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WHEN CSR MEETS THE STOCK MARKET: THE ROLE OF INVESTOR ATTENTION

Amal Aouadi

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THÈSE

WHEN CSR MEETS THE STOCK MARKET: THE ROLE OF INVESTOR ATTENTION

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L'université n'entend donner aucune approbation ni improbation aux opinions émises dans les thèses; ces opinions doivent être considérées comme propres à leurs auteurs.

« Je n'ai jamais rien créé en imagination. Cette faculté m'a toujours manqué. Je ne réussissais par un heureux hasard que lorsque je puisais dans la réalité, en utilisant les données dont je disposais. »

Nicolas Gogol, Confession d'un auteur

« La seule façon de défendre nos idées et nos principes est de les faire connaître. »

Wilfrid Laurier, Un discours de 1870

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Gandhi disait « *Chaque bonne réalisation, grande ou petite, connaît ses périodes de corvée et de triomphe; un début, un combat et une victoire* ». En effet, une thèse de doctorat est un vrai combat mais qui n'a pas du tout été mené en solo. Parce qu'il faut « *rendre à César ce qui est à César* » et pour tous les efforts qu'ils ont fournis et toute l'énergie positive qu'ils me communiquent, je remercie mes deux directeurs de recherche auxquels je souhaiterais exprimer ma plus haute gratitude. Un grand merci à Mohamed Arouri pour avoir été le premier à croire en moi et pour m'avoir transmis la passion pour la recherche. Sa bienveillance et son professionnalisme ont été exemplaires. Un merci aussi grand s'adresse à Sylvain Marsat pour ses idées, son enthousiasme et sa présence permanente et infaillible. À vous chers professeurs, sachez que sans vous rien n'aurait jamais été pareil. Vous avez été exemplaires tant sur le plan personnel que professionnel et j'ai vraiment de la chance d'avoir croisé votre chemin.

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ABSTRACT

This thesis consists of three empirical essays investigating the role of investor attention as a determinant of the relationship between corporate social performance (CSP) and financial performance. Our aim is to rethink the controversial literature on the financial implications of CSR activities by exploring a new premise – investor attention may shape the financial returns on corporate social impact. Since a growing stream of literature has highlighted the role of firm visibility (X. Luo et al. 2015) as well as stakeholder attention (Madsen and Rodgers 2015) to connect CSP to financial performance in addition to the complementary literature of investor attention and stock prices (Yuan 2015), we expect that controlling for firm-specific investor attention would provide novel insights to the literature on the potential financial effects of CSP.

A consistent strand of literature has provided interesting evidence of a strong relationship between the firm CSP and its stakeholders such as consumers (Casadesus-Masanell et al. 2009; Fosfuri et al. 2015), employees (Turban and Greening 1997), suppliers (Hillman and Keim 2001), investors (Mackey et al. 2007; Cheng et al. 2014), analysts (Ioannou and Serafeim 2015; X. Luo et al. 2015), activists and communities (Baron 2001; Baron and Diermeier 2007; Henisz et al. 2014), and regulators (Koh et al. 2014), with the benefits being stronger, the greater the attention to and salience of social activities among stakeholders (Lev et al. 2010; Flammer 2013; Servaes and Tamayo 2013; Madsen and Rodgers 2015; Aouadi and Marsat 2016). We complement and extend this literature by implementing a more granular analysis and particularly we focus on the relevance of investors' attention, a scarce and limited cognitive resource (Kahneman 1973).

Therefore, in the first essay, we conduct a multi-country event study and investigate the impact of environmental, social and governance (ESG) news headlines on the shareholder wealth. We find that investors do not value positive ESG news headlines but negatively react to negative ESG news headlines. This result is consistent with the idea that social responsibility and irresponsibility are not the two sides of the same coin. Furthermore, evidence reveals that shareholders only react to negative corporate governance related headlines. This suggests that investors may be especially prone to attend to corporate social responsibility (CSR) initiatives that directly impact their own interests as previously suggested by T. M. Jones et al. (2007). Most importantly, investor attention was found to shape the punishment and reward of CSP, after controlling for the additional role of firm's internal moderators such as firm size and advertising expenditure.

In the second essay, we study the influence of ESG controversies on the firm value as proxied by Tobin's Q. Corporate ESG controversies are news stories such as suspicious social behavior and product-harm scandals that place a firm under the media spotlight and, by extension, grab investors' attention. In an international context, we surprisingly find that the direct relationship between ESG controversies and Tobin's Q is significantly positive. However, the interaction

between ESG controversies and CSP score has removed this direct relation while evidence reveals that the interaction has a positive and significant impact on market value. Precisely, this result hold only to for high-attention firms, those firms which are larger, perform better, located in countries with greater press freedom, more searched on the Internet, more followed by analysts, and have received a CSR award. One possible explanation of this evidence is that increased exposure to an information improves positive evaluations of that information (Zajonc 1968), regardless of its nature and content (Turban and Greening 1997).

Finally, in the third essay, we investigate the non-linear relation between corporate responsibility (CR) awards and financial performance. First, OLS linear regression reports no significant association between CR awards and financial outcomes. However, panel threshold regression interestingly indicates that the impact of CR awards translates into financial benefits only since an optimal level of investor attention. Therefore, there is a non-linear relationship between CR awards and financial performance through investor attention. In particular, CR awards positively impact financial performance in high-attention regimes but are either negatively or insignificantly related to performance in low-attention regimes. This evidence particularly holds for social labels while environmental awards appear to be not enough relevant for investors, regardless the attention regime.

To sum up, our results provide new insights on the role of firm visibility through which firms may profit from greater exposure of their CSP and especially, through this research, we move beyond the merits of *doing good* part of the equation and rather study how investor attention may shape the financial returns on CSP. Furthermore, empirical findings are robust to different sample compositions, various proxies and estimation methods.

Keywords: *Investor attention, corporate social responsibility, financial performance, firm visibility, stakeholder theory.*

RÉSUMÉ

Cette thèse se compose de trois essais empiriques qui étudient le rôle de l'attention des investisseurs comme étant un déterminant de la relation entre la performance sociale de l'entreprise (CSP) et sa performance financière (CFP). Notre objectif étant de repenser la littérature controversée sur les répercussions financières des activités de l'entreprise en matière de RSE, nous émettons un nouveau postulat – l'attention des investisseurs joue un rôle important dans la relation entre la CSP et la CFP. En effet, en complément à l'attrait de l'attention des investisseurs sur les marchés financiers tel que suggéré par un bon nombre d'articles académiques (Yuan 2015), une littérature émergente mais conséquente a récemment souligné le rôle de la visibilité de l'entreprise (X. Luo et al. 2015) ainsi que celui de l'attention des différentes parties prenantes (Madsen and Rodgers 2015) comme étant des facteurs pertinents de la relation entre la CSP et la CFP. Par conséquent, nous jugeons utile de revisiter les retours sur investissements en matière de RSE, tout en intégrant l'effet de l'attention des investisseurs.

Un important courant de la littérature empirique sur la CSP témoigne d'une forte cohésion entre l'entreprise socialement responsable et ses différentes parties prenantes telles que les consommateurs (Casadesus-Masanell et al. 2009; Fosfuri et al. 2015), les employés (Turban and Greening 1997), les fournisseurs (Hillman and Keim 2001), les investisseurs (Mackey et al. 2007; Cheng et al. 2014), les analystes financiers (Ioannou and Serafeim 2015; X. Luo et al. 2015) ainsi que les militants et activistes (Baron 2001; Baron and Diermeier 2007; Henisz et al. 2014), cette cohésion étant encore plus forte, pour les entreprises bénéficiant d'une attention plus accrue de la part des différentes parties prenantes (Lev et al. 2010; Flammer 2013; Servaes and Tamayo 2013; Madsen and Rodgers 2015; Aouadi and Marsat 2016). Dans ce travail de recherche, nous poursuivons dans une telle logique et plus particulièrement, nous mettons en œuvre une analyse plus fine de ce constat, à savoir, nous évaluons le rôle de l'attention des investisseurs en matière, en tant que ressource cognitive rare et limitée (Kahneman 1973)., dans la relation CSP-CFP.

Par conséquent, dans un premier essai, nous menons une étude d'événements en utilisant un échantillon de plusieurs pays. En particulier, nous testons l'impact des gros titres de l'actualité portant sur les aspects environnementaux, sociaux et de gouvernance (ESG) sur les rendements boursiers. Nous constatons que les investisseurs ne valorisent pas les gros titres positifs de l'actualité ESG mais plutôt réagissent négativement à ceux à portée négative. Ce résultat est conforme à l'idée que la responsabilité et l'irresponsabilité sociale des entreprises ne représentent pas les deux faces d'une même médaille. En outre, les résultats empiriques révèlent que les investisseurs réagissent plus intensément aux gros titres de l'actualité négatifs relatifs à la gouvernance d'entreprise. Cela suggère que les investisseurs accordent plus d'importance aux aspects de RSE qui sont intimement liés à leurs propres intérêts tel que prouvé par T. M. Jones et al. (2007). Plus important encore, l'attention des investisseurs expliquerait en partie la réaction positive (négative) du marché aux gros titres de l'actualité ESG, et ce, même après avoir pris en

compte le rôle supplémentaire des modérateurs internes de l'entreprise tels que la taille de l'entreprise et les dépenses publicitaires.

Dans le second essai, nous étudions l'influence des controverses ESG sur la valeur de la firme telle que mesurée par le Q de Tobin. Par controverses, nous faisons référence aux informations divulguées par les médias relatifs à des faits mettant en doute la politique de l'entreprise en matière de RSE, ce qui a pour possible conséquences de favoriser une attention plus accrue de la part des investisseurs et des parties prenantes de manière générale. Contre toute attente, nous avons trouvé que la relation directe entre les controverses ESG, à connotation négative, et la valeur marché de l'entreprise est significativement positive. Toutefois, l'interaction entre les controverses ESG et le score de CSP vient annuler toute relation directe entre les controverses ESG et le Q de Tobin, tandis que celle-ci a un impact positif et significatif sur la valeur marché de l'entreprise. Plus précisément, un tel résultat n'est valable que pour les entreprises à forte attention, à savoir celles qui sont les plus grandes, les plus performantes, localisées dans des pays à forte liberté de presse, les plus recherchées sur internet, les plus suivies par les analystes et finalement celles ayant reçu un prix de responsabilité sociale.

Quant au troisième essai, nous abordons la littérature récente témoignant d'une relation non linéaire entre la CSP et la CFP et nous étudions particulièrement la relation entre les prix décernés à la firme en récompense à sa responsabilité sociale (RSE) et sa performance financière. Dans un premier lieu, la régression par la méthode des moindres carrés ordinaires (MCO) suggère qu'il n'y a aucune relation significative entre les prix de RSE et la performance financière. Dans un second lieu, la régression en panel à effet de seuil fournit des constats plus intéressants dans la mesure où les répercussions financières des prix de RSE sont devenues positives et significatives à partir d'un certain seuil de l'attention des investisseurs. Par conséquent, nous pouvons prétendre d'une relation non linéaire entre les prix de RSE et la performance financière grâce à l'attention des investisseurs. En particulier, les prix de RSE ont impact positif sur la performance financière de l'entreprise pour des régimes à forte attention des investisseurs alors que l'impact apparaît négatif ou non significatif lorsqu'on se situe dans les régimes à faible attention des investisseurs. Ces résultats concernent uniquement les récompenses en matière de performance sociale alors que les récompenses environnementales semblent ne pas être suffisamment attractives pour les investisseurs, et ce quel que soit le régime attentionnel.

En guise de résumé, nos résultats apportent de nouveaux éléments de preuve empiriques en ce qui concerne le rôle de la visibilité de l'entreprise qui profiterait à l'entreprise pouvant ainsi exhiber sa CSP aux différentes parties prenantes mais surtout, à travers ce travail de recherche, nous expliquons comment l'attention des investisseurs module les répercussions financières de la CSP. En outre, les résultats sont robustes pour à l'emploi de différents échantillons, différentes mesures et plusieurs méthodes d'estimation.

Mots clés : *Attention des investisseurs, performance social de l'entreprise, performance financière, visibilité de l'entreprise, théorie des parties prenantes.*

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LIST OF ABBREVIATIONS

CSR	<i>Corporate social responsibility</i>
CR	<i>Corporate responsibility</i>
CSI	<i>Corporate social irresponsibility</i>
CSP	<i>Corporate social performance</i>
CFP	<i>Corporate financial performance</i>
ESG	<i>Environment, social and governance</i>
GSV	<i>Google search volume</i>
RBV	<i>Resource-based view</i>
AGSV	<i>Abnormal Google search volume</i>
AR	<i>Abnormal returns</i>
CAR	<i>Cumulative abnormal returns</i>
CAAR	<i>Cumulative average abnormal returns</i>
OLS	<i>Ordinary least squares</i>
PTR	<i>Panel threshold regression</i>
2SLS	<i>Two-least squares</i>
Ln	<i>Natural logarithm</i>
Q	<i>Tobin's Q</i>
Adj_Q	<i>Industry-adjusted Tobin's Q</i>
ROE	<i>Return on equity</i>
Adj_ROE	<i>Industry-adjusted ROE</i>
ROA	<i>Return on assets</i>
OIA	<i>Operating income by assets</i>
Adj_OIA	<i>Industry-adjusted OIA</i>
OIS	<i>Operating income by sales</i>
Adj_OIS	<i>Industry-adjusted OIS</i>
PFI	<i>Press freedom index</i>

GENERAL INTRODUCTION

“The true scarce commodity is increasingly human attention”.
– Microsoft CEO Satya Nadella

GENERAL INTRODUCTION

Did you know that Google processes 3.5 billion searches per day? Or that Google stores 10 exabytes of digital data, the equivalent of 10 billion gigabytes? *Did you know that* the world produced 500 exabytes of data, which is more than 5 million times the information contained in all the books ever written? Or that 90 percent of this data has been created in the last two years alone?¹ *Imagine* you woke up one day and decided you no longer wanted to participate to the “*information age*” in some way ... how could you just drop out? You cannot, it is impossible. Pick your metaphor: we are buried, drowning and snowed under.

How long will this introduction hold your attention for? Not long, according to a study² by technology giant Microsoft Corporation. Particularly, the study claimed that human attention span went from 12 seconds on average in 2000 to just 8.25 seconds in 2015, which is a second shorter than a goldfish. Put simply, we have left the era of lack of resources to attend, to the abundance of resources and the lack of attention.

Attention, and its close relative consciousness, is one of the most studied attributes of the brain today. Thousands of psychological and social science studies have been conducted on how we “*pay attention*”. One remarkable pattern shows that most of the time, we merely do not. Therefore, the information age can, in another light, be called the distraction age. As Patrick Le Lay, former CEO of TF1 the main French private channel, said “*There are many ways to speak about TV, but in a business perspective, let’s be realistic: TF1’s job is to help Coca-Cola sell its products. What we sell to Coca-Cola is available human brain time.*” Indeed, in an era of “*infobesity*”, the new dilemma for corporations, broadcasters and content providers is a battle not just for viewership but for public’s time and attention.

Simon (1957) was early to note that information scales faster than attention of human decision makers who have to make decisions about which information to process. He further argues that “*What information consumes is rather obvious: it consumes the attention of its recipients*”. Today, we are producing far more information than we can possibly manage and process. Thanks to digital data; information has near-zero cost. In contrast, paying attention is

¹ <http://www.internetlivestats.com/google-search-statistics/>

² Microsoft surveyed 2,000 people and used electroencephalograms (EEGs) to monitor the brain activity of another 112 in the study, which sought to determine the impact that pocket-sized devices and the increased availability of digital media and information have had on our daily lives.
<http://www.nytimes.com/2016/01/22/opinion/the-eight-second-attention-span.html>

very costly and requires energy, of which we have a low supply (Corwin and Coughenour 2008; Sarter et al. 2006). That is, individuals have limited attention (Kahneman 1973; Rensink et al. 1997). The interaction between human limited attention and an ever-growing volume of information has non-trivial consequences on how people consume, process and spread information. Still, investigating this interaction is essential to understand how new information propagates and what new dilemmas are taxed to corporations. Representing a veritable minefield of distractions, the information age poses a central challenge to corporations whose mandate is to inform stakeholders. Attention becomes the new currency and gaining access to information is far from being the biggest challenge organizations are facing today. What if they see attention in the same way that they see air or water, as a valuable and scarce resource that they have to optimize?

Yet, despite the intuitive appeal of psychological evidence, among others, the question to what extent attention matters for the quality of decision making in financial markets has only recently become the subject of intense investigations. This may seem surprising as asset markets provide a natural setting for exploring consequences of decision makers' time and processing constraints. Market participants are constantly faced with an abundance of information signals, which moreover widely vary in strength and precision. However, time and resources are costly. Optimally allocating limited resources in this context is a complex and demanding task. It therefore seems reasonable to expect that attention allocation may potentially have far-reaching implications for many aspects of financial markets.

Evidence shows that investors are human in their analysis, as much as in their judgments as well as in their capacity to gather information. Since the market is not perfect and suffers from asymmetric information, certain pieces of valuable and relevant information will be noticed only by some investors (Merton 1987). In addition, in their evaluation process, investors will retain only a small set of public news, which has first grabbed their attention. Firm visibility will have a stronger impact with respect to discrete news. Indeed, when there are many alternatives such as the thousands of stocks available in financial markets, options that particularly catch attention are natural candidates. *"Preferences determine choices after attention has determined the choice set"* (Barber and Odean 2008).

An immediate but far-reaching consequence of this assumption is that informationally equivalent disclosures can have different effects on investor perceptions, depending on firm visibility. Limited attention has implications for non-equivalent disclosures as well. Thus, the

relevance of incorporating limited investor attention as a strategic asset in financial markets is heightened by the information explosion. The existence of attention constraints due to the imperfection of the human brain leaves room for testing its efficiency and its role in financial markets in a fair ground. If investors are not perfectly rational and constrained by limited attention span, a new piece of information may cause disarray in the market equilibrium.

Therefore, because investors cannot pay attention to all stocks or acquire and process all relevant information, greater investor attention (distraction) is more likely to move stock prices. Anecdotal evidence presented by Patterson and Martin (2010) perfectly illustrates pure investor attention effects in stock markets. The authors precisely assert that “*Investors took time out from trading to watch [Tiger] Woods apologize for his marital infidelity and repeated irresponsible behavior. New York Stock Exchange volume fell to about 1 million shares, the lowest level of the day at the time, in the minute Woods began a televised speech (...). Trading shot to about 6 million when the speech ended, the highest for any period except just after exchanges opened, data compiled by Bloomberg show*” (p. 1247).³ Recent empirical evidence further highlights the relevance of investor attention to the pricing of stocks, suggesting that attention (distraction) to firm-specific information and events is associated with positive (negative) capital market effects (Hirshleifer and Teoh 2003; Hirshleifer et al. 2009).

While the facts developed so far may be applied to various types of information related to firm initiatives, this thesis will particularly focus on investor attention to the corporate social performance (CSP) information. We conjecture that stock market participants determine a firm’s stock price and consequent market value and base their decisions on perceptions of past, current, and future financial performance (Orlitzky et al. 2003), as well as social performance (Boyle et al. 1997). Particularly, we extend and complement the attention literature by estimating the extent to which firm-specific investor attention to corporate social responsibility (CSR) issues matter for financial consequences of the firm’s social impact.

Over the last decades, a considerable attention has been paid to CSR. Accordingly, it has become a prominent concept (De Bakker et al. 2005; Dobers 2009; Nejati and Ghasemi 2012). In light of several theoretical concepts (Freeman 1984; Jensen and Meckling 1976; Wernerfelt 1984), companies have become more active in integrating CSR in their activities

³ The intuition behind this example is explored in more depth in a recent working paper by Peress and Schmidt (2014).

(McWilliams et al. 2006; Dahlsrud 2008). The driving force behind this is an upsurge in socially sensitive stakeholders who are demanding sustainable and more environmentally friendly products and services (Van Beurden and Gössling 2008), not a mere fad. Moreover, as noted by Lee (2008), a large majority of managers are today aware that CSR initiatives can significantly contribute to improving financial performance. Furthermore, given the growing relevance of social investing, the fund managers' quest for "*investment with a conscience*" and analysts' recommendations of CSP as an intangible and promising asset, we believe that CSP can be seen as a critical intangible asset, to which investors pay increasing attention.

While stakeholders may be especially prone to attend to CSR initiatives that directly impact their own interests (T. M. Jones et al. 2007), CSR in general nevertheless represent a key type of firm action that may provide stakeholders with information about a firm's priorities and intentions (Godfrey 2005). Attending to firm social activities in particular provides shareholders with valuable cues about a firm's use of power, and its relative "other-regarding" orientation (Agle et al. 1999; Godfrey 2005) and may particularly lead shareholders to a generalized inference of firm quality and benevolence (McWilliams and Siegel 2001). Furthermore, CSR seems to be related to reduced information asymmetry which allow for lower agency costs (Jensen and Meckling 1976). Indeed, a decrease in information asymmetry gives shareholders a clearer picture of the firm's actions, which may in turn increase their future expectations. These increased expectations may motivate managers to perform more CSP in order to address the pressures from stakeholders. For instance, Christensen et al. (2015) suggest that CSR information disseminated through financial reports can focus investor attention and highlight socially undesirable activities leading to feedback effects from the capital markets that can alter managers' behavior and have real effects.

Sustainability, corporate citizenship, CSR and other terms are generally used to describe a portfolio of socioeconomic activities, including environmental, social, and corporate governance initiatives of corporations (Gardberg and Fombrun 2006). Since social responsibility has a non-financial nature, the actual processing of information derived from CSR commitment in stock prices may be subject to psychological biases, eliciting divergent reactions among investors.

Much of the academic research to date, in its pursuit of insights into the psychological mechanisms and outcomes of CSR-driven stakeholder behaviors, has implicitly assumed CSR awareness (McWilliams and Siegel 2001; Godfrey et al. 2009). For instance, Du et al. (2010) argue the business returns to CSR depend on stakeholders' awareness of a company's CSR

activities. However, recent empirical studies revealed that awareness of a company's CSR activities among its external stakeholders (e.g. consumers) or even among its internal stakeholder (e.g. employees) is typically low, thus preventing the company's quest to reap strategic benefits from its CSR activities (Du et al. 2007; Sen et al. 2006; Chitra B Bhattacharya et al. 2008). Moreover, lack of stakeholder attention is a stumbling block for firms seeking to maximize their profits, to the very simple reason that investors, for example, tend to invest only in firms they recognize (Merton 1987) and more familiar firms are more likely to attract prospective employees (Turban and Keon 1993).⁴

Godfrey et al. (2009) stated that corporate social responsibility (CSR hereafter) “*must be public knowledge*” in order to be rewarded by stakeholders. In other words, stakeholders may reward firms for their social responsibility, but only to the extent that those stakeholders become aware of the firm CSR activities. Further, Chiu and Sharfman (2009) argued that the different legitimacy requirements and corporate social performance (CSP hereafter) expectations firms face emanate in part from the degree of attention they attract from society. In particular, they found that the relationship between CSR initiatives and outcomes was stronger in industries that were more visible to stakeholders.

Apart from Madsen and Rodgers (2015), despite the importance of the assumption that stakeholders must pay attention to firm CSR in order for CSP to translate in financial performance, neither the current CSR literature nor the stakeholder theory (Freeman 1984) literature has yet explicitly taken into account this assumption. In the present thesis, as an extension to recent studies on information, attention, and decision making in financial markets (Peng 2005; Da et al. 2011; Hou et al. 2009), we discuss how investor attention can provide insights on the never ending debate about the financial returns on CSR investments. We capitalize our analysis on stakeholder attention theory of Madsen and Rodgers (2015) — where the degree of attention that stakeholders pay to a firm's CSR initiatives may crucially shape the relation between CSR and corporate financial performance (CFP hereafter). As an extension, the main research question for which we pay full attention is as follows:

How does the degree of attention that investors pay to a firm's CSR initiatives shape their decisions to reward or punish that firm for its social impact?

⁴Turban and Keon (1993) find that familiar firms are those firms which are larger, are in the newspapers more frequently, advertise more, and tend to have better community relations, treatment of women and minorities, product quality, and employee relations.

This research question moves beyond the initial question of whether CSP translates into CFP to understand *how* investor attention may shape this relation. Our research objectives are twofold. First, we challenge the literature on the CSP-CFP relation and provide novel insights to the existing empirical studies and theoretical background. Second, we examine whether investor attention helps explain the financial returns on CSP as evidenced in prior work (Servaes and Tamayo 2013; Freeman 1984).

Our background sits at the intersection of two literatures, namely CSR-financial outcomes literature and related studies on investor attention. With respect to the first stream of literature, possible relationships between CSR and financial performance are three. M. Friedman (1970) claimed a negative relation between sustainability and profits. Particularly, Barnett (2007) argued that while the costs of CSR commitment are immediate, the benefits are realized more slowly. Accordingly, CSR expenditure could reduce wages, profits and dividends causing a reduction in stock prices and increasing the difficulties in attracting capital.

In contrast, there is evidence that sustainable practices have to be seen as any other traditional business activity. Firms should ponder both the costs and the benefits as meticulously as for any other financial decision they take. It is emerging the idea that the ultimate value of shareholders is strictly linked to “*maximizing the sum of various stakeholder surpluses*” to attain a long term survival (Becchetti et al. 2012). Hence, the idea of “*doing well, doing good*” makes perfect sense. According to Dula (2009), CSR is a mean to create goodwill and establish a good reputation and a competitive advantage, which might promote a strategy of differentiation from competitors, leading to higher sales, in support of the belief that high quality intangible assets can lead to a superior performance. In addition, CSR disclosure acts as a powerful insurance tool against reputational damages, able to hedge risk of adverse events (Minor and Morgan 2011), and reduces the risk for significant future expenditure resulting from social irresponsibility. CSR may also signal superior management practices, due to the manager's attention towards key stakeholders (D’Amato et al. 2009).

Much of the present research on the question concerning whether business ethics has a financial payoff refers to the views of M. Friedman (1970) or Freeman (1984). Between these two extremes, the hypothesis of no particular relationship between CSR and financial performance has found ground. Possible explanations for this lack of consensus rely on drawbacks related to measurement issues (Griffin and Mahon 1997), omission of important

determinants (McWilliams and Siegel 2000; Waddock and Graves 1997a), or a lack of individual level of analysis (Foss 2011). Moreover, the existence of a potential non-linear relationship could bring to misleading results (Barnett and Salomon 2012; Surroca et al. 2010).

Summarizing, theory indicates both positive and negative effects of CSR on shareholder wealth. Further, extant literature document a weak association between CSR and financial benefits, hence we approach this relationship as an empirical question. Clearly, a piece of the puzzle is missing and there are some limitations in the studies conducted so far. The question is whether there exists a point of convergence for all those different results and whether there is actually a mainstream position.

In this thesis, we rely on the investor attention literature and investigate whether the investor attention effect, in the short and long terms, follows the predictions of visibility theory (F. E. Bowen 2000) as well as the stakeholder attention theory (Madsen and Rodgers 2015). Understanding the role of investor attention is important given that prior research suggests that firm visibility is a key moderator of the CSP-CFP relation. Moreover, several scholars have called for the need to improve our understanding of the underlying mechanisms of the CSP-CFP relation (Aguilera et al. 2007; Aguinis et al. 2011; Margolis and Walsh 2003; Wood 2010).

Particularly, from our central thesis, we raise the following research questions:

Research Question 1: To what extent does investor attention matter in the relationship between ESG news headlines and stock returns?

Research Question 2: What effects do environmental, social and governance (ESG hereafter) controversies have on firm value after controlling for the firm visibility?

Research Question 3: Is there threshold effects of investor attention in the relationship between corporate responsibility (CR hereafter) awards and financial performance?

Stakeholder theory (Freeman 1984) suggests a positive relationship between CSR and CFP. The basic logic of this assumption is that stakeholders attend to firms' CSR activities, an assumption that has just been tested by Madsen and Rodgers (2015) but in a narrow setting. Madsen and Rodgers' (2015) paper was the first attempt to document that financial benefits from corporate disaster response efforts are generated financial only if the firm's stakeholders

attend to these activities and reward the firm for them. Stakeholder attention is, in turn, driven by the legitimacy, urgency, and enactment of disaster relief CSR. This study is limited in a number of ways. First, the theory developed in this paper apply only to one type of CSR—disaster relief CSR— but may apply for other forms of CSR. Second, the authors focus on the attention of stakeholder in general, regardless the heterogeneity of stakeholders' expectations and skills. Future work in a more granular and rigorous manner is required. Third, from a sampling standpoint, this study was restricted to publicly traded companies listed on U.S.-based exchanges.

The fact that investor attention is dynamic but limited is remarkable. Through this evidence, we complement and extend the stakeholder attention theory of Madsen and Rodgers (2015) and move to shareholder attention hypothesis by exploring the financial consequences of CSP information while controlling for investor attention, an assumption that has yet to be examined. We test the resulting hypotheses on different international samples of publicly traded companies that engaged in different forms of CSR, concluding that by ignoring the role of investor attention, any potential relation between CSP and CFP falls apart.

Scholars have struggled for decades to establish causal links between CSR and CFP (Margolis and Walsh 2003; Orlitzky et al. 2003), especially in case of favorable CSR commitment. Through the empirical essays, we also moved beyond this classical question to *how* CSP influences CFP (Lev et al. 2010) and precisely focused on an individual level of analysis which has yet to be fully investigated (Aguinis and Glavas 2012). This does not mean that macro-level variables have to be excluded. Indeed, as Aguinis and Glavas (2012) said, "*it will be the integration of variables at different levels of analysis that has the greatest potential to move the CSR field forward*". Aguinis and Glavas (2012) also suggested that the use of theories that are targeted at more individual levels can help us to ascertain the underlying psychological processes (i.e., mediators), as well as contingencies (i.e., moderators) of CSR and its potential outcomes. Furthermore, from a methodological standpoint, although we believe that CSP rating agencies have improved the measurement of CSP, they not free from criticism (Waddock and Graves 1997a; Rowley and Berman 2000) because for example, scores are largely time-invariant. Therefore, we rather approach CSP through ESG news headlines, ESG controversies and CR awards respectively and argue that our empirical studies partially remedy the inconsistency of prior results.

Specifically, this research is divided in four chapters. The first chapter is a survey of prior theoretical and empirical literature on the controversial debate of the relation between CSR

and financial outcomes. Specifically, we have reviewed potential mechanisms that allow CSP to translate into CFP. Most importantly, we rely on studies claiming that firm visibility is a crucial factor to connect social impact to financial performance. Another argument of great appeal is the stakeholder attention theory recently as proposed by Madsen and Rodgers (2015) from which our research question draws its full legitimacy. Then, we have connected the literatures on attention, information, decision making and CSR to remake the CSP-CFP puzzle and highlight potential research hypotheses. Building on insights from chapter 2, despite all the advancements in assessing the returns on CSR investments, this debate remains unsettled and has yielded conflicting results. Thus, we conducted three empirical essays on the relation between CSP and financial performance and particularly provide new and unique evidence on the role of investor attention to shape this controversial empirical issue.

The second chapter conducted an event study and examines the role of investor attention as a probable determinant of the relationship between CSP and shareholder wealth over the short term. Relying on a 15-year sample of 2,012 environmental, social and governance (ESG hereafter) press articles about 197 firms from 24 countries, we find that shareholders react exclusively to negative ESG press headlines and especially those related to corporate governance performance. Thus, as stated by Starks (2009), in the short run, investors seem to care more about corporate governance than CSR. It is also likely that corporate governance issues may be relatively more prone to agency costs (Jensen and Meckling 1976) since they are more focused on shareholders. The event study methodology is appealing to the extent that it observes how stock market prices react to information related to CSP, and to see whether ESG news headlines are used by investors to evaluate a firm's value. Indeed, if investors expect that a firm's CSP has an impact on future cash flows or financial risk, new information about CSP must move stock prices. With respect to ESG news coverage, this paper's finding is broadly consistent with evidence in the literature regarding asymmetric responses to positive and negative news (McQueen et al. 1996; Skinner and Sloan 2002; Sagar P Kothari et al. 2005; Veronesi 1999). Most importantly, we posit that the value of CSP depends on abnormal investor attention, as proxied by daily internet searches. In particular, we argue that companies that attract greater levels of abnormal attention are punished (rewarded) more by shareholders in response to negative (positive) ESG news headlines. However, this effect is found to be reduced by internal factors such as firm size and company-controlled advertising expenditure. Thus, investor attention varies with the information content of the underlying event in addition to firm characteristics.

The aim of the third chapter is to investigate the relationship between ESG controversies and firm market value over the long run. Controversies are defined as corporate ESG news stories such as product-harm scandals that place a firm under the media spotlight and, by extension, grab investors' attention (Cai et al. 2012; Carroll 1979; Klein and Dawar 2004). This kind of news raises doubts about the firm's future prospects, constitutes a risk for firm reputation, and may have an impact on firm value. Using a unique dataset of more than 4,000 firms from 58 countries during 2002-2011, primary analysis surprisingly shows that ESG controversies are associated with greater firm value. Yet, this effect is cancelled by the interaction between the CSP score and ESG controversies which exhibits a highly and significant positive impact on firm value. Building on this evidence, sample splits analysis with respect to levels of investor attention indicates that higher CSP score has an impact on market value only for high-attention firms, those firms which are larger, perform better, located in countries with greater press freedom, more searched on the Internet, more followed by analysts and have received a CSR award. Firm visibility is of great importance for investor attention, since attention is very limited by nature. The value of CSP is thus associated with factors related to firm visibility, such as firm size, analyst following and CSR reputation because they may attract investor attention. One possible explanation of this evidence is that increased exposure to an object increases positive evaluations of that object (Zajonc 1968), which suggests that investors tend to rate more positively what they've been exposed to frequently, regardless of the nature of that information (Turban and Greening 1997). This paper's findings find further support from Turban and Greening (1997) which indicate that firms that are more familiar to potential applicants are larger; had more media exposure, greater advertising expenditure, more positive CSP, and more positive ratings for reputation and attractiveness as employers.

The final chapter was built on suspicions about the oversimplification of the cumulative evidence to expect CSR to produce systematic positive—or negative—economic outcomes regardless of mitigating circumstances. Rather, the relationship between CSR and financial outcomes may be non-linear, variable, and highly complex (Barnett 2007; Barnett and Salomon 2006; Hillman and Keim 2001; Porter and Kramer 2006; Vogel 2005). In this essay, we examine the non-linear link between CSP and CFP, yet under an international context. We particularly highlight the relevance of investor attention to shape this relationship. The objective to test the role of investor attention here is twofold. First, we investigate the basic role of investor attention to connect CR awards to financial performance. Second, we further test for threshold effects in investors' attention. Specifically, using a balanced panel of 879

firms from 25 countries from 2005 to 2014, OLS regression first suggested that there is no relationship between CR awards and Tobin's Q, even after controlling for investor attention. We then go beyond this result and implement a panel-threshold regression (PTR) analysis to check whether there exists an optimal investor attention level which may result in threshold effect and asymmetrical responses of the financial performance to CR awards. Interestingly, empirical results show that returns on CR awards are either not significant or negative below the threshold and then become significantly positive above the threshold. In a more granular analysis, social labels are found to be valued by investors above a particular threshold, while environmental awards are not significantly related to financial performance, regardless the investors' attention regime. To sum up, this study indicate that CR awards enhance financial performance indirectly through improved firm visibility, but only from a point at which investor attention is optimal.

Accordingly, our findings would first constitute a counter-point to a long-standing contention that corporate pro-social behavior reduces both corporate and societal welfare (Friedman, 1970). Particularly, our results suggest that corporate social performance may, in fact, be "*good business*" (Soloman and Hansen 1985), however after accounting for investor attention. Furthermore, these results are important for both managers who seek to understand the consequences of their socially responsible and irresponsible activities, as well as for academics who focus on social irresponsibility and argue that perceptions of social irresponsibility are likely to generate strong investor reaction, often looming larger for the firm than perceptions of social responsibility (Lange and Washburn 2012; Muller and Kräussl 2011; Pfarrer et al. 2010; Hawn et al. 2014). We also provide novel insights to the literature on investor attention, information and decision-making.

Finally, here is a little challenge that might prove useful: as you read this introduction, how many times were you distracted or tempted to switch to another task? How many times did you think of something you wanted to do, or check your email or other favorite distractions? How many times did you want to switch, but resisted? How many different things made a noise or visual distraction while you were reading? How many people tried to get your attention? In a perfect world, the answers to all these questions would be "*zero*" — you would be able to read with no distractions, and completely focus on your task. Most of us, however, have distractions coming from all sides, and the answers to this little challenge will probably prove illuminating.

