e.g., Italy dropped from 41% to 27%).

Although economic growth followed the financial crisis in the US, the European sovereign debt crisis followed the financial crisis in Europe. As a result, most European countries experienced a sharp decline in trust from 2011 to 2012, which was more significant compared to the shock in 2009 (Edelman, 2013).

### 2.1.3 The value of trust and social capital

Literature on macro-economic effects of social capital is extensive; the concept is acknowledged to be an enabler of cooperation and trust and to increase economic growth and improve government performance (e.g., Knack & Keefer, 1997; La Porta et al., 1997). Trust is vital to all trade and investments, and especially important for the functioning financial markets, where people exchange based on promises, which would be worthless without trust (Sapienza & Zingales, 2012). Relating social capital to capital markets, Guiso et al. (2008) show that trust resulting from greater social capital allows for more stock market participation.

Although literature on the micro-economic effects of social capital is limited, some research implies that firms also benefit from social capital and trust. Dirks and Ferrin (2001) argue that high-trust levels generate positive attitudes and increase cooperation, which may generate superior firm performance. Also, economists would intuitively argue that firms benefit from high-trust levels. First, trust is believed to improve cooperation; second, trust is likely to reduce the need for written contracts and to specify potential contingencies; third, high-trust firms enjoy lower labour costs and higher profits, since their employees work harder and are more satisfied (e.g., Chami & Fullenkamp, 2002). In addition, recent research shows that endowed trust is positively related to less intensive formal contracting, improved financial performance and higher firm valuations (Hilary & Huang, 2015)

## 2.2 Differences in CSR: Europe vs. United States

Institutional variation and differences in social, political and cultural legacies cause cross-country variation in stakeholder legitimacy and influence on CSR and expectations and preferences of CSR. These variations lead to disparities in the public policy process and CSR issue-resolutions (Doh & Guay, 2006). Although CSR used to be more common in the US, Europe has seen an increase in support and adoption of CSR practices (Brammer & Pavelin, 2005; Doh & Guay, 2006; Matten & Moon, 2008). European firms exhibit higher levels of CSR, especially for employee and customer related activities, and are more motivated to act socially responsible toward customers.

Regarding institutional differences, EU policy-makers, address environmental and ethical issues more proactively than US policy-makers (e.g., Mattan & Moon, 2008). The announcement that the US will cease participation from the Paris Agreement, underlines that the EU institutional environment is more supportive of, and engaging with, firms acting responsible.

As stated by Hartman et al. (2007), Europe surpassed the US in 2001 when it published the *Green Paper: Promoting a European Framework for CSR* (European Commission, 2001). As proposed by this

paper, the move toward CSR in Europe is driven by several factors. Furthermore, socially responsible investing (SRI) is greatest in Europe (GSIA, 2016). Moreover, Dyck et al. (2018) show that only European institutional investors impact the environmental and social performance of firms. The differences in institutional environment, (changes in) trust levels, CSR drivers, stakeholder expectations and CSR engagement make it interesting to investigate whether social capital (CSR) investments pay off for European firms during crisis periods.

### 2.3 Value of firm-level social capital during crisis periods

Firms with a good CSR reputation were shielded from stock declines during the 1999 WTO failure, which implies that a reputation for CSR serves as a reservoir of ‘goodwill’ during crises (Schnietz & Epstein, 2005). Moreover, CSR reputation is positively related to financial performance during the 1989 crisis, but not during the 1987 crisis, which is attributed to the fact that investors did not foresee the 1987 crisis (Jones et al., 2000). Furthermore, Nofsinger & Varma (2014) show that including ESG criteria in investment decisions decreases downside risks during crises, but at the cost of under-performance during non-crisis periods. Additionally, Lins et al. (2017) show that CSR-activities built firm-level social capital which pays off during the financial crisis in terms of higher profitability, sales growth, productivity and subsequently stock returns. Based on these findings, it may be proposed that social capital fosters stakeholder trust in firms, which is particularly important during a (trust) crisis period. This notion can be motivated from the perspective of all stakeholders, including shareholders.

From a shareholder perspective, investment decisions are not simply made by an evaluation of risks and returns, but also requires investors’ trust that the information they use to make their decisions is reliable and that the overall system is fair. If there is a decline in trust, shareholders are likely concerned that the information is not credible (Lins et al., 2017). Consequently, investors incorporate measures such as social capital ratings (reflecting the integrity of the firm) in their investments decisions and may place a valuation premium on high social capital firms, which they perceive as more trustworthy (Guiso et al., 2008; Lins et al., 2017).

From the perspective of non-shareholding stakeholders, most interaction between a firm and its stakeholders is through implicit, incomplete contracts. During a low-trust period, the parties involved may feel that there is a bigger chance that these contracts will be breached. Social capital promotes the development of trust, which may support the interactions between the firm and its stakeholders and reduces the need for formal contracts (Knack & Keefer, 1997). Therefore, stakeholders may perceive the probability of breaching a contract to be lower for high social capital firms. Moreover, stakeholders of high social capital firms are more likely to exert additional effort to ensure the firm recovers from a crisis, given that the firm showed greater attention to and cooperation with stakeholders in the past (Lins et al., 2017). This idea is consistent with the concept of reciprocity: ‘I will be good to you, with the assumption that you will be good to me when I require it’ (Fehr & Gächter, 2000) and underpinned by recent evidence suggesting that firm-level social capital can increase stakeholder cooperation, which

generates financial value and reduces risk (e.g., Edmans, 2011; Ferrell et al., 2016; Servaes & Tamayo, 2013). For example, firms where employees perceive their top managers as trustworthy, have stronger performance (Guiso, Sapienza & Zingales 2015). Although the benefits of social capital derived from stakeholder cooperation may be enjoyed by high-social capital firms during any crisis, they are particularly important when trust levels are low (Lins et al., 2017; Amiraslani et al., 2018). It is noteworthy that as stakeholder groups have different objectives, they might value the various CSR elements differently.

Although Dyck et al. (2018) indirectly assume that the observed benefits of social capital found by Lins et al. (2017) could be generalised for firms globally, there is no direct evidence that social capital has a positive effect on crisis period firm performance in other countries. The effect of firm-level social capital on stock returns and operating performance of European firms during crisis periods is yet to be examined.

Besides the academic literature, the effects of CSR during the financial crisis also attracted practitioners' attention. A survey by McKinsey (Bonini et al., 2009), provides insights on the opinions of CFO's and investment- and CSR-professionals on the effects of the crisis on the importance of ESG programs. Governance is the only category that professionals believe its importance increased following the crisis (37%, 56% and 39%, respectively).

#### 2.4 Trust in PIIGS countries during the Euro crisis

The acronym PIIGS is used in reference to the countries that were unable to refinance their government debt or to bail out over-indebted banks during the Euro crisis. The magnitude and persistence of the effects of the crisis were most striking in Greece. The country suffered from a loss of access to external borrowing and a 'lack of trust', meaning that investors lost confidence in the reliability of Greece's monetary and fiscal institutions, in the run-up to the debt crisis (Garefalakis et al., 2017). Greece was the first to establish an agreement with the troika. In addition, the private sector involvement — a deal to cut Greece's debt — started in 2012, resulting in a 53.5% reduction of the nominal value of Greek bonds (Karamichailidou, Margaritis & Mayes, 2017).

After Greece reached an agreement with the troika, Ireland, Portugal and Spain followed. In return for assistance, these countries agreed to implement austerity measures (e.g., increasing taxes and decreasing public sector expenditures). Ireland was the first to exit the program in 2013, followed by Spain and Portugal in 2014. In contrast, Greece, did not exit the program until 2018. The impact of Greece's austerity measures was lower than expected, and additional funds and austerity measures were needed to restore trust and stabilise the economy (Christodoulakis, 2015; Karamichailidou et al. 2017).

In contrast, Ireland rapidly returned to a sustainable path due to its redesigned economic policy, which improved its competitiveness. Portugal implemented several austerity measures before the crisis, however, they were insignificant to rebuilt investors trust who were concerned for contagion and a euro collapse after the crisis escalated in Greece. Spain also reached an agreement to reduce its deficit and regain the trust of international financial markets (Kickert & Ysa, 2014).

The abovementioned approaches to combat the crisis show that various parties were involved in re-establishing the countries' fiscal and monetary institutions by means of recovering investors' trust.

## 2.5 Country-level trust as mediator

Putnam (2000) argues that an individual's social capital is more valuable when the overall trust level of the agent's environment is high. Relating these findings to the context of the effect of social capital on firm performance, CSR activities are less likely to be perceived by stakeholders as improving the credibility of the firm in low-trust regions, instead CSR may be perceived to solely serve the purpose of being an image enhancing investment instead of being sincere (Lins et al., 2017).

In contrast, stakeholders in countries with higher trust levels are more likely to reward companies they perceive as trustworthy. Investors tend to hold local companies (e.g., Coval & Moskowitz, 1999) and stock prices are influenced by local supply and demand (Hong et al., 2008), which implies that firms perceived by investors as trustworthy can raise more capital and realise higher valuations during a crisis when they are located in a high-trust region. In other words, the positive effect of CSR on firm performance might be greater in high-trust regions (Lins et al., 2017). This suggests that the positive image created through CSR activities develops faster and more extensively in high social capital regions because of greater network density, increasing the positive impact of CSR (Jha & Cox, 2015).

In contrast, it could be argued that CSR is more valuable in low social capital regions, where CSR activities are more likely to stand out. Consequently, it is also plausible that CSR has a greater positive impact in a low-social capital region. Whereas Lins et al. (2017) show that the positive effect of CSR on crisis stock returns is stronger for firms headquartered in high-social capital regions, Jha and Cox (2015) find no difference in the effect of CSR on firm performance (measured by Tobin's Q) for firms in a high compared to firms in low social capital regions

## 2.6 CSR elements

### 2.6.1 Internal and External Stakeholder CSR

Some CSR elements might be more effective in building trust, which may influence their effect on stock returns. For example, consumers might buy products from a firm because it supports the local community. Also, employees might work harder for the company because it is environmentally conscious, and investors might be more willing to provide monetary means to a company that treats its employees well. Lins et al. (2017) test whether there are differences between the effect of CSR focused on internal stakeholders compared to CSR focused on external stakeholders. Their findings show that both internal and external stakeholder CSR have a positive effect on firm performance.

The Accenture CEO survey (Hayward et al., 2014) suggests that both internal and external stakeholder CSR are critical to a firm's success. Related to internal stakeholder CSR, 78% of North American, and 71% of European CEO's indicate that growth and employment is most critical to success. Furthermore, climate change and energy (related to external stakeholder CSR) were indicated by CEO's to be critical to their business' future success.

### 2.6.2 Environmental, Social and Governance

Studies on the effect of environmental responsibility on firm performance show contradictory results. Most studies show that firms with high environmental scores generate higher operating performance and stock returns (e.g., Derwall et al., 2005; Günster et al., 2011; Russo & Fouts, 1997), while some suggest that there is no or a negative correlation (e.g., Galema et al., 2008). The findings of several meta-analyses suggest that the environmental score has a positive effect on financial performance, implying that environmental responsibility may decrease costs, increase differentiation, and eventually results in higher firm performance (see e.g., Dixon-Fowler et al., 2013; Endrikat, Guenther & Hoppe, 2014; Friede et al., 2015).

Moreover, recent research shows that institutional investors avoid investing in green (very high environmental performance) and toxic stocks (very low environmental performance) compared to neutral stocks. Although both green and toxic stocks have low Tobin's Q compared to neutral stocks, there is no significant difference in stock returns (Fernando et al., 2017). Albertini (2013) shows that regional difference and the duration of the study moderate the relationship between environmental score and financial performance. They find a stronger positive effect in the US compared to the EU. Furthermore, Brammer et al. (2006), found a negative effect of environmental score on stock returns of UK firms.

Existing research provides limited empirical support for the idea that employee related-CSR activities improve firm performance. Some studies find no relationship between the KLD employment variable and stock returns, while others find a negative or no effect of employee involvement on profitability and firm value (e.g., Dhrymes, 1998; Gorton & Smith, 2004). In contrast, several studies find a positive relation between the employee related score and stock returns in the US (e.g., Derwall et al., 2011; Galema et al., 2008; Kempf & Osthoff, 2007). In addition, several meta-analyses report a significant positive correlation between human capital-related scores and firm performance (Crook et al., 2011).

Moreover, according to human-relations theories employee satisfaction creates value for shareholders through motivation and retention and because some customers are more willing to buy from firms that treat their employees well. Edmans (2011) shows empirical evidence for this, as he finds a positive effect of employee satisfaction on stock returns in the long run.

Research on the effect of employment scores outside the US is limited. Recent research shows that in countries with flexible labour markets (such as the US and UK) employee satisfaction is positively correlated with long-run abnormal returns and higher profitability, whereas there is no correlation in countries with rigid labour markets (e.g., Germany) (Edmans, Li & Zhang, 2018). As legislation already specifies minimum standards for employee welfare, as such, increasing expenditure to employee satisfaction may lead to diminishing returns in rigid labour markets. Lastly, Kempf and Osthoff (2007) show that community screening leads to outperformance, while they do not find outperformance of companies with high scores for the categories: diversity, human rights and product.

Recent literature found evidence that firms with better governance, performed relatively better compared to otherwise similar firms, during the financial crisis (Lins et al., 2013; Nguyen, Nguyen and Yin, 2015). Moreover, as noted by Friede et al., 62.7% of studies focused on the effect of the Governance CSR category found a positive relation (e.g., Dalton et al., 1999; Gillan & Starks, 2007), whereas 9.2% found a negative correlation between governance-related aspects and firms' financial performance.

### 2.7 The effect of CSR on operating performance and capital raising

The literature suggest that the higher excess returns earned by high social capital firms accrue through the customer, employee and investor channels, by showing that there is a positive association with several operating performance measures related to these channels.

Related to the customer channel, executives believe that consumers are most important in determining CSR policies (Hayward et al., 2014). Moreover, 77% of respondents of the Edelman Trust Barometer (2009) indicated that they refuse to buy from firms they do not trust, while 91% would buy from a firm they do trust. Furthermore, empirical evidence shows that high-CSR firms earn higher profit margins and sales growth during the financial crisis, which supports the idea that customers are more willing to support high social capital firms to help them survive a crisis (Lins et al., 2017; Albuquerque et al., 2018). Additionally, the relation between CSR and firm value is positive (negative or neutral) for firms with high (low) customer awareness (Servaes & Tamayo, 2013).

It could be also be argued that high-social capital firms are more engaged and closely related to their employees. Hence employees of firms with high social capital might be willing to work harder because they feel more closely related to the firm, which may lead to increased productivity and eventually higher crisis stock returns. CSR is found by Lins et al. (2017) to have a positive effect on employee productivity during the financial crisis and to persist at approximately half the rate after the crisis. In addition, recent research shows that employee satisfaction positively affects firm performance by increasing productivity in the long term (Edmans, 2011; Edmans et al., 2018), which suggest that employee-related CSR may also increase employee productivity in the long term.

Hart and Zingales (2017) propose that if investors incorporate social factors in their behaviour (e.g., purchasing an electric car), they may want companies to also take social responsibility into account. Moreover, incorporating ESG criteria into investment decisions is one of the most important investment trends (Verheyden et al., 2016), which implies that high-CSR firms earn excess crisis period returns through the investor channel. Lins et al. (2017) find limited evidence for this idea as they only find a small significant correlation between CSR and the ability to raise debt.

### 2.8 Corporate social responsibility and firm value

Although research on the effect of social capital on firm performance is limited, a lot of literature examined the effect of CSR on firm performance, though the effect of CSR on firm performance remains ambiguous (Margolis et al., 2009; Kitzmüller & Shimshack, 2012). Literature showing that CSR has a positive effect on performance and value is often related to stakeholder theory, which states that firms create shareholder value by meeting stakeholder demands. According to stakeholder theory CSR

activities improve market reputation, brand image and stakeholder relations and relate to long-term strategic interests (Porter 1998; Porter & Kramer, 2002), thereby increasing profitability or reducing risk, leading to better firm performance and higher firm value. The related resource-based theory argues that firms create a comparative advantage by investing in CSR (e.g., Porter & Kramer, 2007). Research showing that products with CSR features are sold more often or at higher prices supports this notion (e.g., Elfenbein & McManus, 2010). Furthermore, recent research shows that CSR increases differentiation and allows firms to achieve higher profits and firm value by decreasing systematic risk (Albuquerque, 2018).

While most literature described so far suggests that shareholders derive value from CSR, several studies find a negative relation between CSR and firm value (e.g., Barber, 2007; Heinkel et al., 2001). These studies are often related to agency theory and argue that CSR is symptomatic of agency problems and deleterious to shareholder value. According to agency theory, non-shareholding stakeholders might pressure the firm to invest in CSR activities, since they do not bear the costs involved. If managers care about these pressures or obtain private benefits from CSR investments, this might have negative financial implications (Cheng et al. 2016; Masulis & Reza, 2015). Agency theory is supported by socially responsible investing (SRI) studies that found a negative relation between SRI and abnormal returns (e.g., Renneboog, Ter Horst & Zhang, 2008). Moreover, various studies found that sin-stock are associated with positive abnormal returns (e.g. Derwall et al., 2011; Hong & Kacperczyk, 2009).

### 2.9 CSR costs

Recent research shows that CSR scores are positively and significantly associated with SG&A expenses (Di Giuli & Kostovetsky, 2014; Lins et al., 2017). Lins et al. (2017) found that increasing CSR from the 1<sup>st</sup> to the 4<sup>th</sup> quartile led to SG&A expenses that were \$44.9 million higher for the median firm. The substantial costs associated with CSR activities may be one of the reasons firms choose to not invest heavily in increasing their social capital through CSR investments.

## 3 Hypothesis Development

As discussed in the introduction I examine whether the trust between a firm and its stakeholders built through CSR activities, pays off for European firms during the financial crisis, the Euro crisis and the Brexit. To answer the research question, I test the hypotheses outlined below.

### 3.1 Crisis stock returns

First, I examine whether European firms with high levels of social capital activities have higher stock returns when overall trust is low during the financial crisis, the Euro crisis and the total crisis period.

*Hypothesis 1: European firms with high social capital generate higher crisis period stock returns compared to low social capital firms.*

Related to this hypothesis I also test whether the outperformance of high-social capital firms is unique to crisis periods or if high social capital firms also outperform low social capital firms in terms of stock returns before and after the crisis periods.

Based on Putnam's notion that individual social capital is greater when overall trust level of the agent's environment is high and the findings of Lins et al. (2017) that the effect of a firm's CSR scores on stock returns is greater in regions with high-trust levels, I postulate that the relation between a firm's social capital and stock returns is greater when the firm is headquartered in a high-trust country. In other words, stakeholders who reside in high-trust countries are more likely to reward firms for their investments in social capital. This leads to the second hypothesis:

*Hypothesis 2: The positive relation between firm social capital and crisis stock returns is stronger for firms headquartered in high-trust countries than firms in low-trust countries.*

As discussed in the theoretical framework, the Euro crisis accompanied a significant loss in trust of the financial markets in the PIIGS countries and the shock to trust during the financial crisis was greater in most PIIGS countries, relative to other countries (Edelman, 2012). Therefore, I extend this test by examining whether the positive relation between social capital and crisis stock returns is stronger for firms headquartered in PIIGS countries.

### 3.2 CSR elements

In addition, I examine if specific CSR elements are more effective in generating trust and therefore have a stronger effect on crisis period stock returns. First, to get insights into the perspectives of investors on the value of both internal and external stakeholder related CSR activities, I examine the following hypothesis:

*Hypothesis 3: Internal stakeholder CSR and external stakeholder CSR both have a significant positive effect on crisis period stock returns of European firms.*

In addition, I investigate whether the individual CSR-elements: environmental, social and governance drive the excess returns by studying the individual effects of a firm's environmental, social and governance scores on its stock returns during the various crises and non-crisis periods.

*Hypothesis 4: Environmental, social and governance scores all have a positive effect on crisis period stock returns of European firms.*

### 3.3 Mechanisms

Lastly, I investigate whether excess stock returns are earned through the customer or employee channels by examining the effect of CSR on operating performance, leading to the final hypothesis:

*Hypothesis 5: European firms with high social capital levels generate higher operating performance during crisis periods.*

Several operating performance measures are used to examine the channels. First, I explore the customer channel by examining whether high-social capital firms also earn higher operating returns on assets and gross margins during the crisis periods. Secondly, I test whether high-CSR firms have higher crisis period productivity by investigating the effect of CSR score on sales per employee.



## 4. Data Description

### 4.1 Institutional setting

Following Lins et al. (2017), I define the financial crisis period as the period from August 2008 to March 2009. Although there is no agreement on the specific start and end dates of the Euro crisis, I define the Euro crisis period in line with Armingeon and Cranmer (2018) and Ulrich et al. (2017) as the period from April 2010 to December 2012. The European countries that are examined in this research include all countries that were part of the European Union before its expansion in 2004: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, Sweden and the United Kingdom.

### 4.2 Data collection and sample construction

#### 4.2.1 Social capital data

In line with several studies that examined the effect of CSR on firm value (e.g., Cheng et al., 2016; Hawn & Ioannou, 2016), I retrieve social capital data from the Thomson Reuters ESG database (a replacement of the ASSET4 ratings) using Datastream, which contains environmental, social, and governance ratings of large public traded companies. The Thomson Reuters ESG scores measure a firm's relative ESG performance, commitment and effectiveness across ten themes: resource use, emissions, innovation, workforce, human rights, community, product responsibility, management, shareholders and CSR Strategy. Consequently, these categories are combined into three pillar scores: environmental, social and governance. The combination of the weighted categories constructs the overall ESG score, a reflection of a firm's ESG performance, commitment and effectiveness based on publicly available information.

Two different CSR measures are used in this paper. The first is the Thomson Reuters ESG score (*CSR\**). *CSR\** includes the product responsibility and corporate governance scores, in contrast to the CSR measure used by Lins et al. (2017). However, governance is often not included in the definition of social capital, but rather seen as an effect of social capital. Based on the findings of Knack (2002) and Bjørnskov (2006) who show that the quality of governance is a positive effect of social trust and the possibility that several governance categories (such as shareholder loyalty) are closely related to firm-level social capital and trust, I expect the governance score to be correlated with a firm's social capital score. Therefore, I include governance in the first CSR measure (*CSR\**). I also include product responsibility in the *CSR\** measure, given the possibility that both customers and investors may perceive product responsibility to be positively related to the trustworthiness of the firm.

The second CSR metric (*CSR\*\**) is similar to the one used by Amiraslani et al. (2018), Lins et al. (2017) and Servaes and Tamayo (2013), who consider governance and product responsibility to be out of the scope of the CSR merit. Whereas Lins et al. (2017) use the categories: Environment, Community, Diversity, Employment, and Human Rights retrieved from the MSCI Stats Database; I construct a similar *CSR\*\** measure using the categories: Resource Use, Emissions, Environmental Innovation, Workforce and Community retrieved from the Thomson Reuters ESG Database. I adjusted

the weights of the individual CSR\*\* categories so that the sum of the categories used is 100% (see Appendix 3.1).

To examine whether a specific CSR element is driving the excess stock returns, CSR\*\* is disaggregated into the following two independent variables: *Internal Stakeholder CSR*: consisting of the category Workforce, and *External Stakeholder CSR* consisting of the categories Human Rights, Resource Use, Emissions, Environmental Innovation, and Community. The weights used to calculate these scores are provided in Appendix 3.2.

To investigate the effect of the three CSR pillars: *Environmental*, *Social* and *Governance* on crisis stock returns, I construct three pillar scores by multiplying the individual categories that belong to the specific pillars with the weights as reported in Appendix 3.3. As the goal of this thesis is to analyse whether CSR investments prior to the start of the crisis pay off in terms of stock returns and operating performance during crisis periods, all CSR metrics are taken from 2007, a year before the onset of the financial crisis.

#### 4.2.2 Raw and abnormal stock returns

The dependent variable in most regression models is the stock return during a particular time period. Two measures of stock returns are used: (i) *Raw Crisis Period Return* (the firm's raw buy and hold return over the crisis period) and (ii) *Abnormal Crisis Period Return* (calculated by subtracting the expected return from the raw return). The expected return is based on the market-model estimated over the 60-month period ending July 2008, calculated using the formula:  $R_{i,t} = a_i + \beta_i * R_{m,t} + \varepsilon_{i,t}$ , where  $R_{i,t}$  is the raw return on stock  $i$  at time  $t$ ,  $a_i$  is the intercept (the value of  $R_{i,t}$  when  $R_{m,t}$  is equal to zero),  $R_{m,t}$  is the return of a particular market proxy at time  $t$ ,  $\beta_i$  is the slope coefficient of the systematic risk for stock  $i$  and  $\varepsilon_{i,t}$  is the estimation error for stock  $i$  at time  $t$ . For the baseline regression, raw and abnormal crisis period returns are calculated as the sum of the monthly returns for the respective crisis periods: (i) August 2008-March 2009, (ii) April 2010-December 2012 and (iii) August 2008-December 2012. Moreover, the monthly returns are first calculated with the formula:  $Monthly\ return_{i,t} = \frac{\ln(P_{i,t})}{\ln(P_{i,t-t})}$ , where  $P_{i,t}$  presents the price of the stock  $i$  at time  $t$  (monthly price). The crisis period returns are calculated by taking the exponent of the sum of all monthly returns over the respective crisis period, after which 1 is subtracted from this outcome. All stock return data of the firms in the sample is obtained using Datastream and winsorized at the 2<sup>st</sup> and 98<sup>th</sup> percentiles, to control for outliers.

#### 4.2.3 Operating performance

To investigate the potential channels and examine the effect of social capital on operating performance, a panel with quarterly data for the measures *Operating Return on Assets*, *Gross Margin* and *Sales per Employee*, over the period 2006-2018 is constructed. *Operating Return on Assets* is calculated by dividing the firm's operating income by its assets, *Gross margin* is calculated by dividing sales minus cost of goods sold by sales and *Sales per Employee* is calculated by dividing quarterly sales by the number of employees in 2009. All data is retrieved from Datastream and winsorized at the 2<sup>nd</sup> and 98<sup>th</sup> percentile at the firm-level.