CHAPTER I

THE MARKET VALUE OF CSR: IS THERE A MISSING PIECE IN THE PUZZLE?

“The farther backward you can look, the farther forward you can see”

Winston Churchill

CHAPTER 1. THE MARKET VALUE OF CSR: IS THERE A MISSING PIECE IN THE PUZZLE?

Abstract

Given the contradictory results, it seems obvious that the question of whether CSP does really matter in financial markets is still an empirical issue. This chapter reviews the extant literature on the market value of CSR. Particularly, we identify the three main stream of this literature and then discuss the role of the internal and external monitoring mechanisms shaping this issue. Most importantly, we pay particular attention to the literature on the role of firm visibility to translate CSP into CFP. The latter opens the debate on the potential relevance of investor attention as a determinant of the CSP-CFP relation. Thus, in a second section, we highlight prior literature on attention, information and decision making in financial markets. Then, after properly defining attention and introducing its role in financial markets, we discuss in the final section the relevance of investor attention to shape the firm's social impact on financial performance. Finally, we conclude and paved the way to the complex and challenging research questions that we address all along the three essays of this thesis – how does investor attention translates CSP into market value.

Keywords: *CSR, stock markets, investor attention, information asymmetry, firm visibility.*

Résumé

Étant donné les résultats contradictoires, la question de savoir si la performance sociale est valorisée sur les marchés financiers n'est pas tranchée. Ce chapitre passe en revue la littérature existante sur la valeur marché de la RSE. En particulier, nous identifions trois courants de recherche principaux portant sur cette question et discutons du rôle des mécanismes internes et externes qui façonne la réaction des marchés financiers à la performance sociale. Plus important encore, nous accordons une attention particulière à la littérature sur le rôle de la visibilité de l'entreprise pour traduire la performance sociale en performance financièrement tangible. Ce dernier constat ouvre le débat sur la pertinence potentielle de l'attention de l'investisseur comme un déterminant de la relation entre la RSE et la performance financière. Ainsi, dans une deuxième partie, nous mettons en évidence la littérature antérieure sur l'attention, le traitement de l'information et la prise de décision sur les marchés financiers. Puis, après avoir correctement défini l'attention et présenté son rôle sur les marchés financiers, nous discutons dans la dernière section la pertinence de l'attention des investisseurs à façonner l'impact social de l'entreprise sur ses résultats financiers. Enfin, nous concluons et ouvrons la voie à la question de recherche complexe et stimulante que nous abordons tout au long des trois essais de cette thèse – comment l'attention investisseur transforme la performance sociale de l'entreprise en performance financière.

***Mots clés :** RSE, marchés financiers, attention des investisseurs, asymétrie d'information, visibilité de l'entreprise.*

1.1. Introduction

CSR is not a new debate, nor is it a fad (Wu 2006). Indeed, it is a very old concept that became more popular in the 20th century. In moral philosophy, one of the oldest and important questions is whether it pays off to be a good person (Flew 1973; Gössling 2003). Still, there is no consensus on what exactly should be considered as socially responsible (Frederick 1994; Griffin 2000; Scherer and Palazzo 2007; Wood 2010). Does CSR really pay off and, particularly, how does it pay off remain problematic to consider.

The modern debate on corporate social responsibility (CSR) dates back to 1953 when H. R. Bowen (1953) published his seminal book entitled “*Social responsibilities of the business man*”. He defined social responsibility as “*the obligation to follow those policies, to make those decisions, or to undertake those actions which are expedient in terms of the objectives and values of society*” (Carroll 1999; Balabanis et al. 1998; Garriga and Melé 2004). Bowen's (1953) interpretation launches the debate on a substantial concept, being the prompt for the evolution of the philosophy. The word “*social*” can address a variety of issues, including but not limited to community development, environment protection, labor standards instauration, or stakeholder orientation (Hawn and Ioannou 2016; Margolis and Walsh 2003; Howard-Grenville and Hoffman 2003). For example, Putnam (1993) views social capital as “*The propensity of people in a society to cooperate to produce socially efficient outcomes*”. However, the term “*responsibility*” is a moral obligation which implies a normative assessment and is more likely defined as the state or fact of being accountable or to blame for something.

In this thesis, since the focus is not on the debate of what is (or not) the responsibility of corporations, we moved away this issue and adopt the seminal and possibly the most commonly cited definition⁵ proposed by Carroll (1979) which is as follows: “*The social responsibility of business encompasses the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time*”. Carroll's (1979) definition is a good conceptualization of CSR because it identifies the firm's obligations to society and clearly differentiates the firms' responsibilities from financial targets and especially from the governments' liabilities (F.-Y. Chen et al. 2012; Lozano 2008; Wood 2010). Thus, the concept of CSR can be simply defined as the firm's commitment in those “*actions that appear to further some social good, beyond the interests of the firm and that*

⁵ See, for example, Galbreath and Shum (2012), Sheth and Babiak (2010) and Shum and Yam (2011).

which is required by law" (McWilliams and Siegel 2001). It is also necessary to clarify our working definition of corporate social performance. Following McWilliams and Siegel (2000) and Wood (1991), we define CSP as a firm's actions in the promotion and configuration of social responsibility processes, policies, programs, and observable outcomes that are beyond the immediate interests of the firm and beyond that which is required by law. Key to this definition is that CSP is about both values as well as outcomes, that is, the firm's greenwashing is not sufficient—rather the “*bottom line*” is its social performance, including action areas such as diversity programs, corporate philanthropy, and community engagement. Even after decades of research on CSR, studies do not agree on a precise and definitive position about CSR and potential outcomes. Specifically, the relation between CSP and financial performance has been widely studied; but the first impression we have from this literature is that there are mixed results. More interestingly, a new trend in literature attempts to understand what may shape the CSR premium which implies that the question of how CSR pays off is still an open debate.

This thesis articulates investor attention as a missing and complementary force in the CSP-shareholder wealth relationship. Aiming to respond to the calls of prior studies to taking into account more monitoring mechanisms on the CSP-CFP relation (M. Friedman 1970; Hull and Rothenberg 2008), this chapter shows that related studies on investor attention can provide novel insights into this issue. Indeed, while Madsen and Rodgers (2015) have only recently emphasized the role of stakeholder attention to connect CSP to financial performance, CSR literature has so far remained silent on the topic. This is surprising for two reasons. First, the growing consensus is that the relationship of CSP with shareholder wealth is contingent on key stakeholders of firms. Nonetheless, the role of shareholders remains overlooked in the CSR literature. Second, recent financial research has highlighted the relevance of investor attention in leveraging stock market activity (Aouadi et al. 2013; Da et al. 2011; Bank et al. 2011). Since firm visibility was found to play a crucial role in making the spotlight on the firm's CSR efforts (Chiu and Sharfman 2009; Cordeiro and Tewari 2015; Mishra and Modi 2016), investor attention would further enhance this effect by reducing information asymmetry and thereby improving financial performance. To sum up, by guiding the pathways to investor attention literature, we complement the CSR literature in explaining shareholder wealth and empirically evaluating the shape of the attention effects and thus move the CSR field forward.

This chapter is organized as follows. Section 2 reviews the extant literature on the market value of CSR. Particularly, we identify the three main stream of this literature and then

discuss the role of the internal and external monitoring mechanisms shaping this issue. Most importantly, we pay particular attention to the literature on the role of firm visibility to translate CSP into CFP. The latter opens the debate on the potential relevance of investor attention as a determinant of the CSP-CFP relation. Thus, in the second section, we highlight prior literature on attention, information and decision making in financial markets. Then, after properly defining attention and introducing its role in financial markets, we discuss in the final section the relevance of investor attention to shape the firm's social impact on financial performance. Finally, we conclude and paved the way to the complex and tumultuous research question that we address all along the three essays of this thesis.

1.2. The market value of CSP: Do all the pieces fit?

In this section, we briefly outline the different theories mentioned by the CSR literature in order to properly discuss empirical studies on the relation between corporate social and financial performance. This question has been extensively studied and has interestingly yielded a number of stimulating and conflicting results (Margolis and Walsh 2003).

As previously evoked, the first impression a reader may have from the CSR literature is that there are three main competing assumptions regarding the potential impact of corporate social performance. Among the numerous studies examining the relationship, some found no relationship, others a negative relationship, still others a positive relationship, and some a mixed relationship. For example, an earlier strand of literature suggested that CSR activities, as a source of agency problems, imply higher costs, favor private benefits extraction and destroy value (Jiraporn and Chintrakarn 2013b; M. Friedman 1970; Servaes and Tamayo 2013; Wu 2006; B. H. Spicer 1978; Gollop and Roberts 1983; Simpson and Kohers 2002; J. B. Smith and Sims 1985). Another piece of evidence have challenged this literature and argued that CSR increases corporate legitimacy, induces reputational benefits, develops strategic resources and thus creates value and decreases idiosyncratic risk (T. M. Jones 1995; O. Hart 1995; Russo and Fouts 1997; Branco and Rodrigues 2006). Still, a third existing but limited literature reported no relationship at all between CSR and financial performance (Soana 2011; Seifert et al. 2003; Moore 2001). Later in this section, Table 1.1 aims to synthesize the theoretical background as well as the outcomes of empirical studies on the relation between CSP and financial performance. As can be noted through this Table, CSR-related theories differ on the direction and the sign of the empirical relation namely, positive, neutral, or negative.

1.2.1. When CSP costs

This line of thinking was firstly introduced by M. Friedman (1970) and other neoclassical economists. In particular, these theorists expect the relationship between CSP and financial performance to be negative and believe that firms that perform responsibly incur a competitive disadvantage (Aupperle et al. 1985) given that CSR is a resource-consuming task. As M. Friedman (1962) said, “*The business of business is business*”. Therefore, it was strongly argued that there are few potential benefits of socially responsible behavior while there are numerous costs induced. From a neoclassical view, the author advocates that CSR commitment leads to lower financial performance because financial resources are allocated to unproductive activities. Thus, high CSR firms may be less efficient than their peers. From an agency theory view (Jensen and Meckling 1976), CSR expenditures can be seen as a misuse of financial resources (McWilliams et al. 2006) inducing agency costs. In particular, the corporate initiatives that were the focus of Meznar et al. (1994) event study of firms announcing their divestment from South Africa and the event study of TIAA-CREF’s board diversity initiatives (Carleton et al. 1998) were both met with negative market reactions. Vance (1975) and Wright and Ferris (1997) similarly found a negative relation between CSR and investor returns.

In light of this evidence, Boyle et al. (1997) investigate the relation between shareholder perceptions of the effects of CSR on firm value and find a negative relationship. A more recent evidence was provided by Marsat and Williams (2013) who find that there is a negative relation between Innovest’s IVA ratings and the market value, in an international context.

1.2.2. When CSP does not matter

This stream of literature simply claims that there is no relationship, nor positive or negative, between social and financial performance (Aupperle et al. 1985; Abbott and Monsen 1979). In particular, proponents of this line of reasoning often argue that there are so many intervening variables between the two concepts that there is no reason to expect a relationship to exist, except possibly by mere chance. Furthermore, the measurement problems that have plagued CSP research may mask any linkage that exists.

McWilliams and Siegel (2000) provide evidence that there is no relationship between CSR and financial performance, after controlling for R&D expenditure. Similarly, Lenssen et al. (2005) investigate the profitability of socially responsible investment (SRI) strategies and find a positive but not significant relationship between corporate governance ratings and financial

performance. Seifert et al. (2004) also investigate the relationship between corporate philanthropy and profitability while controlling for ownership concentration, differentiation, and industry and no relationship exists. More recently, Cheung (2011) examines the reaction of American stock markets to similar announcements of index additions and deletions to the Dow Jones Sustainability World Index (DJSWI) from 2002 to 2008 and does not find evidence of any significant impact on the stock returns of U.S. firms that are included(excluded) in(from) the DJSWI. Focusing on the U.K. supermarket industry, Moore (2001) investigates the link between corporate social performance and financial performance and finds no significant relationship. The same evidence was provided in the U.K. by Balabanis et al. (1998).

1.2.3. When CSP pays-off

Evidence revealing a positive relation between CSR and financial performance has received the lion's share in the CSR literature (Orlitzky et al. 2003; Lioui and Sharma 2012; Oeyono et al. 2011; Melo and Garrido-Morgado 2012; Quazi and Richardson 2012; Tang et al. 2012). In contrast to S. Hamilton et al. (1993) and Kurtz and DiBartolomeo (2011), Statman and Glushkov (2009) and Kempf and Osthoff (2007) show that portfolios comprising firms with strong CSR policies perform better than portfolios consisting of weak CSR companies. Clacher and Hagendorff (2012) also observe a statistically significant increase in trading volume of firms included in a socially responsible index (SRI), which seems to confirm that investors positively react to positive CSR announcements. In addition, Consolandi et al. (2009) document that inclusion in (deletion from) the Dow Jones Sustainability Stoxx Index (DJSSI), a European SRI index, leads to a positive (negative) market reaction. In a related vein, it has been widely advocated that some forms of socially responsible behavior may enhance the current value of a firm's future cash flows and, thus, may be consistent with the wealth-maximizing interests of relevant stakeholders. For instance, CSR policies can enable corporations to avoid costly government-imposed fines (Belkaoui 1976; Bragdon Jr and Marlin 1972; Freedman and Stagliano 1991; Shane and Spicer 1983; B. H. Spicer 1978).

Regarding environmental performance, Dasgupta et al. (2001) analyze how emerging capital markets such as Argentina, Chile, Mexico, and the Philippines react to the announcement of environmental news and argue that these emerging capital markets reward firms with good news concerning their environmental impact, and penalize firms with bad news. Using the Investor Responsibility Research Center (IRRC) data, Dowell et al. (2000) investigate whether adhering to higher global environmental standards is associated with greater market

value and find that improved environmental performance is related to higher market value. Gillan et al. (2010) also show that environmental and governance scores are positively related to firm value as measured by Tobin's Q, a market based measure of corporate value. Otherwise, Carter et al. (2000) investigate the effect of environmental purchasing on firm performance and find a positive relation. Focusing on the U.S. stock market, Flammer (2013) report a positive (negative) stock market reaction to good (bad) environmental news between 1980 and 2009. In a similar vein, Judge and Douglas (1998) provide a positive relation between the level of integration of environmental issues into the strategic planning process and financial performance. Klassen and McLaughlin (1996) find a significant and positive association between strong environmental management and perceived future financial performance. In particular, there are positive abnormal stock returns following environmental awards. Focusing on emission reduction as a proxy of CSP, Hart and Ahuja (1996) show that firms with a higher level of emission reduction and pollution prevention have better firm performance through different industries. Interestingly, this effect holds only for firms with high emission levels. He et al. (2007) find a positive relationship between non-market strategy and financial performance. Kumar et al. (2002) study the consequences of favorable social behavior on stock market value during the apartheid regime and find a positive relationship. Finally, Ramchander et al. (2012) observe that the addition to the Domini Social 400 Index leads to an increase of a firm's stock prices, and that the deletion from this index causes a negative market response.

Elsewhere, viewed from stakeholder theory and RBV lenses, CSR is seen to financially benefit shareholders through its positive impact on firm stakeholders, i.e., investors, consumers, employees, media, partners and regulators. For example, studies show that consumers identify more readily with firms with a good record of social responsibility (Chitrabhan B Bhattacharya and Sen 2003; T. J. Brown and Dacin 1997). Evidence also indicates that consumers positively evaluate offerings of firms engaged in CSR (Berens et al. 2005; Gürhan-Canli and Batra 2004), and derive greater satisfaction from them (X. Luo and Bhattacharya 2006). In a similar vein, employer reputation of social fairness is known to improve front-line employee behavior (Korschun et al. 2014), which has positive consequences for customer service (Bitner 1990), and positions firms for faster recovery from negative events (Modi et al. 2015). In addition, CSR also potentially increases trust among channel members (Carter et al. 2000), enabling firms to work together with their partners towards long-term performance (Ganesan 1994). Actually, trust serves as an effective governance mechanism that can lower opportunistic behaviors in the value chain and reduce

performance variability of firms (Carter et al. 2000). Finally, it is expected that “*moral capital*” generated by CSR induces lower regulatory penalties following egregious actions by firms and can improve future cash flows of firms (Wiles et al. 2010). Together, these arguments indicate that CSR can elevate prospective cash flows level and reduce cash flows volatility, implying higher shareholder wealth.

1.2.4. Mixed evidence

Earlier literature has offered a multifaceted conceptualization of CSR, and has predominately considered just an overall measure of CSR. The few that offer a more granular operationalization of the construct focus on only one or two ESG pillars. For example, some have considered pro-environment and product-based efforts (Jayachandran et al. 2013), while others have investigated corporate governance (R. A. Johnson and Greening 1999). Although it seems interesting to parcel out the specific effect of each ESG pillar, the evidence appears to be more complex than when the focus is on an overall measure of CSR. For example, Jiao (2010) finds that high CSR firms have higher Tobin’s Q, a market-based measure of corporate value. However, while employee relations and environment scores seem to have a significant and positive effect on Tobin’s Q, community relations, diversity, and product characteristics have no relevant impact. Conversely, Jo and Harjoto (2011) observe that employee relations and products scores have a significantly positive impact on value, whereas environment and community relations scores do not have any impact on firm value. Using an event study in a French context, Cellier et al. (2011) show that the announcements of CSP ratings prompt an overall positive reaction in the stock market, regardless the ESG pillar, but that share prices react differently when focusing on each pillar. In particular, prices increase with good corporate governance practices or improvements in reputation, but decrease in case of environment and human resources matters and they are not affected by other factors. Thus, investors seem to penalize in advance practices that could generate excessive cost with respect to benefits.

Similarly, relying on the Fama and MacBeth (1973) approach, Brammer and Pavelin (2006) regress individual stock returns on CSR ratings as provided by the Ethical Investment Research Service (EIRIS) data. The authors find that there is a negative impact of the environment and the community scores on excess stock returns, but a positive impact of the employment score. In a related setting, Nelling and Webb (2009) revisit the “*virtuous circle*” between CSR and CSP using a fixed effects Granger causality approach. Over the period

1993-2000, there is no evidence that CSR as proxied by KLD scores affect financial performance, except for higher employee relations scores.

An extant literature has reported mixed evidence about the relation between CSP and financial performance⁶. Although by taking a narrower focus, these studies have provided many rich insights, this has also been one of the potentially limiting factors driving the divergent findings on the financial effects of CSR in extant literature (Margolis et al. 2009). An ideal framework would probably consider a comprehensive view of CSR, as well as parceling out the different effects of each ESG pillar, which would provide interesting insights into the boundary conditions for the role of internal and external monitoring factors shaping the potential benefits of CSR.

1.2.5. Evidence from meta-analyses

A meta-analysis is a form of research review which statistically aggregates the results of multiple individual studies (Orlitzky et al. 2003). For decades, meta-analyses was shown to provide a suitable solution when a particular field of research suffers from divergent outcomes and conflicting results such as the CSP-CFP relationship. In this section, we discuss some qualitative and quantitative meta-analyses about the CSP-CFP relationship.

Ullmann (1985) conducted a qualitative meta-analysis and investigated a number of studies regarding the relationship between *social disclosure and social performance* (of 7 studies, 4 studies found no correlation, 2 found a positive correlation, and 1 found a negative correlation), between *social performance and economic performance* (of 13 studies, 8 studies reported a positive correlation, 4 found no correlation, and 1 found a negative correlation), and between *social disclosure and economic performance* (of 11 studies, 7 reported a positive correlation, 1 found some, positive or negative, correlation, and 3 studies found no correlation), which clearly illustrates the inconclusiveness of prior studies. More recently, a seminal meta-analysis of Margolis and Walsh (2003) has identified 127 studies published between 1972 and 2002, including 109 studies where CSP is the dependent variable. Among these studies, 54 studies show a positive relationship, only 7 show a negative relationship, 28 find a non-significant relationship and 20 provide mixed evidence.

In addition to qualitative reviews, some quantitative reviews have been made about the CSP-CFP link. For instance, Orlitzky et al. (2003) aim to reduce the uncertainty about the

⁶ (Belkaoui and Karpik 1989; Cochran and Wood 1984; Hillman and Keim 2001; T. J. Brown and Dacin 1997; Graves and Waddock 1994; Bowman and Haire 1975; Gregory et al. 1997; Mallin et al. 1995; McGuire et al. 1990; Luther et al. 1992).

association between CSR and financial performance. A meta-analysis of 52 studies show that across studies, there is a positive correlation between CSP and CFP. It is also confirmed that the relationship between CSR and CFP is simultaneous and bidirectional. Moreover, firm reputation seems to be an important moderator of the connection between CSR and CFP. However, the authors point out that the measures of CSP or financial performance that have been used in studies moderate this positive relationship. For instance, they argue that accounting-based measures of financial performance are more correlated with CSP than market-based ones, and that reputational indexes are more correlated with financial performance than other measures of CSP. These findings are supported by Goll and Rasheed (2004) also providing a positive screening of the CSP–CFP link. Particularly, the research finds evidence for the fact that stakeholder mismatching, sampling error, and measurement error in previous studies can explain 15 to 100 percent of the cross-study variation in several fractions of the CSP-CFP relationship. Allouche and Laroche (2005) also provide a meta-analytic review of literature which extends and complements the work of Orlitzky et al. (2003) by using a larger international sample of 82 studies. The authors argue that, despite publication biases within the field, it is more likely that CSP has a positive impact on CFP. As a response to the inconsistent linkages among CSP, CFP and firm size resulting from prior studies, Wu (2006) conducted a meta-analysis of 121 studies, and find a positive CSP-CFP association. This result confirms the view that the costs of being socially responsible are low and that firms may even benefit from socially responsible actions. Furthermore, Wu (2006) do not find any visible effect of firm size on CSP or CFP. Investigating 251 studies from 1972–2007 about the relation between CSP and CFP, Margolis et al. (2009) find an overall positive association but yet weak. Only 2% of the studies under analysis report significant negative evidence. The authors suggest that future studies should be redirected to gain a better understanding of the motives for CSR and the mechanisms connecting prior CSP to subsequent CFP (Shen and Chang 2009; Garcia-Castro et al. 2010). This call has paved the way for a fast growing literature on the different internal and external monitoring mechanisms of the CSP-CFP relationship, as a response to conflicting results.

Table 1.1. Different theories to explain the CSP-CFP relation

Theory	Brief definition	Application to the CSP-CFP relation	Direction of causality			Sign			Theoretical framework	Empirical evidence
			CSP-->CFP	CFP-->CSP	CSP<-->CFP	Negative	Neutral	Positive		
<i>Stakeholder theory</i>	Managers should satisfy all stakeholders' implicit claims, instead of exclusively acting in the sole interest of shareholders. These stakeholders include workers, customers, suppliers, and community organizations.	Good management implies positive relationships with key stakeholders, which in turn improve CFP.	✓						Freeman (1984)	Peloza and Shang (2011) Agle et al. (1999) Hillman and Keim (2001) Madsen and Rodgers (2015)
<i>Slack resources theory</i>	Also known as the available funds hypothesis and states that the actual behavior of corporations depends on the resources available.	Better CFP results in a surplus of slack resources that provides firms with the financial ability to consider social issues.		✓					McGuire et al. (1988) Bourgeois and Singh (1983)	Waddock and Graves (1997a) Harrison and Coombs (2012) Barnea and Rubin (2010)
<i>Positive synergy theory</i>	Synergistic value creation arguments focus on exploiting opportunities that reconcile the differing stakeholder demands. Firms do this by 'connecting stakeholder interests, and creating pluralistic definitions of value for multiple stakeholders simultaneously'.	CFP and CRP are synergistic. CSP is both a predictor and a consequence of CFP, thereby forming which is called the "virtuous circle".			✓				Waddock and Graves (1997a)	Waddock and Stanwick et al. (1998) Orlitzky et al. (2003) Surroca et al. (2010)

Table 1.1. (Continued)

<i>Theory</i>	<i>Brief definition</i>	<i>Application to the CSP-CFP relation</i>	<i>Direction of causality</i>			<i>Sign</i>			<i>Theoretical framework</i>	<i>Empirical evidence</i>
			CSP-->CFP	CFP-->CSP	CSP-->CFP	Negative	Positive	Neutral		
<i>Supply and demand theory of the firm</i>	Firms produce at a profit-maximizing level, including the production of both core-products and social responsibility outputs.	The social outputs produced depend upon the unique demands for CSP that the firms experience. A supply and demand perspective on CSR implies that the firm's ideal level of CSR can be determined by cost-benefit analysis.					✓		<i>McWilliams and Siegel (2001)</i>	<i>Aupperle et al. (1985)</i> <i>McWilliams and Siegel (2000)</i>
<i>Agency theory</i> <i>/Managerial opportunism theory</i>	A separation of ownership and control leads to a divergence in the pursuit of managerial interests that are not in concurrence with owner interests.	Being socially responsible may incur costs and thereby reduce resources of the firm. Thus, engaging in CSP is symptomatic of an agency problem or a conflict between the interests of managers and shareholders. It may indicate self-serving behavior of managers, and thus, reduces shareholder wealth.	✓			✓			<i>Friedman (1970)</i> <i>Jensen and Meckling (1976)</i>	<i>Oh et al. (2016)</i> <i>Barnea and Rubin (2010)</i> <i>Harrison and Coombs (2012)</i> <i>Jiraporn and Chintrakarn (2013b)</i>
<i>Resource-based view (RBV) of the firm</i>	Differences in financial performance are mainly attributed to differences in a firm's endowment of resources and especially intangibles, which are valuable, rare, non-imitable and non-substitutable by competitors and can be sources of competitive advantage for organizations.	Investing in CSP may help the firm develop new competencies, resources and capabilities in areas such as human capital, corporate culture, and technology which should lead to shareholder wealth in the long run.	✓					✓	<i>Wernerfelt (1984)</i> <i>Barney (1991)</i>	<i>Russo and Harrison (2005)</i> <i>P. W. Roberts and Dowling (2002)</i> <i>Russo and Fouts (1997)</i> <i>Sharma and Vredenburg (1998)</i> <i>Aragon-Correa and Sharma (2003)</i>

1.2.6. The role of internal and external monitoring mechanisms of the CSP-CFP relation

So far, only few studies have investigated the role of intervening variables on the CSP-CFP relation which may explain the conflicting research outcomes of this issue (McWilliams and Siegel 2000).

Although the majority of CSR studies have posited CSP as an output of internal firm phenomena such as managerial values, CEO compensation, or board structure (Buchholtz et al. 1999; Deckop et al. 2006; Logsdon and Yuthas 1997; J. Wang and Coffey 1992), a growing stream of literature (Cox et al. 2004; Matten and Moon 2008; McWilliams and Siegel 2001; Rupp et al. 2006; Neubaum and Zahra 2006; Weaver et al. 1999) rather argue that CSP is as much a response to external pressures as it is to internal firm-specific characteristics (Aguilera et al. 2007; R. A. Johnson and Greening 1999; McWilliams and Siegel 2001; Rupp et al. 2006).

In this section, we shed light on studies proposing a number of effective external or internal monitoring mechanisms and particularly present a comprehensive (though not exhaustive) list of most typical current motives of CSP as well as moderators and mediators of the CSP-CFP relation at different levels of analysis. Later in this chapter, we also present an illustration in Figure 1.1 which defines predictors, outcomes, mediators, and moderators of the CSP-CFP relation at different levels of analysis. However, we will not describe in the text all of the studies summarized in the figure, to the extent that such conceptualization provides a fast and accessible way to locate sources addressing various types of relationships at different levels of analysis and lending further support for our main research question. Elsewhere, it is worth noting that Figure 1.1 is the result of a comprehensive (not exhaustive) literature review. Moreover, we particularly focus on empirical research closely related to firm visibility and CSR which, as will be explained later, is more likely closely related to the research gaps we address in this thesis.

1.2.6.1. Predictors of CSP

Scholars argue against prevailing theories that assume that self-interest is the main motivator of human behavior (Kahneman et al. 1986; Turillo et al. 2002). To test this theoretical proposition, literature has identified a number of predictors of CSP. Among prior studies, the determinants of CSP can be categorized by country-dependent factors such as regulatory and institutional mechanisms, laws, press freedom and national culture (A. Spicer et al. 2004; El Ghoul et al. 2016b; El Ghoul et al. 2016a; Ho et al. 2012), industry-dependent factors such as

intensity of competition (Strike et al. 2006), firm-specific factors such as firm size (Chih et al. 2010; Udayasankar 2008) and firm's prior financial performance (López et al. 2007), and multi-level normative motivations such as the sense of responsibility and duty (Bansal and Roth 2000), morals (Aguilera et al. 2007), and the sense of stewardship (Davis et al. 1997). Traditional governance mechanisms can also serve as a tool to drive CSR expenditure (Benson et al. 2011), which would therefore reduce agency costs by mitigating conflicts between managers and stakeholders, and thus increase the corporate value. Furthermore, firms are more likely to engage in CSR when their structures are more open to relationships with society. For example, R. A. Johnson and Greening (1999) found that corporate governance structures such as the greater board independence broadened the focus of the firm to go beyond the exclusive interest of shareholders (Harjoto and Jo 2011; Jo and Harjoto 2011, 2012).

According to Baron (2001) and Bénabou and Tirole (2010), possible motives of CSR engagement include, among others, greenwashing, strategic choices and altruism. Greenwashing is generally used when significantly efforts has been done to advertise being green, rather than spend resources on effective sound CSR practices (Lyon and Maxwell 2011; Frankental 2001). Scholtens and Dam (2007) and Dam et al. (2009) suggest that greenwashing-based motives of CSR has no effect on financial profits. Otherwise, the altruism motive posits that companies conduct CSR activities for self-interest (Baron 2001), thereby negatively affecting financial performance. In contrast, the strategic motivations would improve CFP through CSR engagement. Finally, another predictor of CSR engagement is a firm's instrumental motivation—the perception that CSR is good for business and likely to lead to increased competitiveness (Bansal and Roth 2000) and legitimacy (Sharma 2000; Bansal and Roth 2000) which may be intuitively beneficial for financial performance.

1.2.6.2. Mediators

Recently, an emerging but growing literature points to that CSR has a number of non-financial benefits such as improved competitive advantage (Greening and Turban 2000) and attractiveness (Graves and Waddock 1994). These outcomes give consistent support to the widespread view of CSR as a valuable resource (O. Hart 1995; Russo and Fouts 1997; Branco and Rodrigues 2006; Aragon-Correa and Sharma 2003) since it was found to improve management practices (Waddock and Graves 1997a), operational efficiencies (Sharma and Vredenburg 1998), product quality (Agle et al. 1999; R. A. Johnson and Greening 1999), and

perceived quality of management (Waddock and Graves 1997a). Taken together, CSR would improve financial performance through non-financial benefits.

As argued by S. L. Hart (1995) and tested by Sharma and Vredenburg (1998), some companies develop intangibles to enhance their environmental protection which highlight the mediating role of intangibles in the CSP-CFP relationship. Relying on a sample of 599 companies from 28 countries, Surroca et al. (2010) suggest that there is no direct relation between CSP and financial performance. However, this relation is found to be fully mediated by intangible resources including innovation, human resources, reputation, and organizational culture.

Typically, reputation building effect of CSR is receiving more attention in the literature (Freeman 1984; Harjoto and Jo 2011; Jo and Harjoto 2011, 2012; Harjoto and Jo 2015; Calton and Payne 2003; Makni et al. 2009). At the same time, consistent evidence reveals a strong relation between reputation and financial performance. For example, Cabral (2012) claim that a firm's performance depends on its reputation, and that reputation depends stochastically on the firm's efforts and strategies to maintain and improve it. Similarly, Helm (2007) claim that a company with a good reputation is perceived to be less risky than companies with similar financial performance but a weaker reputation. Accordingly, a notable effort that may help firms to establish, maintain and improve their long-term reputation is increasing CSR commitment (Varadarajan and Menon 1988; Peloza 2006). Firms could, for example, engage in sustainable relationships with charitable organizations for the purpose of enhancing corporate reputation (Madsen and Rodgers 2015; T. Wang and Bansal 2012). In a related vein, Robinson et al. (2011) report an asymmetric stronger response to inclusion on an SRI index in the US market (DJSI) than to a deletion from the index. In particular, there is an increase in value following a firm's addition which is more likely due to a gradual reassessment of the firm's value by investors. Through a multivariate regression analysis, the authors suggest that the value increase is due to reputational effects, as opposed to an effect due to the firm being added to a major stock index. The reputational benefits of CSR were also found to constitute insurance during crises (G. R. Dowling 2004). In particular, Schnietz and Epstein (2005) investigate the role of CSR reputation to test whether it has an insulating effect on an exogenous shock that is likely to harm a firm and find a positive relationship. However, when R&D expenditure was included as a control variable, the effect becomes weaker.

Corporate social performance may also have both internal and external strategic outcomes. Internal benefits refer to the acquisition of new resources such as employees' motivation and

loyalty (Branco and Rodrigues 2006) which in turn reduces turnover and absenteeism and enhances financial performance. Elsewhere, given that the firm's synergy with stakeholders is difficult to duplicate (Hillman and Keim 2001), CSR can also be seen as a part of firm's strategy which may provide external benefits such as customer loyalty (C. Fombrun et al. 2000) and cooperation with suppliers (C. Fombrun et al. 2000). Stakeholder-oriented strategies would thus reduce agency costs and conflicts between managers and stakeholders (Jo and Harjoto 2011, 2012) and improve firm's financial goals achievements (Berman et al. 1999). By extension, such purposes may have positive impact on financial performance as well.

1.2.6.3. Moderators

In addition to mediators of the CSP-CFP relation, scholars have also identified potential moderators of this relation including financial resources (R. A. Johnson and Greening 1999; Turban and Greening 1997; Brammer and Millington 2004; McGuire et al. 1988), slack resources (Graves and Waddock 1994; Bansal and Kandola 2003; Waddock and Graves 1997a), and lower debt levels (Graves and Waddock 1994; Waddock and Graves 1997a, 1997b).

From an organizational standpoint, an important moderator is firm size (Graves and Waddock 1994; Greening and Gray 1994; Godfrey et al. 2009; Waddock and Graves 1997b, 1997a; Sharma 2000; Buehler and Shetty 1974, 1976). In particular, as firm size increases, additional financial resources and firm visibility may strengthen the relation between CSR and potential outcomes. For example, Fry et al. (1982) find that as firms have a higher degree of public exposure, the relation between CSR commitment and outcomes is stronger. Firm size was also found to be positively related to the level of information disclosure in both developing and developed countries (Kahl and Belkaoui 1981; Cooke 1992, 1989; Ahmed and Courtis 1999; Wallace et al. 1994; Craig and Diga 1998). This positive association emanates from several reasons. First, the cost of information disclosure is greater for small firms (Owusu-Ansah 1998). Second, agency costs are higher for larger firms because shareholders are widespread and thus, disclosing more information reduces these costs (Watts and Zimmerman 1983). Third, due to competitive cost advantage, larger firms tend to disclose more information than smaller firms in their annual reports (M. Lang and Lundholm 1993).

A firm's legitimacy as reflected in its financial performance is also likely to serve as a moderator of investor reaction to CSR commitment. Favorable financial performance

provides companies with more slack resources which may be deployed to pursue environmental opportunities (Sharma 2000) in new green market segments or in green innovation labels, for example. Firms with higher levels of financial performance are also likely to have more reactive and trustworthy managers and a good performance would allow them making CSR initiatives, especially if they perceive these as being of strategic importance. In contrast, lack of resources (excess resources) may lead managers to assign lower priority to CSR issues (Henriques and Sadosky 1996). Finally, we argue that for more legitimate firms (i.e., those with superior financial performance), investors will be less likely to be worried about the agency costs associated with CSR expenditure. Harrison and Coombs (2012) show that stock ownership of CEOs moderates the positive relationship between available slack and community-based performance as measured by KLD scores for community involvement. That is, governance mechanisms that align the interest of managers and shareholders mitigate the extent to which managers would waste financial resources. In this way, Harrison and Coombs (2012) also suggest a complementary moderating role of board independence and investment fund ownership.

From an external point of view, literature proposed the firm's environment as a moderator of the relation between CSR and financial performance and specifically, found that superior CSP translates into higher CFP in an environment that is more dynamic and munificent (Goll and Rasheed 2004). In a similar vein, Flammer (2013) investigated the impact of institutional norms of CSR on the CSP-CFP relation and provided additional evidence that industry affiliation moderates this relation and precisely that, "*in industries with higher institutional norms of CSR ("clean" industries) stakeholders are more sensitive to companies' CSR efforts*", which finally translates into higher financial performance. Industry growth was also introduced as a moderator and particularly, the connection is stronger in higher growth industries (Russo and Fouts 1997). Otherwise, Krüger (2015) show that shareholder wealth implications of positive CSR news depend on the motivation of the management: there is a negative effect on stock prices if management is likely to receive private benefits from CSR adoption, but an opposite favorable effect if CSR policies are adopted to improve relations with stakeholders.

Jensen (2001) tries to reconcile stakeholder theory (Jensen and Meckling 1976) and the objective of maximizing shareholder wealth (M. Friedman 1970). It follows that firms must take stakeholder claims into account in order to maximize shareholder wealth. In a related vein, X. Luo and Bhattacharya (2006) investigate the link between CSR and firm market value and find that customer satisfaction plays a significant role in the relation between CSP

and CFP. Otherwise, A. Kacperczyk (2009) observes that the interaction between takeover protection and CSP has a significant positive effect on a firm's value. This result was attributed to the idea that a high CSR commitment allows managers to develop strategic resources, and thus enhance a firm's long-term market value. A more recent evidence proposes that marketing capability — the efficiency with which firms convert marketing resources into sales (Narasimhan et al. 2006) — can positively impact stakeholders' perceptions of the company, and in relation creates more revenue and reduces risk (Mishra and Modi 2016). However, the findings of Mishra and Modi (2016) depend upon specific types of CSR that were analyzed, where CSR that was found to have “*verifiable benefits to key firm stakeholders*” were capable of providing significant returns.

The list of intervening variables is not exhaustive, and new potential variables are continually being developed by literature. Also, it is worth noting that what is thought to be conventional varies across different firms, industries and countries and changes over time.

1.2.7. A matter of visibility?

The stakeholder theory perspective on CSR holds that CSR may benefit firms financially because various stakeholder groups may reward firms for their CSR efforts (Freeman 1984). Companies with higher visibility (e.g., greater media exposure, a large number of stakeholders, etc.) are particularly expected to be more sensitive to stakeholders' demands for CSP because they are under greater scrutiny in the range and quality of their corporate citizenship profiles (Chiu and Sharfman 2009). Visibility theory, defined based on the magnitude of different firm attributes such as size or advertising expenditure, is often employed to hypothesize that stakeholders will develop expectations of a firm's CSR strengths and concerns based on whether the firm is more or less visible (F. E. Bowen 2000).

A growing strand of literature explores this premise and suggests that stakeholder rewards to CSR should only be expected to accrue to the extent that the firm's CSP is visible to stakeholders. Indeed, some companies are more visible to stakeholders than others. Their degree of visibility depends, amongst others, on internal factors such as their size, the frequency of information disclosure and advertising expenditure as well as external pressures such as business press and analyst coverage. Furthermore, the CSR expectations likely would not be uniform across countries, across industries or across firms within industries because countries, firms and industries vary in the amount of attention they attract (Matten and Moon 2008; John Y Campbell et al. 1997).

In the following, we will discuss why and how the firm visibility shapes the relation between CSP and CFP. On the one hand, higher visibility signals to stakeholders that the firm has greater resources to devote to CSR expenditure (Chiu and Sharfman 2009; J. Dowling and Pfeffer 1975) resulting in strengths rather than concerns. Sharfman et al. (1988) and Chiu and Sharfman (2009) also suggest that the presence of greater slack resources allows the firm to make more discretionary investments which are often highly visible to stakeholders and media. Similarly, Easley and O'hara (2004) find that firms with lower costs of capital, and thereby probably greater slack resources, generally engage in more corporate disclosures. As discretionary resource spending levels increase, organizations are expected to fulfill their obligations to society by allocating greater resources to CSR, because stakeholders and society expect firms with higher resources to develop CSR strengths, which in turn enhance firm visibility (Easley and O'hara 2004).

Visible companies are more affected by social constraints and pressures than companies which are less visible to the public (Belkaoui and Karpik 1989; Brammer and Pavelin 2006; Holthausen and Leftwich 1983). Stakeholders (including pressure groups) are interested in these companies' activities and try to influence them. As can be seen, firm visibility may ensure its sustainability and highlight all its efforts, but at the same time it is a double edged sword since the expectations of stakeholders would be higher. In the following, we will further discuss this point by reviewing different studies introducing the role of firm visibility in the CSP-CFP relation. Furthermore, this literature is summarized by a selection of empirical papers on CSR, financial performance and firm visibility factors in a clear Table namely, Table 1.2 as reported in the end of this chapter.

1.2.7.1. Legitimacy pressure

Chiu and Sharfman (2009) propose that the different legitimacy requirements and CSP expectations firms face emanate in part from the degree of attention they attract from society. In particular, the authors show that managers are motivated to engage in socially responsible activities in response to societal expectations and legitimacy pressures that come from higher visibility. They also suggest that lower visibility demotivates managers to perform more socially responsible behaviors, because they are under less scrutiny by the firm's stakeholders and society, to be better corporate citizens. In other words, the lower the visibility and attention firms attract from society the lower the legitimacy pressures and expectations of stakeholders regarding CSR strengths.

Elsewhere, Madsen and Rodgers (2015) demonstrate that firm disaster relief CSR initiatives generate financial benefits to the extent that a firm's stakeholders attend to these activities and reward the firm for them. In particular, stakeholder attention to firm disaster relief efforts is driven by the legitimacy, urgency, and enactment of disaster relief CSR.

Similarly, J. Dowling and Pfeffer (1975) suggest that firms that are 'less in the public eye' are less likely to face legitimacy pressures from stakeholders to develop CSR strengths, than firms that are more visible. In addition, they suggest that organizations that are smaller, and those that receive fewer political and social benefits, tend to engage less in legitimate behavior. Consequently, if lower visibility firms do develop CSR strengths, the observed strengths deviate positively from stakeholders' lower expectations of strengths; hence, CSR strengths are expected to be associated with higher stock returns.

1.2.7.2. Firm size

Environmental management researchers (notably (Darnall et al. 2010)) have recently turned their attention to firm size as a potentially important moderator of the relationship between stakeholder pressures and the adoption of proactive environmental management. We believe that firm size will significantly moderate the impact of firm visibility on investor reaction.

Larger firms are more visible to the public and stakeholder. Bowen(2000, 2002) noted the potential of the greater visibility that large firms possess to trigger green organizational responses (Jiang and Bansal 2003). Larger firms by definition have larger impacts on the environment, *ceteris paribus*. Further, in the case of larger firms, given their presence in the public eye and presumably deeper pockets, they are more likely to be targeted by environmental NGO stakeholders who may utilize boycotts, protests, lawsuits, letter writing, and student mobilization campaigns) to significantly influence corporate environmental behavior (Baron and Diermeier 2007; Eesley and Lenox 2006; Doh and Guay 2006). In addition to NGOs, it is also likely that other stakeholders including customers, regulators, and investors are more aware of the environmental performance of larger firms given their greater visibility. Consequently, it is likely that larger firms may overcome their rigidity (A. A. King and Shaver 2001) to be more environmentally proactive especially in technical situations like eco-efficiency and pollution control initiatives (Sharma and Henriques 2005). Stakeholders are likely to ramp up their activism in cases where poor environmental performance is prominently disclosed by the media, as in the case of the Newsweek Green Rankings, as such disclosure provides stakeholders with more credibility for their actions and a stronger basis

for their demands. More importantly, the larger the firm, the more likely it is to experience activism in the face of disclosure of poor environmental performance. Larger firms make attractive targets, since changes are likely to be on a larger scale and also because they provide “examples” of activist power for smaller firms to consider. On the other hand, superior environmental performance rankings are likely to quiet stakeholder activism, resulting in less drain on the large firm’s resources on fighting this activism. Reasoning in this fashion, stockholders of larger firms are likely to react more positively to disclosure of superior environmental performance and to react less positively to disclosure of inferior environmental performance.

1.2.7.3. Stakeholder pressures

F. E. Bowen (2000) provides a useful review of the management and strategy literature on how environmental visibility can be employed to predict green organizational commitment because greater visibility exposes the firm to greater stakeholder pressures. Otherwise, Gamerschlag et al. (2011) found that CSR disclosure is positively associated with higher company visibility, a more dispersed shareholder ownership structure, and US cross-listing proxying for US stakeholders’ interest in the company.

Furthermore, the higher a firm’s standing among opinion leaders and visibility in the mass media, the greater its ability to attract as well as retain a high quality workforce at all levels. A high quality workforce is likely to be more knowledgeable about changes in the environment and skilled at formulating and implementing superior responses to these changes. An environmental development that is likely to be prominent in the assessment of firms with a superior quality workforce at all levels is the environmental sustainability imperative. They reason that the visibility of firms whose activities caused severe harm to the environment and their sensitivity will make them more responsive to pressure exerted by external constituencies.

Theoretically, S. Arora and Gangopadhyay (1995) conclude that in an environment of greater public access to information regarding the performance of firms on social dimensions, a key driving force behind voluntary over-compliance is the public image of the firm. Empirically, S. Arora and Cason (1995) report that larger firms, with more toxic emissions, are more likely to participate to voluntary over compliance with environmental regulations.

Furthermore, companies constantly in the media spotlight are especially susceptible to political actions, since they attract more attention from stakeholders than less visible companies (Deegan and Carroll 1993; Powell 1991). That is, they are potentially subject to

higher political or societal costs as a result of their exposed position in the public. Thus, highly visible companies are assumed to disclose more CSR-related information to reduce potential costs than less visible companies (Belkaoui and Karpik 1989). Firms that have higher media exposure (more news coverage) are under greater scrutiny concerning their corporate citizenship behaviors because of their higher visibility, which in turn helps reduce information asymmetry between stakeholders and managers (Brammer and Pavelin 2006). A decrease in information asymmetry gives stakeholders a clearer picture of the firm's actions, which may in turn increase stakeholders' future expectations. These increased expectations may motivate the firm's managers to perform more CSP in order to address the pressures from institutional actors and other important stakeholders.

After discussing different studies on the relation between CSR and CFP and potential drivers, mediators and moderators of such relation, we complement and extend this strand of research and propose investor attention as a relevant determinant of the CSP-CFP relation. Indeed, with consistent support from the role of firm visibility, we believe that there is satisfying evidence on the complementary role of investor attention. By centering on investor attention, we also add to the limited body of research on shareholder-related factors in the context of CSR and financial value. Extant research has singularly focused on shareholder proposals (Flammer 2015a), long-term institutional ownership (Neubaum and Zahra 2006) and stakeholder attention (Madsen and Rodgers 2015), overlooking investor attention. In the following, we will first define attention and discuss the relevance of investor attention as a determinant of asset pricing behavior. Then, we will remake the puzzle of the CSP-CFP relation after introducing investor attention in the literature review process.

1.3. Information, attention and decision making: A new piece to the puzzle?

Market participants are constantly faced with an abundance of information signals, which vary in strength and precision. However, time and resources are finite and costly. Therefore, paying attention to new information would be selective and limited. A direct implication of attention constraints is "*thinking through categories*" as suggested by Mullainathan (2002). The intuition behind this assumption is that cognitively overloaded investors might employ complexity reducing heuristics instead of focusing on individual firms. Therefore, they might exhibit a tendency to categorize stocks into broad classes, such as local, value or sin stocks. Processing information and making investment decisions subsequently shape asset prices and induce co-movements of stock returns.

1.3.1. Defining attention

Attention literally means taking notice of someone or something. However, it is a deep and multifaceted concept which is notoriously difficult to define. Therefore, before going further, it may be useful to itemize briefly at the outset some of the most widely used senses of the word “attention” in scientific as well as commonsense discourse. In ordinary language, attention, derived from the verb attending, refers to giving heed, a state of the whole organism or person. Attending can also be assimilated to a transient state in which a person’s awareness, purposeful thought and action can be coordinated and directed toward, or guided by, the object of attention. Typically, by attending to an object or information you can keep track of it over a period of time, process it and answer some questions about it, and finally to act intentionally on it. One of the most popular definitions of attention was proposed by James (1890) for who attention refers to “*the taking possession of the mind, in clear and vivid form, of one out of what may seem several simultaneously possible objects or trains of thoughts...It implies withdrawal from some things in order to deal effectively with others*”. Finally, there is broad agreement in the cognitive neuroscience of attention that it represents a term we use to address experimentally the set of brain mechanisms that deal with the selection of information. In other words, paying attention involves selecting some information for further processing and at the same time impeding other information from receiving further processing. Elsewhere, the attention-based view (ABV) of the firm, as introduced by Ocasio (1997) defines attention as the noticing, encoding, interpreting, and focusing of time and effort by organizational decision makers on both (1) issues: the available set of categories for making sense of the environment and (2) answers: the available set of action alternatives (Ocasio 1997).

It is worth highlighting, however, that limited attention per se is not a behavioral bias, as it merely reflects constraints in human information processing which are rooted in human being (Kahneman 1973; Hou et al. 2009). Nevertheless, attention constraints are likely to be related to or to interact with well-known biases. For example, Hirshleifer and Teoh (2003) conjectures that narrow framing — the tendency to buy and sell assets without considering total portfolio effect — is rooted in information processing constraints. While this issue is somewhat at the periphery of the scope of this thesis, some discussion is warranted in the following.

1.3.2. Attention-like biasing effects

The difficulty humans have in processing multiple sources of information or performing multiple tasks at the same time, first documented in the psychology literature (Pashler et al. 2001; Kahneman 1973), is widely recognized as a potentially important factor in financial markets (Gilbert et al. 2012; Hou et al. 2009; Mondria and Quintana-Domeque 2013; Peng 2005). Thus far, a strong body of psychological research shows the focal role that attention play in judgment, decision making and behavior. Such construals are also likely to influence responses to information, which can have different directions. Most importantly, attention can automatically activate some cognitive bias even those outside of conscious awareness.

Although we assume that attention is central in explaining the limited information processing capacity of individuals (Styles 2006), cognitive neuroscience has also demonstrated that it is not a unitary process but is best understood as a variety of interconnected processes operating in the neural networks of the brain (Posner and Rothbart 2007). Furthermore, since paying attention requires time and effort (Pashler et al. 2001), it should not be surprising that our brains use some cognitive shortcuts to facilitate information processing. Contrary to what predicts the traditional financial theory (Allais 1953; Walliser 1989), investors are not able to pay attention to all pieces of information available, even the most relevant ones. A number of cognitive biases would allow them to cope with the unprecedented amount of information.

1.3.2.1. The availability heuristic

A different line of thought suggests that cognitively overloaded investors may prefer habitats, i.e. prefer to trade only a specific subset of available securities, to reduce the complexity of investment decisions (Barberis and Shleifer 2003; Barberis et al. 2005). Today, individual investors have to cope with an unprecedented amount of information and must selectively allocate their attention between work, personal life and making investment decisions.

Accordingly, the manner in which attention would be allocated among stocks depends on the ease with which “*relevant instances come to mind*”. This is commonly known as the availability heuristic (Tversky and Kahneman 1973), which assumes that people tend to base their judgments on examples accessible or readily available in memory. If a stock belongs to the habitat of a number of investors, it is more likely to be traded than the stocks of other comparable firms (Loughran and Schultz 2005). Furthermore, widely available information tends to be more easily invoked and frequently used, thereby minimizing the cognitive effort required for its identification and processing (Tversky and Kahneman 1973). As a result,

actors are likely to allocate future attention to actors and events that are easily recalled. For example, Lawrence (2013) and Rennekamp (2012) find that investors react more strongly to more readable disclosures which use plain English. However, the unfamiliar also draws attention (Starbuck and Milliken 1988), for the very simple reason that so recent stimuli can also grab public attention because of their potential novelty.

1.3.2.2. The negativity bias

The tendency of bad being stronger than good reflects into almost every aspect of daily life. Indeed, an important strand of psychological literature provides evidence that negative events elicit more physiological, emotional and cognitive activity (S. E. Taylor 1991). The basic logic of the negativity bias follows Kanouse (1984) and Peeters (1971) and is explained by Beach and Strom (1989). Negativity is merely defined as giving greater weight to negative than positive information. Most importantly, Fiske (1980) suggests that negative information do not only receive disproportionate weight in humans' judgments, but also grab a greater share of their perceptual attention. These effects even occur independently of the extremity of the information, although extreme information would receive more attention and more weight. More recently, N. K. Smith et al. (2006) suggest that there are environments in which it is quite beneficial to preferentially attend to negative information. For instance, in an environment in which the consequences of negative events are more dire than those of positive events are beneficial (e.g., uncertainty, stress), it can be adaptive to over-attend to negative information. But why would investors choose to allocate more attention to negative events?

Negativity bias, as a general phenomenon, has been related to individual's decision-making as it relates to prospect theory, risk aversion and loss aversion (Kahneman and Tversky 1979). In particular, potential costs are found to be more heavily considered than potential gains, in line with the principle of negative potency (Rozin and Royzman 2001). If attention is a scarce resource, then it makes sense for loss-averse investors to expend relatively more attention in monitoring negative news, since negative events may be more likely to contain information regarding potential losses that may affect them.

1.3.2.3. The representativeness heuristic

When individuals make decisions under uncertainty, they often apply the representativeness heuristic, a tendency to make choices on the basis of the similarity between a particular case and the typical example (Tversky and Kahneman 1974). Put simply, it means people tend to

favor those examples which look like the standard case and neglect it when it looks inconsistent (Tversky and Kahneman 1973). Representativeness such as the extrapolation of trends is probably an indirect consequence of attention constraints and resulting biased information processing (Barberis et al. 1998). In particular, distracted investors might tend to make too easy judgments as they try to detect trends in ratios indicating the financial situation of the company. In simple terms, given attention constraints, investors sort easily available information (prominent examples) to attention and memory and thus overstate those confirming their views and minimizing the discordant information (conservatism bias).

1.3.2.4. Overconfidence

Literature on judgments under uncertainty provides another evidence that individuals tend to have excessive confidence in their judgments (Heath and Tversky 1991). Deaves et al. (2008) define overconfidence as the tendency of investor to overestimate its knowledge, ability and the accuracy of its set of information. Theoretical research on overconfidence has not taken into account limited investor attention; however, overconfidence could lead investor to overestimate their capabilities, to be less receptive to some relevant details and to engage in biased information processing. To the extent that investors do not sufficiently adjust for the fact that they are basing their decisions only on a subset of publicly-available information, trading volume might increase (H. Hong and Stein 2007). Particularly, this effect might be even more pronounced if attention constraints and behavioral biases such as overconfidence are present simultaneously (Hou et al. 2009; Daniel et al. 1998). Investors then might pay selective attention towards news that confirms their private information, whose precision might consequently be overestimated.

Finally, it is worth noting that the list of potential cognitive biases interacting with investor attention and discussed above is not exhaustive and we believe that there are other well-known behavioral biases (for example framing, anchoring, disposition effects and categorization bias) that may certainly arise from attention constraints and consequent biased information processing.

1.3.3. Investor attention constraints and biased information processing

A consistent evidence emerges from laboratory studies in psychology is that attention is a limited resource. Limited attention implies that the brain can process information only at some finite rate. Therefore, individuals can focus their attention on a particular stimuli only at

the expense of other stimuli from the surrounding environment (Broadbent 1953). As for example a survey by Pashler and Sutherland (1998) reveals, performance is typically challenged if individuals are requested to carry out several mental tasks at the same time. Taking into account attention span limits, organizational researchers increasingly recognize that choice under uncertainty involves two distinct actions; namely the selection of a subset of firms to focus attention on, and evaluation of the relative merits of their competing profiles (Hoffman and Ocasio 2001; Pollock and Rindova 2003; Rindova et al. 2005; Zuckerman 1999). Indeed, as Barber and Odean (2008) said “*preferences determine choices after attention has determined the choice set*”(Ocasio 1997; March and Simon 1958).

In addition to attention allocation, another cognitive task market investor would perform is evaluation, which requires drawing conclusions about often some unobservable attributes, such as product quality or social commitment (Connolly et al. 2000; Hsee et al. 1999). Evaluation would be based on interpreting signals provided by the firm itself as well as on readily available evaluations made by external sources such as rating providers (Rindova et al. 2005). If the stock is unfamiliar, uncertainty would be at higher levels but in contrast, the accuracy of the assessment at lower levels (Eagly and Chaiken 1993). As a result, investors may in general trust the assessments of external sources of information when deciding what to do (Benjamin and Podolny 1999), and their opinions are likely to be easily influenced by the recent evaluations provided by others (Einhorn and Hogarth 1981).

In financial markets, there is strong theoretical evidence that investor attention constraints can affect asset pricing statics and dynamics through biased information processing. For example, investors may be slow in incorporating publicly available information immediately into prices in case of information overload. Put simply, information will not be completely incorporated into asset prices until investors fully pay attention to it.

Furthermore, the investor recognition hypothesis as proposed by Merton (1987) postulates that uninformed investors are more likely to invest and trade in firms that are well-known or with which they are more familiar. Merton (1987) notes that individual investors tend to hold only a few different common stocks in their portfolios. He points out that gathering information on stocks requires resources and suggests that investors conserve these resources by actively following only a few stocks. If investors behave this way, they will buy and sell only those stocks that they actively follow. They will not impulsively buy stocks that they do not follow simply because those stocks happen to catch their attention. Thus their purchases will not be biased toward attention-grabbing stocks.

1.3.4. Quantifying investor attention

Asset markets provide a natural setting for exploring consequences of decision maker attention and processing constraints. However, contrary to laboratory experiments in psychological research, investor attention can hardly be measured directly, for the very reason that attention allocation in real financial markets is typically not observable. The problem was described by Barber and Odean (2008) as follows:

“How can we measure the extent to which a stock grabs investors’ attention? A direct measure would be to go back in time and, each day, question the hundreds of thousands of investors in our datasets as to which stocks they thought about that day. Since we cannot measure the daily attention paid to stocks directly, we do so indirectly..... While none of these measures is a perfect proxy for attention, all three are useful.”

Barber and Odean (2008) measured investor attention by abnormal trading volume, extreme previous day returns, and news announcements, respectively. Two of these proxies are already consequences of potential investor attention (i.e. changes in price and volume), which is not ideal if we aim to measure the same market reaction to investor attention. The third proxy, news announcements, focuses on information supply. However, as Da et al. (2011) said, *“a news article in the Wall Street Journal does not guarantee attention unless investors actually read it.”*

An important stream of literature addresses this issue by developing and testing empirically quite diverse proxies for limited investor attention which are directly inspired from firm characteristics such as firm size (Bamber 1987; Al-Tuwaijri et al. 2004), trading volume, market states (Hou et al. 2009; H. Hong et al. 2000), analyst coverage (H. Hong et al. 2000); Blankespoor et al. (2013) and advertising expenditure (Grullon et al. 2004; Lou 2014). Another strand of literature attempts to find a concise and tractable approach to isolate attention effect from other confounding factors and used other uncommon measures of attention (sometimes referred to as investor distraction) such as the presence of competing news events (DellaVigna and Pollet 2009; Hirshleifer et al. 2009), the ease with which earnings information may be processed (Engelberg 2008) and personal trading account data (Hartzmark 2014).

So far, we are still unable to *“question hundreds of thousands of investors”* about their thoughts, but we are able to access a cross section of what has been ‘Googled’ over the

previous twelve years. A novel sub-stream of literature initiated by Da et al. (2011) has proposed Google search volume of stock tickers as the first market-independent measure of investor attention which might do better in reflecting the psychological essence of attention (Da et al. 2011; Vozlyublennaiia 2014; Dimpfl and Jank 2016). In this context, anecdotal evidence provided by Ginsberg et al. (2009) in a letter to *Nature* indicates that the relative frequency for certain internet search engine queries (e.g. ‘flu symptoms’) is highly correlated with associated doctor visits. They were, thereby, able to estimate the current level of weekly influenza activity in regions of the USA, and hence forecast local outbreaks.

Certainly, Google search volume is not a perfect proxy and is more or less confounded by trading irrelevant motives and other heuristics. However, although all the aforementioned measures capture a certain amount of investor attention, they may be at different levels confounded with a firm’s fundamental or other relevant information, which is unobservable and difficult to be adjusted for explicitly. That is, most prior studies were not able to make explicit causal claims regarding the impact of investor attention because of the endogeneity of attention proxies.

Given that internet search activity was found to be highly correlated with prior proxies of attention while being determined out of the stock markets (Da et al. 2011) and that there is consistent evidence that it is a relevant predictor of information demand and in turn of financial outcomes (Da et al. 2011; Drake et al. 2012; Bank et al. 2011; Vlastakis and Markellos 2012; Dimpfl and Jank 2016), we assume that this proxy has far-reaching contributions to advancements in research on individual attention.

1.3.5. Attention constraints and financial markets

As can be seen from the psychological literature, attention is a scarce cognitive resource which requires time and effort. However, which market participants are likely to be concerned by attention constraints?

Naturally, one would assume that information processing constraints should be particularly challenging for retail investors. This conjecture finds further support in empirical literature. In particular, findings suggest that the attention-driven nature of retail investors’ behavior negatively affects their performance⁷. For example, an extant literature documents that retail investors are net buyers of attention grabbing stocks (Merton 1987; Barber and Odean 2008; Da et al. 2011; Engelberg and Parsons 2011; Lou 2014; Seasholes and Wu 2007).

⁷ Economic literature consistent support to the view that limited attention might adversely affect individuals’ welfare (Hossain and Morgan 2006; Chetty et al. 2009; Stango and Zinman 2014; DellaVigna 2009).

Still, as can be noted from psychological literature, limited attention is rooted in human cognitive resource constraints and limitations of attention capability are not restricted to a specific group of individuals. Drawing to financial markets, all market participants are more or less likely to experience some attention constraints and probably in varying degrees, including sophisticated financial professionals (Hirshleifer et al. 2004; Hirshleifer et al. 2009; Huang and Liu 2007). For example, Corwin and Coughenour (2008) find that time and processing constraints negatively affect the liquidity provision of market makers, in particular in overloaded moments. Similarly, M. Kacperczyk et al. (2011) argue that mutual fund managers exhibit limited attention. There is also consistent evidence that analysts fail to take value-relevant financial statement information into account (S. D. Campbell and Sharpe 2009; Hirshleifer and Teoh 2003).

The impact limited investor attention can have on aggregate stock-level trading volume is, to some extent, obvious: In their investment decision, investors can only consider stocks whose existence they are aware of (Merton 1987). Consequently, attention towards a certain firm is simply a necessary condition for trading its stock (Hou et al. 2009). Apart from this very basic relationship, several theories and empirical findings suggest more specific mechanisms for how the link between attention and trading volume might work. For instance, if (at least some) attention-constrained investors form their expectations on the basis of only a subset of publicly available information (H. Hong and Stein 1999), differences of opinion might become more pronounced. In a similar vein, attention-grabbing stocks might *ceteris paribus* be more likely to be heavily traded, as these stocks solve the search problem of which stock to invest in. When there are many alternatives such as the thousands of stocks available in financial markets, options that particularly catch attention are natural candidates. Moreover, there is convincing evidence that stale news, which however is broadcasted in an attention grabbing manner, leads to increased trading (Huberman and Regev 2001; Gilbert et al. 2012; Tetlock 2011). Finally, Grullon et al. (2004) and Chemmanur and Yan (2010) show that the stocks of firms with high advertising expenditures are, *ceteris paribus*, more heavily traded.

In addition, a large and growing body of literature documents that because attention is a scarce cognitive resource (Kahneman 1973), attention constraints of market participants would affect asset pricing. Studies on investor attention primarily focus on the role of limited investor attention in explaining the predictability of stock returns. This is most often studied indirectly through cognitive biases such as overreaction resulting from extrapolative expectations, overconfidence, and psychological anchoring, or underreaction due to

conservatism (Barberis et al. 1998; Hirshleifer et al. 2009; Hirshleifer et al. 2011; Li and Yu 2012; De Long et al. 1990; Daniel et al. 1998). However, a sub-stream of this literature tries to isolate attention from biases and investigates how investors allocate their attention at the level of cognitive processes, or the selective aspect of investor attention, in addition to rationality-based arguments of investor distraction (Sims 2003). Sims (2003) argues that the inability of economic agents to process all available information leads them to under-react to new information. Accordingly, attention is a necessary condition for overreaction. Investors can only overreact to information when they pay attention to the firm after becoming aware of that information.

Studies that focus on the investor as the decision-maker show that the speed of price adjustment (Peng 2005) and under-reaction to earnings announcements (Hirshleifer et al. 2009), profits and losses (Balakrishnan et al. 2010) and long term information (DellaVigna and Pollet 2009) can all be explained in models that incorporate investor attention constraints. Chakrabarty and Moulton (2012) examine a new channel – the attention constraints of a market maker – through which one firm's earnings announcement can affect the liquidity of other firms' stocks, even stocks without any industry link to the announcing firm. They identify a new channel – market makers' attention constraints – through which earnings announcements for one stock affect the liquidity of other stocks.

There is an emerging but growing literature on the consequences of limited investors' attention. For example, Hou et al. (2009) show that investors have limited attention and, thus, tend to overreact towards attention-grabbing information, whereas they underreact to less salient but useful public information. Peng (2005) also finds that stocks that contribute more to portfolio uncertainty attract more attention, while those that provide less uncertainty attract less attention. Similarly, Drake et al. (2015) suggest that investors feel a greater need to gather information when stock price changes suggest that things are not going well, but apply less scrutiny to firms with strong performance. Focusing on the French stock market, Aouadi et al. (2013) provide evidence that firm-specific investor attention is a determinant of stock liquidity and volatility.

Elsewhere, theoretical studies (Merton 1987; H. Hong and Stein 1999; Hirshleifer and Teoh 2003) argue that, in economies populated by investors with limited attention, delayed information revelation can generate expected returns that cannot be fully explained by traditional asset pricing models. Evidence of the effects of investors' limited attention is also provided by numerous empirical studies, including Huberman and Regev (2001), Barber and

Odean (2008), DellaVigna and Pollet (2009), Menzly and Ozbas (2006), H. Hong et al. (2007), and L. Cohen and Frazzini (2008) find that investors respond quickly to information that attracts their attention (e.g., news printed in the New York Times, stocks that have had extreme returns or trading volume in the recent past, and stocks that more people follow), but tend to ignore information that is less salient yet material to firm values (Huberman 2001; Huberman and Regev 2001; Peng and Xiong 2006; Barber and Odean 2008). The prominence with which (actual or stale) news is revealed appears crucial in this context (H. Hong and Stein 2007). A sub-stream of the literature proposes that attention driven noise traders may excessively focus on attention-grabbing stocks, thereby inducing price pressure and stock price overreaction. In this sense, investor attention constraints appear to play a dual role (Hou et al. 2009).

1.3. Investor attention, financial performance and the role of CSR: Making the pieces fit

While investors may be especially prone to attend to CSR initiatives that directly impact their own interests (R. N. Jones et al. 2007), firm CSR nevertheless represents a key type of firm action that may provide them with information about a firm's priorities and intentions (Godfrey 2005). In general, attending to firm social activities particularly provides stakeholders with valuable cues about a firm's use of resources and power, and its relative extra-orientation (Agle et al. 1999; Godfrey 2005) and may lead them to a generalized inference of firm quality and warmth (McWilliams and Siegel 2001). Taken together, we expect that the amount of shareholder wealth that a firm receives in exchange for its CSR initiatives depends critically on how much attention investors pay to those activities.

1.3.1. Drivers of investor attention to CSR

Merton (1987) argues that more visible stocks attract more investors because of an increasing attention, which is commonly referred to as the Merton attention model. This model predicts that stocks that receive more attention should have higher valuations and thus a lower rate of return. When there are many alternatives, stocks that attract attention are more likely to be considered, hence more likely to be chosen, while stocks that do not attract attention are often ignored. In a similar vein, Odean (1998) proposes that investors do not evaluate each of the thousands of stocks actively trading in public markets when making their investment decisions; rather, investors limit their investment decisions to stocks that have recently caught their attention. A firm that catches an investor attention is more likely to be included in his

portfolio, and the broader investor base lowers the firm's cost of capital. Barber and Odean (2008) also find that individual investors tend to buy stocks that grab their attention - those mentioned in the news, with high daily trading volume, with an extreme daily return, etc.

Analysts can facilitate the recognition of listed companies by investors (Merton 1987). Previous studies prove that analysts are important information providers in asset markets. For example, Easley et al. (1998) argue that analysts attract investors without inside information to participate in trade as high analyst stocks have low probability of information-based trading, although their analyses show that analysts fail to create private information and introduce any good or bad news into the stock. Analyst coverage can also assist the information disclosure of firms (Barth and Hutton 2004; Piotroski and Roulstone 2004), monitor or improve the financial reporting quality of firms (M. H. Lang et al. 2004; Irani and Oesch 2013; F. F. Yu 2008), and most importantly enhance the visibility of firms to investors (Merton 1987; Easley et al. 1998; Mehran and Peristiani 2010). In particular, Mehran and Peristiani (2010) report that one of the determinants of public firms going private is the declining growth in analyst coverage. Losing such coverage implies a failure to attract financial visibility and investor interest.

According to Madsen and Rodgers (2015), the legitimacy of the organization may enhance stakeholder attention. In particular, firms that partnered with established NGOs in their disaster relief efforts are found to receive more attention from the media than other firms, because the non-profit nature of NGOs enhance the legitimacy of a firm's CSR efforts. This same legitimacy, however, can also draw the attention of activists (McDonnell and King 2013). Similarly, another piece of evidence is provided by B. G. King and Whetten (2008), who argue that stakeholders are more likely to pay attention to organizations whose actions and claims are consistent with the values and expectations of society (B. G. King and Whetten 2008). Such attention is particularly salient for organizations with strong prosocial orientations (McDonnell and King 2013). Indeed, having a strong prosocial orientation can attract the attention of the public—in particular, socially conscious consumers and investors whose values match the activities and initiatives of the legitimate organizations. In either case, we argue that legitimate organizations tend to be more visible and that the increased visibility increases the likelihood that stakeholders will notice and attend to activities or behaviors that may appear hypocritical.

1.3.2. CSR and investor attention: The role of media coverage

In this section, we particularly focus on the role of media coverage as the most prominent driver of investor attention. Indeed, investors face various information processing constraints, which inhibit them from acting on all available information. News disseminated by the media may alleviate this friction and thus result in financial market consequences. More specifically, Earlier research starting with Zingales (2000) and Dyck and Zingales (2003) emphasizes that the media can play an important informational role by reducing information processing costs (Soltes 2009) and information asymmetry between firms and their stakeholders (Bushee et al. 2010; Tetlock 2011). More recent research shows that media coverage has a substantial effect on both political and economic outcomes, such as voting behavior (DellaVigna and Kaplan 2008), stock trading (Engelberg and Parsons 2011), capital allocation (D. H. Solomon et al. 2014), CEO compensation (Core et al. 2008), and corporate governance (Dyck et al. 2008b).

Soltes (2009) also hypothesizes that increased dissemination reduces information processing costs and finds that dissemination increases the liquidity of a firm's shares. Similarly, Bushee et al. (2010) find that press coverage lowers information asymmetry around earnings releases, predominantly due to the dissemination role of the press. Furthermore, recent research argues that managers have the ability to influence the dissemination of firm-initiated news (Bushee and Miller 2012; D. Solomon 2011), suggesting dissemination as a disclosure activity managers can pursue.

The informational role of media attention can be achieved by rebroadcasting publicly available information produced by firms and other information intermediaries (information synthesization role) or by creating new content (investigative role) (Miller 2006; Bushee et al. 2010; Dai et al. 2015). Given that media attention drives investor attention, analyst following and firm visibility, investor attention may in turn reduce information asymmetry, information acquisition costs and thereby transaction costs⁸. This is consistent with a finding reported by Madsen and Dodgers (2015) that, in a cross-sectional comparison of natural disaster relief initiatives across public companies, initiatives that were more prompt in addressing disaster created needs received more stakeholder attention as inferred through greater media coverage.

⁸ Transaction costs comprise gathering information, deciding whom to bargain with and enforcement costs (G. R. Jones and Hill 1988; Coase 1960). The sources of these costs are the transaction difficulties associated with the exchange process such as information asymmetry and bounded rationality (B. Klein et al. 1978; Williamson 1975; G. R. Jones and Hill 1988).