### 4.3 Control variables

Several control variables that have been found to affect stock returns in previous research are added to the regression models. The first set of controls is based on the common risk factors of the Fama-French three-factor model. According to Fama and French (1996) investors are compensated for the increased risk and sensitivity to macro-economic factors associated with distressed firms that load on the HML and SMB factors. During a crisis, firms that load high on the HML and SMB factors are expected to have worse performance during the crisis, which explains the importance of these factors for this research. To calculate the factor loadings, I obtain the European monthly factor returns and the risk-free rate from Kenneth French's website, which are used to estimate the following model in Stata:  $R_{i,t} - R_{f,t} = \alpha_i + \beta_1 * (R_{m,t} - R_{f,t}) + \beta_2(SMB_t) + \beta_3(HML_t) + \beta_4(MOM) + e_{i,t}$ , where  $R_{i,t} - R_{f,t}$  is the raw return of stock  $i$  minus the risk-free rate in month  $t$ ,  $\alpha_i$  is the intercept,  $\beta_1, \beta_2, \beta_3, \beta_4$  represent the estimated factor loadings for stock  $i$  at time  $t$ ,  $(R_{m,t} - R_{f,t})$  is the market risk premium, SMB is the excess return of firms with small market cap over firms with big market cap, HML represents the excess returns of value stocks over growth stocks and MOM is the excess returns of monthly 'winners' over monthly 'losers'.

Second, to mitigate the concern that superior performance of high-CSR firms is not due to CSR itself but due to omitted variables correlated with CSR, I control for firm characteristics that could have a potential impact on stock returns. First, I add *Size* (measured as the log of a firm's market cap) and *Book-to-Market* (hereafter: *BTM*) ratios to the regression models. Also, I include a dummy for firms with *Negative Book-to-Market* ratios (set to 1 when *BTM* is negative), as firms with negative *BTM* ratios are more likely to be distressed and have returns that are more similar to the returns of firms with high *BTM* ratios (Fama & French, 1992). Further, I control for *Momentum* (computed as raw return of a one-year period ending at the start of the crisis period), as a large amount of empirical evidence showed that past winners continue to outperform past losers (e.g., Jegadeesh & Titman, 1993). In addition, I control for *Idiosyncratic Risk* as price volatility affects (crisis) stock returns (e.g., Goyal & Santa Clara, 2003; Lins et al., 2017). Idiosyncratic risk is computed as the residual variance from the market model estimated over a five-year period ending in July 2008, using monthly data. The MSCI UK Value Weighted Index is used as market proxy to estimate the market model and consequently compute the idiosyncratic risk for UK firms. For all other firms I use the MSCI Europe Value Weighted Index.

To control for a firm's financial health, I apply several proxies known to affect crisis-period returns: *Cash Holdings*, *Short-Term Debt*, *Long-Term Debt* and *Profitability* (e.g., Almeida et al., 2012; Duchin, Ozbas & Sensoy, 2010; Lins et al., 2017). Additionally, industry dummies defined at the two-digit SIC level are included in all regression models, since firms in some industries may be more likely to invest in social capital and the effects of the financial crisis differentiates across industries.

In addition, I control for corporate governance when I use the *CSR\*\** measure in the baseline regression. If governance is correlated with CSR, this could imply that CSR is just a proxy for governance and that the analysis is suffering from omitted variable bias (Lins et al., 2017). Various

Governance measures are used. First, I construct the *Thomson Reuters ESG Governance index* by using the metrics: Shareholders, CSR Strategy and Management from the Thomson Reuters ESG database. Second, I construct an E-index based on the entrenchment index identified by Bebchuk, Cohen and Ferrell (2009). This E-index is not completely in line with the one used by Lins et al, (2017) and identified by Bebchuck et al. (2009), since the Thomson Reuters ESG database aggregates the takeover provisions: limits to amend the charter, limits to amend bylaws and supermajority voting requirements into one variable: “*Supermajority or Qualified Majority Vote Requirements*”. Hence, I construct an E-index using the sum of the following four dummies: (i) *Staggered Board*, (ii) *Supermajority or Qualified Majority Vote Requirements*, (iii) *Golden Parachute* and (iv) *Poison Pill*. Besides the *Thomson Reuters Governance index* and the *E-index*, I also use *Board Independence* (the fraction of the board consisting of outside directors), *Board Size* and a dummy if the *CEO is board member* as controls. All governance controls are retrieved from Thomson Reuters ESG database.

With the exception of *Momentum* and *Idiosyncratic Risk*, all financial health and firm characteristics were taken from 2007 for the financial and total crisis baseline regressions models and in 2009 for the Euro crisis baseline regression model. In the panel dataset, market-based controls are updated monthly, all other controls are lagged one year and updated annually. Momentum is calculated over a one-year period prior to the onset of the crisis, and idiosyncratic risk is measured over a time horizon of five years before the onset of the crisis period. A sample of 508 non-financial firms is obtained after combining non-financial firms with sufficient accounting data coverage, stock return and ESG data for the period August 2008-December 2018, retrieved from Datastream. Financial firms are removed from the sample, since these firms received significant governmental support throughout the financial crisis and also benefited from the quantitative easing programs of European and National Central Banks. Also, micro-cap stocks (firms with a market capitalisation below €250 as of year-end 2007) will be removed from the sample given that they tend to have low liquidity and high bid-ask spreads and are more subject to price pressure effects of trading, which are all likely to be more severe during crises (Lins et al., 2017). Furthermore, firms with less than 12 months of data available to estimate the market model are excluded from the analysis. All data in the three samples is obtained using Datastream.

#### 4.6 Descriptive statistics

Table I provides descriptive statistics for the main dependent and independent variables used in the analyses. The first two rows of Panel A show that the primary variables of interest, *CSR\** and *CSR\*\** are slightly above the overall average of the Thomson Reuters ESG database, with mean values of 54.5 and 57.2, respectively. The raw returns over the total crisis period is positive, with a mean of 24.35%, median of 11.5% and 75th percentile of 67.5%. In contrast, the median firm earns negative raw and abnormal returns during the financial crisis, with a mean of -35.9%, median of -36.1% and a 75th percentile value of -21.1%. The negative returns indicate that stakeholders including investors were likely to be quite concerned about the future existence prospective of firms they worked for, invested in

or had business interactions with. The mean abnormal Euro crisis period return is close to zero, the median is negative with -2.2%, while the mean is positive with 1.9%. Hence it can be concluded that the majority of the firms in the sample used in this thesis outperformed the MSCI value weighted proxies. Contrary to the financial crisis period stock returns, most firms in the sample did not lose market value during the Euro crisis. The mean of the Euro crisis raw returns is 12.8%, the median 11% and the 75<sup>th</sup> percentile value is 45.1%. Only the 25<sup>th</sup> percentile of raw Euro crisis returns is negative with (-.224). The summary statistics of the abnormal returns are also mainly positive, with a mean of 22.8% a median of 10.6%, which shows that the firms included in the sample also outperformed their market proxies during the Euro crisis. It is noteworthy that the spread for both raw and abnormal returns is smallest for the financial crisis and greatest for the total crisis period. Furthermore, a correlation matrix of the main variables used in the fundamental analyses is provided in Panel B of Table I.

**Table I**  
**Descriptive Statistics**

Panel A: Summary Statistics					
	Mean	SD	25 <sup>th</sup> perc.	Median	75 <sup>th</sup> perc.
<i>CSR*</i>	0.545	0.157	0.418	0.552	0.668
<i>High-Trust</i>	0.531	0.154	0.407	0.530	0.648
<i>Low-Trust</i>	0.565	0.159	0.451	0.579	0.687
<i>PIIGS</i>	0.541	0.171	0.392	0.559	0.689
<i>Non-PIIGS</i>	0.549	0.153	0.432	0.554	0.667
<i>CSR**</i>	0.572	0.184	0.424	0.591	0.720
<i>High-Trust</i>	0.553	0.182	0.400	0.560	0.702
<i>Low-Trust</i>	0.598	0.185	0.453	0.638	0.748
<i>PIIGS</i>	0.562	0.192	0.386	0.606	0.724
<i>Non-PIIGS</i>	0.578	0.182	0.427	0.606	0.726
<i>Environmental Score</i>	0.574	0.203	0.406	0.594	0.733
<i>Social Score</i>	0.556	0.201	0.408	0.563	0.714
<i>Governance Score</i>	0.500	0.200	0.336	0.497	0.659
<i>Raw Return Total Crisis</i>	0.243	0.799	-0.339	0.115	0.675
<i>Raw Return Financial Crisis</i>	-0.359	0.217	-0.500	-0.361	-0.211
<i>Raw Return Euro Crisis</i>	0.128	0.526	-0.224	0.110	0.451
<i>Abnormal Return Total Crisis</i>	0.488	1.503	-0.472	0.043	0.808
<i>Abnormal Return Financial Crisis</i>	0.019	0.411	-0.252	-0.022	0.224
<i>Abnormal Return Euro Crisis</i>	0.218	0.722	-0.281	0.106	0.572
<i>Market Capitalisation</i>	11412	19653	1776	3848	10453
<i>Long-Term Debt</i>	0.199	0.158	0.064	0.168	0.305
<i>Short-Term Debt</i>	0.330	0.146	0.220	0.313	0.421
<i>Cash Holdings</i>	0.094	0.095	0.029	0.063	0.121
<i>Profitability</i>	0.102	0.086	0.047	0.084	0.138
<i>Book-to-Market</i>	0.413	0.259	0.227	0.361	0.546
<i>Negative B/M</i>	0.012	0.108	0.000	0.000	0.000
<i>Momentum (Financial and Total Crisis)</i>	-0.305	0.237	-0.472	-0.300	-0.152
<i>Momentum (Euro Crisis)</i>	0.718	0.593	0.308	0.601	0.999
<i>Idiosyncratic Risk</i>	0.069	0.022	0.052	0.064	0.081

**Table I - Continued**

**Panel B: Correlation Matrix for Main Variables**

	CSR*	CSR**	Total Crisis Raw Return	Fin. Crisis Raw Return	Euro Crisis Raw Return	Total Crisis Abn. Return	Fin. Crisis Abn. Return	Euro Crisis Abn. Return	Ln(Mkt Cap)	L/T Debt	S/T Debt	Cash Hold.	Profita bility	B/M	Neg. B/M	Mom. (Fin/ Tot. Crisis)	Mom. (Euro Crisis)
CSR**	0.920***																
Total Crisis Raw Return	-0.083*	-0.057															
Fin. Crisis Raw Return	0.122**	0.145***	0.334***														
Euro Crisis Raw Return	-0.114**	-0.086*	0.840	0.120													
Total Crisis Abn. Return	0.008	0.052	0.709***	0.226***	0.495***												
Fin. Crisis Abn. Return	0.102**	0.144***	0.353***	0.793***	0.106**	0.494***											
Euro Crisis Abn. Return	-0.025	0.018	0.732***	0.118**	0.728***	0.890***	0.363***										
Ln(Market Cap)	0.510***	0.547***	-0.165***	0.124**	-0.126***	-0.142***	0.033	-0.132***									
Long-Term Debt	0.051	0.054	-0.067	-0.023	-0.046	0.010	0.001	0.036	0.028								
Short-Term Debt	0.008	0.057	-0.012	0.066	-0.057	0.001	0.092*	-0.039	-0.089*	-0.369***							
Cash Holdings	-0.044	-0.063	-0.019	0.061	-0.027	-0.100**	0.019	-0.132***	-0.039	-0.323***	0.163***						
Profitability	-0.070	-0.100**	0.126***	0.127***	0.088*	-0.040	0.057	-0.073	-0.100**	-0.181***	0.051	0.227***					
Book-to-Market	0.042	0.067	-0.104	-0.140***	-0.041	0.066	-0.009	0.105**	0.175***	-0.116***	-0.251***	-0.155***	-0.473***				
Negative B/M	-0.045	-0.042	0.011	0.052	-0.017	0.077	0.069	0.038	-0.102**	0.219***	0.180***	0.042	0.253***	-0.187***			
Mom. (Fin./Tot. Crisis)	0.032	0.007	-0.123**	0.001	0.015	-0.460***	-0.411***	-0.412***	0.293***	-0.156***	-0.077	0.151***	0.035	-0.016	-0.121***		
Mom. (Euro Crisis)	-0.143***	-0.138***	0.370***	-0.467***	0.224***	0.383***	-0.263***	0.304***	-0.225***	-0.063	0.012	-0.074	0.026	0.010	-0.045	-0.228***	
Idiosyncratic Risk	-0.288***	-0.333***	0.011	-0.166***	-0.057	0.085*	0.041	-0.004	-0.447***	-0.098**	0.017	0.279***	0.144***	-0.007	0.088*	-0.245***	0.146***

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## 5. Methodology

Several multiple regressions models that control for a wide variety of factors and firm characteristics are used to test the effect of a European firm's social capital on their performance during and surrounding the financial and Euro crisis period. I use both *Raw Crisis Period Return* and *Abnormal Crisis Period Return* as independent variables in most baseline and panel regression models to investigate the effect of social capital. While raw returns represent the actual return of a stock, abnormal returns indicate whether the stock performed better or worse than expected, based on the market index. These returns thus show whether the stock out or under-performed the market. Abnormal returns provide information on an event's effect on stock prices and can also serve as an overall volatility measure, allowing a more accurate assessment of the stock's true worth. Abnormal returns are thus essential in determining a stock's risk-adjusted performance compared to the benchmark index.