1.3.3 CSR, attention and information asymmetry

As discussed in a previous section, CSP can contribute to financial performance by enhancing stakeholder relationships (i.e., more customer loyalty, higher employee morale and commitment), cultivating core competencies (i.e., innovation capabilities), and minimizing damage during times of crises (G. R. Dowling 2004). However, stakeholders suffer from information asymmetry relative to the executives managing the firm (Greenwald and Stiglitz 1990). That is, they are not privy to all relevant information that impacts their interests. Several studies show that stakeholder awareness of a firm's CSR is generally very low (Dawkins 2005; Du et al. 2007), highlighting the information asymmetry between the firm and its stakeholders. Although there is no clear and explicit rationale, in literature, behind the association between CSR commitment, investor attention and information asymmetry, one could expect that effective CSR communication coupled with greater investor attention can overcome information asymmetry costs.

Conducting a research on Fortune's 500 companies over the period 2005-2011, K. Yu et al. (2013) argued that stand-alone CSR reports have a fundamental role in enriching the firm financial disclosure and improving information transparency to investors and other important stakeholders. Since CSR reports deliver a consistent and comprehensive vision of the firm's social behavior, CSR reports are a tool to reduce information asymmetry by expanding the knowledge of stockholders about the general conduct of the firms. Through the new information, market players can make more conscious decisions. The authors also provided empirical evidence on the use of CSR reports to build forecasts so that investors adjust their expectations on future performance and idiosyncratic risks. In addition, they found a net positive correlation of the release of CSR reports and abnormal stock returns.

Another evidence is provided by Dhaliwal et al. (2011) who find that, for socially responsible firms, CSR reports reduce cost of equity, suggesting that CSR reporting reduces information asymmetry between managers and investors. In a related vein, Cho et al. (2013) even suggest that both positive and negative CSR disclosure reduces information asymmetry and that regulatory action may be appropriate to mitigate the adverse selection problem faced by less-informed investors. Similarly, Kim and Statman (2012) provide supportive evidence of the role of CSR in enhancing a firm's information quality control by managers. Given that high CSR firms provide more financial disclosures (Gelb and Strawser 2001), high CSP seems to be related to higher information transparency. By reducing information asymmetry, high

information transparency can lead to a reduced cost of capital since this allows firms to increase their stocks' liquidity (Diamond and Verrecchia 1991; Sharfman and Fernando 2008; El Ghouli et al. 2011). Furthermore, this reduced information asymmetry due to high CSR performance, together with the mitigation of conflicts within firms, can also lead to a reduction in financial constraints (Cheng et al. 2014; Attig et al. 2014). In particular, lower agency costs and information asymmetry facilitate access to external capital (Cheng et al. 2014; El Ghouli et al. 2011), which in turn accelerate firm growth.

Despite the intuitive appeal of CSR reports to reduce information asymmetry, lack of stakeholder attention is a stumbling block for firms seeking to maximize their profits, to the very simple reason that investors tend to invest only in firms they are aware of (Merton 1987). Moreover, firms that catch investor attention are more likely to be included in its portfolio (Odean 1998; Busse and Green 2002; Barber and Odean 2008). Therefore, if the amount of attention a firm receives influences its stock price, the manager of a neglected firm has an incentive to draw attention to the firm. Elsewhere, as previously discussed, firm's disclosure quality may increase firm visibility, raise investor basis, and induce more trading. Thus, since CSR reports provide comprehensive, detailed, and quantitative information about a firm's social and environmental performance, paying attention to the release of such reports (previously unnoticed) may reduce information asymmetry.

Reduced information asymmetry allow also for lower agency costs. Indeed, a decrease in information asymmetry gives shareholders a clearer picture of the firm's actions, which may in turn increase their future expectations. These increased expectations may motivate managers to perform more CSP in order to address the pressures from institutional actors and other important stakeholders. This argument is consistent with Saiia et al. (2003) who found that firms with higher visibility tend to make larger philanthropic gifts to the community. However, firms vary significantly in terms of how many actors (e.g., number of common shareholders, institutional investors, and community groups) might have a stake in their outcomes. For instance, coporations with a large number of common shareholders are likely to be more visible than those with a small number of shareholders. The more that the firm's actions are monitored by stakeholders, the more likely their social performance is explicit and visible (J. L. Campbell 2007; Matten and Moon 2008).

Clearly, a large body of prior research suggests that CSR information is value-relevant (Godfrey et al. 2009; X. Luo and Bhattacharya 2006; Surroca et al. 2010) and that CSP leads

to reduced information asymmetry (Y. Hong and Andersen 2011; Kim et al. 2012; Becchetti et al. 2013; Harjoto and Jo 2015; Chih et al. 2008). However, we argue that returns on CSR commitment need to meet two main conditions. First, to ensure reliability, CSR information has to be provided by a disinterested, reputable third party which convey new information to the stakeholders, thereby reducing information asymmetry (Cordeiro and Tewari 2015; Ramchander et al. 2012), and helping stakeholders revise and improve their expectations concerning the firm's present and future social performance. Second, CSR initiatives have to first raise investor attention in order to effectively reduce information asymmetry (Madsen and Rodgers 2015; Barber and Odean 2008).

1.3.4. Investor attention and asset prices: Implications for valuation of CSR

In this thesis, instead of rethinking the direct relation between CSP and financial performance, our focus is more aligned with recent research showing that CSR activities are associated with shareholder base or clientele effects. In particular, we rely on the role of investor attention to shape asset prices, as mentioned above, in order to give some insights to the controversial potential effects of firm's CSP.

In theory, firms face few difficulties in attracting investor attention to their CSR actions, as the close connection of investors to the firm increases the salience of firm CSR commitment to them. However, since investors' attention is limited, scarce and essentially biased, one can argue that shareholders must first attend to a firm's social initiatives before they could be expected to reward the firm. Kim et al. (2014), for example, provides evidence that firms with higher CSR ratings have broader ownership in the sense of more institutional and individual investors holding the firms shares. They also find that higher CSR ratings are associated with greater demand for information as reflected in Google and EDGAR search volume. Dhaliwal et al. (2011) find that firms initiating disclosure of CSR activities, who presumably have positive CSR activities to disclose, tend to attract institutional investors. Robinson et al. (2011) and Hawn et al. (2014) show that the addition of a firm to the Dow Jones Sustainability Index is associated with positive abnormal returns, consistent with increased investor demand for shares of firms with positive and visible CSR indicators. These findings corroborate our predictions that CSR is associated with investor holdings and that there is complementarity between firm information (about both CSR and fundamentals) and investor demand driven by CSR expectations.

An increase in investor attention, can also affect the financial performance in several ways. First, the firm's operating performance may improve because of increased monitoring by investors and/or by enhanced access to capital markets. Second, the firm's liquidity may improve due to a lower cost of information asymmetry as a result of greater production of information by investors and analysts. Finally, the required rate of return for the firm could fall in segmented markets because of a drop in Merton's (1987) shadow cost following increased investor recognition.

Using the melamine contamination incident in China, M. Wang et al. (2011) investigate how investors react to firms' CSP in terms of their investing behavior, and how such behaviors change following an event that provokes their attention and concerns to CSR. Interestingly, the authors find that investors' concerns for CSR might be influenced by the mounting of attention paid to some events. Consistent with this evidence, Baron and Diermeier (2007) and Baron (2009) suggest that firms with highly visible CSR initiatives grab increased public attention, and may experience a "boomerang effect" in case of controversial behavior. Servaes and Tamayo (2013) provide also consistent evidence that CSR affect positively the firm value only for firms with high consumer awareness as proxied by advertising expenditures. For firms with low customer awareness, the relation is either negative or insignificant. Closely related to our thesis, but not focusing explicitly on investor attention, Madsen and Rodgers (2015) provide evidence that stakeholder attention is necessary to translate CSP into financial performance. It is worth also highlighting the role of capital market responses to the dissemination of information through financial reports as a mechanism that can alter managerial incentives and precipitate real changes. Prior literature shows that investors' limited attention (Merton 1987; Barber and Odean 2008; Barber et al. 2006), news dissemination (Rogers et al. 2013), and non-cash-flow-based preferences (A. Kacperczyk 2009; H. L. Friedman and Heinle 2014; H. Hong and Kostovetsky 2012; H. Hong and Kacperczyk 2009; Fama and French 2007) can affect security prices.

1.4. Conclusion

Despite the natural role of investor attention as a determinant of the relation between CSP and financial performance, the literatures on investor attention and CSR have only grown in parallel. In this chapter, we have attempted to make the bridge between them and introduce the different research questions which will be investigated in the following chapters.

This chapter first discussed some empirical studies on the relationship between CSP and CFP, highlighted the growing strand of literature on the potential intervening variables in this relationship and paid particular attention to the firm visibility channel. The role of firm visibility in translating CSP into CFP (Chiu and Sharfman 2009; Cordeiro and Tewari 2015; F. E. Bowen 2000), gives consistent credit to the idea that investor attention may be relevant for the CSR literature. Thus, we reviewed prior literature on investor attention, decision making and asset prices. Then, building on this evidence, the final part of this chapter paved the way for making the pieces of the CSP-CFP puzzle fit together.

A more readable view is provided by Figure 1.1 which integrates and synthesizes key predictors, outcomes, mediators, and moderators by focusing on studies related to CSR and firm visibility thereby introducing the role of investor attention. Figure 1.1 is not an exhaustive conceptualization of all the intervening variables in the CSP-CFP relation but rather meant as a multilevel lens and guiding framework to which other variables can be added in the future.

From this review of literature chapter, several lessons can be drawn which may present an opportunity for new avenues of research. First, CSP and CFP need to be considered carefully, as they can influence the research outcomes (Orlitzky et al. 2003; Wu 2006). T. J. Brown (1998) takes this position and argues that inconsistency in the measurement of CSP causes problems for analyzing the relationship between CSP and CFP. It seems necessary to recognize the different dimensions of CSP and include them if we are to have an appropriately full picture of CSP (Allouche and Laroche 2005; Waddock and Graves 1997a).

Second, we can note that the literature on the capital market consequences of CSR do not yield definitive and universally agreed conclusions. Indeed, in spite of the explosion of empirical research on this topic, whether or not CSR performance contributes to the achievement of the maximization of shareholder wealth is still an ongoing debate. Yet, a major gap in this literature which may explain divergent empirical results is that the value-creating mechanisms behind CSP and CFP remain largely unexplored.

Third, according to Madsen and Rodgers (2015), we know that CSR has an effect on stakeholder attention but we know less about which one is more affected by firm's social impact. Furthermore, CSR has been mainly studied at the macro and institutional levels, but more studies are needed to understand how CSR influences key stakeholders and especially investors, an underestimated stakeholder yet to be examined.

Fourth, taking market participants' attention constraints into account enables researchers and practitioners alike to gain a better understanding of investor's decision making process in real world financial markets. There is by now also substantial evidence that attention-based frictions are persistent and powerful enough to affect the price formation process. This provides researchers with the opportunity to explain and potentially predict seemingly abnormal asset price dynamics which are difficult to reconcile with standard theoretical models. In sum, limited attention has far-reaching implications for capital markets.

Given these considerations, we particularly focus on three central empirical inquiries. In the next chapter, we examine the role of investor attention as a probable mediator of the relationship between ESG news headlines and shareholder value. We first test potential asymmetrical responses of the stock market to both positive and negative ESG news headlines. Then, in the spirit of Flammer (2013), Servaes and Tamayo (2013) and Madsen and Rodgers (2015), we test how investor attention, as proxied by daily Google search volume, may shape the reward (punishment) of positive (negative) ESG news headlines. Furthermore, we control for the impact of additional internal moderators such as firm size and advertising expenditure as in (Servaes and Tamayo 2013; Mishra and Modi 2016; Wu 2006).

The third chapter aims to investigate the relationship between ESG controversies and firm market value. Considering that controversies make the firm under the spotlight of the media, we expect that such news would increase firm visibility and by extension investor attention which further translates into CFP. Furthermore, since ESG controversies have implicitly a negative connotation, we aim to test how prior CSP score may shape potential negative financial consequences. Then, we explore how the differentials of investor attention (high vs low attention firms) shape this relationship.

Lastly, the third essay addresses the conditions and mechanisms under which CR awards may be translated into financial outcomes. To investigate this issue, we rely on the RBV of the firm and specifically on the view of CSR as a valuable resource (O. Hart 1995; Russo and Fouts 1997; Branco and Rodrigues 2006; Aragon-Correa and Sharma 2003). Furthermore, we extend and complement the recent literature suggesting a non-linear relation between CSP and financial outcomes (Flammer 2015a; Barnett and Salomon 2006; Harjoto et al. 2015). Most importantly, we built on the literature of limited investor attention and check whether there exists an optimal investor attention level which may result in threshold effect on the relation between CR awards and financial performance.

Figure 1.1. The rationale behind the role of investor attention in the CSP-CFP relation

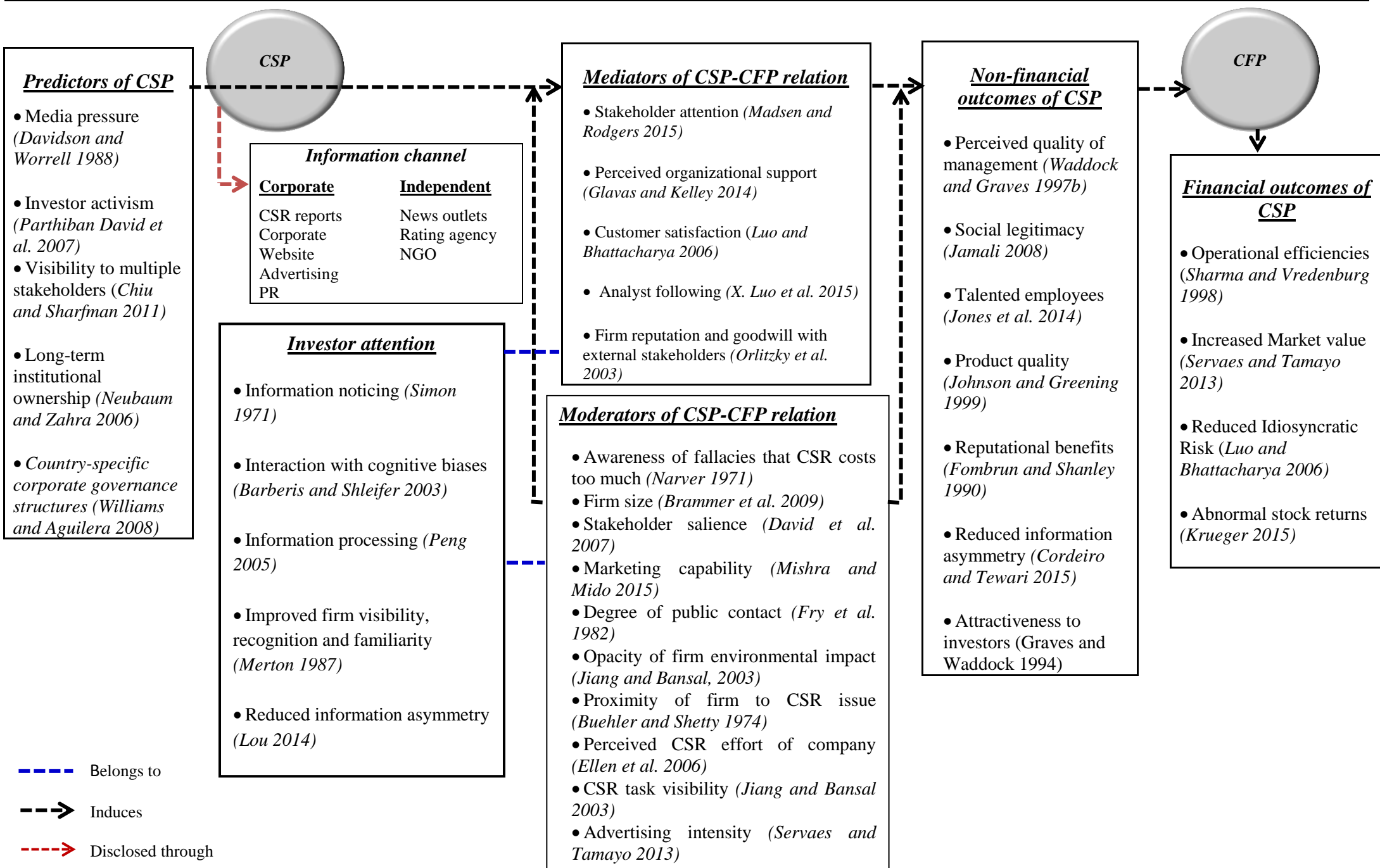


Table 1.2. Selected empirical papers on CSR, financial performance & firm visibility factors

<i>Research article</i>	<i>Central research question</i>	<i>Dependent and independent variables</i>	<i>Main results</i>	<i>Rationale</i>
<i>Luo and Bhattacharya (2009)</i>	The relationship between corporate social performance and idiosyncratic risk of firms and the role of advertising and R&D as strategic levers	DV: Idiosyncratic Risk IV: CSP, Advertising Spending, R&D expenditure	CSP induces lower idiosyncratic risk of firms, with even greater reduction in risk in the presence of higher advertising resources. However, simultaneous increases in both advertising and R&D resources in the presence of CSP lead to higher idiosyncratic risk.	By creating greater visibility and familiarity, advertising increases both individual and institutional stock ownership of the firm, thus insulating it from market downturns.
<i>Servaes and Tamayo (2013)</i>	The moderating role of customer awareness in the financial value of CSR	DV: Tobin's Q (firm value), OIA, OIE and ROE (measures of operating performance) IV: KLD ratings and advertising spending (as a proxy of consumer awareness)	CSR and firm value are positively related for firms with high advertising expenditure. For firms with low advertising expenditure, the impact of CSR on firm value is either insignificant or negative.	CSR activities can add value to the firm but only for high consumer awareness firms. However, firms with high consumer awareness are also penalized more when there are CSR concerns.
<i>Madsen and Rodgers (2015)</i>	The mediating role of stakeholder attention on the relationship between disaster relief and CFP	DV: Stakeholder attention and CAR IV: Disaster CSR value, NGO partnership, CSR urgency and	Stakeholder attention partially mediates the relation between disaster relief and CFP. Stakeholder attention to corporate disaster relief was driven by the legitimacy, urgency, and enactment of disaster relief CSR initiatives	As firms engage in community-centric responses, they attract positive attention from stakeholders that can benefit the financial performance of the firm.
<i>Cordeiro and Tewari (2015)</i>	The moderating role of the market legitimacy and firm size on the relationship between environmental performance and investor reaction.	DV: CAR IV: Newsweek green rankings, firm size, and past financial performance	For a sample of the largest 500 US firms ranked by Newsweek, stock market investors react positively in terms of both the short and intermediate term, both to the raw and, importantly, industry-adjusted green rankings. The investor reaction is significantly influenced by contextual variables such as the level of information asymmetry, firm size, and firm legitimacy.	Larger firms benefit more from superior green rankings given their greater visibility. In contrast, firms which have more market legitimacy, as measured by past financial performance, benefit less. Investors may anticipate that more profitable firms will invest more in environmental CSR and therefore react more positive to superior rankings of less profitable firms.

Table 1.2 (Continued)

<i>Research article</i>	<i>Central research question</i>	<i>Dependent and independent variables</i>	<i>Main results</i>	<i>Rationale</i>
<i>Luo and al. (2015)</i>	The mediating role of analyst recommendations on the relationship between corporate social performance and firm stock returns.	DV: CAR IV: analysts' stock recommendations, KLD and Thomson Reuters ESG data	Analyst recommendations mediate the relationship between corporate social performance and firm stock returns.	Security analysts are certified industry experts skilled at obtaining private information that is not readily accessible to general investors, and so are better able to assess the value relevance of firm CSP information. As industry experts and the 'information bridge,' analysts reduce the information asymmetry associated with CSP, by incorporating firm CSP information into their recommendations for general investors.
<i>Mishra and Modi (2015)</i>	The moderating role of marketing capability in the CSP-shareholder wealth relationship, considering both overall CSP and ESG pillars.	DV: Stock returns and Idiosyncratic Risk (measures of shareholder wealth) IV: CSP, 6 types of CSP, and marketing capability	CSP doesn't impact shareholder wealth of firms directly but does so through marketing capability. However, the influence of marketing capability will be higher for CSR types with verifiable benefits to firm stakeholders, i.e., consumers, employees, channel partners, and regulators.	A firm's marketing capability is likely to enhance CSR's potential for generating positive stakeholder synergy with the firm.
<i>This thesis</i>	The role of investor attention in the CSP-CFP relationship, considering both overall CSP and CSP components	DV: CAR, Tobin's Q, Q_{CP} and MB (measures of shareholder wealth); OIA, OIS and ROE (measures of operating performance) IV: CSP_{SCORE} , 3 types of CSP (ESG controversies, ESG news headlines and CSR awards), and Investor attention	1-Investor attention explains the stock market response to ESG news headlines. 2-CSP score impacts financial performance indirectly through improved firm visibility after experiencing ESG controversies. 3-Investor attention complements CSP with verifiable financial benefits only since an optimal level of attention and does not influence relatively environment related CSR awards.	Investor attention is a prerequisite for information processing. The financial returns on CSP are shaped by investor attention due to higher firm visibility and reduced information asymmetry. CSP is desired, but only if it has been noticed by shareholders.

CHAPTER II

ESG NEWS HEADLINES AND STOCK RETURNS: DOES INVESTOR ATTENTION MATTER?

“The greater power of bad events over good ones is found in everyday events, major life events (e.g., trauma), close relationship outcomes, social network patterns, interpersonal interactions, and learning processes.

... Bad impressions and bad stereotypes are quicker to form and more resistant to disconfirmation than good ones.”

— Baumeister et al. (2001), Bad is stronger than good

CHAPTER 2. ESG NEWS HEADLINES AND STOCK RETURNS: DOES INVESTOR ATTENTION MATTER?

Abstract

Despite all the advancements in assessing the value-implications of corporate social performance (CSP), this debate remains unsettled and has yielded conflicting results. This study challenges previous literature and examines the role of investor attention as a probable mediator in the relationship between CSP and shareholder wealth. Relying on a 15-year sample of 2,012 environmental, social and governance (ESG) press articles about 197 firms from 24 countries, we find that shareholders react exclusively to negative ESG news headlines and especially those related to governance performance. Indeed, it is likely that corporate governance issues may be relatively more prone to agency costs (Jensen and Meckling 1976) since they are more focused on shareholders. Furthermore, we posit that the value of CSP depends on abnormal investor attention, as proxied by Google search volume. In particular, we argue that companies that attract greater levels of abnormal attention are punished (rewarded) more by shareholders in response to negative (positive) media coverage. However, this effect is reduced by internal moderators such as firm size and company-controlled advertising. Taken together, these findings reveal that the link between CSP and financial performance is a fully-mediated relationship and suggest a role for investor attention in connecting CSP to shareholder value by improving firm visibility. The findings are robust to various event windows, abnormal returns and hold up to a battery of validity checks.

Keywords: *Abnormal investor attention, Corporate social performance, Firm size, Firm visibility, Multi-country event study.*

JEL Classification: C58, G14, G15, G32, M14.

Résumé

Malgré tous les progrès dans l'évaluation des implications de la performance sociale des entreprises sur leur valeur marché, ce débat demeure en suspens, donnant des résultats contradictoires. Cette étude remet en question la littérature précédente et examine le rôle de l'attention des investisseurs en tant que médiateur probable dans la relation entre la performance sociale et la valeur actionnariale. En se basant sur 2012 articles de presse sur l'environnement, le social et la gouvernance (ESG) concernant environ 197 entreprises dans 24 pays durant la période 2000-2015, nous constatons que les actionnaires réagissent exclusivement aux titres de presse négatifs à connotation négative et en particulier ceux relatifs à la gouvernance. En outre, nous estimons que cet impact dépend de l'attention anormale des investisseurs tel que démontré par le volume de recherches Google. En particulier, nous suggérons que les entreprises qui connaissent une plus grande attention anormale sont plus punies ou récompensées par les actionnaires en réaction à la couverture médiatique selon qu'elle est négative ou positive. Cependant, cet effet est réduit par les modérateurs internes tels que la taille de l'entreprise et des dépenses publicitaires. Dans l'ensemble, ces résultats révèlent un rôle de l'attention des investisseurs dans la connexion entre CSP et la valeur actionnariale à travers l'amélioration de la visibilité de l'entreprise. Ces résultats sont robustes à une série de tests de validité.

Mots clés : *Attention anormale des investisseurs, Performance sociale des entreprises, Taille de l'entreprise, La visibilité des entreprises, Etude de cas de multiples pays.*

Classification JEL: C58, G14, G15, G32, M14.

2.1. Introduction

Despite the huge amount of academic attention paid to the value implications of corporate social performance⁹ (CSP hereafter), few definitive conclusions can be drawn from the existing literature. While this issue has been extensively explored from different perspectives, the evidence continues to be unresolved, yielding conflicting results (Borghesi et al. 2014; Griffin and Mahon 1997; Krüger 2015; Masulis and Reza 2014).

In the present paper, we challenge this literature and argue that most prior studies fail to properly identify relevant determinants of the market pricing of CSP and omit a critical variable, namely investor attention. Closely related to our paper, Servaes and Tamayo (2013) use advertising expenditures as a proxy for consumer awareness and show that KLD scores are positively related to firm value for firms with high customer awareness. In a broader setting, Flammer (2013) highlights the role of KLD ratings to explain the stock market response to environmental news. To the best of our knowledge, our study provides the first quantitative empirical evidence identifying investor attention as a determinant of the value of CSP.

Information about CSP can be disseminated through several channels, including company-controlled channels, such as advertising and corporate webpages, and non-corporate sources, such as media outlets and independent CSR rankings (Du et al. 2010; Du and Vieira Jr 2012). In particular, media reports are increasingly seen as a legitimate source of information for stakeholders (McWilliams and Siegel 2001; Siegel and Vitaliano 2007). Prior studies provide confounding results and one might suggest that they lack consistency because they overlook investor attention as a necessary prerequisite for information processing. Moreover, most existing research investigates the financial implications of corporate news in a single country and has been predominately one-sided, skewed towards positive events (Mackey et al. 2007; Sabino P Kothari et al. 2009) or extreme negative events (Capelle-Blancard and Laguna 2010).

The present paper certainly not the first to investigate the value of CSP, but it makes four key contributions. First, partially in line with Krüger (2015) and Flammer (2013), we provide new international evidence that the stock market significantly responds only to negative environmental, social and governance (ESG hereafter) press headlines. This paper is different

⁹ The events studied by these papers may be negative, such as environmental accidents or toxic emissions, or positive, such as firms winning environmental awards or adhering to voluntary environmental programs (Aktas et al. 2011; Becchetti et al. 2012; Capelle-Blancard and Laguna 2010; Dasgupta et al. 2001; Deng et al. 2013; Fisher-Vanden and Thorburn 2011; Flammer 2013; McWilliams and Siegel 1997).

to the extent that Krüger (2015) and Flammer (2013), among others, limit their studies to the US stock market and restrict CSP to particular ESG components. While Krüger (2015) focuses on environmental and social information, we employ a multi-country event study and find that shareholders are particularly concerned by corporate governance performance. By investigating only environmental issues, Flammer (2013) finds that shareholders significantly positively (negatively) react to positive (negative) environmental news, while our study reveals that positive ESG press headlines are completely overlooked by shareholders, regardless of the ESG pillar. In addition, our study extends but differs from Dimson et al. (2015), who test whether ESG shareholder commitments are relevant to stock performance. While the authors provide evidence that successful commitments with respect to climate change and corporate governance issues generate positive shareholder value effects, we find that positive ESG press coverage is not incorporated into corporate valuations. This result could be attributed to asymmetric investor attention giving more weight to negative issues (Peeters 1971; Peeters and Czapinski 1990; C. Taylor 1992). Thus, our results provide clear and opposing evidence of CSR as important for increasing shareholder wealth, supporting the agency cost prediction (Surroca and Tribó 2008; Jensen and Meckling 1976; Barnea and Rubin 2010) and contrary to the resource-based view of CSR (Barney 1991; S. L. Hart 1995; Wernerfelt 1984).

Second, as previously mentioned, we build on the work of Flammer (2013) and Servaes and Tamayo (2013) by adding to the literature on the determinants of the CSP and corporate financial performance (CFP hereafter) relationship. While Flammer's (2013) and Servaes and Tamayo's (2013) papers identify the CSP score and consumer awareness respectively as the determinants of the CSP-CFP relationship, we introduce a previously omitted variable, namely investor attention, which is proxied by abnormal volume of Google searches for stock tickers around the disclosure date of ESG news and is proven to explain the market pricing of CSP. In particular, companies experiencing greater abnormal attention are punished (rewarded) more by shareholders in response to negative (positive) media coverage. However, the regression results show that larger companies do not really profit from the reward of CSP as much as small companies but they succeed in leveraging their size to the extent that they are less severely punished for corporate social irresponsibility. It could be that company-controlled advertising, in addition to established high visibility, make active contributions in times of crisis for large firms.

Third, our analyses also illustrate the importance of controlling for firm advertising expenditure, as in Servaes and Tamayo (2013), since advertising proxies for consumer

awareness and thereby improves the firm's visibility and reduces information asymmetry (Bagwell 2007; Nelson 1974). This evidence is confirmed by our results. In particular, we find that the direct effect of advertising is positive for both ESG press headlines, whether positive or negative. One could suggest that higher advertising expenditure allows companies to be punished less for corporate social irresponsibility and to reinforce their rewards for CSR by controlling the message conveyed to stakeholders. Furthermore, when combined with the CSP score, advertising is found to have a negative sign for all specifications, while the direct effect of the CSP score is not significant. We argue that companies profit from their CSR performance if they advertise to the extent that advertising enhances firm visibility, as in Servaes and Tamayo (2013), and sheds light on their CSR strengths.

Finally, since the geographical location was proven to play a crucial role in firms' CSR involvement (Di Giuli and Kostovetsky 2014), we control for country-specific settings with respect to media freedom, media offer and the corruption index and particularly find that pressures to engage in corporate social responsibility (CSR) are stronger in countries where the media have more freedom.

The remainder of the paper is organized as follows. The next section provides an overview of the related literature and develops our main hypotheses. Section 3 describes the data and the event study methodology. Section 4 reports the main findings of the event study. In Section 5, we investigate the role of investor attention as a determinant of the value of CSR. In Section 6, we address some methodological concerns by employing a battery of validity check tests. The next section discusses the empirical findings. Section 8 concludes and discusses future research avenues and the paper's limitations.

2.2. Literature and hypotheses

This section reviews the existing literature on the relationship between CSP and financial outcomes, as well as prior studies on investor attention, and develops the main hypotheses.

2.2.1. Corporate social performance and financial performance

A limited but growing number of studies on CSR assume that corporate social performance, whether positive or negative, has no significant impact on financial performance (Orlitzky 2013). Among others, McWilliams and Siegel (2001) and Curran and Moran (2007) posit that, all things being equal, the marginal costs and benefits of CSR should offset each other. In particular, Curran and Moran (2007) investigated whether being added to or deleted from the FTSE4Good² Index has a significant impact on share price, but did not find any significant

effect. These results could be attributed to the fact that the FTSE4Good¹⁰ Index only includes 50 stocks, which implies a very limited number of changes (additions or deletions). Moreover, the sample is limited to the largest companies, those which could be considered for inclusion in the index.

Conversely, an important body of literature examines the empirical relationship between CSR and financial performance and reports a significant relationship. In particular, a growing number of CSR-related event studies have been conducted (J. T. Hamilton 1995; Klassen and McLaughlin 1996; Khanna et al. 1998; Dasgupta et al. 2001; Martin Curran and Moran 2007). The events often refer to positive or negative news about specific ESG pillars such as the emission of pollutants (Capelle-Blancard and Laguna 2010) or product recalls (Davidson and Worrell 1992). As previously mentioned, the events can also refer to information about broader CSR indicators such as news on the inclusion in or deletion from a sustainability index which requires high levels of corporate environmental and social performance.

Specifically, Ramchander et al. (2012) show that being added to the Domini Social 400 Index leads to an increase in a firm's stock prices. Likewise, Clacher and Hagendorff (2012) find that trading volumes of firms included in a socially responsible index is significantly enhanced. In a broader context, Consolandi et al. (2009) document that inclusion in the Dow Jones Sustainability Stoxx Index (DJSSI), a European socially responsible investment (SRI) index, is positively assessed. Similarly, Robinson et al. (2011) observe that the inclusion of US firms in the Dow Jones Sustainability World Index (DJSWI) leads to a positive market reaction while stock prices are insensitive to deletion from this index.

Godfrey et al. (2009) conduct an event study of 178 negative legal actions between 1993 and 2003 and find that high CSP provides ex post insurance benefits. Relying on a sample of US firms between 1991 and 2007, Koh et al. (2014) find that CSP also has an ex-ante insurance value. In particular, CSP is proven to have a more important positive impact on market value for firms with higher litigation risks. Aktas et al. (2011) use Innovest's IVA ratings over the 1997-2007 period and find that acquirers are rewarded by the stock market when they buy firms with better CSR reputations. By investigating 1,838 Vigeo corporate social rating announcements from 2004 to 2009 on the short-term stock returns of 739 firms on European markets, Cellier et al. (2011) find the announcements had a positive significant influence on the stock returns between two days prior and after the announcement. More particularly, the

¹⁰ The FTSE4Good is a sustainability index designed to measure the ESG risk and performance of companies worldwide.

authors bring evidence that “environment”, “community involvement” and “corporate governance” aspects have a stronger positive impact.

In an international setting, Dasgupta et al. (2001) analyze how emerging capital markets such as Argentina, Chile, Mexico, and the Philippines react to the announcement of environmental news. They argue that these markets reward firms with good news concerning their environmental impact, and penalize firms with bad news. Similar results have been obtained by researchers studying firms in developed countries such as Canada and the United States (Lanoie et al. 1998). Similarly, Flammer (2013) investigates the US market’s reaction to environmental news between 1980 and 2009. Empirical results provide consistent evidence of a positive and significant stock market reaction to eco-friendly news. Aktas et al. (2011) suggest that the stock market rewards acquirers for undertaking socially and environmentally responsible investments. El Ghouli et al. (2011) also report consistent evidence that US firms with high CSR rankings experience a lower cost of equity. Similarly, using a Fama and French (1993) framework, Girerd-Potin et al. (2014) find that high “*business stakeholders*” (employees, clients and suppliers) ratings experience are associated with lower cost of equity. Furthermore, seminal meta-analyses related to this line of research note that empirical findings generally reveal a positive relationship between CSR and corporate financial performance (Orlitzky et al. 2003; Margolis et al. 2009). Building on these studies, and given that an increase in media coverage has been proven to have a significant and positive effect on stock returns (Barber and Odean 2008; Da et al. 2011), we propose the following hypothesis:

Hypothesis 1. Shareholders react positively to the publication of positive ESG press headlines.

Within the existing research on CSR, a body of literature focuses on stock market reactions to extreme negative environmental news¹¹. For instance, J. T. Hamilton (1995) shows a statistically significant and negative stock market response to the publication of the Toxics Release Inventory (TRI) data. He also finds that the stock market negatively responded to the publication of the US Environmental Protection Agency’s (EPA) pollution data. More recently, Capelle-Blancard and Laguna (2010) used an original sample of 64 explosions in chemical plants and refineries worldwide from 1990 to 2005. The authors provide consistent evidence that petrochemical firms instantaneously experience an average drop in their market value of about 1.3% over the 2 days following the disaster. Konar and Cohen (1997) similarly

¹¹ See Capelle-Blancard and Laguna (2010) for a survey of the impact of environmental events on the market value of firms.

found significant abnormal returns following the public announcement of company emissions reports from the TRI. A meta-analysis of 27 event studies conducted by Frooman (1997) provides consistent evidence that shareholders' wealth decreases significantly when negative information regarding a firm's social and environmental behavior is made public. Doh et al. (2010) do not report any positive market reaction to inclusion in the Calvert social index, while there is a negative reaction to deletion from the same index. More recently, Krüger (2015) finds consistent evidence that negative ESG events are followed by a stock price decrease, while positive ESG events have no significant impact.

A body of literature documents a significant negative effect on returns after exit announcements from a socially responsible index. For instance, Consolandi et al. (2009) investigate changes on the DJSSI and report that deletion from this index leads to a negative market reaction. A similar result was obtained by Ramchander et al. (2012) while studying deletion from the Domini Social 400 Index.

Drawing on legitimacy and stakeholder theories, media attention has been proven to drive investors' perceptions and opinions (Dyck et al. 2008b; Dyck and Zingales 2003; Kuhnen and Niessen 2012; Liu and McConnell 2013). Accordingly, greater coverage of poor corporate social behavior implies lower levels of firm legitimacy and credibility (Godfrey et al. 2009; Yoon et al. 2006) and triggers more stakeholder skepticism.

Moreover, much of the prior literature considers CSR initiatives such as developing sound and trusting relationships with stakeholders as the main antecedents of reputation (C. J. Fombrun 2005; Brammer and Millington 2005; MacMillan et al. 2004). Accordingly, companies with suspicious corporate social behavior run the risk of damaging their reputation and losing trust among stakeholders. A poor reputation can adversely impact firm performance (Van Beurden and Gössling 2008). Specifically, Stuebs and Sun (2011) argue that firms with weaker CSR practices are more likely to experience consumer boycotts, labor problems and environmental concerns.

Hypothesis 2. Shareholders react negatively to the publication of negative ESG press headlines.

2.2.2. The moderating role of investor attention

There is ample evidence of a significant link between CSR and financial performance¹². Interestingly, a growing and important stream of literature has recently shed light on the determinants of this relationship. This paper builds on these studies and introduces investor attention on ESG press headlines as a determinant of the market pricing of CSR.

Prior studies identified the determinants of CSR. For instance, H. Hong et al. (2012) show that less financially constrained firms care more about corporate policies aimed at increasing stakeholder welfare. Liang and Renneboog (2013) study how legal origins and political institutions shape the trade-off between shareholder and stakeholder rights. Di Giuli and Kostovetsky (2014) show that firms with democratic-leaning chief executive officers (CEOs) are more socially responsible. Prabu David et al. (2005) explore consumer reactions to CSR initiatives and find that consumers' purchase intentions are related to whether a company's ethics record reflects their expectations. The authors argue that better news coverage can significantly increase the public's familiarity with CSR activities and, eventually, influence public perceptions. Finally, a company's reputation also appears to affect the success of its CSR strategy (Du et al. 2010; Lii and Lee 2012; Yoon et al. 2006).

Turning to the literature on the determinants of the CSP-CFP relationship, Hull and Rothenberg (2008) argue that CSR performance has a strong impact on financial performance when the firm displays low levels of innovation and industry differentiation. Elsewhere, Servaes and Tamayo (2013) use advertising expenditure as a proxy for consumer awareness and show that KLD scores are positively related to firm value for firms with high customer awareness.

Accounting for the role of investor attention is important. Overwhelmed by information, today's investors have to cope with an unprecedented level of information. As economist Herbert Simon (1971)¹³ has argued, information consumes the attention of the individuals who receive it. Therefore, as information becomes abundant, attention becomes scarce.

¹² Examples include Al-Tuwaijri et al. (2004), Aras et al. (2010), Aupperle et al. (1985), Cochran and Wood (1984), Moneva and Ortas (2010), Orlitzky et al. (2003), Pava and Krausz (1996); Ullmann (1985), and Waddock and Graves (1997a).

¹³ "In an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it" -- Designing Organizations for an Information-Rich World', in Martin Greenberger, *Computers, Communication, and the Public Interest* [Baltimore, MD: The Johns Hopkins Press, 1971, 40–41].

Indeed, attention is a valuable and limited cognitive resource (Kahneman 1973). By attention, we refer to the processes that involve the enhancement or selection of particular information and the inhibition of other information (J. R. Anderson 1990; Pashler et al. 2001).

In the spirit of the psychological literature, several studies on finance consider the impact of attention allocation on investor behavior and asset pricing (Peng and Xiong 2006; Peng 2005; DellaVigna and Pollet 2007). Mondria and Wu (2011) find that firms receiving an increase in attention earn higher returns, even after controlling for size, book-to-market, momentum and liquidity factors. Likewise, H. Chen et al. (2004) indicate that firms added to the SandP500 experience a positive price return. However, firms that are removed do not experience a negative price return. The authors attribute this asymmetric finding to changes in investor attention. As stock becomes part of their portfolio universe, it is subject to stronger buying pressures and its required rate of return is permanently decreased.

Similarly, Da et al. (2011) study the impact of investor attention on trading and asset pricing. The authors use Google search frequency as a proxy for investor attention and find that higher abnormal attention has an effect in the first two weeks of the month, which is then eventually reversed within the year. They also show that higher search volumes contribute to the large first-day IPO return and long-run underperformance of IPO stocks, thereby providing direct and consistent evidence to support the price pressure hypothesis.

In the spirit of Da et al. (2011), Drake et al. (2012) study the dynamics of investor demand¹⁴ for information about earnings announcements. They report that information demand as proxied by Google search volume increases about two weeks prior to the announcement of earning news, spikes at the time of the announcement, and continues at high levels for a period thereafter. Most importantly, they argue that preannouncement prices and changes of volume reflect more of the upcoming earnings news, when investors search for more information in the days just prior to the announcement.

Taken together, we believe that any potential effect of ESG press headlines on stock prices depends to some extent on the visibility of a firm's social behavior to stakeholders (Servaes and Tamayo 2013; Cho et al. 2013; Di Giuli and Kostovetsky 2014; Barnett 2014), and more precisely on investor attention.

¹⁴ Drake et al. (2012) acknowledged that “investor information demand and investor attention are very similar and may be viewed as capturing the same underlying concept. If investors are looking for information about a stock, they are paying attention to it; conversely, if investors are paying attention to a stock, they are also likely looking for information about that stock.”

Hypothesis 3. The stock market response to ESG press headlines depends on investor attention.

As is evident from the studies mentioned above, the existing literature has not yielded any definitive conclusions. Indeed, whether CSP influences financial performance is still up for debate and further studies are needed. In the present paper, we revisit this question and test our main hypotheses in an international setting. Furthermore, we integrate a previously omitted determinant of the market pricing of CSR, namely investor attention.

2.3. Research design

2.3.1. Data and summary statistics

2.3.1.1. Event selection

In the present paper, the main goal is to test whether investor attention helps to explain the stock market response to ESG-related headlines. Data on such headlines was obtained from Factiva. Dow Jones Factiva covers all major newspapers and publications throughout the world, with access to more than 10,000 news sources. For our purposes, we restricted the news sources to top sources, i.e. Dow Jones Newswire, Reuters Newswire, Press Release Wires, Wall Street Journal, Financial Times, and New York Times. Since media attention can be either positive or negative, we isolated positive and negative ESG-related headlines.

To ensure reliability and validity, we applied a number of filters. We began by searching¹⁵ Factiva for all articles in English that belonged to the customized Factiva topics, namely environment, social, governance and CSR issues. In particular, we restricted the search procedure to headlines where the firm name appeared. Moreover, to determine whether the headline was about negative (positive) information, we relied on the Factiva expert search feature which allowed us to determine the tone of the article and facilitate the identification procedure. Typically, positive ESG-related headlines include the announcement of a social sponsoring program, charitable donation, a green award, etc., whereas negative headlines range from corruption to environmentally harmful products or bad labor conditions in subcontractor factories etc. As a control check, we further asked the Factiva database for the

¹⁵ In collecting the data, at least two researchers processed each CSR topic. It should be noted that interrater agreement was 97%. Indeed, thanks to the Factiva expert search feature, in almost all cases assessment of an article's relevance was relatively straightforward. Interrater agreement for categorizing the articles was 96%.

firm name and the firm/year combination obtained from the first stage of the search and did a matching of news¹⁶.

From the first sample, some articles were dropped for the following reasons: (1) the news item occurred on a non-business day; (2) it was poorly specified (either the nature of the event or the date is missing); (3) it did not refer to a specific company, but rather to the government (e.g., in the context of legislation), society, a particular industry, etc.; (4) no stock market information was available during the estimation period; (5) the article was not about CSR issues; (6) numerous news items appeared on the same day about the same firm, making it impossible to interpret the stock market reaction.

All items matching the above criteria were dropped leaving a total of 967 press headlines regarding environmental issues, 393 about social issues and 340 about corporate governance issues. In addition to ESG-related news, the final count of events is about 2,012, 765 of which relate to positive ESG headlines and 1,247 to negative ones. Some examples of the press articles collected are illustrated in Appendix 2.2.

2.3.1.2. Financial data

Having compiled the list of relevant articles, we then extracted the company name from each one and matched it to the corresponding company name in Datastream, which covers more than 75% of publicly listed companies worldwide. The sample period spans from 01/01/2000 to 31/12/2015. For each article date, we collected corresponding daily data for stock returns, local market indices, the MSCI world market index, and daily foreign currency exchange rates from the Datastream database. We then used firm-level identifiers from Datastream to match the dataset to other databases (IBES, Factset Fundamentals, Worldscope and Thomson Reuters Asset4) as reported in Appendix 2.1. All the countries of the firms included in the last sample, as well as the corresponding media system quality metrics, are reported in Appendix 2.3.

¹⁶ One caveat of this method, as with any event selection procedure, is that the collection of event data is very time-consuming. Moreover, although the Factiva database features allowed us to identify the tone of the article, it is sometimes difficult to reach a consensus about what constitutes positive or negative information. Nevertheless, we believe that there is no reason to suppose that the event selection procedure would introduce any systematic bias into the analysis. However, the power of the tests could be reduced since, to some extent, some relevant ESG press headlines may have been omitted.

2.3.1.3. Measurement of variables

2.3.1.3.1. Investor attention as measured by abnormal daily GSV

In their seminal paper, Barber and Odean (2008) implicitly distinguish between passive and active investor attention, the latter originating from investor decisions to analyze firm-level fundamentals, whereas passive attention originates from a foreign source such as the media outlets directing investor attention to a particular firm. For instance, greater media coverage increases the passive investor attention paid to the firm. However, as argued by Da et al. (2011), a press article does not guarantee attention unless investors actually read it.

Until recently, proxying for active investor attention has been a challenging task. Da et al. (2011) introduce Google search volume (GSV hereafter) of ticker symbols provided by Google Trends as a proxy of firm-specific active investor attention. They also provide consistent evidence that, in an average week, GSV is positively associated with market capitalization, abnormal returns of IPOs, turnover, and media attention. Accordingly, GSV seems to be a more reliable and direct proxy for attention than other indirect measures, such as extreme returns, trading volume, and media attention (Barber and Odean 2008). In a broader setting, GSV appears to be a significant predictor of future sales (Choi and Varian 2012), jobless claims (Choi and Varian 2009), flu outbreaks (Dukic et al. 2012) and IPO returns (Da et al. 2011).

In this study, we use the stock ticker as the search criterion submitted to Google Trends to identify firm-specific investor attention¹⁷. One of the shortcomings of this application is that Google data with a daily frequency are available only for 90 days, whereas weekly data are available for an extended period¹⁸. To create daily data for periods longer than 90 days, we first downloaded all quarterly daily data for each company/year couple during the sample period. We then adjusted the daily data by calculating the percentage change between the days, before using the weekly data and percentage of daily change to create a new daily index value. From the daily GSV data, we removed non-trading dates. Since this procedure was manually a challenging task, we developed an R code to save time and properly complete the procedure for all the firms under analysis.

¹⁷ The use of tickers instead of firm names increases the likelihood that the user is an investor, rather than an individual searching Google for other company information, such as products.

¹⁸ Some other minor concerns with Google data are: (1) the search volume does not include searches from other major search engines such as Bing and Yahoo!; and (2) the data do not include searches using other major search mechanisms, such as Google Finance.

We followed Da et al. (2011) and calculated firm-specific abnormal GSV (AGSV hereafter) on day t as the natural logarithm of GSV as provided by Google, minus the median GSV over the prior 10 days. Google Trends references the keywords inserted by Google users, scaled by their time-series average and by the total search traffic, in order to control for the increasing use of the internet. As in Drake et al. (2012) and Da et al. (2011), we also used the natural logarithm of $(1+AGSV)$ to normalize the distribution of Google data. Overall, such a procedure normalizes this distribution, controls for the fraction of GSV that is unrelated to the ESG-related news, increases the power of the statistical tests, and reduces the likelihood that correlated omitted variables are biasing the results.

2.3.1.3.2. Corporate social performance

The Thomson Reuters Asset4 database is a particularly reliable data source because of its diverse sources and news coverage, and its frequent updates from different media sources (hundreds of major English-speaking news outlets and non-governmental organizations). Asset4 classifies these data into categories within each major pillar. For instance, the environmental pillar consists of three categories: emission reduction, product innovation, and resource reduction. The governance pillar has five categories: board functions, board structure, compensation policy, shareholder policy, and vision and strategy. The social pillar is condensed into seven categories: community, diversity, employment quality, health and safety, human rights, product responsibility, and training and development. Asset4 provides the “Equal Weighted Rating”, which captures a balanced view of the firm’s performance in four areas: environmental, social, governance, and economic. In this paper, we do not use the “Equal Weighted Rating” as denoted “14IR” by Asset4, but rather exclude the economic dimension from this score. We controlled for corporate social performance by employing the industry-year adjusted CSP score in the year preceding an event as a proxy.

2.3.2. Event study analysis

2.3.2.1. The market model

As commonly practiced, we implement the standard market model in order to estimate abnormal returns (Capelle-Blancard and Laguna 2010; Flammer 2013). As in Model (1), to explain return series, we take into account the stock’s sensitivity to general market movements reflected by the country’s main stock index, as follows:

$$R_{ijt} = \alpha_i + \beta_i R_{mjt} + \varepsilon_{ijt} \quad (1)$$

Where R_{ijt} is the observed returns of a particular security i at time t , R_{mjt} is the market returns at the same time and ε_{ijt} is a random-error term with $E[\varepsilon_{ijt}] = 0$ and $\text{Var}[\varepsilon_{ijt}] = \sigma_{ij}$. For each day of the event window relative to the event day, an abnormal return AR_{ijt} is calculated as in Model (2) performed as follows:

$$AR_{ijt} = R_{ijt} - (\hat{\alpha} + \hat{\beta}R_{mjt}) \quad (2)$$

To capture the total return change, we calculate the cumulative abnormal returns (CAR hereafter), defined as the sum of abnormal returns (AR) included in the event period:

$$CAR_{[x,y]} = \sum_{j=x}^{j=y} AR_{ijt} \quad (3)$$

One caveat with the use of the market model is that the abnormal returns may reflect other factors (e.g., size, book-to-market ratio, or past performance) that are priced during the sample period. Another concern arises from the fact that international stock markets differ in several respects. We address this issue in the “robustness” section by providing additional evidence regarding the estimation of normal performance.

2.3.2.2. Event day, estimation window and event window

Unfortunately, the length of the estimation period is not without controversy (Pettengill and Clark 2001). In untabulated results, we follow previous studies and employ a wide range of dates, ranging from 120 business days (roughly six months) to 255 business days (roughly one year). The literature also shows that studies use a period that varies from immediately prior to the event window over which abnormal returns are accumulated to 45 days prior to the event being investigated.

As is common practice (Flammer 2013), the event date corresponds to the publication date of the press article (day 0). To account for the leakage of information and capture cases where the news was published the day after the announcement, we also include the previous trading day (day -1) in the event window (MacKinlay 1997; Flammer 2013). This two-day event window is denoted by (-1, 0). According to McWilliams and Siegel (1997), the event window should be as short as possible on the basis that the stock price may actually fully adjust within only a few minutes or hours. Likewise, an important stream of financial literature has held that using longer event windows severely reduces the power of event study tests (S. J. Brown and Warner 1985; Sabino P Kothari and Warner 2007; MacKinlay 1997). Finally, the most

serious problem which may arise from longer event windows is that they are more likely to capture confounding effects, making it harder to obtain reliable statistical inference.

To check the robustness of the results, we also considered alternative event windows such as (-1, +1), (0,+1), (+1,+5) and (+1,+10), as reported in Table 2.2. The abnormal returns are estimated by OLS on the basis of 120 trading days prior to the first time interval (the 120 trading days used in the estimation correspond to the interval (-130,-11)).

2.3.2.3. The significance of abnormal returns

For an event study to be reliable and validated, it has to be supported by statistical tests. Specific market-related characteristics can influence the statistical properties of stock returns. Moreover, when applied to multi-country samples, commonly used test statistics may be less powerful than with US data and may be biased, leading to potentially incorrect inferences.

In this paper, the effects of CSR issues are tested for statistical significance via the Patell Z (Patell 1976) and some non-parametric tests, as evidenced in the “Robustness” section. These are respectively parametric and non-parametric statistical tests designed to determine whether the calculated abnormal returns and cumulative abnormal returns are significantly different from zero at conventional significance levels. There is no consensus about a perfect test but parametric and non-parametric tests have been proven to be complementary.

2.4. Does the stock market value corporate social performance? Evidence from a multi-country event study

2.4.1. Main findings

Table 2.1 first provides the summary statistics for the variables under analysis (mean, standard deviation, VIFs and pairwise correlations). These statistics are reported separately for the positive and negative ESG-related headlines.

As expected, the mean CAR is negative (positive) in reaction to the publication of negative (positive) ESG-related headlines, in keeping with the view that shareholders punish companies for bad CSP and reward them for good CSP (Hypotheses 2, 3). In particular, the stock market experiences on average a significant equity loss of about 0.2% in a window of two days around the publication in the media of a negative ESG-related headline, while there is an equity gain of about 0.6% in a window of two days around the publication of a positive ESG-related headline.

Further, the correlation between CAR and media freedom is negative for both positive and negative events, suggesting that the reward for positive CSR initiatives is negatively

correlated to media freedom, while punishment for suspicious behavior increases with greater media freedom. It would appear there is no significant correlation between CAR and AGSV, suggesting that abnormal investor attention does not explain the stock market response to ESG headlines. Likewise, the correlations between CAR and CSP scores are not suggestive of a significant relationship between corporate social performance and stock performance.

<Insert Table 2.1 here>

Given the high correlation between some variables of interest, we tested for multicollinearity. VIFs are commonly used as reliable indicators of multicollinearity. We predict that in fixed effect models, VIFs are by construction expected to be inflated (Baum 2006). Hence, to obtain reliable metrics of multicollinearity, we re-estimate a transformed model using the OLS method, which removes the fixed effects from the estimation but still produces the same estimated coefficients as in Gormley and Matsa (2014). The transformed model replicates the fixed effects procedure and is achieved by subtracting from each explanatory variable its mean. We then estimate our main base model using these transformed variables (Wooldridge 2003). As can be seen in Table 2.1, VIFs do not exceed 3 for all the variables under analysis, indicating the absence of multicollinearity.

The event study analysis starts with a test of Hypothesis 1, i.e. whether shareholders react positively to the publication of ESG-related press headlines. The results are presented in Table 2.2. In particular, we first investigate whether stock prices respond to all ESG-related headlines taken together, before testing whether shareholders react positively to the publication of positive ESG-related headlines. For each event window, we report the average CAR as a percentage as well as the corresponding z-statistics in parentheses. We also report the number of positive vs negative individual CARs. For all event windows analyzed, CARs – although not negligible – are insignificant, rejecting Hypothesis 1.

<Insert Table 2.2 here>

Interestingly, the publication of negative ESG press headlines significantly leads to negative abnormal returns. As can be seen in Table 2.2, the average CAR is negative (-0.14%) and significant at the 1% level for the (-1,+0), (0,+1) and (-1,+1) event windows respectively. Furthermore, 601 out of 646 individual CARs are negative. For longer event windows, the CARs are smaller and insignificant, which confirms that the results are not driven by other unrelated information around the event dates. Finding negative and significant abnormal returns following negative ESG headlines is supportive of Hypothesis 2.

Taken together, the results suggest that there is an asymmetric stock market reaction to ESG-related headlines and especially that shareholders punish firms for negative press coverage of CSR issues while positive media attention is ignored by the stock market.

Corporate good news is generally no news for stakeholders. Corporate problems, on the other hand, are more likely to cause controversy and attract high levels of public attention. This probably explains why media reports on companies often focus on controversies. In order to explain these results, we can refer to the negativity effect which could be regarded as a special case of the broader positive–negative asymmetry first introduced by Peeters (1971). In our setting, the negativity effect could be defined as a typical asymmetry: a negative reaction to bad news but a negligible reaction to good news.

2.4.2. Evidence from ESG pillars

One of the core findings of the paper is that shareholders react negatively to unfavorable ESG press headlines. In this section, we isolate the types of press headlines for which this result continues to hold. As evidenced in Table 2.2 and confirmed in Table 2.5, we find that shareholders are particularly sensitive to corporate governance concerns in a two-day event study, while social and environment press headlines (both positive and negative) are somewhat overlooked by the stock market. Indeed, the stock market reaction is statistically non-significant for different event windows considered. Hence, one can conclude that our main results are driven by specific categories of ESG headlines, especially governance performance.

Corporate governance is widely seen as a shareholder engagement channel. Specifically, it constitutes the fundamental mechanism through which shareholders ensure a return on the money they invest in the equity of firms. In a similar vein, McCahery et al. (2016) show that inadequate corporate governance and excessive compensation are considered by the majority of their respondents as very important triggers for shareholder engagement, which reflects the importance of these topics in the public debate.

2.5. Abnormal investor attention as a determinant of the value-implications of CSR

2.5.1. Regression analysis

In this section, we aim to examine the capital market implications of abnormal investor attention as previously defined. In particular, we test whether abnormal GSV is associated with the price discovery of ESG press headlines. Empirically, we use a regression-based methodology to explain the contribution of abnormal investor attention to the CSP-CFP

relationship, while controlling for well-known market performance determinants. This analysis is a standard part of almost every event study and examines to what extent the stock price effects of an event are related to internal and external attention-related moderators, which is relevant even when the mean stock price effect of an event is zero (John Y Campbell et al. 1997). In particular, for a cross section of firms, abnormal returns are regressed against internal attention-related moderators such as firm characteristics (firm size, advertising expenditure), and external ones such as AGSV, CSP score, and country-specific settings related to the media system.

Intuitively, more investor attention on a particular firm would be thought to increase the stock market reaction to ESG-related news. However, this assumption may be subject to a number of controls. Given our international dataset, we further predict that the stock market response may certainly vary based on firm-level characteristics but also on certain country-specific settings. To provide a more complete picture of the event study results and to rule out alternative explanations, in addition to abnormal investor attention, we control for the following variables:

- ***Firm size***: as measured by the log of total assets (Flammer 2013; Servaes and Tamayo 2013). Because we expected larger and more profitable firms to receive more publicity and to have greater name recognition, we controlled for firm size. For instance, Turban and Keon (1993) presented evidence that an organization's size influences its attractiveness. Furthermore, El Ghouli et al. (2011) and Core et al. (2008) argue that larger firms attract higher levels of media attention and benefit from greater analyst coverage. We also add an interaction between firm size and AGSV. The coefficient associated with this interaction term represents the incremental effect in the attention-CSR relationship for large firms relative to small firms. We expect this coefficient to be positive and significant if smaller firms receiving more attention are more likely to be punished. Elsewhere, for larger firms, attracting more attention for positive media coverage is expected to imply a lower reward for CSR initiatives.
- ***Return on assets***: as for firm size, we controlled for firm profitability to account for the reasons above mentioned. Firm profitability is measured by the ROA which is used as an accounting-based performance measure and defined by the ratio of net income to total assets.
- ***Market-to-book ratio***: Defined as the ratio of the market value of equity to the book value of equity and added as an explanatory variable. This ratio serves as a proxy for growth opportunities (Collins and Kothari 1989). In other words, a higher market-to-book ratio

implies that investors expect managers to create more value from assets or that the stock is overvalued.

- **Book leverage:** We also control for book leverage as a measure of agency problems in line with Jensen (1986) and more recently Krüger (2015). Book leverage is defined as the ratio of the book value of debt to the book value of total assets. Higher values of this ratio decrease the discretionary power of managers and should indicate fewer agency concerns, and positive media coverage of CSR events involving such firms should bring about more positive stock market reactions.

- **Advertising expenditure:** Advertising generates public awareness about the firm and prompts customers to become more informed about the firm's CSR activities. Hence, this kind of expenditure provides insights into the firm's information environment (Nelson 1974), firm visibility (Grullon et al. 2004) and consumer awareness (Servaes and Tamayo 2013).

From an investor's perspective, advertising expenditure has a positive long-run impact on a firm's market capitalization (Joshi and Hanssens 2010). Furthermore, a number of studies provide evidence that it has a direct effect on firm performance metrics, including sales (Vakratsas and Ambler 1999) and profits (Erickson and Jacobson 1992). In addition, advertising expenditure may be seen as an intangible asset that draws investor attention and help firms improve their reputation (Barth et al. 1998; Rao et al. 2004). However, this incremental scrutiny due to advertising spending would benefit firms with CSR strengths, but may constrain those with CSR concerns. We verify this assumption by adding advertising expenditure as an explanatory variable of CARs. Note that since the data for such expenditure are often missing, we follow the literature by setting unavailable data to zero (Barnett and Salomon 2012; Fee et al. 2009; Hale and Santos 2009; Masulis and Reza 2014; Servaes and Tamayo 2013).

Elsewhere, we believe that the effects of extra-financial information have changed over time (Takeda and Tomozawa 2008; Flammer 2013). Therefore, we introduce a linear time trend (trend 2004, 2005,..., 2014) in addition to firm profitability as measured by the return on assets, as control variables.

Since Google data were available as of 2004, merging the datasets with Google data reduced the sample size to 515 positive ESG press headlines and 652 negative events. This means the relevant sample size is smaller than previously indicated¹⁹.

¹⁹ In addition, since CSP scores covered only a subset of the company-year observations, we employ the year-industry adjusted CSP score instead of the raw values provided by Asset4 (El Ghoul et al. 2016a).

We divided industries according to the GICS classification and included industry fixed effects. We also introduced event-type fixed effects, defined at the ESG pillars level as well as country fixed effects. Including fixed effects mitigates concerns that unobserved heterogeneity at different levels could drive the results. Importantly, such fixed effects control for differences in the size of the events across categories (e.g., oil spills may be more detrimental than sexual discrimination and therefore yield more negative CARs), countries and industries, especially in the case of negative issues. Formally, we estimate the following model:

$$\begin{aligned}
 CAR(-1,0) = & c + \beta_1 Abnormal\ Attention_{i,j} + \beta_2 Size_{i,j} + \beta_3 Size_{i,j} * Abnormal\ Attention_{i,j} + \\
 & Advertising_{i,j} + \beta_8 AdDummy + \beta_9 CSPscore_{i,j} + \beta_{10} Advertising_{i,j} * CSPscore_{i,j} + \\
 & \beta_{11} Profitability_{i,j} + \beta_{12} MB_{i,j} + \beta_{13} Leverage_{i,j} + \beta_{14} Market - wide\ attention + \beta_{15} English_{i,j} + \\
 & \beta_{16} t + \Omega c + \mu s + \beta t + \varepsilon_{i,j}
 \end{aligned} \tag{4}$$

The main dependent variable is cumulative abnormal returns as calculated by the market model, and all explanatory variables are defined in Appendix 2.1.

2.5.2. Empirical results

This section reports the empirical results and offers a brief discussion of the main findings. Table 2.3 shows how the estimation results change when controlling for abnormal investor attention as proxied by AGSV of stock tickers. For both types of ESG-related press headlines, in Model (1), we first regress CARs solely on the firm's standard attributes such as profitability, leverage, size and market valuation proxy. In this way, we are able to assess whether it is likely that the omission of attention-related variables impacts the results of earlier studies. In Model (2), we replicate the regression from Model (1) but with a smaller sample size since we include AGSV, an interaction between firm size and AGSV and the CSP score. In Model (3), we further include advertising expenditure and an interaction between advertising and the CSP score as explanatory variables, as in Servaes and Tamayo (2013). This last specification accounts for external and internal attention-related moderators, which shape firm visibility.

<Insert Table 2.3 here>

As is shown in the left-hand panel of Table 2.3, the coefficient for AGSV is negative and significant at the 95% confidence level. At first glance, this finding supports Hypothesis 3 which proposes that the stock market response to ESG press headlines depends on investor

attention. In particular, shareholders of companies attracting higher levels of investor attention experience greater losses).

However, the coefficient for the interaction between firm size and AGSV is significantly positive. It appears that shareholders of larger companies react less negatively to the announcement of suspicious social behavior. In contrast, smaller firms experiencing higher levels of abnormal attention appear to be punished more in reaction to negative media coverage. This implies that the stock market reaction to ESG press headlines depends, to some extent, on firm size²⁰.

In the right-hand panel of Table 2.3, we replicate the analysis used for negative ESG press headlines. The coefficient for AGSV remains significant but positive, suggesting that shareholders of firms with appropriate corporate social behavior react more positively to positive media coverage of CSR, in accordance with Hypothesis 3. Most importantly, the coefficient for the interaction between AGSV and firm size has an opposite sign while being significant (95% confidence level). As expected from previous results, we can therefore conclude that the impact of investor attention on CARs may differ at different levels of firm size.¹² In particular, the reward for larger firms of positive ESG press headlines is less important. Similarly, more investor attention seems to benefit smaller firms in the case of positive ESG-related headlines. As can be seen, the effect of investor attention is not the same for firms of different sizes. Specifically, for both types of ESG-related headlines, the interaction term between firm size and abnormal attention has a sign opposite to the one for AGSV, suggesting that for larger firms the impact of investor attention on CARs becomes weaker.

The raw effect of advertising is positive in both types of events. These findings suggest that shareholders of companies with greater advertising expenditure react more positively to positive CSR media coverage. Conversely, for companies with negative media coverage, higher advertising expenditures may reduce the negative effects of bad CSR media coverage.

The direct effect of the CSP score is not significant for all specifications and for both types of CARs. However, when interacted with advertising expenditure, the CSP score becomes significant with a negative sign for all specifications while the coefficient for advertising expenditure is significantly positive. Hence, we argue that companies profit from their CSR

²⁰ Although VIFs do not detect any problem of multicollinearity among explanatory variables, we followed the recommendation of Aiken et al. (1991) and McClelland and Judd (1993) and substituted raw values of abnormal GSV and firm size with centered values. The results remain the same and are available upon request.

performance if they advertise to the extent that advertising enhances customer awareness, as in Servaes and Tamayo (2013).

Interestingly, the impact of CSP scores on the value implications of ESG press headlines depends on the level of the firm's branding capital. Finally, the coefficient for market-wide attention is not significant for both positive and negative ESG-related headlines.

2.6. Robustness checks

2.6.1. The role of the institutional context

Since we rely on an international data set, we expect the effect of CSR on financial performance to vary not only across firms but also across countries (El Ghouli et al. 2016a; El Ghouli et al. 2015). We therefore test whether the results change while controlling for the country-specific media system, for which the freedom of the press, the media offer and the corruption index serve as proxies.

One explanation could be differences in institutional environment. For instance, while firms located in developed countries enjoy stronger and more independent media than other firms, the institutional environment with respect to the media system can impact the incentives to engage in CSR activities (El Ghouli et al. 2016b). Indeed, Ioannou and Serafeim (2012) find that country-level institutions significantly affect firms' CSR performance. In this section, we examine whether the institutional context, as reflected by media freedom, the media offer and the corruption index, influence the relationship between CSP and financial performance.

We collect media freedom scores from Freedom House, as in El Ghouli et al. (2016b)²¹. The index ranges from 0 to 100, with larger scores reflecting less press freedom. We multiply the original score by -1 so that higher values indicate greater media freedom. We also control for the level of country-specific media offer, defined as the number of daily newspapers per 1 million inhabitants. Data on media offer and corruption metrics are drawn from the Worldbank database.

For the left-hand panel of Table 2.4, media freedom is significantly and negatively related to CARs, suggesting that greater media freedom induces a more severe stock market reaction to negative ESG press headlines. In addition to media freedom, the coefficient for media offer is positive and significant. It follows that companies located in countries with a wider media offer combined with lower media freedom react less negatively to unfavorable media coverage. For the right-hand panel of Table 2.4, the coefficients for media freedom, media

²¹ Burgess (2010) suggests that media freedom is the most frequently cited indicator of media independence and power.

offer and corruption index are not significant while the main results of the paper remain unchanged.

<Insert Table 2.4 here>

2.6.2. Evidence from alternative proxies

Instead of AGSV, we use analyst following, as measured by the number of analysts that cover a focal firm in each year, as a proxy of investor attention to test the robustness of our main research question. Analyst following is a well-established measure from the accounting and finance literatures that controls for firm visibility (Pollock and Gulati 2007). Furthermore, it is well-known that analysts are information intermediaries for investors and can reduce information asymmetry (Frankel and Li 2004; Lehavy et al. 2011). Losing such coverage implies a failure to attract financial visibility and investor interest (Mehran and Peristiani 2010).

We also employ the log of market capitalization instead of the log of total assets as a proxy of firm size. Finally, as a dependent variable, we use buy and hold abnormal returns (BHAR) instead of CAR. As before, we include in all specifications, industry, country and event-type fixed effects.

The results of this analysis are presented in columns (1), (2) and (3) of Table 2.5. Interestingly, the coefficient of the variable of main interest (attention proxy) remains highly significant for all the specifications.

<Insert Table 2.5 here>

2.6.3. Alternative asset pricing models

2.6.3.1. The revisited World Market model

To estimate abnormal stock returns, researchers have typically used the market model in a single-country setting. In the present paper, we rely on an international sample of 2,012 ESG events related to 197 firms from all over the world (24 countries). Hence, we cannot draw our conclusions regarding the significance of abnormal returns only on the basis of studies working with simulated samples from single or mostly advanced markets.

We implement the revisited World Market model accounting for methodological challenges in multi-country settings as an extension to the work of Park (2004). To explain return series, this model takes into account the stock's sensitivity to general market movements, as reflected

by the countries' main stock market indices, the influence of global stock markets as evidenced by the MSCI World Index, the exchange rate, and a dummy variable that takes 1 for the event date and 0 otherwise.

Abnormal returns are formally calculated on the basis of the following model:

$$R_{ijt} = \alpha_i + \beta_i R_{mjt} + \gamma_i R_{wjt} + \theta_i X_{cjt} + \delta_i Dummy + \varepsilon_{ijt} \quad (5)$$

Where R_{ijt} is the observed returns of a particular security i at time t for the event j , R_{mjt} the corresponding market returns, R_{wjt} the adjusted world market index return at the same time, X_{cjt} the foreign currency exchange rates in country c on day t , and $Dummy$ a binary variable that takes 1 on the day of the event and 0 otherwise. α_i , β_i , γ_i , θ_i and δ_i are firm specific parameters, and ε_{ijt} is a random-error term with $E[\varepsilon_{ijt}] = 0$ and $Var[\varepsilon_{ijt}] = \sigma_{ijt}$.

Note that for the world market returns, we use daily returns of the MSCI world index, which we adjusted to be orthogonal to the local market indices of all 24 countries.

As evidenced in Table 2.2, we find that cumulative abnormal returns remain qualitatively the same regardless of the use of the revisited World Market model to estimate normal performance.

<Insert Table 2.6 here>

2.6.3.2. Robustness to GARCH Models (EGARCH)

In this section, the standard OLS event study methodology is compared to a hybrid method (OLS/EGARCH) to check the impact of ESG press headlines on stock prices and deal with the heteroscedasticity in the disturbance term.

GARCH models are designed to capture the volatility clustering effects in the returns. One extension of the standard GARCH is the Exponential GARCH, commonly known as the EGARCH (Yamaguchi 2008; Takeda and Tomozawa 2008).

As asserted by Table 2.7 (row 7), the results remain the same regardless of the use of EGARCH instead of the standard market model to estimate normal performance.

2.6.4. Alternative significance tests

Apart from endogeneity concerns, the most challenging assumption in utilizing OLS regression for daily stock returns is that we implicitly suppose that the data are cross-sectionally independent. In contrast, cross-sectional dependence is more likely when at least some of the returns used in an event study are correlated due to common macroeconomic or

industry-specific activity or due to single or clustered event dates (Prabhala 1997). Since some of the event dates in our sample may be subject to cross correlation, the assumption of independence would be violated.

Boehmer et al. (1991) propose the standardized cross-sectional test, which is commonly known as the BMP test, a combination of the Patell test and an ordinary cross-sectional test in which the average event-period residual is divided by its contemporaneous cross-sectional error. However, this test still relies on the assumption that security residuals are uncorrelated across firms. Further, Kolari and Pynnönen (2010) propose a revised version of the BMP test to account for cross-correlation of the abnormal returns. As can be seen in Row 1 of Table 2.7, employing this test instead of the standard Patell test yields similar results. Again, the empirical results are robust if we employ a non-parametric significance test such as the Corrado “rank test” first introduced by Corrado (1989).