If firm-level social capital has a positive effect on raw crisis period return, this means that firms with high CSR scores before the crisis generate higher stock returns during or after the crisis period. Moreover, if CSR has a positive effect on abnormal returns, this suggests that increasing firm-level social capital before the crisis is associated with higher market adjusted returns during or after the crisis. Abnormal returns can capture the effects of events or unexpected shocks that are not yet processed by the market. If the effect would have been expected by the market based on the available information, the effect would already be captured by the expected return.

### 5.1 Baseline regression CSR score and crisis-period returns

To test the first hypothesis, I perform a baseline regression, using *Raw Crisis Period Return* and *Abnormal Crisis Period Return* as dependent variables and the company's *CSR\** and *CSR\*\** score measured at year-end 2007 as the independent variables:  $Return_i = \beta_0 + \beta_1 CSR_{i,2007} + \beta_2 X_{i,t-1} + \varepsilon_{i,t}$  (1), where  $Return_i$  represents either a firm's monthly buy and hold raw or abnormal crisis period return during the total, financial or the Euro crisis period and  $X_{i,t-1}$  represents the control variables: *ln(MarketCap)*, *Long-term Debt*, *Short-Term debt*, *Cash Holdings*, *Book to market ratio*, *Negative Book-to-market ratio*, *Momentum*, *Idiosyncratic risk*, *Industry Dummies* and the factor loadings. When *CSR\*\** is used as independent variable in model (1) I add the following corporate governance to the model as controls: the *Thomson ESG Governance Score*, *E-Index*, *Board Size*, *Board Independence* and a dummy variable equal to one when the "CEO is a board member".

To assess whether the effect of a firm's social capital on returns is more pronounced for firms with extremely high and/or low levels of social capital, I re-estimate the previous model using a quartile CSR measure, which is constructed by dividing firms into quartiles based on their net CSR score, after which dummies are included for quartiles 2,3, and 4 ( $CSR^{(**)2}$ ,  $CSR^{(**)3}$  and  $CSR^{(**)4}$  respectively). For this regression, I include the same control variables that were used in model (1).

$$Return_i = \beta_0 + \beta_1 CSR_{i,2007} + \beta_2 CSR_{i,2007} + \beta_3 CSR_{i,2007} + \beta_4 X_{i,t-1} + \varepsilon_{i,t} \quad (2)$$

## 5.2 CSR costs

To retrieve more information on the costs associated with CSR activities, I estimate the following regression model (see e.g., Di Giuli & Kostovetsky, 2014 and Lins et al., 2017).

$$SG\&A\ expenses_i = \beta_0 + \beta_1 CSR_{i,2007} + \beta_2 X_{i,t-1} + \varepsilon_{i,t} \quad (3)$$

Using this regression model, I employ two different dependent variables. In model (1), the dependent variable is the log of SG&A expenses, and in model (2), it is the ratio of SG&A expenses to sales. Besides using a continuous linear measure of CSR, I also employ CSR quartile dummies to test the effect of CSR on SG&A expenses.

$$SG\&A\ expenses_i = \beta_0 + \beta_1 CSR2_{i,2007} + \beta_2 CSR3_{i,2007} + \beta_3 CSR4_{i,2007} + \beta_4 X_{i,t-1} + \varepsilon_{i,t} \quad (4)$$

The control variables that are included in these two models are: *Log of Assets*, *Book-to-Market*, *Cash Holdings*, *Total Interest-bearing Debt to Assets*, *Dividend Payments to Assets*, *Income Before Extraordinary Items to Assets* and *Industry Dummies* defined at the two-digit level. To take care of outliers, I winsorize all dependent variables and controls at the 2<sup>nd</sup> and 98<sup>th</sup> percentiles.

## 5.3 Comparison of returns before, during and after the financial and Euro crisis

The next step is to test whether the expected positive relation between social capital and firm performance is unique for low-trust periods or if it is persistent in most periods. To determine whether the outperformance of high social capital firms is unique for low-trust periods, I estimate a panel data regression model with continuous treatment, including firm and time fixed effects. In line with research conducted by Lins et al. (2017) I construct a panel of monthly returns from 2006 (before the start of the crisis) till December 2018. Using this panel, I estimate the following model:

$$\begin{aligned} Return_{i,t} = & \beta_0 + \beta_1 CSR_{i,2007} * Shock\ to\ credit_t + \beta_2 CSR_{i,2007} * Financial\ crisis_t + \\ & \beta_3 CSR_{i,2007} * Between\ crises_t + \beta_4 CSR_{i,2007} * Euro\ crisis_t + \beta_5 CSR_{i,2007} * \\ & Post\ crisis_t + \beta_6 CSR_{i,2007} * Brexit_t + \beta_7 X_{i,t-1} + Time\ Dummies + \\ & Firm\ Fixed\ Effects + \varepsilon_{i,t} \end{aligned} \quad (5)$$

Where  $Return_{i,t}$  is the monthly raw or market-model adjusted return and  $CSR_{i,2007}$  represents my proxy for CSR (using both  $CSR^*$  and  $CSR^{**}$ ) measured in 2007.  $Shock\ to\ credit_t$  is a dummy variable set equal to 1 for the period July 2007–July 2008.  $Financial\ crisis_t$  is equal to 1 for August 2008–May 2009,  $Between\ crises_t$  is set equal to 1 for April 2009–March 2010,  $Euro\ crisis_t$  is equal to 1 for April 2010–December 2012,  $Post\ crisis_t$  is equal to 1 for January 2013–July 2016,  $Brexit_t$  is a dummy equal to 1 for June 2016–December 2018 and  $X_{i,t-1}$  is a vector of control variables. The control variables are the same as used in model 1, however, the firm financial characteristics and factor loadings are updated annually (accounting variables) or monthly (market-based variables).

Factor loadings are re-estimated monthly based on the prior 60-month period. I specify time dummies at a monthly level and firm fixed effects control for time invariant omitted risk factors. The CSR measure is absorbed by the firm fixed effect and all standard errors are clustered at the firm level (Lins et al. 2017). As in the baseline regression, small firms (firms with a market capitalisation below €250 million in 2007 euros) and financial firms will be removed from the sample. Furthermore, firms average return (firm fixed effects) over the entire estimation period and time-series patterns in overall



returns (time fixed effects) are removed. In this model the interaction of  $CSR_{i,2007}$  and the crisis period ( $\beta_x$ ) captures the differential impact of CSR on monthly stock returns during a specific period. In line with Lins et al. (2017) I test whether CSR is related to stock returns in the period of July 2007–July 2008 to rule out that returns earned by high-CSR firms in Europe during the financial crisis are due to the shock to credit supply instead of the shock to market-wide trust. For this analysis I test whether  $CSR_{2007}$  is related to stock returns in the period July 2007–July 2008, when there was only a shock to the supply of credit and no shock to the supply of trust. This test determines whether the results are driven by a decline in the credit supply that corporations encountered during the financial crisis, or by a decline of trust.

#### 5.4 High versus low-trust countries

Relying on previous theoretical evidence from both a stakeholder and shareholder perspective and empirical evidence of Lins et al. (2017), who show that the effect of CSR on crisis period returns is related to the general level of trust in the region where the company is headquartered, I examine whether the relationship between social capital and crisis stock returns is stronger for firms located in high-trust countries, using cross-sectional variation in country-level general trust. I use the general trust scores as reported by Olivera (2013), who constructed a harmonised dataset of the results of the five bi-annual rounds of the European Social Survey carried out between 2002 and 2010. Based on the scores, I disaggregate the sample into two groups: (i) firms headquartered in high-trust countries: Denmark, Finland, Sweden, the Netherlands, Ireland, the UK and Austria and (ii) all firms headquartered in low-trust countries: Spain, Belgium, Germany, France, Italy, Portugal and Greece.

When comparing the trust score of Olivera (2013) to the general trust score of Eurostat (2013), I found some significant differences in the trust rankings. Nevertheless, the high-trust and low-trust categories will contain approximately the same countries. The only difference is that Spain would be categorised as a high-trust country and Austria as a low-trust country. In addition, since financial markets in PIIGS countries encountered low-trust levels during the Euro crisis, I examine whether the effect between social capital and crisis stock returns is stronger for firms headquartered in PIIGS (low-trust markets) or non-PIIGS countries (high-trust markets) by including dummies for firms headquartered PIIGS and non-PIIGS countries. I estimate the following regression model to investigate the differences between firms headquartered in high- versus low-trust countries and high- versus low-trust markets.

$$\begin{aligned}
 Return_{i,t} = & \beta_0 + \beta_1 CSR_{i,2007} * Financial\ crisis_t * Low\ Trust + \beta_2 CSR_{i,2007} * Financial\ crisis_t * \\
 & High\ Trust + \beta_3 CSR_{i,2007} * Between\ crisis_t * Low\ Trust + \beta_4 CSR_{i,2007} * Between\ crisis_t * \\
 & High\ Trust + \beta_5 CSR_{i,2007} * EuroCrisis_t * Low\ Trust + \beta_6 CSR_{i,2007} * EuroCrisis_t * \\
 & High\ Trust + \beta_7 CSR_{i,2007} * Postcrisis_t * Low\ Trust + \beta_8 CSR_{i,2007} * Postcrisis_t * \\
 & High\ Trust + \beta_9 CSR_{i,2007} * Brexit_t * Low\ Trust + \beta_{10} CSR_{i,2007} * Brexit * HighTrust + \\
 & \beta_{11} X_{i,t-1} + Time\ Dummies + Firm\ Fixed\ Effects + \varepsilon_{i,t}
 \end{aligned} \tag{6}$$

## 5.5 CSR Elements and Returns

### 5.5.1 Internal Stakeholder CSR and External Stakeholder CSR

To examine whether a specific CSR component drives the effect of CSR on crisis-stock returns and to identify whether there is a difference in investors' valuation of CSR activities focussed on internal stakeholders compared to their valuation of CSR activities for external stakeholders, I disaggregate the CSR\* measure to construct the following two independent variables: *Internal Stakeholder CSR* and *External Stakeholder CSR* and run the following regression model accordingly:

$$\begin{aligned} Return_{i,t} = & b_0 + b_1 Internal\ Stakeholder\ CSR_{i,2007} * Financial\ crisis_t + \\ & \beta_2 External\ Stakeholder\ CSR_{i,2007} * Financial\ crisis_t + \beta_3 Internal\ Stakeholder\ CSR_{i,2007} * \\ & Betweencrises_t + \beta_4 External\ Stakeholder\ CSR_{i,2007} * Between\ crises_t + \\ & \beta_5 Internal\ Stakeholder\ CSR_{i,2007} * Euro\ crisis_t + \beta_6 External\ Stakeholder\ CSR_{i,2007} * \\ & Euro\ crisis_t + \beta_7 Internal\ Stakeholder\ CSR_{i,2007} * Post\ crisis_t + \\ & \beta_8 External\ Stakeholder\ CSR_{i,2007} * Post\ crisis_t + \beta_9 Internal\ Stakeholder\ CSR_{i,2007} * \\ & Brexit_t + \beta_{10} External\ Stakeholder\ CSR_{i,2007} * Brexit_t + b_{11} X_{i,t-1} + Time\ Dummies + \\ & Firm\ Fixed\ Effects + \varepsilon_{i,t} \end{aligned} \quad (7)$$

### 5.5.2 Environmental, Social and Governance scores

To allow for a more in-depth answer to the research question by examining whether there is a specific CSR component that is driving the excess stock returns, I employ a multiple regression model including the three individual ESG categories: *Environment*, *Social* and *Governance*. In addition, I run the following regression model using the panel dataset to determine the individual contribution of these categories to the out- or underperformance of high social capital firms.

$$\begin{aligned} Return_{i,t} = & b_0 + \beta_1 Environmental_{i,2007} * Financial\ crisis_t + \beta_2 Social_{i,2007} * Financial\ crisis_t + \\ & \beta_3 Governance_{i,2007} * Financial\ crisis_t + \beta_4 Environmental_{i,2007} * Between\ crises_t + \\ & \beta_5 Social_{i,2007} * Between\ crises_t + \beta_6 Governance_{i,2007} * Between\ crises_t + \\ & \beta_7 Environmental_{i,2007} * EuroCrisis_t + \beta_8 Social_{i,2007} * EuroCrisis_t + \beta_9 Governance_{i,2007} * \\ & EuroCrisis_t + \beta_{10} Environmental_{i,2007} * Post\ crisis_t + \beta_{11} Social_{i,2007} * \\ & Postcrisis_t + \beta_{12} Governance_{i,2007} * Postcrisis_t + \beta_{13} Environmental_{i,2007} * Brexit_t + \\ & \beta_{14} Social_{i,2007} * Brexit_t + \beta_{15} Governance_{i,2007} * Brexit_t + \beta_{16} X_{i,t-1} + Time\ Dummies + \\ & Firm\ Fixed\ Effects + \varepsilon_{i,t} \end{aligned} \quad (8)$$

## 5.6 Mechanisms

As a final step in this research, I examine various operating performance to analyse the sources through which high social capital firms generate excess crisis stock returns. The following multiple regression model with continuous treatment levels will be estimated:

$$\begin{aligned} Performance\ Measure_{i,t} = & \beta_0 + \beta_1 CSR_{i,2007} * Financial\ Crisis_t + \beta_2 CSR_{i,2007} * \\ & Betweencrises_t + \beta_3 CSR_{i,2007} * Euro\ Crisis_t + \beta_4 * \\ & Postcrisis_t + \beta_5 * Brexit_t + \beta_6 X_{i,t-1} + Time\ Dummies + \\ & Firm\ Fixed\ Effects + \varepsilon_{i,t} \end{aligned} \quad (9)$$

where *Performance Measure*<sub>*i,t*</sub> is one of the abovementioned performance measures. For all models, I include time dummies, quarterly (time fixed) and firm fixed effects. Hence, if the outperformance of a firm throughout the estimation period is due to an unobservable variable, this effect will be captured by the fixed effect. Moreover, if a firm's performance varies over time (as is the case for most firms during the financial crisis), this is captured by the time dummies. Additionally, standard errors are

clustered at the firm level in all models. To test whether high social capital firms enjoy excess crisis returns through the customer channel, I examine two performance measures: *Operating return on assets* and *Gross Margin*. Furthermore, I study the employee channel by investigating whether high-CSR firms generated higher *Sales per Employee* during the crisis period.