There are few, if any, potential shortcomings to using non-parametric tests, particularly given that non-parametric tests are typically not used in isolation but, rather, in conjunction with parametric tests so that each can provide a check on the robustness of conclusions as compared to the other (John Y Campbell et al. 1997). Indeed, it is obvious that there is not a single best solution to address cross-sectional dependence in event studies. As a result, it is better to employ a battery of tests in order to check the validity of the results. The results are reported in row 2 of Table 2.7.

2.6.5. Alternative event windows

As previously mentioned, we rely on a two-day event window, following common practice in the finance literature (MacKinlay 1997). Nevertheless, the simulations we performed are built on the strong assumption that the date on which abnormal performance takes place is known with absolute certainty. However, given that in most cases the calendar date of the event cannot be identified exactly, most event study settings involve multiday event periods where the date itself becomes a random variable. To analyze this assumption, we also examine how uncertainty about the precise date of the abnormal performance affects the power of the event study technique. Reassuringly, Table 2.7 does not yield confounding results for the event windows considered, namely (-1, +2), (-1, +3) and (+6, +20).

2.6.6. Robustness to sample construction

We first exclude firms in the financial industry according to the GICS classification, since their regulatory setting is different from that of other firms (El Ghouli et al. 2016a). As can be

seen in row 5 of Table 2.7, the results remain the same regardless of the presence of financial firms in the sample under analysis.

Second, we exclude extreme events which would have a likely impact on abnormal returns. For instance, the BP oil spill has contaminated a large marine environment along the Gulf of Mexico. This incident is considered the biggest offshore oil spill in US history. Another oil spill caused by Exxon in 1989 was considered one of the most damaging environmental disasters of all time. Both incidents received huge negative press coverage. Thus, we may be concerned that the sample is dominated by these firms.

Although this high level of media attention may convey new relevant information, it may continue to be highly correlated to the original incident. To ensure that our results are not driven by these firms, we re-estimated the CARs, excluding all events pertaining to both Exxon and British Petroleum. As shown in row 4 of Table 2.7, excluding those firms has no significant impact on the main results.

<Insert Table 2.7 here>

2.7. Discussion

2.7.1. Abnormal investor attention

Although we cannot confirm the merits of CSR on shareholder wealth, the empirical findings strongly suggest that the media coverage of negative ESG press headlines results in companies being punished by stock markets via decreased shareholder wealth (Frooman 1997).

On the one hand, this evidence is consistent with the theory that limited attention may lead investors to overlook valuable public information and cause distortions in stock prices (Hirshleifer and Teoh 2003; Hirshleifer et al. 2011). On the other, negative phenomena have been found to attract more attention (Fiske 1980), trigger more questions (Wong and Weiner 1981) and more frequently stimulate levels of curiosity (Czapiński 1985). Cannon (1932) even suggests that we are genetically predisposed to process negative information more easily. We are therefore more inclined to be drawn by negative stimuli than positive stimuli. Moreover, negative information carries more weight in our judgments, cognitive efforts and decision-making (Peeters 1971; Peeters and Czapinski 1990; C. Taylor 1992). In the present paper, we build on prior studies which report asymmetric security market reactions to various types of news announcements (H. Chen et al. 2004; W. S. Chan 2003; Kurov 2010; Chuliá et al. 2010). Akhtar et al. (2012) find that the negativity effect is more likely linked to salient

stocks, where such stocks are defined as those which are discussed more in the press and examined by more analysts but are not necessarily larger. They find that negativity effects are more evident in firms that have greater salience or public exposure. Drawing on psychological evidence, this asymmetric reaction could be partially attributed to asymmetric investor attention attributing more weight to negative issues. Investor attention is selective and limited (Kahneman 1973). Among many alternatives, information that is more salient to investors is more likely to be noticed. Preferences come into play only after attention has limited the choice set (Barber and Odean 2008).

If attention is a scarce resource, then it makes sense for loss-averse investors to expend relatively more attention in monitoring negative ESG headlines, since negative events may be more likely to contain information regarding potential losses that may affect them. However, there are also other, more “rational” explanations that point to the underlying nature of the problem faced by investors in interpreting financial and accounting data in such setting. In particular, if investors perceive that managers are reluctant to communicate bad, it follows that markets would react more strongly to an unambiguously negative signal, inferring that it is more likely to be truthful than a positive one, on average. For instance, Sabino P Kothari et al. (2009) argue that managers tend to withhold bad news and find that price reactions to bad news disclosures are significantly larger than those induced by positive ones. In a similar vein, Skinner and Sloan (2002) argue that asymmetrically large reactions to negative earnings announcements for growth stocks are linked to periodic release of disappointing announcements in the face of baseline expectations that tend to be overoptimistic with respect to these firms.

According to empirical results, one can assert that higher levels of investor attention result in higher losses due to negative ESG-related headlines. In other words, incremental firm visibility implies additional losses following a negative event, but especially for smaller firms commonly illustrated as a poor information environment. Another possible explanation for these results is that investors search more for information when the potential search benefits are relatively higher (more uncertainty and idiosyncratic risk).

2.7.2. The prevalence of governance performance

As in Starks (2009), investors seem to care more about corporate governance than CSR. Specifically, because effective governance mechanisms lead to better board management, shareholders pay particular attention to governance performance. For instance, managers of better governed firms are more likely to be fired after negative media coverage (Farrell and

Whidbee 2002). Even if they are not fired, these managers are expected to be more responsive to negative media reports and take corrective measures.

Consistent with this conjecture, Bednar et al. (2013) find that firms with more independent boards are more likely to implement strategic changes in response to negative media coverage. From an investor perspective, we expect that in the case of corporate governance concerns, the media plays a more important monitoring role that translates into higher reactivity from poorly governed corporations.

The corporate governance role of CSR may strengthen or weaken the association between CSR and financial performance. First, this role implies that CSR is also effective in reducing the agency problems associated with negative CSP: the stronger the corporate governance, the lower the negative CSP. For instance, the corporate governance channel implies that CSP actively reduces the agency problems associated with decisions related to cash holdings (Cheung 2016).

Second, the overall financial effects of different CSR types would also be contingent on the level of agency costs associated with them. Although all ESG pillars are expected to entail some agency-related costs, it is likely that corporate governance issues may be relatively more prone to agency hazards for two reasons. Although other ESG pillars appear to be directed towards specific stakeholder groups such as consumers and employees, governance issues are more focused on shareholders. On the other hand, assessment of investor benefits from corporate governance efforts is also expected to be higher while other benefits from for example, philanthropy and charity remain relatively less verifiable (H. Wang et al. 2008).

With respect to agency costs, better governance ultimately leads to better firm performance and value creation for shareholders through the adoption of shareholder-friendly policies and the reduction of agency costs (Gompers et al. 2010). More shareholder-friendly corporate governance is achieved through the implementation of rules, practices, and incentives to comply with shareholder interests.

As a consequence, shareholders benefit economically by advocating improved corporate governance, which would explain the negative impact of negative governance press headlines on shareholder value.

2.7.3. The role of firm size

While we argue that investor attention may influence the market pricing of CSR commitment, this relationship appears not to be uniform across firms. Indeed, as can be seen from the

results, the effect of investor attention on the CSP-CFP relationship is shaped by firm size. In particular, when interacted with firm size, investor attention has a positive impact on CARs in the case of negative ESG press headlines. However, large firms are less rewarded for positive coverage of their CSR involvement.

Size is of particular relevance since there is some evidence that larger firms engage in more CSR activities (El Ghouli et al. 2016b). It could be that growing and mature firms experience higher levels of stakeholder attention and tend to disclose more information about CSR initiatives to respond to pressure from stakeholders (Burke et al. 1986; Waddock and Graves 1997a; Menassa 2010). To the extent that larger firms are under more pressure and face greater concerns in society (Cowen et al. 1987), a body of earlier literature consistently demonstrates that firm size does matter regarding social reporting and commitments (Belkaoui and Karpik 1989; Cowen et al. 1987; Hackston and Milne 1996; Dennis M Patten 2002; R. W. Roberts 1992; Teoh and Thong 1984).

From an internal perspective, using company-controlled communication techniques, larger companies tend to disclose more CSR information (R. Gray et al. 2001), so that they are motivated to maintain and enhance the expectations of society (Tilling and Tilt 2010). This can be understood as a strategy to preserve image and value for the disclosing companies (Dennis M. Patten 1991). Furthermore, firm size could be associated with more CSR disclosure practices as companies try to alleviate some of the negative news coverage and pressure (Deegan and Carroll 1993). Building on this evidence, it could be that the extent and quality of CSR disclosure is positively related to firm size and hence lower information asymmetry.

From an external perspective, one view suggests that media outlets have incentives to cover large firms due to their prominence and greater public interest. Stories about large firms are thus expected to sell more newspapers. Also, since large firms have more stakeholders, there are more potential stories for journalistic investigations. Consistent with these conjectures, Miller (2006) finds that large US. firms are more likely to have accounting fraud identified in the press. Similarly, Core et al. (2008) find that highly paid CEOs at large firms attract negative media attention.

Consistent with these conjectures, it could be that large firms will be persecuted more for negative media attention (Miller 2006; Core et al. 2008), while at the same time CSR practices get noticed more easily in the case of highly visible firms. As can be understood from the results, large firms do not profit from greater visibility since they are less rewarded for CSR involvement, but it is very much possible that positive media attention benefits large

firms in times of crisis. Indeed, the same company might engage in both CSR and corporate social irresponsibility (C. Kang et al. 2016), and large companies might thus profit from a balanced view of these two constructs.

2.7.4. The role of advertising expenditure

Company-controlled advertising is one of the communication channels firms use most frequently to leverage sponsorship. As a response to negative media coverage, advertising enables companies to issue a controlled message to their audience. Lou (2014) finds that managers deliberately use advertising to draw investor recognition and influence their firms' stock prices.

As a corporate source, advertising may generate stakeholder skepticism and gain little credit (Balasubramanian 1994), but advertising has been found to enhance the firm's information environment (Servaes and Tamayo 2013; Nelson 1974; Bagwell 2007), thereby improving stakeholder awareness about the firm and likely making them better informed about all elements of the firm's CSR involvement, including both CSR strengths and concerns. Accordingly, as for firm size, companies can profit from their CSR if they advertise and improve their visibility. Thus, as in Servaes and Tamayo (2013), we expect the CSR-value relationship to depend on customer awareness, as proxied by advertising expenditure.

2.7.5. The institutional context

One might wonder whether, as major advertisers, large firms leverage their importance to impede the media from disclosing their bad performance. We argue that this is unlikely when media outlets are free. Indeed, Miller (2006) provides consistent evidence that US corporate fraudsters attract high levels of media attention despite being listed among the largest advertisers. Large firms are therefore unlikely to cause a media bias in the presence of media freedom. Indeed, as the results show, media pressure to engage in more CSR activities is higher in countries where the media is free (El Ghouli et al. 2016a; El Ghouli et al. 2016b).

Prior studies provide evidence that the country-specific media system influences CSR (Dyck and Zingales 2004; El Ghouli et al. 2016b; Di Giuli and Kostovetsky 2014; Deng et al. 2013) and corporate fraud (Miller 2006; Dyck et al. 2010). A free and independent media system could increase the legal costs incurred due to poor CSP (Dyck et al. 2008b), has more incentives to shed light on instances of suspicious corporate behavior (Dyck et al. 2010) and thus may deter companies from engaging in corporate malfeasance. But if the media can be easily influenced by political pressure, companies are less likely to be punished for bad CSP.

One should therefore expect companies to invest less in CSR in countries with lower levels of press freedom.

Taken together, we posit that investor attention is a necessary element for all the connections for which this paper has provided evidence since firm visibility is improved by various attention-related moderators (advertising, firm size, media offer, etc.).

2.8. Conclusion, limitations and future perspectives

The value of corporate social performance (CSP) is a critical issue which, although widely debated, remains unsettled perhaps because of confounding results and misspecifications. Using 2,012 ESG press headlines about 197 firms from 24 countries during the 2000-2015 period, this paper revisits the relationship between CSP and financial outcomes.

In this study, our goal is to examine under which mechanisms CSR involvement may influence financial performance. We particularly focus on the shareholder channel and examine the effect of a potential critical variable – investor attention – on the CSP–shareholder value relationship. We posit that for firms attracting more investor attention, information asymmetry is reduced, which in turn makes it more likely that shareholders will find out about the firm’s CSR involvement and reward it for its CSR efforts. Likewise, for firms experiencing bad media coverage, more shareholder attention will lead to punishment for corporate social irresponsibility. Accordingly, the increased scrutiny benefits companies with CSR strengths, but harms companies with CSR concerns.

We make several contributions to the existing literature. First, companies benefit from their CSR involvement through greater visibility of their CSR strategy as captured by investor attention. However, firms with improved levels of investor attention are also penalized more when the press addresses CSR concerns. Second, for larger firms, the value implications of more investor attention are less negative in reaction to CSR concerns, while CSR strengths have decreased marginal returns, as in (Flammer 2013). Third, firms experiencing negative media coverage benefit from company-controlled advertising to the extent that it induces higher firm visibility (Grullon et al. 2004) and reduces information asymmetry. Likewise, firms profit from their CSR involvement if they advertise, as found by (Servaes and Tamayo 2013). Fourth, after accounting for the institutional context, pressures to engage in CSR are found to be more important for firms located in countries that enjoy more media freedom (El Ghoul et al. 2016b).

Based on this evidence, the paper takes additional steps towards an improved understanding of the value of CSR (Krüger 2015; Flammer 2013; Servaes and Tamayo 2013), which remains

a topic of intense debate among scholars. Some insights into the asset pricing implications of attention allocation also contribute to the financial literature (Mondria 2010; Mondria and Wu 2011; Van Nieuwerburgh and Veldkamp 2009).

As for any event study, this paper is not free from certain methodological restrictions. For instance, there is no consensus about the choice of different parameters. Moreover, a fundamental problem pertains to the fact that there is no consensus about the definition of “harmful” and “friendly” corporate behavior, perhaps because of the lack of commonly used ESG standards. Including event-type fixed effects controls for the size of the events across categories. However, one would ideally control for the extent and seriousness of the event within each ESG component. However, on the basis of the information provided, it is very difficult to construct a metric that would objectively quantify the extent of different types of ESG press headlines and would be comparable across the events under analysis.

Clearly, there is more to follow, for instance: (1) additional moderating factors may be considered such as endogenous factors related to investor attention; (2) looking at particular types of investors may yield differential outcomes; and (3) from a financial perspective, it would be interesting to explore whether it is useful for a company to commit to CSR expenditure and repair its reputational damage following the exposure of its irresponsible behavior.

Appendix 2.1. Description of variables

Variable	Definition	Variable description	Source
Dependent variables			
CAR (-1,0)	Cumulative abnormal returns	Cumulative daily ARs over a selected event window (-1,0)	Authors' calculations on the basis of the Market model
Independent variables			
Abnormal Attention	Firm-specific investor attention	Ln(AGSV _i) is the log of GSV of the stock ticker during the day minus the log of median GSV during the previous 10 days	Author's calculations on the basis of Google trends data
CSP Score	Corporate social performance score	The mean industry-year CSP score calculated as the equal-weighted score of environmental, social and governance pillar	Authors' calculations on the basis of Thomson Reuters Asset4
Size	Size proxy	Ln(book value of total assets)	Worldscope
Profitability	Return on assets	EBITDA / book value of assets	Worldscope
MB	Firm value proxy	Ln(market value of equity / book value of equity)	Datastream
Advertising	Advertising expenditure	AD expenditure / Sales	Factset Fundamentals
Leverage	Leverage proxy	Book value of debt / book value of assets	Datastream
Market-wide attention	Market-related investor attention	Ln(AGSV _m) is the log of GSV of the market index during the day minus the log of median GSV during the previous 10 days	Author's calculations on the basis of Google trends data
English	Common language	Equals 1 if the official language where the firm is headquartered is English, 2 if English is the first foreign language, 3 if English is the second foreign language, 4 otherwise.	Worldbank
Media Free	Press freedom Index	As provided annually by Freedom House. Scores range from 0 to 100, with 0 being the best possible score and 100 the worst. We multiply by (-1) to facilitate interpretation.	Freedom House
Media Offer	Country-specific media offer	The number of daily newspapers per 1 million inhabitants	Worldbank
Corruption	Absence of corruption proxy	An assessment of corruption within the political system in addition to the Corruption Perception Index (CPI), ranging from 0 (high) to 10 (low) and measuring the overall extent of corruption (frequency and/or size of bribes) in the public and political sectors.	Worldbank

Appendix 2.2. Examples of ESG press headlines by pillar

Positive environmental press headline

Headline Monsanto Takes Action to Fight Climate Change with Carbon Neutral Crop Production Program

Company Monsanto Company

Source Press Association National Newswire

Publication date 01 December 2015

Negative environmental press headline

Headline Enbridge to Pay Almost \$6.8 Million to Settle Class-Action Suit Related to 2010 Michigan Spill

Company Enbridge Inc.

Source Dow Jones Institutional News

Publication date 10 December 2014

Positive social press headline

Headline Paris court drops hiring discrimination charges against L'Oreal

Company L'Oréal

Source Associated Press Newswires

Publication date 1 June 2006

Negative social press headline

Headline Lesbian Files Sexual Orientation Discrimination Lawsuit Against Apple

Company Apple Inc.

Source PR Newswires

Publication date 21 May 2005

Positive corporate governance press headline

Headline HP Helps Organizations Reduce Business Risk with Transparent Records

Company Hewlett-Packard Company

Source Business Wire

Publication date 8 February 2010

Negative corporate governance press headline

Headline AIG Expected to Pay \$1 Billion-Plus to Settle Probes - Huge Penalty Would Resolve Fraud Case

Company American International Group Inc.

Source The Wall Street Journal

Publication date 13 January 2006

Appendix 2.3. Media freedom, media offer and corruption index by country

<i>Country</i>	<i>PFI</i> _{MEAN}	<i>Media Offer</i> _{MEAN}	<i>Corruption</i> _{MEAN}
<i>Argentina</i>	48.636	10.305	5.292
<i>Australia</i>	20.909	9.432	73.695
<i>Belgium</i>	11.272	21.266	56.426
<i>Canada</i>	18.454	20.999	78.643
<i>China</i>	84.090	--	--
<i>France</i>	22.090	6.994	52.013
<i>Germany</i>	16.636	12.728	68.376
<i>Hong Kong</i>	32.818	--	--
<i>India</i>	36.636	3.957	6.157
<i>Ireland</i>	15.545	18.172	48.046
<i>Italy</i>	32.272	4.967	19.422
<i>Japan</i>	21.909	1.203	50.109
<i>Mexico</i>	55.727	9.682	6.046
<i>Netherlands</i>	12.090	7.778	80.839
<i>Nigeria</i>	52.636	--	--
<i>Norway</i>	10.181	44.365	79.172
<i>Philippines</i>	43.454	0.229	0.751
<i>Russia</i>	78.181	--	--
<i>South Korea</i>	30.818	--	--
<i>Spain</i>	9.410	10.074	50.132
<i>Sweden</i>	10.272	27.675	85.669
<i>Switzerland</i>	12.272	46.460	74.760
<i>The United Kingdom</i>	20.000	5.655	67.273
<i>The United States</i>	18.090	11.192	57.596

These variables are defined in Appendix A.

Appendix 2.4. Calculation of abnormal returns (Revisited world market model)

The event study methodology measures the valuation effects of an event, such as earnings announcements or dividend payments, by examining the stock price reaction around the announcement of this event. As is common practice, we use the publication date of the corresponding press article as the event date (day 0). Furthermore, we account for the possibility that the event may have happened on the previous day by including the previous trading day (day -1) in the event window (Makinlay 1997). This two-day event window is denoted by (-1, 0). To see if there is any impact of the event on the stock price before or after the two-day event window, we also considered alternative time intervals (-1,+1), (0,+1), (+1,+5),(+1,+10) in order to test whether there was any impact of the event on the stock price around the two-day event window.

For each firm i , we compute the abnormal returns using the revisited World Market model, an extension of Park (2004). Formally, we estimate the following model:

$$R_{ijt} = \alpha_i + \beta_i R_{mjt} + \gamma_i R_{wit} + \theta_i X_{ct} + \delta_i Dummy + \varepsilon_{it} \quad (6)$$

Where R_{ijt} is the observed returns of a particular security i at time t for the event j , R_{mjt} the corresponding market returns, R_{wit} the adjusted World Market index return at the same time, X_{ct} the change in the foreign currency exchange rates in country c of firm j on day t , and D a dummy variable that takes one on the day of the event and 0 otherwise. α_i , β_i , γ_i , θ_i and δ_i are firm specific parameters, and ε_{ijt} is a random-error term with $E[\varepsilon_{ijt}] = 0$ and $\text{Var}[\varepsilon_{ijt}] = \sigma_{ij}$. Note that for the world market returns, we use daily returns of the MSCI world index, which we adjusted to be orthogonal to the local market indices of all 24 countries.

For each day of the event window relative to the event day, an abnormal return AR_{ijt} is calculated as follows:

$$AR_{ijt} = R_{ijt} - (\hat{\alpha} + \hat{\beta} R_{mjt} + \hat{\gamma} R_{wit} + \hat{\theta} X_{ct} + \hat{\delta} Dummy) \quad (7)$$

To look at the total return change, we build the cumulative abnormal returns, CAR_t , defined as the sum of AR included in the event period:

$$CAR_{[x,y]} = \sum_{j=x}^{j=y} AR_{it} \quad (8)$$

Table 2.1. Correlations and descriptive statistics

	<i>Mean</i>	<i>S.D.</i>	<i>VIF</i>	<i>CAR(-1,0)</i>	<i>Ab_Attention</i>	<i>Size</i>	<i>Advertising</i>	<i>CSPscore</i>	<i>Profitability</i>	<i>MB</i>	<i>Leverage</i>	<i>English</i>	<i>MediaFree</i>	<i>MediaOffer</i>
Negative ESG press headlines														
<i>CAAR(-1,0)</i>	-0.200	6.010	--	1										
<i>Ab_Attention</i>	-0.011	0.231	1.01	-0.017	1									
<i>Size</i>	25.343	1.618	1.24	0.057	-0.053	1								
<i>Advertising</i>	0.001	0.013	1.32	0.009	-0.009	0.117***	1							
<i>CSPscore</i>	0.813	0.069	1.10	0.016	0.041	-0.011	-0.057	1						
<i>Profitability</i>	0.076	0.100	1.28	0.417	0.013	0.004	-0.072*	0.127***	1					
<i>MB</i>	0.821	0.848	1.20	0.062	-0.015	-0.444***	-0.139***	0.106***	0.419***	1				
<i>Leverage</i>	19.166	15.066	1.19	-0.050	0.010	0.065*	0.008	-0.188***	-0.283***	-0.287**	1			
<i>English</i>	1.139	0.346	2.02	-0.054	0.001	0.117***	0.088**	-0.000	-0.162***	-0.200***	-0.075*	1		
<i>MediaFree</i>	-17.997	3.274	1.41	0.131***	0.075*	0.194***	-0.003	0.126***	0.179***	-0.027	-0.020	0.136***	1	
<i>MediaOffer</i>	9.670	2.501	1.48	0.076	0.061	-0.134***	0.041	-0.079**	0.166***	0.196***	0.051	-0.181***	0.274***	1
<i>Corruption</i>	58.783	2.249	1.63	-0.096**	-0.022	0.035	-0.021	0.023	-0.136***	-0.095**	-0.115***	0.499***	-0.106***	0.089**
Positive ESG press headlines														
<i>CAAR(-1,0)</i>	0.600	5.100	--	1										
<i>Ab_Attention</i>	-0.017	0.266	1.01	-0.019	1									
<i>Size</i>	16.951	3.144	1.99	-0.280***	0.015	1								
<i>Advertising</i>	1.514	19.388	1.21	0.188***	0.004	-0.185***	1							
<i>CSPscore</i>	0.793	0.083	1.28	-0.014	-0.005	0.035	0.069	1						
<i>Profitability</i>	0.017	0.275	1.61	-0.206***	-0.012	0.534***	-0.031	-0.028	1					
<i>MB</i>	1.106	0.760	1.09	0.134***	-0.086*	-0.304***	-0.088**	0.196***	-0.049	1				
<i>Leverage</i>	27.550	18.629	1.41	-0.061	0.008	0.279***	-0.109**	-0.440***	0.046	-0.193***	1			
<i>English</i>	1.124	0.329	1.51	-0.036	0.009	0.124***	-0.029	-0.004	0.074*	-0.205***	-0.056	1		
<i>Media Free</i>	-18.263	2.457	1.98	0.004	0.010	0.030	-0.022	0.054	-0.016	0.077*	-0.062	-0.088**	1	
<i>MediaOffer</i>	10.227	3.385	2.01	0.022	-0.003	-0.153***	0.140***	0.001	-0.031	0.066	0.025	0.076*	0.398***	1
<i>Corruption</i>	78.698	6.601	1.79	-0.007	0.039	0.039	0.104**	0.004	0.023	-0.014	-0.044	0.041	0.352***	-0.315***

This table reports the descriptive statistics of the correlations among the explanatory variables and the cumulative abnormal stock returns in addition to the mean, S.D, min. and max. of all the variables under analysis. All variables are defined in Appendix 2.1. The sample spans from 2000 to 2014. ***, ** and * denote statistical significance at the 1, 5, and 10% levels, respectively.

Table 2.2. CAAR¹ of all types of events for every event window: The market model²

<i>Event window³</i>			<i>[-1, +1]</i>	<i>[-1, 0]</i>	<i>[0, +1]</i>	<i>[+1, +5]</i>	<i>[+1, +10]</i>	<i>Total events</i>
<i>Type of event</i>	<i>ESG press headlines</i>	<i>Positive ESG headlines</i>	0.55	0.52	0.44	0.21	0.05	765
		<i>POS:NEG</i>	389:376	398:367	392:373	385:380	385:380	
		<i>% POS¹¹</i>	50.71	51.89	51.10	50.19	50.19	
		<i>Z-stat</i>	(0.457)	(0.915)	(0.894)	(-1.098)	(-1.305)	
		<i>Negative ESG headlines</i>	-0.17	-0.14	-0.17	-0.3	-0.28	
		<i>POS:NEG</i>	606:641	601:646	589:658	627:620	647:600	
		<i>% NEG¹²</i>	51.40	51.80	52.76	49.71	48.11	
	<i>Z-stat</i>	(-3.505)	(-3.419)	(-2.584)	(-1.943)	(-1.454)		
<i>Environmental press headlines</i>	<i>Positive Environmental headlines</i>	0.44	0.52	0.26	0.36	0.22	383	
	<i>POS:NEG</i>	188:195	195:188	181:202	193:190	193:190		
	<i>%POS</i>	49.09	50.91	47.26	50.39	50.39		
	<i>Z-stat</i>	(-0.275)	(0.698)	(-0.877)	(-0.209)	(-0.546)		
	<i>Negative Environmental headlines</i>	-0.16	-0.09	-0.1	-0.08	-0.02		
	<i>POS:NEG</i>	271:277	264:284	259:289	283:265	284:264		
	<i>%NEG</i>	50.55	51.82	52.74	48.36	48.18		
	<i>Z-stat</i>	(-1.588)	(-1.397)	(-0.893)	(-1.104)	(-0.574)		
<i>Social press headlines</i>	<i>Positive Social headlines</i>	0.7	1.14	-0.36	1.37	1.69	53	
	<i>POS:NEG</i>	27:26	31:22	24:29	29:24	31:22		
	<i>%POS</i>	49.06	58.49	45.28	54.72	58.49		
	<i>Z-stat</i>	(0.872)	(2.025)	(0.036)	(0.578)	(1.298)		
	<i>Negative Social headlines</i>	0.09	0.12	0.02	-0.16	-0.47		
	<i>POS:NEG</i>	155:185	167:173	156:184	174:166	183:157		
	<i>%NEG</i>	54.41	50.88	54.12	48.82	46.18		
	<i>Z-stat</i>	(-1.161)	(-0.931)	(-0.534)	(0.316)	(-0.366)		
<i>Governance press headlines</i>	<i>Positive Governance headlines</i>	0.52	0.57	0.59	-1.65	-1.45	85	
	<i>POS:NEG</i>	47:38	45:40	49:36	35:50	36:49		
	<i>%POS</i>	55.29	52.94	57.64	41.17	42.35		
	<i>Z-stat</i>	(0.760)	(0.565)	(0.582)	(-1.247)	(-1.126)		
	<i>Negative Governance headlines</i>	-0.68	-0.41	-0.99	-1.07	-1.34		
	<i>POS:NEG</i>	128:127	123:132	125:130	116:139	122:133		
	<i>%NEG</i>	49.80	51.76	50.98	54.50	52.15		
	<i>Z-stat</i>	(-2.714)	(-2.469)	(-3.543)	(-1.425)	(-1.602)		

1. Cumulative average abnormal return

2. Abnormal returns are computed given the market model parameters which are estimated with OLS. Formally, we have estimated the following model:

$$R_{ijt} = \alpha_i + \beta_i R_{mjt} + \varepsilon_{ijt}$$

3. Event windows: period in days when cumulative abnormal return (CAR) was calculated, day 0 being the day when the event occurred

4. Type of event: type of event selected from the period of 01/01/2000 – 31/12/2015: ESG-related news for 197 companies

5. ESG-related headlines: dates of ESG-related headlines

6. Total shows overall CAAR for each type of event: environmental, social and governance issues

7. Environmental headlines: dates of environment-related headlines

8. Social headlines: dates of social headlines

9. Corporate governance headlines: dates of governance-related headlines

10. The Z-statistical significance test

11. The percentage of positive CARs

12. The percentage of negative CARs

Significant CARs are in bold.

Table 2.3. The stock market response to ESG press headlines: The role of abnormal investor attention

<i>Dependent variables</i>	<i>CAR (-1,0) of negative ESG press headlines</i>						<i>CAR (-1,0) of positive ESG press headlines</i>					
<i>Independent variables</i>	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>	
<i>Abnormal attention</i>			-0.236**	(0.115)	-0.233**	(0.116)			0.090	(0.058)	0.111**	(0.052)
<i>Size</i>	-0.003	(0.002)	-0.005***	(0.002)	-0.005***	(0.002)	-0.004***	(0.001)	-0.004***	(0.002)	-0.003**	(0.001)
<i>Size*Abnormal attention</i>			0.009**	(0.004)	0.009*	(0.004)			-0.005	(0.003)	-0.006**	(0.003)
<i>Advertising</i>					4.264*	(2.292)					0.010***	(0.001)
<i>Advertising_dummy</i>					0.004	(0.009)					0.000	(0.009)
<i>CSP_{SCORE}</i>			-0.029	(0.024)	-0.028	(0.024)			-0.001	(0.025)	-0.004	(0.025)
<i>CSPscore*Advertising</i>					-5.604**	(2.951)					-0.010***	(0.001)
<i>Profitability</i>	0.230**	(0.101)	0.284***	(0.090)	0.284***	(0.090)	-0.018	(0.026)	-0.022	(0.028)	-0.025	(0.027)
<i>MB</i>	-0.005	(0.005)	-0.005	(0.005)	-0.005	(0.005)	0.005	(0.005)	0.008	(0.005)	0.011**	(0.005)
<i>Leverage</i>	0.000	(0.000)	-0.000	(0.000)	-0.000	(0.000)	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
<i>Market-wide attention</i>			-0.000	(0.005)	-0.000	(0.005)			0.008	(0.005)	0.005	(0.004)
<i>English</i>	-0.002	(0.006)	-0.001	(0.015)	-0.002	(0.015)	-0.026***	(0.009)	0.003	(0.019)	-0.001	(0.018)
<i>Time trend</i>	0.001*	(0.000)	0.001*	(0.001)	0.001*	(0.001)	0.000	(0.001)	0.000	(0.001)	0.001	(0.001)
<i>Constant</i>	-1.198*	(0.684)	-2.741*	(1.654)	-2.750*	(1.669)	-0.390	(1.327)	-0.246	(2.033)	0.111**	(0.052)
<i>Country-fixed effects</i>	Yes		Yes		Yes		Yes		Yes		Yes	
<i>Industry-fixed effects</i>	Yes		Yes		Yes		Yes		Yes		Yes	
<i>Event-type fixed effects</i>	Yes		Yes		Yes		Yes		Yes		Yes	
<i>Number of observations</i>	1,064		652		652		648		515		515	
<i>R²(percentage)</i>	18.10		24.03		24.06		8.30		12.09		15.86	

This table analyzes cumulative abnormal returns in a window from -1 to 0 trading days around the ESG press headline dates. Our main explanatory variables are respectively abnormal firm-specific investor attention, interaction between firm size and abnormal investor attention, CSP score and interaction between it and advertising expenditure as scaled by sales. We control for the impact of traditional firm attributes, each country's official language, and a time trend. Heteroscedasticity-robust standard errors are in parentheses. Formally, we estimated the following model:

$$CAR(-1,0) = c + \beta_1 Abnormal\ Attention_{i,j} + \beta_2 Size_{i,j} + \beta_3 Size_{i,j} * Abnormal\ Attention_{i,j} + \beta_4 Advertising_{i,j} + \beta_5 AdDummy + \beta_6 CSPscore_{i,j} + \beta_7 Advertising_{i,j} * CSPscore_{i,j} + \beta_8 Profitability_{i,j} + \beta_9 MB_{i,j} + \beta_{10} Leverage_{i,j} + \beta_{11} Market - wide\ attention + \beta_{12} English_{i,j} + \beta_{13} t + \Omega c + \mu s + \beta t + \varepsilon_{i,j}$$

Where i indexes firms and j indexes events. Country, industry and event-type fixed effects are denoted by $\Omega c + \mu s + \beta t$, respectively. The coefficients for the explanatory variables capture the incremental change in the CAR explained by a unit change in the explanatory variable. The R² values assess if the independent variables that are added to the regression enhance the overall explanatory power of the regression. All variables are defined in Appendix 2.1. The sample spans from 2004 to 2014. ***, ** and * denote statistical significance at the 1, 5, and 10% levels, respectively.

Table 2.4. Controlling for the institutional context

<i>Dependent variable</i>	<i>CAR (-1,0) of negative ESG press headlines</i>		<i>CAR (-1,0) of positive ESG press headlines</i>	
<i>Independent variables</i>	<i>Model 1</i>		<i>Model 2</i>	
<i>Abnormal attention</i>	-0.242**	(0.112)	0.115**	(0.052)
<i>Size</i>	-0.004***	(0.001)	-0.004**	(0.001)
<i>Size*Abnormal attention</i>	0.009**	(0.004)	-0.007**	(0.003)
<i>Media Free</i>	-0.004***	(0.001)	0.003	(0.003)
<i>Media Offer</i>	0.009**	(0.004)	-0.007	(0.007)
<i>Corruption</i>	-0.016	(0.021)	-0.001	(0.001)
<i>Advertising</i>	4.017*	(2.302)	0.010***	(0.001)
<i>AdDummy</i>	0.002	(0.009)	0.001	(0.010)
<i>CSP_{SCORE}</i>	-0.024	(0.024)	-0.009	(0.025)
<i>CSPscore*Advertising</i>	-5.252*	(2.952)	-0.011***	(0.001)
<i>Profitability</i>	0.260***	(0.091)	-0.027	(0.026)
<i>MB</i>	-0.004	(0.005)	0.011**	(0.004)
<i>Leverage</i>	-0.000	(0.000)	0.000	(0.000)
<i>Market-wide attention</i>	0.001	(0.006)	0.003	(0.004)
<i>English</i>	0.001	(0.026)	0.125	(0.232)
<i>Time trend</i>	0.002*	(0.001)	-0.000	(0.002)
<i>Constant</i>	-2.819*	(1.646)	0.333	(3.444)
<i>Country-fixed effects</i>	Yes		Yes	
<i>Industry-fixed effects</i>	Yes		Yes	
<i>Event-type fixed effects</i>	Yes		Yes	
<i>Number of observations</i>	648		510	
<i>R² (Percentage)</i>	24.58		16.47	

This table analyzes cumulative abnormal returns in a window from -1 to 0 trading days around the ESG press headlines dates. Our main explanatory variables are respectively abnormal firm-specific investor attention, interaction between firm size and abnormal investor attention, media system quality parameters, CSP score and interaction between it and advertising expenditure as scaled by sales. We control for the impact of traditional firm attributes, each country's official language, and a time trend. Heteroscedasticity-robust standard errors are in parentheses. Formally, we estimated the following model:

$$\begin{aligned}
 CAR(-1,0) = & c + \beta_1 \text{Abnormal Attention}_{i,j} + \beta_2 \text{Size}_{i,j} + \beta_3 \text{Size}_{i,j} * \text{Abnormal Attention}_{i,j} + \beta_4 \text{MediaFree}_{i,j} \\
 & + \beta_5 \text{MediaOffer}_{i,j} + \beta_6 \text{Corruption}_{i,j} + \beta_7 \text{Advertising}_{i,j} + \beta_8 \text{AdDummy} \\
 & + \beta_9 \text{CSPscore}_{i,j} + \beta_{10} \text{Advertising}_{i,j} * \text{CSPscore}_{i,j} + \beta_{11} \text{Profitability}_{i,j} + \beta_{12} \text{MB}_{i,j} \\
 & + \beta_{13} \text{Leverage}_{i,j} + \beta_{14} \text{Market - wide attention} + \beta_{15} \text{English}_{i,j} + \beta_{16} t + \Omega c + \mu s + \beta t + \epsilon_{i,j}
 \end{aligned}$$

Where *i* indexes firms and *j* indexes events. Country, industry and event-type fixed effects are denoted by $\Omega c + \mu s + \beta t$, respectively. The coefficients for the explanatory variables capture the incremental change in the CAR explained by a unit change in the explanatory variable. The R^2 values assess if the independent variables that are added to the regression enhance the overall explanatory power of the regression. All variables are defined in Appendix 2.1. The sample spans from 2004 to 2014. ***, ** and * denote statistical significance at the 1, 5, and 10% levels, respectively.

Table 2.5. Robustness to alternative proxies

<i>Dependent variables</i>	<i>CAR (-1,0) of negative ESG press headlines</i>		<i>BHAR (-1,0) of negative ESG press headlines</i>			
<i>Independent variables</i>	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>	
	<i>Attention proxy</i>		<i>Size proxy</i>		<i>Abnormal returns proxy</i>	
<i>Abnormal attention</i>			-0.271**	(0.119)	-0.239**	(0.119)
<i>Analyst following</i>	-0.158**	(0.072)				
<i>Size</i>	-0.022**	(0.010)			-0.005***	(0.002)
<i>Size* Abnormal attention</i>					0.009*	(0.005)
<i>Size*Analyst following</i>	0.006**	(0.003)				
<i>Market capitalization</i>			-0.008***	(0.002)		
<i>Market cap*Abnormal attention</i>			0.010**	(0.005)		
<i>Advertising</i>	0.148	(0.228)	2.818	(2.630)	4.349*	(2.380)
<i>AdDummy</i>	0.014	(0.010)	0.005	(0.008)	0.004	(0.009)
<i>CSPscore</i>	-0.029	(0.018)	-0.025	(0.024)	-0.029	(0.025)
<i>CSPscore*Advertising</i>	-0.338	(0.339)	-3.814	(3.377)	-5.711*	(3.059)
<i>Profitability</i>	0.262	(0.257)	0.302***	(0.088)	0.314***	(0.097)
<i>MB</i>	-0.006	(0.010)	-0.001	(0.004)	-0.006	(0.005)
<i>Leverage</i>	0.000	(0.000)	-0.000	(0.000)	-0.000	(0.000)
<i>Market-wide attention</i>	0.000	(0.004)	-0.001	(0.005)	-0.000	(0.006)
<i>English</i>	-0.020	(0.018)	-0.016	(0.015)	-0.001	(0.015)
<i>Time trend</i>	0.001	(0.001)	0.001	(0.001)	0.001*	(0.001)
<i>Constant</i>	-1.048	(1.106)	-2.090	(1.670)	-2.782	(1.733)
<i>Country fixed effects</i>	Yes		Yes		Yes	
<i>Industry fixed effects</i>	Yes		Yes		Yes	
<i>Event-type fixed effects</i>	Yes		Yes		Yes	
<i>Number of observations</i>	867		652		652	
<i>R²(Percentage)</i>	0.228		0.251		0.2585	

This table analyzes cumulative abnormal returns in a window from -1 to 0 trading days around the publication dates of ESG press headlines. Formally, we estimated the following models:

$$CAR(-1,0) = c + \beta_1 AnalystFollow_{i,j} + \beta_2 Size_{i,j} + \beta_3 Size_{i,j} * AnalystFollow_{i,j} + \beta_4 Advertising_{i,j} + \beta_5 AdDummy + \beta_6 CSPscore_{i,j} + \beta_7 Advertising_{i,j} * CSPscore_{i,j} + \beta_8 Profitability_{i,j} + \beta_9 MB_{i,j} + \beta_{10} Leverage_{i,j} + \beta_{11} Market - wide attention + \beta_{12} English_{i,j} + \beta_{13} t + \Omega c + \mu s + \beta t + \varepsilon_{i,j}$$

$$CAR(-1,0) = c + \beta_1 AnalystFollow_{i,j} + \beta_2 Market cap_{i,j} + \beta_3 Market cap_{i,j} * AnalystFollow_{i,j} + \beta_4 Advertising_{i,j} + \beta_5 AdDummy + \beta_6 CSPscore_{i,j} + \beta_7 Advertising_{i,j} * CSPscore_{i,j} + \beta_8 Profitability_{i,j} + \beta_9 MB_{i,j} + \beta_{10} Leverage_{i,j} + \beta_{11} Market - wide attention + \beta_{12} English_{i,j} + \beta_{13} t + \Omega c + \mu s + \beta t + \varepsilon_{i,j}$$

$$BHAR(-1,0) = c + \beta_1 AnalystFollow_{i,j} + \beta_2 Size_{i,j} + \beta_3 Size_{i,j} * AnalystFollow_{i,j} + \beta_4 Advertising_{i,j} + \beta_5 AdDummy + \beta_6 CSPscore_{i,j} + \beta_7 Advertising_{i,j} * CSPscore_{i,j} + \beta_8 Profitability_{i,j} + \beta_9 MB_{i,j} + \beta_{10} Leverage_{i,j} + \beta_{11} Market - wide attention + \beta_{12} English_{i,j} + \beta_{13} t + \Omega c + \mu s + \beta t + \varepsilon_{i,j}$$

Where i indexes firms and j indexes events. Country, industry and event-type fixed effects are denoted by $\Omega c + \mu s + \beta t$, respectively. Heteroscedasticity-robust standard errors are in parentheses. The coefficients for the explanatory variables capture the incremental change in the CAR explained by a unit change in the explanatory variable. The R² values assess if the independent variables that are added to the regression enhance the overall explanatory power of the regression. All variables are defined in Appendix 2.1. The sample spans from 2004

Table 2.6. CAAR¹ of all types of events for every event window: The revisited World market model²

<i>Event window³</i>			<i>[-1, +1]</i>	<i>[-1, 0]</i>	<i>[0, +1]</i>	<i>[+1, +5]</i>	<i>[+1, +10]</i>	<i>Total events</i>
<i>Type of events³</i>	<i>ESG press headlines</i>	<i>Positive ESG headlines</i>	0.64	0.59	0.5	0.33	0.35	765
		<i>POS:NEG</i>	395:370	408:357	389:376	382:383	384:381	
	<i>Z-stat</i>	(1.002)	(1.354)	(1.343)	(-0.579)	(-0.517)		
	<i>Negative ESG headlines</i>	-0.14	-0.11	-0.15	-0.25	-0.19		
	<i>POS:NEG</i>	606:641	637:610	593:654	642:605	644:603	1247	
	<i>Z-stat</i>	(-3.199)	(-3.059)	(-2.472)	(-1.440)	(-0.793)		
<i>Environmental press headlines</i>	<i>Positive Environmental headlines</i>	<i>POS:NEG</i>	0.53	0.6	0.31	0.44	0.39	382
		<i>Z-stat</i>	189:193	198:184	180:202	193:190	190:192	
	<i>Z-stat</i>	(-0.160)	(0.819)	(-0.820)	(-0.303)	(-0.624)		
	<i>Negative Environmental headlines</i>	-0.11	-0.06	-0.09	-0.02	0.08		
	<i>POS:NEG</i>	263:285	277:271	268:280	292:256	285:263	548	
	<i>Z-stat</i>	(-1.410)	(-1.203)	(-0.867)	(-0.748)	(-0.181)		
<i>Social press headlines</i>	<i>Positive Social headlines</i>	<i>POS:NEG</i>	0.7	1.3	-0.15	1.59	2.6	53
		<i>Z-stat</i>	29:24	32:21	25:28	28:25	31:22	
	<i>Z-stat</i>	(1.150)	(2.236)	(0.279)	(0.952)	(1.8286)		
	<i>Negative Social headlines</i>	0.08	0.12	0.09	-0.16	-0.54		
	<i>POS:NEG</i>	165:175	177:163	205:181	179:161	177:163	340	
	<i>Z-stat</i>	(-1.033)	(-0.767)	(1.111)	(0.590)	(-0.035)		
<i>Governance press headlines</i>	<i>Positive Governance headlines</i>	<i>POS:NEG</i>	0.43	0.49	0.51	-1.84	-1.85	85
		<i>Z-stat</i>	42 :43	45:40	44:41	34:51	39:46	
	<i>Z-stat</i>	(0.555)	(0.300)	(0.408)	(-1.521)	(-1.565)		
	<i>Negative Governance headlines</i>	-0.61	-0.39	-0.94	-1.05	-1.28		
	<i>POS:NEG</i>	128:127	129:126	123:132	116:139	120:135	255	
	<i>Z-stat</i>	(-2.493)	(-2.200)	(-3.398)	(-1.392)	(-1.487)		

1. Cumulative average abnormal return

2. Abnormal returns are computed given the revisited world market model parameters which are estimated with OLS. The model is defined in Appendix 2.4. Formally, we estimated the following model:

$$R_{ijt} = \alpha_i + \beta_i R_{mjt} + \gamma_i R_{sjt} + \theta_i X_{mjt} + \delta_i D + \varepsilon_{ijt}$$

3. Event windows: period in days when CAAR was calculated, day 0 being the day when the event occurred

4. Type of event: type of event selected from the period of 01/01/2000 – 31/12/2015: ESG-related news for 197 companies

5. ESG-related headlines: dates of ESG-related headlines

6. Total shows overall CAAR for each type of event: environmental, social and governance issues

7. Environmental headlines: dates of environment-related headlines

8. Social headlines: dates of social headlines

9. Corporate governance headlines: dates of governance-related headlines

10. The Z-statistical significance test.

Significant CARs are in bold.

Table 2.7. Robustness to alternative tests

	<i>CAR (-1,0) of negative ESG press headlines</i>		<i>CAR (-1,0) of positive ESG press headlines</i>	
<i>Alternative tests</i>	<i>Model 1</i>		<i>Model 2</i>	
1. Cross-sectional correlation	-0.14***	(-2.612)	0.52	(0.924)
2. Corrado rank test	-0.14**	(2.460)	0.52	(0.721)
3. Precision-weighted CAARs	-0.15**	(-2.497)	0.06	(0.618)
4. Excluding extreme events	-0.15***	(-3.126)	0.55	(1.361)
5. Excluding financial firms	-0.11**	(-2.571)	0.56	(0.676)
6. Market model with EGARCH error estimation	-0.11***	(-3.258)	0.64	(1.306)
7. Alternative event window: (-1, +2)	-0.30***	(-3.653)	0.66	(0.573)
8. Alternative event window: (-1, +3)	-0.34***	(-3.988)	0.5	(0.086)
9. Alternative event window: (+6, +20)	0.21	(-0.028)	-0.12	(-0.372)

This table reports the abnormal returns around ESG headlines while employing a battery of validity checks as follows:

1. Addressing the cross-sectional correlation between event dates by computing the adjusted standardized cross-sectional correlation, a modified version of the BMP test used in (Kolari and Pynnönen 2010)
2. Non-parametric test for the significance of CARs: Corrado Rank test (Corrado 1989);
3. Precision-weighted cumulative average abnormal returns (CAARs);
4. Estimation of abnormal returns after all firms from the sample; (Kolari and Pynnönen 2010)
6. The normal performance is measured on the basis of the EGARCH model which stands for exponential generalized autoregressive conditional heteroscedasticity;
7. Abnormal returns are estimated in a 4-day event window (-1, +2);
8. Abnormal returns are estimated in a 5-day event window (-1, +3);
9. Abnormal returns are estimated in a (+6, +20) event window.

***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

CHAPTER III

DO ESG CONTROVERSIES MATTER FOR FIRM VALUE: EVIDENCE FROM INTERNATIONAL DATA

“All that glisters is not gold;..”

— William Shakespeare, *The Merchant of Venice*

CHAPTER 3. DO ESG CONTROVERSIES MATTER FOR FIRM VALUE? EVIDENCE FROM INTERNATIONAL DATA

Abstract

The aim of this paper is to investigate the relationship between environmental, social and governance (ESG) controversies and firm market value. We use a unique dataset of more than 4,000 firms from 58 countries during 2002-2011. Primary analysis surprisingly shows that ESG controversies are associated with greater firm value. However, when interacted with the corporate social performance (CSP) score, ESG controversies are found to have no direct effect on firm value while the interaction appears to be highly and significantly positive. Building on this evidence, we attempt to explore the channels through which CSP may enhance market value. Conducting sample splits analysis indicates that higher CSP score has an impact on market value only for high attention firms, those firms which are larger, perform better, located in countries with greater press freedom, more searched on the Internet, more followed by analysts and have received a corporate responsibility award. Thus, our findings provide new insights on the role of firm visibility through which firms can profit from their CSP.

Keywords: *ESG Controversies, Corporate Social Performance, Firm Value, Firm Visibility, Investors' Attention.*

JEL Classification: G15, G32, M14.

Résumé

L'objectif de cet article est d'étudier la relation entre les controverses environnementales, sociales et de gouvernance (ESG) et la valeur de marché d'une entreprise. Nous utilisons un échantillon unique de données de plus de 4000 entreprises dans 58 pays. L'analyse préliminaire montre paradoxalement que les controverses ESG sont associées à une plus grande valeur d'entreprise. Cependant, l'interaction avec le score de la performance sociale de l'entreprise, souligne que les controverses ESG n'ont aucun effet direct sur la valeur de l'entreprise et que cette interaction est hautement et significativement positive. Forts de ces éléments de preuve, nous essayons d'explorer les canaux par lesquels CSP peut accroître la valeur de marché. Une analyse plus fine indique qu'un score plus élevé n'a d'impact sur la valeur de marché que pour les entreprises les plus visibles, celles qui sont les plus grandes, les plus performantes et localisées dans des pays avec une plus grande liberté de presse. Il s'agit également des entreprises qui sont les plus recherchées sur internet, les plus suivies par les analystes et ayant reçu des récompenses pour leur politique sociale. Ainsi, nos conclusions fournissent de nouveaux aperçus sur le rôle de la visibilité des entreprises grâce à laquelle ces dernières peuvent mieux profiter de leur performance sociale.

Mots clés : *Controverses ESG, Performance sociale de l'entreprise, Visibilité de l'entreprise, Attention des investisseurs.*

Classification JEL: G15, G32, M14.

3.1. Introduction

ESG controversies are corporate environmental, social and governance (ESG hereafter) news stories such as suspicious social behavior and product-harm scandals that place a firm under the media spotlight and, by extension, grab investors' attention (Cai et al. 2012; Carroll 1979; J. Klein and Dawar 2004). This kind of news raises doubts about the firm's future prospects, constitutes a risk for firm reputation and may have an impact on firm value.

Despite the growing importance attributed to corporate social performance (CSP), there is little consensus about its influence on market value. While some scholars argue that good social performance promotes firm value by lowering costs and idiosyncratic risk (Oikonomou et al. 2012; McWilliams and Siegel 2001), others consider CSR initiatives as a waste of resources and a tool used by managers to extract private benefits from shareholders (M. Friedman 2002; Barnea and Rubin 2010; Groening and Kanuri 2013). CSR-related studies have long been predominantly one-sided with attention biased towards good social performance (Mackey et al. 2007; Sabino P Kothari et al. 2009). Moreover, since corporate social responsibility and irresponsibility are not perfect opposites (P. Arora and Dharwadkar 2011), the financial implications of bad social performance remain largely unclear.

In keeping with recent studies that call for tests on the effects of social irresponsibility on financial performance, we introduce ESG controversies as a measure of CSR concerns and evaluate their impact of the firm market value, along with corporate social performance (CSP hereafter) and at particular levels of firm visibility.

Recently, Servaes and Tamayo (2013) used advertising expenditures as a proxy for consumer awareness as a channel through which CSR would influence firm value. We build on their work and add to the debate by introducing a channel which is not controlled by firm since ESG controversies are disclosed by media outlets while advertising expenditures are freely adjusted by firms. Empirical results somewhat extend the findings of Servaes and Tamayo (2013), who argue that the value of CSR is only associated with high-awareness firms. However, this study contrasts with their work to the extent that ESG controversies appear to be associated with increased value for high-attention firms (Groening and Kanuri 2013), whereas they provide evidence that CSR concerns harm firm value in the case of such firms.

This paper attempts to make original contributions to the empirical relationship between CSP and financial performance in different ways. Using a unique international dataset of more than 3,000 ESG controversies running from 2002 to 2011 and concerning 4,312 firms, we offer an

improvement on prior studies that used limited samples either in terms of scope¹ (e.g., only environmental pillar) or size (e.g., few events). This can be partially explained by the fact that most prior studies focused only on a particular type of event (Capelle-Blancard and Laguna 2010; M. Wang et al. 2011). In our setting, we add further evidence about various CSR events which are more frequent but equally important. Asset4-Thomson Reuters is a particularly reliable data source because of its diverse sources and news coverage, and its frequent updates from different media sources (hundreds of major English-speaking news outlets and non-governmental organizations).

Most importantly, as previously mentioned, in addition to testing the direct impact of ESG controversies on firm value, we introduce an interaction term between ESG controversies and the CSP score to capture the incremental value of CSP score for firms experiencing ESG controversies. We find stimulating results to the extent that when interacted with the CSP score, controversies are not only proven to be harmless but also, paradoxically, value-enhancing. Further analysis reports that these results survive only for high-attention firms, those firms that are larger, perform better and are located in countries with greater press freedom. We confirm this evidence by employing more specific proxies of firm visibility, namely, Google search volume (GSV), analyst coverage and the firm's social reputation as measured by CSR awards.

Finally, we test the robustness of our results by employing different estimation methods. In particular, we first test the inclusion of firm-fixed effects and then estimate an instrumental variable regression in order to alleviate endogeneity concerns. Before including the firm-fixed effects, the direct impact of ESG controversies appears to be fallacious and turns negative and highly significant after controlling for firm-fixed effects. Otherwise, instrumental variables regression results are qualitatively the same. Most importantly, regardless the estimation method, the interaction between ESG controversies and the CSP score remains positive and highly significant. Finally,

Our study supports the view that to fully understand under which circumstances the firm performance may profit from CSP, we need to focus on the moderating effects of variables on the CSR–firm value relation. One tenet of this literature is that evidence of a direct relation between CSR and firm value appears to be spurious. Another is that whereas direct relations do not survive some specifications, the indirect ones appear to be more robust. Building on

¹ The majority of prior studies deal exclusively with environmental news, either disclosed by the firm itself or by other sources (Barth and McNichols 1994; Clarkson et al. 2004; Moneva and Cuellar 2009).

empirical results, we suggest that ESG controversies do not enhance firm value but conversely seem to drive investors' attention to the CSP score, especially for the most visible firms, which in turn enhance the firm value. It follows that the CSP score is not only an insurance against negative corporate social news, but, beyond, may enable high visible firms to turn ESG controversies into an unintended opportunity.

The rest of the paper proceeds as follows. The next section reviews prior studies and develops our main hypotheses. Section 3 describes our data, sample construction and methodology. Section 4 reports our empirical results and sensitivity analysis and discusses theoretical and practical implications. The last section provides concluding remarks and identifies the limitations of this research.

3.2. Related literature and hypotheses

The existing financial literature has identified numerous factors that have an impact on firm value. For instance, X. Luo et al. (2013) introduce consumer interactions on social media (i.e., posting reviews about a certain firm) as a determinant of market value. In the present paper, we identify an emerging strand of literature suggesting that negative CSR-related news stories are particularly relevant for market value and, in particular, try to complement this literature by investigating whether ESG controversies are a determinant of value.

From a broader perspective, numerous studies have attempted to link CSR to financial performance. However, the results remain inconclusive, with studies suggesting neutral (Martin Curran and Moran 2007; Garcia-Castro et al. 2010; McWilliams and Siegel 2001), positive (Doh et al. 2010; Roman et al. 1999) and negative links (López et al. 2007; Marsat and Williams 2013). Most importantly, these studies have largely struggled to identify mechanisms that might drive this relationship. In this section, we discuss this literature and rely on some basic theoretical concepts to develop the different hypotheses on how ESG controversies influence firm value through social control and legitimacy.

Stakeholders are agents of social control. Thus, CSR can add to firm value through positive relationships with stakeholders (Donaldson and Preston 1995; Godfrey et al. 2009; A. Kacperczyk 2009; Freeman 1984). In particular, news stories illustrating corporate attention to various stakeholders through the active promotion and protection of their interests will obviously help firms reduce and control costs in the long run (Freeman 1984). Improved relationships with the media are particularly useful since different stakeholders' opinions are driven by media attention (Kuhnen and Niessen 2012; Dyck et al. 2008a; Dyck and Zingales

2003; Liu and McConnell 2013). For instance, most prior studies on the relationship between corporate governance and firm value document that better corporate governance is associated with increased firm valuation (L. D. Brown and Caylor 2006; Cremers and Nair 2005; Bebchuk and Weisbach 2010). In contrast, greater media attention to corporate controversies triggers higher stakeholder skepticism and perceptions of corporate hypocrisy (Du et al. 2010; Maignan and Ralston 2002), thus leading to lower credibility (Godfrey et al. 2009; Yoon et al. 2006). Accordingly, stakeholder theory may provide a channel through which ESG information can be connected to firm value (Jiao 2010).

Legitimacy is also vital for corporations to ensure their long-term prosperity. Suchman (1995) defines legitimacy as “a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions”. When perceived as lacking acceptable legitimacy, firms experiencing controversies find their organizational legitimacy challenged (Palazzo and Scherer 2006). In response to the widespread negative media coverage of ESG controversies, as well as the increasing level of stakeholder sensitivity to ESG issues (Maignan and Ferrell 2004; Du et al. 2011), allegations of suspicious behavior therefore alter corporate identity and reputation (Donaldson and Preston 1995).

Drawing upon these two complementary theories, namely legitimacy and stakeholder theory, one might expect ESG controversies to be associated with decreased firm value (Orlitzky 2013; C. Fombrun 1996; Adams 2002; C. Fombrun and Shanley 1990; Weigelt and Camerer 1988). Empirically, according to a meta-analysis by Frooman (1997), the stock market negatively reacts to a firm’s involvement in socially irresponsible or suspicious social behavior, while there is insufficient evidence to identify a link between socially responsible activities and firm value. Similarly, H. H. Johnson (2003) demonstrates that illegal CSR activities harm financial performance while socially responsible activities do not systematically provide fiscal advantages. In a narrower setting, Klassen and McLaughlin (1996) analyze 22 negative ESG news stories (gas leak, oil spill, etc.) and 140 positive ESG news stories (environmental awards) and report that negative stock returns follow negative ESG-related stories. Furthermore, Krüger (2014) reports evidence that investors have strong negative responses to negative ESG news. Their responses are particularly strong when the information concerns employees, the environment (Chollet and Sandwidi 2016), or communities. Likewise, using a panel dataset of SandP 500 firms, Oikonomou et al. (2012) confirm that CSR is negatively related to systematic risk and especially that CSR concerns are

associated with higher systematic risk. Finally, J. Kang and Kim (2013) show that firms lose market share if the tone of CSR news articles about them in the previous year was negative. In light of the above, we propose the following hypothesis:

Hypothesis 1. ESG controversies are negatively and directly linked to firm value.

Beyond this intuitive assumption, there is a growing stream of literature in which it is assumed that ESG issues, whether positive or negative, are not systematically correlated with the economic fundamentals of companies (Orlitzky 2013). For instance, McWilliams and Siegel (2001) and Martin Curran and Moran (2007) provide consistent evidence that in a state of equilibrium and all things being equal, marginal costs and the benefits of CSR should offset each other.

On the other hand, stakeholder activism against social misconduct is more complex than the existing literature has acknowledged. The concern here is that all previous studies have assumed that human attention is constant over time and that stakeholders are able to process all available information. But, events must first of all attract the attention of stakeholders and be considered relevant enough for them to decide to act (Weick et al. 2005).

While it is well established that bad news attracts more attention than good news, social misconduct can be completely overlooked. Several studies such as Hoffman (2001) have shown that stakeholders may even ignore situations of extreme crisis. Controversies may fall outside of their diligence or lose salience due to the overload of information and as a result be overlooked (Kiesler and Sproull 1982; Starbuck and Milliken 1988)².

In his seminal theoretical paper, Barnett (2014) discusses the limits of the ability to condemn firm misconduct through social control and firmly asserts that misconduct often does not result in punishment due to stakeholders' limited attention. Likewise, Zyglidopoulos et al. (2012) show that CSR-weaknesses are not sensitive to changes in media attention, as measured by the number of times a firm's name was mentioned in four major US newspapers. CSR-weaknesses are identified as the negative effects that a firm's various activities have on its stakeholders. Building on this evidence, we propose the following hypothesis:

Hypothesis 2. ESG controversies are not significantly linked to firm value.

²For instance, as Da et al. (2011) point out, "...a news article in the Wall Street Journal does not guarantee attention unless investors actually read it."

While many scholars³ support a direct link between CSP and firm value, there is an emerging strand of literature which argues that firm value is indirectly impacted. Surroca et al. (2010) studied an international dataset of 599 firms and provide evidence that there is no direct relationship between CSR and financial performance, but rather that it has an indirect relationship mediated by firm celebrity and reputation. Likewise, in their empirical study, Servaes and Tamayo (2013) provide consistent evidence that there is no direct link between CSR and firm value as measured by Tobin's Q. The authors introduce advertising expenses as a channel through which CSR influences firm value. In particular, CSR has a positive and significant impact on value only for firms with high consumer awareness as proxied by high advertising intensity. Conversely, they find that CSR activities have a trivial or negative impact on firm value for companies with low advertising intensity. Still, the impact of advertising expenditure on the relationship between CSR and market value was found to be stronger for more admired companies, reduced for less admired ones, and negative for the least admired ones. Taken as a whole, any potential effect of CSR on value depends to some extent on the visibility of a firm's social behavior to investors (Servaes and Tamayo 2013; Cho et al. 2013; Di Giuli and Kostovetsky 2014; Barnett 2014).

In particular, CSP score is traditionally seen as a tool to influence stakeholders. The more a company is seen as virtuous, the more likely it is to be appreciated by consumers, employees and investors. Most importantly, when such virtues are disclosed by external sources such as the media, they build both reputation and credibility (Pfau et al. 2008). Furthermore, Vanhamme and Grobhen (2009) show that a positive CSR reputation can reduce the damage caused by negative publicity during a crisis. In keeping with this evidence, we expect that CSP score is not only highly relevant for firm value but might help to mitigate the negative effects of CSR concerns.

Indeed, as evidenced by previous research, CSP score can be said to constitute a form of insurance against unexpected "bad news". Rating agencies contribute to a firm's reputation prior to a damaging event. Especially in the case of well-known firms (larger and generally more visible), these agencies will not review their endorsement after an undesirable event in order to help improve stakeholders' perception of the firm's ability to repair its reputation.

As is evident from the literature, a high CSP score might be adequate to counter the negative impact induced by unexpected bad news, such as controversies. From an investor perspective, CSP adds value to the company on the basis of a risk-return balance (Derwall 2007).

³Jiao (2010), El Ghouli et al. (2011) and Flammer (2013).

Companies with high CSP scores are perceived as less risky because they are seen as more sustainable in the long term. Consistent with this point of view, investors will demand lower returns from such companies, which makes them benefit from higher firm value. This would imply that high CSP scores affect firm performance, but as previously mentioned, firm value does not reflect it efficiently unless information attracts investor attention (Servaes and Tamayo 2013; Barnett 2007). Accordingly, this reasoning would survive only for high-attention firms; those which are generally larger and more familiar to investors. Taking as a whole, one could expect the following hypothesis.

Hypothesis 3. ESG controversies have an indirect impact on firm market value, depending on firm visibility

In the remainder of this paper, we attempt to provide empirical evidence to test these hypotheses on the basis of our international dataset, which is described in the next section.

3.3. Data and research design

3.3.1. ESG controversies

We consider more than 3,000 ESG controversies relating to 4,312 firms worldwide over the 2002–2011 period. We consider controversies to be public news stories about questionable ESG conduct which are collected by Asset4-Thomson Reuters from diverse media sources, including hundreds of major English-speaking news outlets, NGOs such as Amnesty International, Human Rights Watch, Greenpeace or Transparency International, and trade unions. An example of an ESG controversy concerning Deutsche Bank is illustrated in the Appendix 3.1.

Initially, ESG controversies are classified into 31 different categories which have been recoded into the ESG traditional classification. For example, environmental controversies involve biodiversity, spills and pollution and the environmental consequences of products. Social controversies deal with health and safety, diversity, working conditions, child labor, problems with customers concerning product quality. Governance controversies are concerned with executive board compensation, non-transparent and aggressive accounting issues or insider dealings.

In order to have comparable data on controversies, we further recoded them as dummies: 1 for companies facing at least one controversy during the previous year, 0 otherwise. In the overall sample, almost one fifth of company-year observations included a controversy (19.8 percent). In particular, according to the ESG classification, most of them are concerning social issues

(16.4 percent), whereas environmental and governance issues are less important (respectively 5.2 and 4.7 percent of the observations).

Appendix 3.2 reports the number of controversies by type across years, geographic zone and industry. As can be seen, the overall number of controversies rose throughout the sample period, from 112 in 2002 to 674 in 2011. European firms seem to be the most affected by ESG controversies, around twice as much as in North America. Two major industries in particular – Industry (Gics 20, including Capital Goods, Commercial and Professional Services, and Transportation) and Finance (Gics 40, concerning Banks, Diversified Financials, Insurance, and Real Estate) – come under the media spotlight.

3.3.2. CSP scores

Recognized as a premier source of ESG data, ASSET4 - Thomson Reuters analysts provide objective, relevant and timely-fashion environmental, social and governance (ESG) information based on more than 250 key performance indicators (KPIs) and more than 750 individual data points along with their original data sources (e.g. annual reports, NGO websites, CSR reports).

Asset4 classifies these data into categories within each major pillar. For instance, the environmental pillar consists of three categories: emission reduction, product innovation, and resource reduction. While, the governance pillar has five categories: board functions, board structure, compensation policy, shareholders policy, and vision-and-strategy. The social pillar is condensate into seven categories: community, diversity, employment quality, health-and-safety, human rights, product responsibility, and training-and-development.

Besides, Asset4 provides the “Equal Weighted Rating”, which captures a balanced view of the firm’s performance in four areas, environmental, social, governance and economic. In this paper, we do not use the “Equal Weighted Rating” as denoted “14IR” by Asset4 but rather exclude the economic dimension from this score.

3.3.3. Sample

This paper improves on prior research, which has a limited and few events and relies on an international wide sample. From 4,312 firms over a 10-year period, on the basis of financial data on Tobin’s Q, we have a sample of 15,436 observations. Using the most parsimonious set of control variables leads to a final sample of 13,283 firm-year observations, while including all control variables gives us 8,321.

We match data on ESG controversies with financial and control variables from Factset Fundamentals. All variables are defined in Table 3.1. To measure firm value, we use Tobin's Q, computed as the book value of total assets minus the book value of equity and balance sheet deferred taxes plus the market value of equity, all divided by the book value of total assets (McConnell et al. 2008; Martínez-Sola et al. 2013; Marsat and Williams 2013).

<Insert Table 3.1 here>

First suggested by Brainard and Tobin (1968) and Tobin (1969), Tobin's Q is a forward looking measure of firm performance. A value below one indicates poor use of resources: the firm creates less value on the stock market than its assets are worth. Conversely, a value greater than one, indicates that the forward looking market value is higher than the current value of its assets. Tobin's Q not only has the advantage of being forward-looking, but also overcomes a number of well-known weaknesses of traditional accounting measures. In particular, it does not depend on the timing of (unobservable) cash flows in the company, or on the management's attempt to manipulate accounting measures. It reflects all aspects of performance and provides a comprehensive base to evaluate the full impact of managerial decision making.

Finally, a common practice in financial studies is to winsorize extreme values of all variables of interest prior to estimating a regression model in order to deal with outlier observations. Thus, all variables are winsorized at the 1 and 99 % level to neutralize any potential effect of outliers.

Table 3.2 reports descriptive statistics for the variables under analysis. For our sample, Tobin's Q has a mean of 1.602 and a median of 1.251. The CSP scores vary from 0.012 to 0.999 with a mean of 0.504, while the average institutional ownership in our sample is 29.20%. Our sample includes large as well as small firms in terms of sales and assets. Sales growth (mean 1.126) varies from 3.744 to 0.488, with a median of 1.090. Average ROA for the year is 11.50% with a maximum of 95.60% and a minimum of -84.60 %, indicating significant variation.

<Insert Table 3.2 here>

3.3.4. Methodology

In this section, we describe our empirical tests. The first question we investigate is whether ESG controversies lead to decreased firm value once we control for CSP scores and other firm

attributes such as size, performance and industry. In order to check the sensitivity of primary results, we further explore whether the impact of ESG controversies on market value may vary with the CSP scores and include an interaction term between CSP score and ESG controversies in our regressions. Moreover, we then re-estimate our baseline model on subsamples of the data with respect to firm size, ROA, investors' attention as measured by the Google search volume of firm names and the press freedom index of the corresponding country in order to isolate those firms for which empirical results would survive.

To gain insights into our central research question, we first run correlation tests between the variables under analysis. Table 3.3 presents the correlation matrix. Pearson correlation coefficients were computed among the variables of interest. The bi-variate correlation results indicate that there is no significant correlation between ESG controversies and Tobin's Q. A partial correlation was then computed between ESG controversies and Tobin's Q, holding constant or controlling for the CSP score. If the latter is the principle determinant of firm market value, the partial correlation between ESG controversies and Tobin's Q should not be significant. The results suggest that ESG controversies are unrelated to Tobin's Q, [$r(1) = 0.016$, $p > 0.177$], while controlling for CSP scores.

Moreover, given the high correlation coefficient between CSP scores and ESG controversies [$r = 0.34$], we expect that this positive relationship could be mostly driven by firm size. If this is the case, the positive correlation should disappear after controlling for firm size. Taking into account the firm size, the partial correlation between CSP scores and ESG controversies suggest that the correlation remains significant but is somewhat smaller than the simple correlation. This suggests that part of the high simple correlation is due to each of these variables being related to the firm size. Indeed, when the firm size effect is "*removed*", their relationship is somewhat weaker but remains significant. According to Asset4, controversial news concerning a particular company could incrementally impact the corresponding score which can, in turn, have a potential impact on the overall score of the company. However, since the score is equally weighted among 750 data points, the impact of a particular controversy is marginal.

Therefore, given the correlation between certain variables, we tested for multicollinearity. VIFs are usually considered reliable indicators of multicollinearity. However, in fixed effects models, by construction they are expected to be inflated (Baum 2006). To obtain valid indicators of multicollinearity, we re-estimate a transformed model using the OLS method, which removes the fixed effects from the estimation but still produces the same estimated

coefficients as in the fixed effect model (Gormley and Matsa 2014). The transformed model is achieved by subtracting from each explanatory variable its average. We then perform an OLS estimation procedure using these transformed variables (Wooldridge 2003). Following this method, VIFs do not exceed 2 for all the variables under analysis, confirming the absence of significant multicollinearity.

It would initially appear from the correlation analysis that there is no link between ESG controversies and firm value, thus providing preliminary evidence that firm value does not respond to controversies. However, at this stage of the analysis, any conclusion is still premature. The absence of correlation between Q and ESG controversies may not take into account several factors that might intervene between these two variables. Elsewhere, as expected, market value is highly correlated in absolute numbers to firm characteristics such as size, ROA and sales growth.