### 5.7 Testing Assumptions of the Error Term

The models need to fulfil several assumptions in order to be relevant and interpretable. First, the dependent variable and the independent variables should have a linear relationship. Since outliers make the model a less accurate estimator, I winsorize all return and control variables at the 2% and 98% level. To check whether the analysis suffers from multicollinearity I analyse the correlation table. As there are no high correlations between variables that are used in the same regression model, there is to be no evidence to believe that the multicollinearity assumption is an issue in any of the regression models.

Additionally, the standard errors of the regression models need to exhibit homoskedasticity. To identify whether the error terms are homoscedastic or heteroskedastic I perform the Breusch-Pagan test for the cross-sectional regression models, and the modified Wald test (for group wise heteroskedasticity in fixed effect regression models) for the panel regression models. Since the Breusch-Pagan statistics and the Wald tests show that the error terms are heteroskedastic in all regression models, I use heteroskedastic robust standard errors in all models. Moreover, for the panel data analyses, I cluster the standard errors at the firm-level to correct for potential correlation. Lastly, there should be no autocorrelation in the regression models. I use the Woolridge test to determine whether the panel regression models suffer from autocorrelation, when looking at the results of the Woolridge tests there seems to be no evidence to believe that any of the regression models suffers from autocorrelation.

## 6. Results

This section presents the results of the analysis of the effect of CSR on firm performance during periods of severe drops in trust. First, I describe the results of the baseline regression models, after which the panel data regressions are analysed.

### 6.1 Baseline Regression

The results of the estimated regression models of stock returns during the total crisis period as a function of firms' CSR activities preceding the crisis as well as various control variables are presented in this section. Table II shows the baseline regression results for the total crisis period, Table III presents the results for the financial crisis, and Table IV the results for the stock returns during the Euro crisis. The total sample used for these analyses consists of 508 firms. However, for some control variables 2007 data is not available, so the sample size is reduced to 425 firms when all firm characteristics are included in the regression model. The largest decrease in sample size is because Worldscope does not provide short-term debt levels for all firms in this sample. When *Short-Term Debt* is excluded from the analyses the results are more significant. However, *Short-Term Debt* has a significant effect on crisis period returns in several regression models, so it is not excluded from the analyses.

Overall, the effects of *CSR\** on crisis stock returns are similar to the results using *CSR\*\** as independent variable, however the effects of *CSR\*\** are greater in terms of economic and statistical significance. This may be because of the inclusion of governance in the *CSR\** measure, which has a negative effect on stock returns in most models. Therefore, I focus on the results using *CSR\*\**.

#### 6.1 1 Overall crisis period

Table II Panel A shows, that an increase in *CSR\*\** of one standard deviation (.184) is associated with 18.2 percentage points higher total crisis abnormal returns (significant at the 5% level). The results in Panel B allow for a more in-depth analysis of the effect of social capital investments on total crisis returns. The third row shows that the positive effect of *CSR\*\** on abnormal total crisis returns is mainly driven by *CSR\*\*4*. Moving from the worst to the best CSR quartile (as captured by *CSR\*\*4*) increases abnormal returns with 54.5 percentage points and is significant at the 5% level.

Turning to the control variables, the estimated effects of most variables show the expected sign. Some variables show a sign that differs from a-priori expectations, however, they are not significant. Interestingly, although *Ln(Market Cap)* and *Momentum* are not related to raw returns, they are significantly negatively related to abnormal total crisis returns. This implies that large firms and higher momentum stocks did not have worse performance in general, but they performed worse than expected by the market given the available information.

Panel C shows whether the previous results remain to hold when governance controls are added to the model. When the Thomson Reuters Governance index is added as a control, the effect of *CSR\*\** on abnormal returns becomes economically and statistically more significant. Nevertheless, the effect becomes insignificant when other governance controls are added. Contrary to existing literature (Bebchuk et al., 2009), E-index has a significant positive effect on both raw and abnormal returns. This suggests that firms with entrenching provisions perform better in general and better than expected by the market. In contrast, the dummy *CEO is Board Member* has a negative effect on abnormal returns, suggesting that firms with more entrenched managers perform worse than expected by the market given available information.

**Table II**  
**Total Crisis Period Returns and CSR**

Panel A: CSR** Score, Raw and Abnormal Total Crisis Returns				
	(1)	(2)	(3)	(4)
	Raw Return	Abnormal Return	Raw Return	Abnormal Return
<i>CSR**</i>	.010 (.199)	.286 (.334)	.323 (.281)	.988** (.462)
<i>Ln(Market Cap)</i>			-.068 (.043)	-.136* (.074)
<i>Short-Term Debt</i>			-.739* (.409)	-.988 (.670)
<i>Long-Term Debt</i>			-.079 (.410)	-.489 (.718)
<i>Cash Holdings</i>			-.145 (.599)	-.571 (.922)
<i>Profitability</i>			.827 (.644)	-.779 (1.025)
<i>Book-to-Market</i>			-.387 (.255)	-.133 (.516)
<i>Negative B/M</i>			-.137 (.367)	.647 (.679)
<i>Momentum</i>			-.161 (.257)	-2.228*** (.400)
<i>Idiosyncratic Risk</i>			-1.609 (2.703)	4.457 (4.764)
Industry dummies	Yes	Yes	Yes	Yes
Four-factor loadings	Yes	Yes	Yes	Yes
R <sup>2</sup>	.165	.225	.191	.316
Observations	508	508	425	425
Panel B: Dummies for Quartiles of CSR* Score: Raw and Abnormal Total Crisis Returns				
	(1)	(2)	(3)	(4)
	Raw Return	Abnormal Return	Raw Return	Abnormal Return
<i>CSR**2</i>	.146 (.107)	.217 (.175)	.129 (.121)	.224 (.198)
<i>CSR**3</i>	.030 (.102)	.169 (.177)	.081 (.124)	.290 (.209)
<i>CSR**4</i>	.042 (.106)	.197 (.182)	.204 (.139)	.545** (.237)
Industry dummies	Yes	Yes	Yes	Yes
Four-factor loadings	Yes	Yes	Yes	Yes
Firm characteristics	No	No	Yes	Yes
Adj. R <sup>2</sup>	.166	.224	.189	.314
Observations	508	508	425	425

Standard errors in parentheses:

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Panel C: Controlling for Corporate governance, Raw and Abnormal Total Crisis Returns				
	(1)	(2)	(3)	(4)
	Raw Return	Abnormal Return	Raw Return	Abnormal Return
<i>CSR**</i>	.424	1.257***	.105	.816
	(.296)	(.483)	(.325)	(.543)
<i>Thomson Reuters Governance Index</i>	-.002	-.006		
	(.002)	(.004)		
<i>E-Index</i>			.125**	.174*
			(.062)	(.096)
<i>Board Independence</i>			.001	.004
			(.002)	(.004)
<i>Board Size</i>			.006	.059*
			(.017)	(.034)
<i>CEO is board member</i>			-.129	-.569**
			(.137)	(.230)
Industry dummies	Yes	Yes	Yes	Yes
Four-factor loadings	Yes	Yes	Yes	Yes
Firm characteristics	Yes	Yes	Yes	Yes
Adj. $R^2$	.190	.320	.191	.356
Observations	423	423	334	334

Panel D: Individual ESG categories, Raw and Abnormal Total Crisis Returns				
	(1)	(2)	(3)	(4)
	Raw Return	Abnormal Return	Raw Return	Abnormal Return
<i>Environmental Score</i>	-.240	.173	-.222	.351
	(.222)	(.401)	(.254)	(.454)
<i>Social Score</i>	.192	.188	.653**	.970*
	(.239)	(.435)	(.315)	(.508)
<i>Governance Score</i>	.003	-.320	-.228	-.610
	(.172)	(.323)	(.199)	(.377)
Industry dummies	Yes	Yes	Yes	Yes
Four-factor loadings	Yes	Yes	Yes	Yes
Firm characteristics	No	No	Yes	Yes
Adj. $R^2$	.162	.222	.196	.319
Observations	506	506	423	423

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

To further examine the effect of social capital on total crisis period returns, I disaggregate *CSR\*\** in three categories: *Environmental*, *Social* and *Corporate Governance Scores*. As shown in Panel D, only *Social Score* appears to have a positive and significant effect on both abnormal and raw total crisis period returns after controlling for firm characteristics. In contrast to existing literature (e.g. Dixon-Fowler et al., 2013; Lins et al., 2013; Friede et al., 2015) there is no effect of *Environmental Score* and *Governance Score* on total crisis stock returns. This may imply that the value of CSR in low-trust periods is mainly driven by pre-crisis investments in social CSR activities.

### 6.1.2 Financial Crisis

The effect of *CSR\*\** on raw and abnormal returns during the financial crisis is insignificant when firm characteristics are added to the model. As shown in Table III Panel A, however, the effect of *CSR\*\** on financial crisis raw and abnormal returns becomes significant when *Short-Term Debt* is not included as control<sup>2</sup>. Though *CSR\*\** has a positive effect on both raw and abnormal financial crisis returns, the value of firm-level social capital to investors appears to be smaller during the financial crisis period compared to the total crisis period. Indicating that pre-crisis CSR investments may also generate value during the between-crisis and/or Euro crisis period.

Firms in the best CSR quartile have higher market-adjusted financial crisis returns compared to firms in the worst CSR quartile, which implies that high *CSR\*\** scores especially pay off in terms of market-adjusted returns. The excess returns earned by firms with high CSR scores, when trust levels are low, are not fully expected by the market based on available information. Moreover, the effect of *CSR\*\*4* on raw and abnormal returns is greater compared to the effect found by Lins et al. (2017) for US firms during the financial crisis. From these results it may be concluded that very high levels of firm-level social capital were more valuable during the financial crisis for European firms compared to US firms.

For the control variables, in line with expectations, firms in better financial health (higher cash holdings and profitability) perform better during the financial crisis. In contrast to existing literature, which showed that firms with better governance performed relatively better during the financial crisis (Lins et al., 2013; Nguyen et al., 2015), we see in panel C that better governance as measured by the Thomson Reuters Governance Index is associated with worse abnormal financial crisis stock returns. Although, the effect of *CSR\*\** on stock returns increases slightly in economic significance when the Thomson Reuters Governance Index is added, model 3 and 4 show that the effect becomes insignificant when the other governance variables are controlled for. Nevertheless, the effects of all corporate governance controls are insignificant.

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<sup>2</sup> When *Short-Term Debt* is included in the model, it seems to have no significant effect on financial crisis period returns.

**Table III**  
**Financial Crisis Period Returns and CSR**

Panel A: CSR** Score: Raw and Abnormal Financial Crisis Returns, excl. Short-Term Debt				
	(1)	(2)	(3)	(4)
	Raw Return	Abnormal Return	Raw Return	Abnormal Return
<i>CSR**</i>	.098*	.124	.107*	.190*
	(.053)	(.094)	(.065)	(.114)
<i>Ln(Market Cap)</i>			.003	-.004
			(.010)	(.019)
<i>Long-Term Debt</i>			-.117	-.226
			(.084)	(.144)
<i>Cash Holdings</i>			.246**	.325
			(.122)	(.227)
<i>Profitability</i>			.400***	.651***
			(.134)	(.245)
<i>Book-to-Market</i>			-.036	-.029
			(.056)	(.096)
<i>Negative B/M</i>			.025	-.025
			(.065)	(.142)
<i>Momentum</i>			-.057	-.544***
			(.062)	(.104)
<i>Idiosyncratic Risk</i>			-.880	-.308
			(.586)	(1.125)
Industry dummies	Yes	Yes	Yes	Yes
Four-factor loadings	Yes	Yes	Yes	Yes
Adj. $R^2$	.156	.208	.198	.285
Observations	508	508	501	501
Panel B: Dummies for Quartiles of CSR** Score: Raw and Abnormal Financial Crisis Returns				
	(1)	(2)	(3)	(4)
	Raw Return	Abnormal Return	Raw Return	Abnormal Return
<i>CSR**2</i>	.049*	.079	.022	.035
	(.028)	(.051)	(.029)	(.051)
<i>CSR**3</i>	.030	.034	.018	.020
	(.027)	(.050)	(.031)	(.056)
<i>CSR**4</i>	.065**	.089*	.071**	.128**
	(.029)	(.054)	(.036)	(.063)
Industry dummies	Yes	Yes	Yes	Yes
Four-factor loadings	Yes	Yes	Yes	Yes
Firm characteristics	No	No	Yes	Yes
Adj. $R^2$	.158	.209	.217	.320
Observations	508	508	425	425

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$



Panel C: Controlling for Corporate Governance Raw and Abnormal Financial Crisis Returns

	(1)	(2)	(3)	(4)
	Raw Return	Abnormal Return	Raw Return	Abnormal Return
<i>CSR**</i>	.130*	.249*	.054	.108
	(.073)	(.129)	(.077)	(.132)
<i>Thomson Reuters Governance Index</i>	-.077	-.172*		
	(.054)	(.101)		
<i>E-Index</i>			-.003	.004
			(.013)	(.025)
<i>Board Independence</i>			-.000	-.000
			(.001)	(.001)
<i>Board Size</i>			-.002	-.003
			(.004)	(.007)
<i>CEO is Board Member</i>			.000	-.022
			(.026)	(.048)
Four-factor loadings	Yes	Yes	Yes	Yes
Four-factor loadings	Yes	Yes	Yes	Yes
Firm characteristics	Yes	Yes	Yes	Yes
Adj. $R^2$	.220	.323	.257	.377
Observations	423	423	334	334

Panel D: Individual ESG categories: Raw and Abnormal Financial Crisis Returns

	(1)	(2)	(3)	(4)
	Raw Return	Abnormal Return	Raw Return	Abnormal Return
<i>Environmental Score</i>	-.002	.037	.028	.085
	(.065)	(.122)	(.065)	(.118)
<i>Social Score</i>	.118*	.124	.120*	.202*
	(.063)	(.116)	(.068)	(.118)
<i>Governance Score</i>	-.025	-.065	-.050	-.140
	(.050)	(.098)	(.051)	(.095)
Industry dummies	Yes	Yes	Yes	Yes
Four-factor loadings	Yes	Yes	Yes	Yes
Firm characteristics	No	No	Yes	Yes
Adj. $R^2$	.158	.208	.201	.288
Observations	506	506	499	499

Panel E: Social Score Quartiles: Raw and Abnormal Financial Crisis Returns

	(1)	(2)	(3)	(4)
	Raw Return	Abnormal Return	Raw Return	Abnormal Return
<i>Social Score Q2</i>	.022	.031	.009	.003
	(.027)	(.049)	(.030)	(.053)
<i>Social Score Q3</i>	.063**	.090	.077**	.132**
	(.031)	(.056)	(.033)	(.058)
<i>Social Score Q4</i>	.070**	.091	.080**	.132*
	(.033)	(.063)	(.038)	(.068)
<i>Environmental Score</i>	-.000	.000	.000	.001
	(.001)	(.001)	(.001)	(.001)
<i>Governance Score</i>	-.000	-.001	-.001	-.002*
	(.001)	(.001)	(.001)	(.001)
Industry dummies	Yes	Yes	Yes	Yes
Four-factor loadings	Yes	Yes	Yes	Yes
Firm characteristics	No	No	Yes	Yes
Adj. $R^2$	.158	.208	.228	.330
Observations	506	506	423	423

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Panel D shows the effect of *Environmental*, *Social* and *Governance Score* on financial crisis stock returns. In line with the findings of Table II panel C and existing literature, we observe that increasing pre-crisis social CSR activities is associated with an increase in firm value during the financial crisis. This effect is further investigated in Panel E, where we observe that the positive effect of *Social Score* on financial crisis returns is especially present for firms in the second-best and best social score quartiles. Although social CSR activities increase both raw and abnormal financial crisis returns, the effect is greater for abnormal returns, which implies that the positive effect is greater than is expected by the market based on the available information.

### 6.1.3 Euro Crisis

In line with the results shown in Tables II and III, Table IV shows that firms with higher CSR scores outperformed the market as indicated by the effect on abnormal returns during the Euro crisis period. A one standard deviation (.184) increase in *CSR\*\** is associated with 8.9 percentage points higher abnormal Euro-crisis period returns. In contrast to the total and financial crisis periods, besides the statistically significant outperformance, in terms of abnormal returns, of firms in the best *CSR\*\** quartile compared to the firms in the worst quartile (24.5 percentage points higher abnormal returns), moving from the worst to the second-best CSR quartile is also associated with an economically significant increase in in abnormal returns of 16.9 percentage points (significant at the 10% level).

Turning to the control variables, most signs off the coefficients are as expected. Some signs of the control variables are opposite to a-priori expectations, however, these effects are statistically insignificant. In contrast to the effect of *Momentum* on financial and total-crisis stock returns, *Momentum* has a positive effect on raw and abnormal Euro crisis stock returns (significant at the 1% level). This indicates that high momentum stocks performed better than low-momentum stocks, which was partially expected by the market given the available information.

**Table IV**  
**Euro Crisis Period>Returns and CSR**

Panel A: CSR** Score: Raw and Abnormal Euro Crisis Returns				
	(1)	(2)	(3)	(4)
	Raw Return	Abnormal Return	Raw Return	Abnormal Return
<i>CSR**</i>	-.019 (.139)	.146 (.165)	.046 (.172)	.487** (.211)
<i>Ln(Market Cap)</i>			-.003 (.025)	-.054* (.033)
<i>Short-Term Debt</i>			-.994*** (.230)	-.878*** (.291)
<i>Long-Term Debt</i>			-.217 (.214)	-.090 (.301)
<i>Cash Holdings</i>			.249 (.346)	-.147 (.414)
<i>Profitability</i>			.908** (.446)	-.166 (.556)
<i>Book-to-Market</i>			-.081** (.034)	-.006 (.052)
<i>Negative B/M</i>			-.166 (.186)	.317 (.286)
<i>Momentum</i>			.264*** (.055)	.389*** (.079)
<i>Idiosyncratic Risk</i>			-2.121 (1.664)	-.699 (2.097)
Industry dummies	Yes	Yes	Yes	Yes
Four-factor loadings	Yes	Yes	Yes	Yes
Adj. $R^2$	.154	.251	.279	.371
Observations	508	508	427	427

Panel B: Dummies for Quartiles of CSR** Score: Raw and Abnormal Euro Crisis Returns				
	(1)	(2)	(3)	(4)
	Raw Return	Abnormal Return	Raw Return	Abnormal Return
<i>CSR**2</i>	.089 (.071)	.096 (.086)	.088 (.072)	.108 (.089)
<i>CSR**3</i>	.021 (.068)	.087 (.084)	.059 (.076)	.169* (.097)
<i>CSR**4</i>	.007 (.070)	.094 (.087)	.022 (.083)	.246** (.107)
Industry dummies	Yes	Yes	Yes	Yes
Four-factor loadings	Yes	Yes	Yes	Yes
Firm characteristics	No	No	Yes	Yes
Adj. $R^2$	.152	.249	.279	.368
Observations	508	508	427	427

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Panel C: Controlling for Corporate Governance Raw and Abnormal Euro Crisis Returns				
	(1)	(2)	(3)	(4)
	Raw Return	Abnormal Return	Raw Return	Abnormal Return
<i>CSR**</i>	.064 (.180)	.526** (.220)	.059 (.219)	.507* (.258)
<i>Thomson Reuters Governance Index</i>	-.049 (.120)	-.088 (.161)		
<i>E-Index</i>			.055 (.034)	.064 (.044)
<i>Board Independence</i>			-.001 (.001)	.001 (.002)
<i>Board Size</i>			-.007 (.010)	.022 (.014)
<i>CEO is board member</i>			.070 (.080)	-.103 (.110)
Industry dummies	Yes	Yes	Yes	Yes
Four-factor loadings	Yes	Yes	Yes	Yes
Firm characteristics	Yes	Yes	Yes	Yes
Adj. $R^2$	.277	.370	.272	.388
Observations	425	425	335	335

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Panel C shows that the effect of *CSR\*\** on abnormal crisis period returns remains significant when the Thomson Reuters governance index and other governance controls are added to the model. Moreover, we observe that the governance controls have no significant effect on Euro crisis stock returns. In contrast to the previous findings, the individual CSR categories *Environmental*, *Social* and *Governance* have no significant effect on Euro crisis period returns.

#### 6.1.4 SG&A Expenses

To investigate the costs associated with CSR activities, I estimate regression models of SG&A expenses as a function of *CSR\*\**. In models (1) and (3) of Table V the dependent variable is the *Log of SG&A* expenses, whereas the ratio of *SG&A Expenses to Sales* is the independent variable in models (2) and (4), both measured in 2007. In Panel A, the linear measure of *CSR\** and *CSR\*\** is employed, while dummy variables for the *CSR\*(\*\*)* quartiles 2 to 4 are the independent variables in Panel B. As shown in Table V both *CSR\** and *CSR\*\** are significantly positively related to the *Log of SG&A*. An increase in *CSR\*(CSR\*\*)* of one percentage points increases the *Log of SG&A* expenses by .639 (.676). The effect of *CSR\*\** is mainly captured by *CSR\*\*Q4* as displayed in Panel B, implying that firms in the best *CSR\*\** quartiles have significantly higher SG&A expenses compared to firms in the worst *CSR\*\** quartiles. Increasing *CSR\*\** from its 1<sup>st</sup> to its 4<sup>th</sup> quartile is associated with SG&A expenses that are €41.1 million higher for the median firm in the sample and €48.3 million higher for the mean firm. Firms with high pre-crisis *CSR\*\** scores also have high SG&A expenses, which suggests that CSR activities are associated with high costs. The high costs associated with CSR activities explain why not all firms choose to invest in social capital. Earlier results show that especially *Social Score* generates firm value during the financial and total crisis. Panel C shows there are significant costs associated, especially, with these social CSR activities.

**Table V**  
**Selling, General and Administrative expenses**

Panel A: CSR*(**) and SG&A expenses				
	(1)	(2)	(3)	(4)
	Log SG&A	SG&A/Sales	Log SG&A	SG&A/Sales
<i>CSR*</i>	.639*	5.634		
	(.362)	(4.885)		
<i>CSR**</i>			.676**	3.527
			(.336)	(4.470)
Industry dummies	Yes	Yes	Yes	Yes
Control variables	Yes	Yes	Yes	Yes
Adj. $R^2$	.800	.286	.801	.284
Observations	376	351	376	351
Panel B: CSR*(**) quartiles and SG&A expenses				
	(1)	(2)	(3)	(4)
	Log SG&A	SG&A/Sales	Log SG&A	SG&A/Sales
<i>CSR*Q2</i>	.023	-1.119		
	(.113)	(1.746)		
<i>CSR*Q3</i>	.110	1.422		
	(.138)	(2.099)		
<i>CSR*Q4</i>	.170	1.002		
	(.140)	(1.970)		
<i>CSR**Q2</i>			.007	-2.776
			(.127)	(1.781)
<i>CSR**Q3</i>			-.041	.326
			(.144)	(2.214)
<i>CSR**Q4</i>			.275*	1.973
			(.156)	(2.060)
Industry dummies	Yes	Yes	Yes	Yes
Control variables	Yes	Yes	Yes	Yes
Adj. $R^2$	.789	.259	.801	.266
Observations	376	351	376	351
Panel C: CSR category scores and SG&A expenses				
	(1)	(2)		
	Log SG&A	SG&A/Sales		
<i>Environmental Score</i>	-.091	-1.467		
	(.295)	(4.903)		
<i>Social Score</i>	.696*	5.754		
	(.359)	(5.499)		
<i>Corporate Governance Score</i>	-.118	3.282		
	(.222)	(3.888)		
Industry dummies	Yes	Yes		
Control variables	Yes	Yes		
Adj. $R^2$	.801	.258		
Observations	375	350		

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## 6.2 Comparing Returns During and Around the financial and Euro Crisis

The results of the baseline regressions show that high social capital firms outperform low social capital firms in terms of stock returns when overall trust in corporations, institutions, and the financial market was low (during the financial crisis, Euro crisis, and overall crisis period). To find a more elaborate answer to the research question and test whether the effects are unique to the crisis periods, I further investigate the effects of a firm's CSR scores, using a panel dataset from January 2006 to December 2018. In line with the results from the baseline regression, the effects of *CSR\** and *CSR\*\** on raw and abnormal stock returns are similar, however the results of *CSR\*\** are more economically and statistically significant, therefore I, similar to the baseline regressions, only focus on the effect *CSR\*\** in the analyses of the panel regressions models. As we will see later in the results of the regression models, social CSR has a significant positive effect on stock returns, while the effect of governance is mostly negative, which may explain the less significant effects of *CSR\**. Since governance is included in the *CSR\** measure, the effect of governance may attenuate the effect of social score, causing the total effect of *CSR\** to be smaller in economic and statistical significance.

Table VI shows the effects of the interaction variables of *CSR\*\** with the periods: shock to credit, financial crisis, Euro crisis, between-crises, post-crisis, Brexit- and after-crisis on raw and abnormal stock returns. Pre-crisis CSR investments seem to generate value in the run-up to the financial crisis (shock to credit) and during the financial crisis itself. In contrast to a-priori expectations, we see that CSR has no effect on stock returns in the run-up to the Euro crisis (the between-crises period) and during the Euro crisis. During this period investors did not seem to value pre-crisis CSR investments for European firms, which may be attributed to the differences in the scope of the trust to shock that accompanied the crises. During the financial crisis the shock to trust affected firms worldwide, while the trust shock during the Euro crisis was more concentrated and especially evident in PIIGS countries. Contrary to the financial crisis, investors had more substitutes, i.e. opportunities to invest in stocks that were not affected by the shock to trust, e.g., by investing in other countries.

Noteworthy, there is also the possibility that the regression picks up the result of the shock to credit, rather than the shock to trust, since high social capital firms also generate higher abnormal stock returns during the credit crunch. However, CSR seems to be also value generating in the run up to the Brexit (post-crisis period) and during the Brexit period itself. Although the Brexit is not a crisis, the period accompanied with a decline in overall trust levels in Europe. The results thus imply that social capital generates value in the run up to and during a decline in trust. With an exception of the financial crisis stock returns, *CSR\*\** does not affect raw returns, but does generate excess market-adjust returns. This means that the returns earned by high *CSR\*\** firms are not expected by the market given the available information.

**Table VI**  
**CSR and abnormal returns during and surrounding the crises**

	(1)	(2)
	Raw Return	Abnormal Return
<i>CSR** x Shock to Credit</i>	-.001 (.008)	.012* (.007)
<i>CSR** x Financial Crisis</i>	.020* (.012)	.032** (.014)
<i>CSR** x Between Crises</i>	-.010 (.009)	.005 (.009)
<i>CSR** x Euro Crisis</i>	-.006 (.005)	.008 (.007)
<i>CSR** x Post-Crisis</i>	-.004 (.004)	.012* (.007)
<i>CSR** x Brexit</i>	.003 (.004)	.018*** (.007)
Firm characteristics	Yes	Yes
Four-factor loadings	Yes	Yes
Time(monthly) fixed effects	Yes	Yes
Adj. $R^2$	.294	.074
Observations	40188	40188

Standard errors in parentheses  
\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table VII shows the difference of the effect of *CSR\*\** on raw and abnormal returns during all crisis periods for firms headquartered in high-trust and low-trust countries. In line with the findings in Table VI, CSR has no effect on raw and abnormal returns during the between-crisis and Euro-crisis. During the financial crisis, the post-crisis and the Brexit periods, pre-crisis CSR investments pay off in terms of abnormal returns for all firms. Moreover, the results imply that firms headquartered in high-trust countries, outperform firms headquartered in low-trust countries, since most effects are greater for the high-trust country headquartered subsample. An exception is the effect of *CSR\*\** on credit crisis period abnormal returns. The effect for high-trust country firms is insignificant, whereas the effect for firms located in low-trust countries is .012. In line with the previous findings, pre-crisis social capital investments seem to generate most value during the financial crisis, followed by Brexit and the post-crisis period.

**Table VII**

**High- vs. Low-Trust: CSR\*\*, Raw and Abnormal Returns during and suraround the crises**

Panel A: CSR**, Raw and Abnormal Returns PIIGS vs. non-PIIGS		
	(1)	(2)
	Raw Return	Abnormal Return
<i>CSR** x Credit Crisis x High-Trust</i>	-.005 (.009)	.009 (.008)
<i>CSR** x Credit Crisis x Low-Trust</i>	-.001 (.008)	.012* (.007)
<i>CSR** x Fin. Crisis x High-Trust</i>	.020 (.014)	.033** (.016)
<i>CSR** x Fin. Crisis x Low-Trust</i>	.020* (.011)	.031** (.013)
<i>CSR** x Between Crises x High-Trust</i>	.002 (.009)	.013 (.010)
<i>CSR** x Between Crises x Low-Trust</i>	-.013 (.009)	.003 (.009)
<i>CSR** x Euro Crisis x High-Trust</i>	-.004 (.007)	.010 (.009)
<i>CSR** x Euro Crisis x Low-Trust</i>	-.007 (.005)	.007 (.007)
<i>CSR** x Post Crisis x High-Trust</i>	-.004 (.005)	.013* (.007)
<i>CSR** x Post Crisis x Low-Trust</i>	-.004 (.004)	.011* (.007)
<i>CSR** x Brexit x High-Trust</i>	.004 (.005)	.020*** (.007)
<i>CSR** x Brexit x Low-Trust</i>	.002 (.004)	.017*** (.007)
Firm characteristics	Yes	Yes
Four-factor loadings	Yes	Yes
Time(monthly) fixed effects	Yes	Yes
Adj. $R^2$	.294	.074
Observations	40188	40188

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$



Panel B: CSR**, Raw and Abnormal Returns PIIGS vs. non-PIIGS		
	(1)	(2)
	Raw Return	Abnormal Return
<i>CSR** x Credit Crisis x non-PIIGS</i>	.001 (.007)	.014** (.006)
<i>CSR** x Credit Crisis x PIIGS</i>	-.006 (.008)	.003 (.006)
<i>CSR** x Fin. Crisis x non-PIIGS</i>	.011 (.011)	.030** (.012)
<i>CSR** x Fin. Crisis x PIIGS</i>	.021* (.012)	.039*** (.014)
<i>CSR** x Between Crises x non-PIIGS</i>	-.007 (.008)	-.005 (.009)
<i>CSR** x Between Crises x PIIGS</i>	-.030*** (.009)	-.021** (.010)
<i>CSR** x Euro Crisis x non-PIIGS</i>	-.000 (.005)	.009 (.006)
<i>CSR** x Euro Crisis x PIIGS</i>	-.011** (.005)	-.002 (.006)
<i>CSR** x Post Crisis x non-PIIGS</i>	-.004 (.004)	.006 (.006)
<i>CSR** x Post Crisis x PIIGS</i>	-.002 (.005)	.005 (.006)
<i>CSR** x Brexit x non-PIIGS</i>	.003 (.004)	.013** (.006)
<i>CSR** x Brexit x PIIGS</i>	.005 (.003)	.012** (.005)
Firm characteristics	Yes	Yes
Four-factor loadings	Yes	Yes
Time(monthly) fixed effects	Yes	Yes
Adj. $R^2$	.294	.075
Observations	40188	40188

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Panel B shows the differences between the effects of *CSR\*\** on raw and abnormal returns in non-PIIGS countries versus PIIGS countries. Contrary to previous findings we observe that *CSR\*\** has a negative effect on between-crisis raw and abnormal returns and Euro crisis raw returns for firms headquartered in PIIGS countries. In contrast, pre-crisis *CSR\*\** activities do generate value during the financial crisis and the Brexit period for firms with a headquarter in a PIIGS country. This may imply that there is a difference in investor preferences regarding CSR during the financial and Euro crisis, which may be due to the differences in nature of the crises. Since the financial crisis was accompanied by a worldwide shock to trust, whereas the scope of the trust shock during the Euro crisis was relatively small and especially apparent for the financial markets in PIIGS countries. Investors may be more inclined to invest in stocks of firms headquartered in countries where there was no or less of a shock to trust in the run up to and during the Euro crisis. Moreover, as shown in Table V, CSR activities may be associated with significant expenses, investors might relate firm-level social capital to significantly higher excess expenses which may be especially toxic for PIIGS countries in the run up to and during the Euro crisis. To conclude, pre-crisis CSR investments generate firm value during the financial crisis and the Brexit period, however this benefit comes at the cost of a decrease in firm value during the

between-crisis and Euro-crisis periods as investors were reluctant to invest in high CSR firms headquartered in PIIGS countries.

**Table VIII**  
**CSR categories, Raw and Abnormal Returns During and Around the Crises**

Panel A: Internal and External Stakeholder CSR		
	(1)	(2)
	Raw Return	Abnormal Return
<i>Int. Stakeholder CSR x Credit Crunch</i>	.010 (.007)	.012** (.005)
<i>Ext. Stakeholder CSR x Credit Crunch</i>	-.012 (.010)	-.002 (.007)
<i>Int. Stakeholder CSR x Financial Crisis</i>	-.006 (.010)	-.008 (.010)
<i>Ext. Stakeholder CSR x Financial Crisis</i>	.028* (.014)	.043*** (.016)
<i>Int. Stakeholder CSR x Between Crises</i>	.012* (.007)	.019** (.008)
<i>Ext. Stakeholder CSR x Between Crises</i>	-.024** (.009)	-.016 (.011)
<i>Int. Stakeholder CSR x Euro Crisis</i>	-.000 (.004)	.002 (.005)
<i>Ext. Stakeholder CSR x Euro Crisis</i>	-.006 (.006)	.006 (.008)
<i>Int. Stakeholder CSR x Post Crisis</i>	-.005* (.003)	-.003 (.005)
<i>Ext. Stakeholder CSR x Post Crisis</i>	.002 (.005)	.015* (.008)
<i>Int. Stakeholder CSR x Brexit</i>	-.002 (.003)	.000 (.004)
<i>Ext. Stakeholder CSR x Brexit</i>	.005 (.005)	.018** (.008)
Firm characteristics	Yes	Yes
Four-factor loadings	Yes	Yes
Time(monthly) fixed effects	Yes	Yes
Adj. R <sup>2</sup>	.294	.075
Observations	40188	40188

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

To further investigate the effect of CSR\* on crisis period stock returns, Table VIII shows the effect of the disaggregated CSR\* measures: *Internal Stakeholder CSR* and *External stakeholder CSR* and the individual CSR categories on stock returns. Overall it can be concluded that especially CSR activities focused on external stakeholders pay off in terms of abnormal stock returns and that this positive effect is most pronounced in, though not limited to, the financial crisis. As we see in Panel B, pre-crisis CSR investments focused on external stakeholders generate value during the financial crisis, the post-crisis and the Brexit period. Though the effect of *External Stakeholder CSR* on abnormal stock returns was greatest in economic significance during the financial crisis, investors preferences regarding external stakeholder CSR quickly changed as pre-crisis external stakeholder CSR has a negative effect on between-crisis raw returns. Following the Euro-crisis, during the post-crisis and Brexit period, investors regained a preference regarding CSR activities focused on external shareholders and started to value the trust that was generated by means of external stakeholder CSR activities investments again.

Panel B: Environmental, Social and Governance Score		
	(3)	(4)
	Raw Return	Abnormal Return
<i>Environmental x Credit Crunch</i>	-.006 (.009)	-.006 (.007)
<i>Social x Credit Crunch</i>	.006 (.009)	.020*** (.007)
<i>Corporate Governance x Credit Crunch</i>	-.005 (.009)	-.005 (.006)
<i>Environmental x Financial Crisis</i>	.007 (.013)	.013 (.016)
<i>Social x Financial Crisis</i>	.020 (.013)	.027* (.015)
<i>Corporate Governance x Financial Crisis</i>	-.009 (.011)	-.014 (.012)
<i>Environmental x Between Crises</i>	-.011 (.008)	-.014 (.009)
<i>Social x Between Crises</i>	.002 (.009)	.020** (.010)
<i>Corporate Governance x Between Crises</i>	-.004 (.008)	.003 (.009)
<i>Environmental x Euro Crisis</i>	-.004 (.005)	-.003 (.007)
<i>Social x Euro Crisis</i>	-.001 (.005)	.015* (.008)
<i>Corporate Governance x Euro Crisis</i>	-.007 (.005)	-.006 (.007)
<i>Environmental x Post Crisis</i>	.000 (.004)	.002 (.008)
<i>Social x Post Crisis</i>	-.005 (.005)	.010 (.008)
<i>Corporate Governance x Post Crisis</i>	.004 (.004)	.007 (.006)
<i>Environmental x Brexit</i>	.004 (.004)	.007 (.007)
<i>Social x Brexit</i>	.001 (.004)	.015** (.007)
<i>Corporate Governance x Brexit</i>	-.007* (.004)	-.004 (.006)
Firm characteristics	Yes	Yes
Four-factor loadings	Yes	Yes
Time(monthly) fixed effects	Yes	Yes
Adj. $R^2$	.293	.074
Observations	39900	39900

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

In line with predictions of existing literature and the significant positive effect of social score on raw and abnormal returns found in the baseline regression, the results of panel B show that social CSR investments pay off in terms of abnormal returns during all periods, with an exception of the post-crisis period. From these findings it may be concluded that investments in social CSR activities generate value, which is of particular value in, but not limited to, crisis periods. The economic significance of the effect of *Social Score* seems to be greatest during the financial crisis, followed by the periods surrounding the

financial crisis, nevertheless it also has an economic and statistically significant effect during the Euro-crisis and the Brexit.

### 6.3 Channels

This section explores whether CSR scores affect companies' operating performance during and surrounding the crisis period, more specifically from the third quarter of 2008 till December 2018. Four different measures of operating performance are used as dependent variables: *Operating Return on Assets*, *Gross Margin*, *Sales Growth* and *Sales per Employee (in €000's)*, the results of the regression models using *CSR\*\** can be found in Table IX.<sup>3</sup> In contrast to the results found by Lins et al. (2017) there is no positive significant effect to be found of *CSR\*\** on a firm's operating performance during and after the crisis period. Therefore, I remain inconclusive regarding the potential channels through which high social capital firms generate excess stock performance.

**Table IX**  
**Operating Performance, Employee Growth and CSR during and after the crises**

Operating performance and CSR** during and surrounding crisis periods			
	(1) Operating Return on Assets (%)	(2) Gross margin (%)	(3) Sales per Employee (in €000's)
<i>CSR** x Credit Crunch</i>	-.001 (.006)	.034 (.052)	-.096 (.343)
<i>CSR** x Financial Crisis</i>	-.007 (.008)	.034 (.052)	-.901 (.946)
<i>CSR** x Between Crises</i>	.005 (.005)	.098 (.073)	-.248 (.637)
<i>CSR** x Euro Crisis</i>	.002 (.005)	-.009 (.054)	-2.637 (2.687)
<i>CSR** x Post Crisis</i>	-.004 (.006)	-.019 (.063)	-1.088 (1.218)
<i>CSR** x Brexit</i>	-.005 (.007)	-.071 (.069)	-1.482 (1.260)
Firm fixed effects	Yes	Yes	Yes
Time (quarterly) fixed effects	Yes	Yes	Yes
Standard errors clustered by	Firm	Firm	Firm
Adj. $R^2$	.460	.658	.344
Observations	12228	11170	11979

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

<sup>3</sup> The results of the regression models using *CSR\** as independent variable show similar results.

## 7. Conclusion

The findings of this paper suggest that investments in firm-level social capital by means of pre-crisis CSR activities pay off for European firms during the credit crunch, the financial crisis, as well as, the post crisis period and the Brexit. Overall, *CSR\*\** is found to have an economically and statistically greater significant effect on raw and abnormal stock returns than *CSR\**, which may be due to the inclusion of governance categories in the *CSR\** measure, as governance has an (insignificant) negative effect on stock returns during most periods. In addition, it is noteworthy that CSR investments especially pay off in terms of abnormal returns. This implies that the excess returns generated by firms with high CSR scores are only partially expected by the market based on the available information.

Another interesting finding is that the positive effect of *CSR\*\** on abnormal financial crisis and Brexit returns, is greater for firms headquartered in PIIGS countries. This positive effect for high CSR firms in PIIGS countries comes at the cost of underperformance in terms of both raw and abnormal between crises period returns and lower Euro crisis raw returns. Furthermore, although the differences are small, pre-crisis CSR investments especially pay off for firms headquartered in high-trust countries compared to firms in low trust countries, which is in line with the findings of Lins et al. (2017).

In contrast to a-priori expectations, I do not find a positive effect of a firm's environmental and governance CSR activities on raw and abnormal returns for European firms during any of the periods examined. In contrast, investments in social CSR activities pay off in terms of market-adjusted returns in most periods, with an exception of the Euro crisis and post crisis periods. Investments in social CSR activities before the financial crisis seem to have the greatest payoff during the financial crisis, followed by the periods surrounding the crisis (the credit crunch and the between-crisis period). Moreover, *Social Score* is also positively related to abnormal stock returns during the Brexit. In general, it can thus be concluded that the positive effect of *Social Score* on abnormal stock returns is especially apparent when overall trust levels are low. The absence of a positive effect of *Social Score* during the Euro crisis and the post-crisis period may be explained by the significant costs associated with social CSR activities and a change in investors preference regarding these activities.

To conclude, in contrast to the findings of Lins et al (2017), this paper finds no evidence that pre-crisis CSR scores are associated with higher operating performance and I remain inconclusive regarding the channels through which the excess returns earned are by high-CSR firms.

Future research should further examine the customer and employee channel, as well as the investor channel by testing the effect of CSR on different operating performance and capital measures. If a positive effect of one of these measures is found, the baseline regression model (1) should be re-estimated using this specific measure as explanatory variable and raw and abnormal stock returns as dependent variable. This analysis may determine to what extent the cross-sectional variation in stock returns can be explained by their concurrent operating performance (Lins et al., 2017).

Additionally, further research should test the long-term effect of social capital on firm performance and the effect during other (crisis) periods, as I find evidence that the effect of firm-level

social capital is not unique to crises periods, which is in line with existing literature showing that CSR may generate long-term value (e.g. Edmans, 2011).

Another potential focus for future research is to investigate the impact of customer awareness on the effect of CSR on firm performance, as Servaes and Tamayo (2013) found that CSR has a positive effect on firm performance for firms with high customer awareness. Finally, future research should examine the effect of social capital and CSR on firm performance and firm value in other countries. Most research on the topic is focused on developed countries, in particular the United States. Examining the effect on countries worldwide and on the developing countries in particular would add to the inconclusive debate on social capital and CSR on firm performance.

A limitation of this research is that I use a firm's CSR activities to measure firm-level social capital. Further research should further investigate the relationship between CSR activities and firm-level social capital and examine which CSR activities are most effective in generating firm-level social capital. Second, different measures of social capital should be used to verify my findings. Besides using another firm-level social capital measure than CSR activities, the MSCI ESG Stats database or the Dow Jones Sustainability Index can be used as alternative CSR measures.

Moreover, several additional tests should be conducted to increase the robustness of the findings. First it should be checked if the decision to remove micro-cap firms from the sample affects the results. Second, it should be verified whether the findings are robust when CSR scores measured in 2006 and 2008 are used, to rule out that (i) managers anticipated the crisis and adjusted their CSR activities accordingly and (ii) that high CSR firms outperformed low CSR firms since their former CSR activities were actually negative NPV projects and firms were forced to trim these "overinvestments" during the crises. In addition, the exact amount spent on CSR activities, instead of the total amount of SG&A expenses, should be used to examine whether high CSR scores are accompanied with substantial costs.

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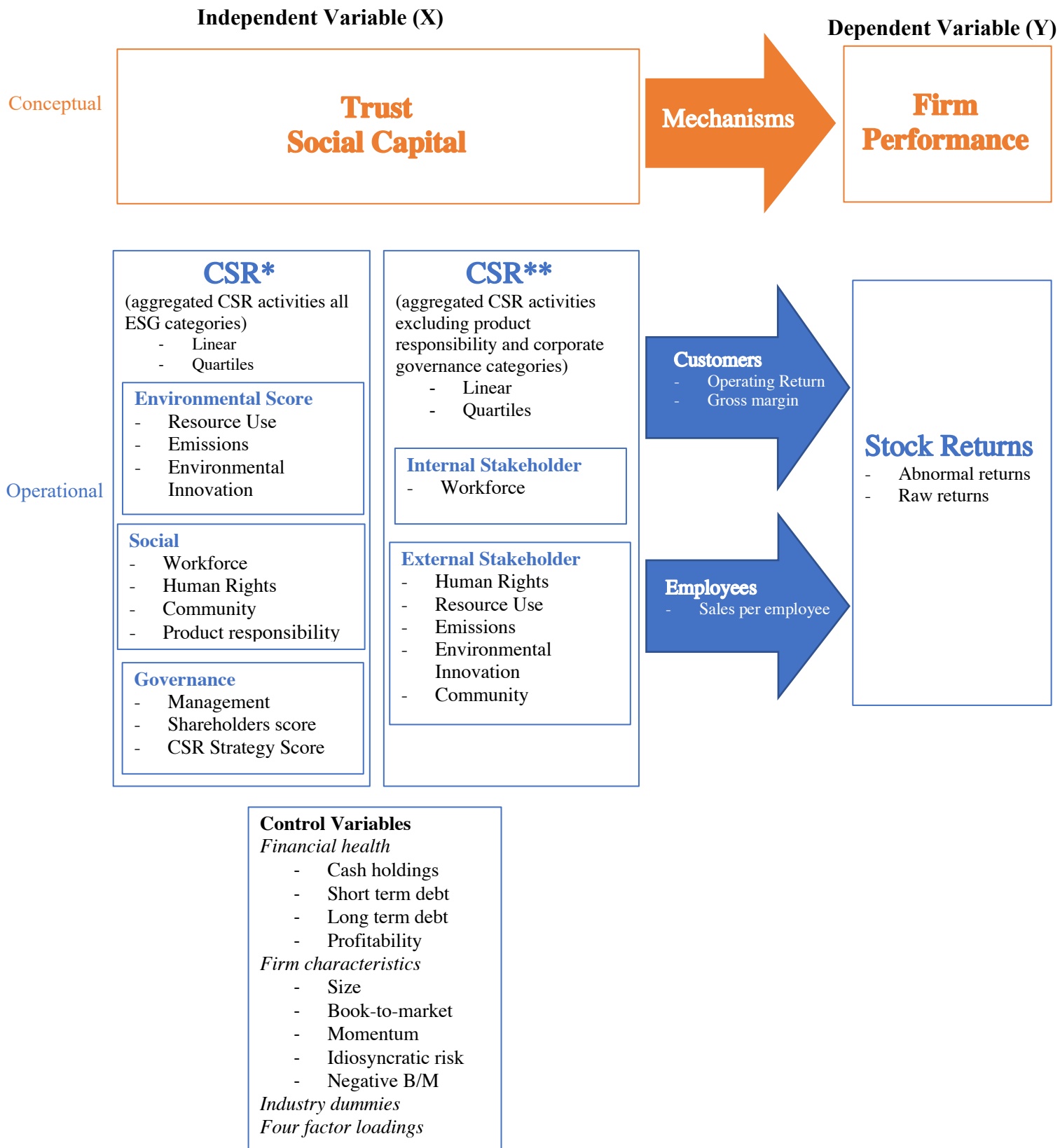
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# Appendix

## Appendix 1- Empirical Framework



## Appendix 2 - Description of variables

### Appendix 2.1- Description of CSR category scores

Category Title	Description
Resource Use Score	Resource use category 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.
Emissions Score	Emission category score measures a company's commitment and effectiveness towards reducing environmental emission in the production and operational processes.
Environmental Innovation Score	Environmental innovation category 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	Workforce category score measures a company's effectiveness towards job satisfaction, healthy and safe workplace, maintaining diversity and equal opportunities, and development opportunities for its workforce.
Human Rights Score	Human rights category score measures a company's effectiveness towards respecting the fundamental human rights conventions.
Community Score	Community category score measures the company's commitment towards being a good citizen, protecting public health and respecting business ethics.
Product Responsibility Score	Product responsibility category 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	Management category score measures a company's commitment and effectiveness towards following best practice corporate governance principles.
Shareholders Score	Shareholders category score measures a company's effectiveness towards equal treatment of shareholders and the use of anti-takeover devices.
CSR Strategy Score	CSR strategy category 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.

### Appendix 2.2- Description Corporate Governance categories

Category Title	Description
Poison Pill	Does the company have a poison pill (shareholder rights plan, macaroni defense, etc.)?
Staggered Board Structure	Does the company have a staggered board structure?
Supermajority or Qualified Majority Vote Requirements	Does the company have a supermajority vote requirement or qualified majority (for amendments of charters and bylaws or lock-in provisions)?
Golden Parachute	Does the company have a golden parachute or other restrictive clauses related to changes of control (compensation plan for accelerated pay-out)?
Board Size	The total number of board members at the end of the fiscal year.
CEO-Chairman Separation	Does the CEO simultaneously chair the board or has the chairman of the board been the CEO of the company?
Independent Board Members	Percentage of independent board members as reported by the company.

## Appendix 3 Category weights

### Appendix 3.1 - Adjusted category weights to calculate CSR\*\*

Pillar	Category	Indicators in Rating	Weights	Adjusted Weights	Pillar weights
<i>Environmental</i>	Resource Use	19	11%	17.6%	54.4%
	Emissions	22	12%	19.2%	
	Innovation	20	11%	17.6%	
<i>Social</i>	Workforce	29	16%	25.6%	45.6%
	Human rights	8	4.5%	7.2%	
	Community	14	8%	12.8%	
	Product responsibility	12	7%	0.0%	
<i>Governance</i>	Managers	34	19%	62.30%	CONTROL (100%)
	Shareholders	12	7%	22.95%	
	CSR Strategy	8	4.50%	14.75%	

### Appendix 3.2 - Category weights to construct Internal and External Stakeholder CSR\*\*

Pillar	Category	Weights	Total Weights
<i>Internal Stakeholder CSR</i>	Workforce	100%	100%
<i>External Stakeholder CSR</i>	Resource Use	23.66%	100%
	Emissions	25.81%	
	Environmental Innovation	23.66%	
	Human Rights	9.68%	
	Community	17.20%	

### Appendix 3.3 - Category weights used to calculate the pillar scores

Pillar	Category	Indicators in Rating	Weights	Weights to calculate pillar score
<i>Environmental</i>	Resource Use	19	11%	32.35%
	Emissions	22	12%	35.30%
	Innovation	20	11%	32.35%
<i>Social</i>	Workforce	29	16%	45.07%
	Human rights	8	4.5%	12.67%
	Community	14	8%	22.54%
	Product responsibility	12	7%	19.72%
<i>Governance</i>	Managers	34	19%	62.30%
	Shareholders	12	7%	22.95%
	CSR Strategy	8	4.50%	14.75%