<Insert Table 3.3 here>

Next, we use panel estimations to test our hypotheses. We test the null hypothesis that ESG controversies do not affect Tobin's Q, where *Tobin's Q* is the dependent variable and the variables described below are the independent variables. As in Montgomery and Wernerfelt (1988), Tobin's Q has the merit of being "less susceptible to accounting-based distortions because it relies on stock market values" while "it is forward-looking in incorporating not just current profitability, but also future profitability".

As previously mentioned in the "Related literature and hypotheses" section, we suppose that the relationship between ESG controversies and firm market value may vary with the CSP score. Accordingly, we add to our regression the CSP scores as provided by Asset4-Thomson, Reuters as an explanatory variable. We also control for current CSP score, because of the potential persistence of firm value.

As in L. H. Lang and Stulz (1993) and Rountree et al. (2008), we add other control variables for the following factors:

- *Firm size*

Several studies show that market value is directly linked to firm size. However, the latter still has an ambiguous effect on value. For instance, L. H. Lang and Stulz (1993) support the view that firm value decreases as a company becomes larger and more diversified. Meanwhile, El Ghouli et al. (2011) argue that larger firms attract wider media and analyst coverage, which reduces information asymmetry and improves firm value. In our setting, we suppose that a

firm's size may also affect its visibility, since smaller firms may be able to better avoid public scrutiny (Salancik and Pfeffer 1978; Meznar and Nigh 1995). We therefore control for organizational size using the logarithm of total assets (Boyd et al. 2006).

- **Profitability:** We proxy profitability that return on assets (ROA) per year. Previous research has established that firm value is directly related to firm performance.
- **Growth:** For firms with high sales growth, a greater fraction of firm value is derived from growth opportunities rather than assets in place. Hence we expect a positive relationship between sales growth and firm value.
- **R&D:** McWilliams and Siegel (2001) suggest that R&D is a major contributor to information asymmetry. We measure a firm's R&D intensity by its R&D expenses scaled by assets. Consistent with prior studies, we set R&D expenses to zero if they are missing (Barnett and Salomon 2012). This expenditure may yield positive returns in future, improving firm performance. However, these variables also control for opportunities of discretionary expenditure by management.

Jiao (2010) also points to the roles of other variables such as debt-to-asset ratio, capital expenditure, dividend yield, insider ownership or firm age as determinants of market value. For instance, as older firms generate experience-based economies of scale based on learning, they can enjoy superior performance compared to newcomers and can avoid liabilities of newness. However, older firms are prone to inertia and rigidities in adaptability, which may lead to lower performance. We proxy a firm's age as the number of days (in logs) since its first listing. Servaes and Tamayo (2013) find that advertising expenditure improves consumer awareness of CSR and ultimately the incremental value of CSR. Hence, advertising expenditure provides insights into a firm's information environment (Nelson 1974) and consumer awareness (Servaes and Tamayo 2013). Therefore, we also control for advertising expenditure. Note that since advertising expenses are often missing, we follow Barnett and Salomon (2012) by setting non-available data to zero and controlling for the presence of data by a dummy variable. Finally, consistent with the arguments that attribute insider ownership to smoothed earnings, and with arguments that smoothed earnings lead to higher firm value, we expect positive associations between insider ownership and firm value. Accordingly, we add these variables to ensure that the model is correctly specified.

3.4. Empirical results

3.4.1. ESG controversies and firm value

As mentioned above, Table 3.4 reports the results of our OLS regressions using year fixed effects, industry and geographical area dummies and clustering by firms (Petersen 2009). To address heterogeneity, we follow Guenster et al. (2011) and Arouri and Pijourlet (2015) and rejected the use of firm fixed-effects since it was proven that time variations in CSR performance are very limited. In addition, in all of our estimations, we use robust standard errors clustered by firm.

Models 1, 2, 3 and 4 report the results using a one-year lag between the independent variables and firm market value. In addition to the control variables, the first model (Model 1) includes the direct effects of CSP scores only, the second model (Model 2) reports the direct effects of ESG controversies only, the third model (Model 3) includes both direct effects of ESG controversies and CSP score, and finally the fourth model (Model 4) presents the direct effects of CSP scores and ESG controversies, and the interaction between CSP score and ESG controversies. All models control for other well-known determinants of firm value.

For all specifications, firm size is negatively related to Tobin's Q, while profitability and advertising expenditure are positively and significantly correlated with value (Myers 1977; C. W. Smith and Watts 1992). Sales growth, R&D expenditure and dividend yield are, once again, proven to be highly significant at conventional levels.

In contrast to hypothesis 1, specification (2) surprisingly suggests that ESG controversies have a strong positive impact on firm value while controlling for other well-known determinants of market value (Jiao 2010), as in Groening and Kanuri (2013). This finding holds even after including the raw CSP score, which also appears to be highly significant with a positive sign (specification (3)). However, according to specification (4), the direct link between ESG controversies and firm value does not survive after controlling for CSP scores and the interaction term between ESG controversies and the CSP score. In particular, specification (4) mainly suggest that the direct impact of ESG controversies on firm value is spurious and that including the interaction term is important in the last specification. Although not statistically significant, the coefficient on ESG controversies becomes negative, providing a more intuitive result and supporting hypothesis 1. Meanwhile, the interaction between the CSP score and controversies appears to be significantly positive. As can be seen, CSP scores continue to have positive effects on firm value. One would suggest that ESG controversies do

not harm the CSR-FP relationship, and even seem to play the role of an attention grabbing event.⁴

<Insert Table 3.4 here>

These results partially corroborate those of Servaes and Tamayo (2013), who provide evidence of a significant and positive link between Tobin's Q and CSP for high-awareness firms as measured by advertising expenditure. Unlike advertising, ESG controversies are not intentionally disclosed by firms and can be assumed to have negative content. Apart from Servaes and Tamayo (2013), the present paper provides consistent evidence that ESG controversies (as opposed to CSR concerns) have no direct impact on firm market value while controlling for the CSP scores and the interaction term. Thus, we investigate this hypothesis and study the conditions under which the main empirical results continue to hold.

3.4.2. Evidence from sample splits

The core finding of this paper is that the more positive firm value could be attributed to greater CSP score for firms experiencing ESG controversies. Likewise, one can argue that controversies are playing a role of an attention-grabbing event, while there is no evidence of a direct and negative impact of ESG controversies on firm value. In this section, we attempt to check the sensitivity of this result and isolate the types of firms for which these stimulating results survive.

Table 3.5 replicates the analysis in Table 3.4 on subsamples of the data. We use specification (4) from Table 3.5 in this analysis, i.e. we control for the joint effect of CSP score and ESG controversies in addition to the variables discussed above. Our splits are respectively based on high vs. low ROA, size and press freedom index. In this paper, we use an international dataset controlling for geographical areas. We also control for levels of press freedom in respect of each country's score as provided by the World Press Freedom Index (PFI), which is constructed annually by Reporters without Borders (Faccio 2006). Each year's index reflects violations of the freedom of information. In particular, it gauges (i) the freedom that journalists and media outlets actually enjoy in each country and (ii) government efforts to guarantee respect for that freedom. Scores range from 0 to 100, with 0 being the best possible

⁴ Since the dummy method would induce a loss of information, we have re-run our baseline models with the raw level of ESG controversies. The results remain unchanged and are available upon request.

score and 100 the worst. To make the interpretation of the results more intuitive, we multiply the original score by -1, and thus higher values again indicate greater media freedom.

<Insert Table 3.5 here>

As reported in Table 3.5, it is notable that our main finding is significant only for the biggest (large SIZE) and high-performance firms (high ROA), or those which are located in countries with greater levels of press freedom (high PFI). These characteristics demonstrate that the relationship between ESG controversies and firm value is highly dependent to investors' perceptions of the firm performance.

Thus, as an additional sensitivity analysis, we test the difference between the two coefficients of interaction variables and find that it is statistically significant for each pair of subsamples.⁵

3.4.3. The role of firm visibility

In this section, we check if our results hold only for high-visible firms by employing several measures of investors' attention.

To measure investors' attention towards a particular firm, the financial literature proposes several proxies such as advertising expenditures (Grullon et al. 2004; Lou 2014), media coverage and abnormal returns (Barber and Odean 2008). All of these measures were recently revolutionized. In their seminal paper, Da et al. (2011) propose a more intuitive measure of investor attention called Google search volume (GSV). As it seems, GSV is provided by Google Trends, an application of the giant of the Web Google, which reflects the search volume of any query submitted to Google. Apart from Da et al. (2011), GSV was proven to be a valuable proxy of investor attention for several purposes (Drake et al. 2012; Mondria and Wu 2011).

In the present paper, we first use GSV of each firm name included in our sample from 2004 until 2011. For this section, our sample period starts from 2004, when Google started to make the data publicly available. Moreover, Google allows us to identify the country from where the search originates. Since we are working with an international dataset, we filter the search volume by country if possible and we use the 'full name' of each company. Then, we convert the weekly GSV data into annual basis to match the frequency of other data. We identify highly visible firms; those firms which are more familiar to investors and more searched on Internet.

⁵Results are available upon request.

We also employ two alternative measures of firm visibility. Our first of two proxies for visibility is analyst following (Blankespoor et al. 2013) since analysts play an important role in increasing firm visibility (Irvine 2003; Bushee et al. 2010). Otherwise, to capture the number of investors who are aware of the corporate-specific social behavior, we also use a dummy variable which takes one if the firm has received a CSR award and 0 otherwise.

<Insert Table 3.6 here>

As expected, the empirical results reported in Table 3.6 indicate that the incremental value of the CSP score for firms experiencing controversies holds only for attention-grabbing firms as identified by GSV, analyst following and those firms which have received a CSR award.

3.4.4. Alternative measures of firm performance

In this section, we further control for the sensitivity of our results. In addition to Tobin's Q, we use two alternative measures of firm market value to check if our results continue to hold for any valuation proxy used. The first measure is the alternative Q ratio (Q_{CP}) as computed by Chung and Pruitt (1994) and the second measure is the market-to-book ratio, which is frequently used as a proxy of Tobin's Q (Galema et al. 2008; Edmans 2011). Given these two proxies are very similar to Tobin's Q, we further check whether ESG controversies have material implications on firms, with respect to operating performance measures as used in Servaes and Tamayo (2013).

Indeed, while we have used Tobin's Q as a market-based forward looking performance measure, there may be some interest in the relationship between ESG controversies and accounting measures of firm performance. We accordingly repeat the analysis in Table 3.4 (Model 4) using operating income by assets, operating income by sales and return on equity, as dependent variables and report the results in Table 3.7.

<Insert Table 3.7 here>

Using market valuation proxies, whether employing Q_{CP} or market-to-book ratio as the dependent variables, lead to the same results. However, ESG Controversies seem to be negatively linked to accounting based performance measures, while the CSP score itself does not exhibit a robust impact. Meanwhile, the interaction term between ESG controversies and CSP score is still positive and highly significant.

As the direct effect of ESG controversies is significantly negative for accounting-based measures, ESG controversies seem to have an actual impact on short-term cash flows, by increasing costs or decreasing revenues, thus leading to lower operating performance. Market-based measures, however, are not directly and significantly affected. This might imply that an ESG controversy is not judged relevant by investors for the long term firm value, since they already updated the firm value according to the marginal impact on the short-term performance.

3.4.5. Addressing endogeneity

As evidenced by our main empirical results (Table 3.4), the valuation of CSP is higher for firms experiencing ESG controversies, signaling for greater firm visibility. However, our results may be subject to endogeneity issues. We first employ firm-fixed effects to mitigate concerns related to omitted firm-level heterogeneity.

<Insert Table 3.8 here>

The results, as displayed in the two first columns of Table 3.8, are in line with our main findings since the interaction term is still positive and highly significant. Besides, the direct effect of controversies on the firm value is still negative but appears to be significant while it turns positive when associated to the CSP score. The direct effect of the raw CSP score has however disappeared. Indeed, one caveat with the inclusion of firm-fixed effects when there is little time-series variation is that they may remove all the interesting cross-sectional variation that needs to be explained (Zhou 2001). Moreover, as in Cheng et al. (2014), introducing firm fixed effects substantially reduces the power of our test given the high autocorrelation of the CSP scores. It clearly appears that firm-fixed effects make it difficult for variables that change only slowly to show their impact.

Otherwise, it is well known that firm-fixed effects are not able to alleviate all endogeneity concerns. For instance, although we have lagged all explanatory variables in our empirical analysis, the evidence may be driven by reverse causality, whereby past firm value influences the current CSP.

We estimate instrumental variables regressions in order to mitigate the remaining endogeneity concerns. Following recent studies (El Ghouli et al. 2016a; Kim et al. 2014), we instrument the CSP score by the mean industry-year CSP score while excluding the focal firm. We estimate the first stage OLS regressions to predict the value of the CSP score. In particular, as

evidenced by Model (2), we regress the CSP score on the instrument (mean industry-year CSR score), other control variables, ESG controversies and fixed effects. We then replace the CSP score by its fitted value as estimated in the first-stage regression. In Model (3), we repeat the same procedure while controlling for the inclusion of firm-fixed effects.

As evidenced in Table 3.8, the results are qualitatively the same as those obtained by the OLS estimation method regardless the inclusion of firm-fixed effects. Indeed, the positive coefficient of the interaction between ESG controversies and the CSP score survives all the specifications. However, in line with OLS results, ESG controversies have a negative and direct impact on firm value after controlling for firm-fixed effects while there is no evidence of direct relation between CSP score and firm value.

3.5. Discussion

Using a large sample of more than 4000 firms from 58 countries during 2002-2011 and controlling for time and firm-level unobservable heterogeneity, we find that the CSP score is positively related to the firm value for highly visible firms. In particular, we find that the CSP score leads to improved firm value for firms experiencing ESG controversies, high-performance and larger firms and those which are located in countries enjoying greater press freedom.

Since endogeneity was recognized to be a concern for studies that examine the relationship between CSR and financial performance (McWilliams and Siegel, 2000; Rodriguez et al., 2006), we first control for the inclusion of firm-fixed effects and then employ the instrumental variables approach in order to alleviate this issue (El Ghoul et al. 2016a). Results remain qualitatively the same.

According to the empirical results, we can assume that ESG controversies, regardless their bad connotation, enhance the firm visibility which in turn would positively connect the CSP score to the firm market value. In particular, this reasoning holds only for high-attention firms – those firms which are bigger, more performing, located in countries enjoying greater levels of press freedom and as identified by different measures of firm-specific investors' attention. Supporting evidence is provided by Servaes and Tamayo (2013), who argue that the value of CSR measures (concerns/strengths) is only effective when associated with high-awareness firms when awareness is measured by advertising intensity. Likewise, controversies appear to have a negative a direct impact on firm value after controlling for firm-level heterogeneity. However, this study contrasts with their work suggesting that this increased scrutiny harms

companies with CSR concerns. In our setting, when combined with CSP scores, ESG controversies signaling for CSR concerns have no detrimental impact on firm value. This result partially corroborates the study by Groening and Kanuri (2013), who find that in almost half of cases a positive social event results in a negative return, while a negative social event leads to a positive return.

For low-attention firms, our results are partially in line with Servaes and Tamayo (2013) to the extent that these firms experience either negative or negligible association with value in respect of CSR concerns. Nonetheless, our results indicate that ESG controversies do not moderate the positive link between firm value and CSP scores for firms that attract less attention (low GSV) which are at the same time smaller, low-performers or are located in countries with low levels of press freedom.

The impact of ESG controversies on firm value seems to be mostly affected by changes in information asymmetry and search costs. Investors have difficulty perceiving a firm's actual CSR quality due to information asymmetry and the costs generated by gathering, collecting and processing information. CSP scores resolve this problem to some extent since they are supposed to integrate any new ESG information in a timely-fashion way.

Moreover, it is well known that larger firms tend to have better disclosure rates (R. Gray et al. 1995; Brammer and Pavelin 2006; Guidry and Patten 2012) and higher visibility on stock markets since they attract more information intermediaries (Gode and Mohanram 2003) and receive diverse stakeholder demands (Fiss and Zajac 2006). This alleviates information asymmetry, leading to cheaper cost of capital since larger firms are more familiar to investors (Barber and Odean 2008). Further, companies that are more visible to their stakeholders are more likely to grab investors' attention, are often subject to greater restrictions from regulators (Salancik and Pfeffer 1978) and public interest groups (Greening and Gray 1994). This additional attention is unlikely to reveal valuable new information about more visible companies due to the fact that they are already highly scrutinized, but may focus attention on the firm's CSR policy. Conversely, less visible companies are unlikely to be familiar to a broad number of investors and their lower profile also means the public is less likely to have formed strong assumptions (positive or negative) about them (C. Fombrun et al. 2000).

Besides, firms experiencing controversies would revise their future CSR behavior and communication strategy. Then, the short-term bad image may have positive consequences on the CSR reputation, which would partially explain our results. As a matter of fact, the controversy makes that the firm becomes more scrutinized by its environment in addition to

higher institutional pressure (Campbell 2007). If possible, this situation represents an opportunity to the firm to exhibit the bright side of its CSR policy. Accordingly, the attention induced by the controversy could be interpreted as a chance to regain the investors' confidence. Unfortunately, drawing to reality, this ability to overcome controversies is particularly possible for firms used to deal with high public attention, which is in line with our empirical results.

Our study contributes to the recent but growing literature on the channels through which CSR may influence the firm value (El Ghouli et al. 2016a; Surroca et al. 2010; T. Wang and Bansal 2012; Servaes and Tamayo 2013; X. Luo et al. 2015). In particular, we suggest that greater firm visibility affect the link between CSP and firm value. In other words, the positive relationship between the CSP score and firm value for firms experiencing ESG controversies suggests that the incremental value of CSR is greater where investors' attention lead to higher CSR premium.

Managerial implications can also be drawn from this study. From investors as well as managers' point of view, CSP scores are potentially linked to higher future market value in the case of highly visible firms. In that sense, uncontrolled CSR concerns such as controversies, serve surprisingly as an attention-grabbing event that nurtures the CSP-firm value relationship.

3.6. Conclusion

In addition to testing for the potential link between CSP and firm value, this paper relies on previously unexplored data on ESG controversies and tests the robustness of their direct link to market value. Using a sample of more than 4,000 firms from 58 countries during 2002–2011, we first find that ESG controversies exert a surprisingly significant and positive effect on firm market value. We introduce an interaction term between controversies and the CSP score to our baseline model in order to shed light on the potential indirect effects of CSP scores on market value. When interacted with the CSP score, the direct effect of ESG controversies completely disappears but the interaction term is positive and significant.

These results hold only for high-attention firms, i.e. those which are larger, perform better, receive more investors' attention or are located in countries with greater levels of press freedom. Interestingly, our understanding of the effects of CSP on firm value is further improved by revealing an important channel: investor attention as measured by Google search

volume of firm names. Thus, one can argue that the incremental value of CSP strongly depends on the firm visibility, regardless the negative connotation of ESG controversies.

As a robustness check, our results remain qualitatively the same for different measures of firm performance. Most interestingly, the coefficient of ESG controversies turns negative and highly significant while the interaction between controversies and the CSP score remains positively significant when employing accounting-based performance measures instead of market-based ones. Likewise, after controlling for firm-level heterogeneity, the results are not affected. Finally, our results find further support after employing instrumental variables regression which is in line with our main findings.

This study extends but differ from Servaes and Tamayo (2013) in that advertising expenses are voluntarily engaged by firms while ESG controversies are outside of their diligence. Moreover, Servaes and Tamayo (2013) provide evidence that CSR concerns are associated with lower firm value, whereas we find that ESG controversies focus investor attention in a way that actually enhance the relation between CSP and market value, even if the controversy itself is detrimental by essence and directly decreases operating performance measures.

Through this evidence, this paper takes additional steps towards an improved understanding of the effects of CSR concerns on firm value, which remains a topic of intense debate among scholars. Interesting conclusions can be drawn from this paper, although it is not free from external validity problems caused by data restrictions and a coarse level of analysis (yearly). In addition, while firm fixed effects and the instrumental variables approach were employed to mitigate endogeneity concerns, potential unobserved factors may influence the level of controversies which in turn may also affect the relationship between CSP and firm value. As a future research question, it would be interesting to examine the effect of specific categories of ESG controversies on financial performance. Unfortunately, identifying such components is known to be difficult especially for non-US firms. Moreover, the impact of the severeness and materiality of controversies needs future investigation.

Appendix 3.1. Example of an ESG controversy

<u>Title</u>	Dubai investigates Deutsche Bank over anti-money-laundering practices
<u>Textual Data</u>	Germany's Deutsche Bank is under investigation by the DIFC's financial regulator over alleged shortcomings in its customer due diligence and anti-money-laundering procedures. The Dubai Financial Services Authority (DFSA) is concerned about several potential regulatory breaches by the bank's personal wealth management division. The investigation, which began last December, came to light yesterday after the DFSA said it had started proceedings against the bank's Dubai branch in the DIFC Courts to compel the bank to produce documents relevant to the inquiry. "The DFSA has brought the proceedings for the purpose of enforcing compliance with two investigative notices served on [Deutsche Bank's DIFC branch] under Article 80 of the Regulatory Law 2004, requiring the production of information and documents," said a statement posted on the regulator's website yesterday.
<u>Company</u>	Deutsche Bank
<u>Publisher / Author</u>	The National
<u>Publication date</u>	17/11/2013

Appendix 3.2. Distribution of controversies by type across years, geographical zone and industry

Year	# ESG_C	# EC	# SC	# GC
2002	112	26	77	37
2003	119	35	86	32
2004	156	49	113	42
2005	222	65	165	45
2006	250	64	200	70
2007	277	83	218	60
2008	338	128	274	71
2009	389	89	330	108
2010	520	126	452	129
2011	674	138	613	132
Zone				
ASIA	833	288	662	185
EUR	1388	342	1166	375
NAM	710	140	586	144
Others	126	33	114	22
Industry				
10	242	154	170	54
15	397	212	300	69
20	580	119	504	130
25	345	47	301	62
30	289	92	248	51
35	141	15	127	38
40	470	19	408	166
45	148	14	127	40
50	160	9	146	63
55	168	89	106	26
No GICS	117	33	91	27
Overall	3057	803	2528	726

Appendix 3.3. Press freedom index by country

<i>Country</i>	<i>PFI_{MEAN}</i>	<i>Country</i>	<i>PFI_{MEAN}</i>
<i>Australia</i>	6.53	<i>Netherlands</i>	0.20
<i>Austria</i>	2.38	<i>New Zealand</i>	1.97
<i>Belgium</i>	1.61	<i>Nigeria</i>	39.72
<i>Brazil</i>	19.48	<i>Panama</i>	20.63
<i>Canada</i>	02.82	<i>Peru</i>	28.71
<i>Cayman Islands</i>	93.23	<i>Philippines</i>	45.44
<i>Chile</i>	12.03	<i>Poland</i>	9.25
<i>China</i>	93.73	<i>Portugal</i>	5.07
<i>Colombia</i>	45.82	<i>Qatar</i>	29.1
<i>Cyprus</i>	11.79	<i>Russia</i>	53.12
<i>Czech Republic</i>	7.66	<i>Saudi Arabia</i>	69.79
<i>Denmark</i>	1.23	<i>Singapore</i>	51.23
<i>Egypt</i>	51.10	<i>South Africa</i>	8.71
<i>France</i>	7.72	<i>Spain</i>	9.41
<i>Germany</i>	2.93	<i>Sri Lanka</i>	53.16
<i>Greece</i>	9.88	<i>Sweden</i>	10.3
<i>Hong Kong</i>	11.38	<i>Switzerland</i>	1.11
<i>Hungary</i>	5.38	<i>Taiwan</i>	93.73
<i>Iceland</i>	0.00	<i>Thailand</i>	36.83
<i>India</i>	35.29	<i>Turkey</i>	36.73
<i>Indonesia</i>	33.38	<i>Ukraine</i>	35.88
<i>Ireland</i>	7.93	<i>The United Arab Emirates</i>	29.25
<i>Israel</i>	21.98	<i>The United Kingdom</i>	5.37
<i>Italy</i>	11.48	<i>The United States</i>	8.46
<i>Japan</i>	6.9	<i>Zimbabwe</i>	53.26
<i>Jordan</i>	36.3		
<i>Kazakhstan</i>	47.85		
<i>Korea (South)</i>	19.92		
<i>Kuwait</i>	20.44		
<i>Malaysia</i>	39.64		
<i>Mauritius</i>	10.93		
<i>Mexico</i>	42.98		
<i>Morocco</i>	38.99		

Table 3.1. Description of variables

<i>Variable</i>	<i>Definition</i>	<i>Variable description</i>
<i>Dependent variables</i>		
<i>Ln(Q)</i>	Ln(Tobin's Q)	Ln((market value of equity + book value of assets - book value of equity - balance sheet deferred taxes)/book value of assets)
<i>Ln(Q_{CP})</i>	Ln(Tobin's Q computed as in Chung and Pruitt (1994))	Ln((market value of equity + liquidating value of preferred stock + book value of net long-term debt + (short-term liabilities – short-term assets)) / book value of assets)
<i>Ln(MB)</i>	Ln(Market-to-book)	Ln(market value of equity / book value of equity)
<i>OIA</i>	Operating income on assets	Operating income/assets
<i>OIS</i>	Operating income on sales	Operating income/sales
<i>ROE</i>	Return on equity	Net income/shareholders' equity
<i>Independent variables</i>		
<i>ESG_{Controversies}</i>	ESG controversies	As provided by Asset4 – Thomson Reuters, equals 1 if the company has at least one ESG controversy, 0 otherwise
<i>CSP_{Score}</i>	The score of Corporate social performance	As provided by Asset4 – Thomson Reuters, it measures the firm's established reputation related to CSR issues
<i>GSV_{Mean}</i>	The mean of Google search volume	Ln(mean of google search volume of the firm name)
<i>Analyst following</i>	Analyst coverage	Analyst coverage is defined as the number of analysts providing current fiscal year earnings estimates, averaged over the previous year.
<i>CR_{Awards}</i>	Corporate responsibility awards	As provided by Asset4-Thomson Reuters, equals 1 if the company received an award for its social, ethical, community, or environmental activities or performance, 0 otherwise
<i>Size</i>	Size proxy	Ln(book value of total assets)
<i>ROA</i>	Return on assets	EBITDA / book value of assets
<i>Sales growth</i>	Sales growth	(Sales in year (t) / Sales in year (t-1))
<i>R&D</i>	Research and development expenditure	Research and development expenditure / Sales
<i>Advertising</i>	Advertising expenditure	AD expenses / Sales
<i>DA</i>	Leverage	Book value of debt / book value of assets
<i>Capex</i>	Capital expenditure	Capital expenditure / book value of assets
<i>IO</i>	Insider ownership	Percentage of shares owned by insiders
<i>Dividend</i>	Dividend yield	Dividend per share / stock price per share
<i>Age</i>	Age	Natural log of the number of days since first listing
<i>Press freedom</i>	Press Freedom Index	As provided annually by Reporters without Borders. Scores range from 0 to 100, with 0 being the best possible score and 100 the worst. We multiply this score by (-1) such that higher values indicate more freedom.

Table 3.2.Descriptive statistics

<i>Variable</i>	<i>Mean</i>	<i>Median</i>	<i>Maximum</i>	<i>Minimum</i>	<i>Std. Dev.</i>	<i>VIF</i>	<i>Obs.</i>
<i>Ln(Q)</i>	1.602	1.251	9.850	0.340	1.037	--	15,436
<i>ESG_{Controversies}</i>	0.198	0.000	1.000	0.000	0.399	1.090	15,436
<i>CSP_{Score}</i>	0.504	0.482	0.999	0.012	0.304	1.564	14,743
<i>GSV_{Mean}</i>	32.622	32.000	90.000	0.000	21.948	1.011	13,845
<i>Size</i>	22.746	22.572	28.750	15.504	1.704	2.065	15,436
<i>Return on assets</i>	0.115	0.105	0.956	-0.846	0.099	1.035	15,426
<i>Sales growth</i>	1.126	1.090	3.744	0.488	0.275	1.097	13,825
<i>R&D</i>	0.016	0.000	1.979	0.000	0.058	1.048	15,436
<i>Advertising</i>	0.004	0.000	0.424	0.000	0.019	1.092	15,436
<i>Leverage</i>	0.190	0.165	0.990	0.000	0.150	1.561	14,333
<i>Capex</i>	0.052	0.038	0.997	0.000	0.056	1.124	14,958
<i>IO</i>	0.292	0.240	1.000	0.000	0.236	1.076	12,317
<i>Dividend</i>	0.029	0.023	0.887	0.000	0.030	1.033	14,715
<i>Age</i>	8.280	8.600	9.202	0.693	0.942	1.248	13,571
<i>Press freedom</i>	10.788	6.000	100	0.000	18.025	1.030	15,249

This table reports the descriptive statistics of the Tobin Q variable and explanatory variables. In addition to the mean and median controlling for the distribution's central tendency, this table reports the minimum, maximum, standard deviation of the variables and variance inflation factors (VIFs). All variables are defined in Table 1. The sample spans from 2002 to 2011.

Table 3.3. Correlation matrix

	<i>Ln(Q)</i>	<i>ESG_{Contr}</i>	<i>CSP_{Score}</i>	<i>GSV_{Mean}</i>	<i>Size</i>	<i>Return on assets</i>	<i>Sales growth</i>	<i>R&D</i>	<i>Advertising</i>	<i>Leverage</i>	<i>Capex</i>	<i>IO</i>	<i>Dividend</i>	<i>Age</i>
<i>Ln(Q)</i>	1													
<i>ESG_{Controversies}</i>	0.004	1												
<i>CSP_{Score}</i>	-0.026**	0.340***	1											
<i>GSV_{Mean}</i>	0.028**	0.182***	0.299***	1										
<i>Size</i>	-0.348***	0.309***	0.352***	0.193***	1									
<i>Return on assets</i>	0.579***	0.051***	0.046***	0.033***	-0.304***	1								
<i>Sales growth</i>	0.158***	-0.047***	-0.114***	-0.130***	-0.064***	0.131***	1							
<i>R&D</i>	0.16***	0.041***	0.087***	0.035***	-0.075***	0.051***	0.003	1						
<i>Advertising</i>	0.03***	-0.012	-0.081***	0.020*	-0.026**	0.013	-0.016	0.049***	1					
<i>Leverage</i>	-0.087***	0.009	0.068***	-0.043***	-0.006	-0.055***	-0.013	-0.118***	-0.091***	1				
<i>Capex</i>	0.184***	0.009	-0.014	-0.053***	-0.176***	0.357***	0.105***	0.005	-0.037***	0.135***	1			
<i>IO</i>	0.037***	-0.113***	-0.230***	-0.137***	-0.013	0.046***	0.088***	-0.082***	0.049***	-0.081***	0.101***	1		
<i>Dividend</i>	0.015	-0.001	0.079***	-0.016	-0.05***	0.125***	0.054***	-0.125***	-0.073***	0.083***	-0.016	0.026**	1	
<i>Ln(Age)</i>	-0.003	0.021**	-0.009	0.000	-0.008	0.028***	-0.028**	-0.024**	0.013	-0.005	-0.003	-0.077***	-0.051***	1

This table reports pairwise relationships between variables of interest from 2002 to 2011. All variables are defined in Table 1. ***, ** and * denote statistical significance at the 1, 5, and 10% levels, respectively.

Table 3.4. ESG controversies and firm value

	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 4</i>	
	<i>Ln(Q)</i>		<i>Ln(Q)</i>		<i>Ln(Q)</i>		<i>Ln(Q)</i>	
<i>Constant</i>	1.104***	(0.190)	1.153***	(0.174)	1.200***	(0.177)	1.247***	(0.183)
<i>ESG_{Controversies(t-1)}</i>			0.055***	(0.012)	0.049***	(0.015)	-0.019	(0.029)
<i>CSP_{Score(t-1)}</i>	0.098***	(0.022)			0.086***	(0.024)	0.07***	(0.026)
<i>CSP_{Score(t-1)} x ESG_{Controversies(t-1)}</i>							0.102***	(0.031)
<i>Size_(t-1)</i>	-0.047***	(0.008)	-0.046***	(0.007)	-0.052***	(0.007)	-0.053***	(0.007)
<i>Return on assets_(t-1)</i>	2.5***	(0.166)	2.521***	(0.160)	2.497***	(0.163)	2.489***	(0.164)
<i>Sales growth_(t-1)</i>	0.044***	(0.015)	0.037**	(0.016)	0.044***	(0.014)	0.044***	(0.014)
<i>R&D_(t-1)</i>	1.001***	(0.115)	1.088***	(0.145)	0.987***	(0.122)	0.974***	(0.122)
<i>R&D_{dummy(t-1)}</i>	0.035***	(0.008)	0.026***	(0.009)	0.035***	(0.009)	0.035***	(0.009)
<i>Advertising_(t-1)</i>	0.486	(0.358)	0.5	(0.382)	0.512	(0.361)	0.485	(0.342)
<i>Advertising_{dummy(t-1)}</i>	0.026***	(0.009)	0.028***	(0.009)	0.029***	(0.009)	0.028***	(0.009)
<i>Leverage_(t-1)</i>	-0.073***	(0.022)	-0.063***	(0.018)	-0.069***	(0.021)	-0.066***	(0.021)
<i>Capex_(t-1)</i>	-0.241*	(0.133)	-0.236*	(0.127)	-0.257**	(0.126)	-0.256**	(0.126)
<i>Dividend_(t-1)</i>	-0.47	(0.345)	-0.373	(0.339)	-0.483	(0.347)	-0.487	(0.346)
<i>IO_(t-1)</i>	-0.111*	(0.063)	-0.124**	(0.059)	-0.103	(0.064)	-0.103	(0.064)
<i>IO_(t-1)*IO_(t-1)</i>	0.245***	(0.089)	0.239***	(0.082)	0.233**	(0.090)	0.235***	(0.089)
<i>Age_(t-1)</i>	-0.005	(0.003)	-0.007**	(0.003)	-0.005*	(0.003)	-0.005*	(0.003)
<i>Year fixed effects</i>	Yes		Yes		Yes		Yes	
<i>Industry fixed effects</i>	Yes		Yes		Yes		Yes	
<i>Area fixed effect</i>	Yes		Yes		Yes		Yes	
<i>Adj-R² (percentage)</i>	48.55		48.45		48.51		48.58	
<i>Number of observations</i>	7,453		7,781		7,453		7,453	

This table depicts the results of fixed-effects time series regression for firm value as measured by Tobin's Q on ESG controversies, CSP score and other selected control variables. The variables are defined in Table 1. All regressors are one-year lagged to account for a possibly endogenous interdependence and winsorized at the 1% and 99% level to mitigate the effect of outliers. Robust standard errors adjusted for clustering by firm are in parentheses. Our sample spans from 2002 to 2011. ***, ** and * denote statistical significance at the 1, 5, and 10% levels, respectively.

Table 3.5. ESG controversies and firm value: evidence from sample splits

<i>Dependent variable</i>	<i>Model 1</i>				<i>Model 2</i>				<i>Model 3</i>						
	<i>Ln(Q)</i>								<i>Ln(Q)</i>						
<i>Split variable</i>	<i>Return on assets</i>				<i>Size</i>				<i>Press freedom index</i>						
<i>Sample</i>	<i>Low</i>		<i>High</i>		<i>Small</i>		<i>Big</i>		<i>Low</i>		<i>High</i>				
<i>Constant</i>	0.521***	(0.161)	2.502***	(0.212)	2.976***	(0.226)	0.603***	(0.143)	1.534***	(0.193)	1.059***	(0.172)			
<i>ESG_{Controversies(t-1)}</i>	0.007	(0.022)	-0.047	(0.039)	0.086	(0.089)	-0.021	(0.027)	-0.037	(0.033)	-0.009	(0.027)			
<i>CSP_{Score(t-1)}</i>	0.045***	(0.016)	0.108***	(0.032)	0.133***	(0.036)	0.086***	(0.025)	0.102**	(0.033)	0.076**	(0.035)			
<i>CSP_{Score(t-1)} × ESG_{Controversies(t-1)}</i>	0.013	(0.026)	0.198***†	(0.040)	-0.064	(0.103)	0.083***†	(0.029)	0.092	(0.048)	0.10***†	(0.025)			
<i>Size_(t-1)</i>	-0.020***	(0.007)	-0.101***	(0.007)	-0.138***	(0.011)	-0.022***	(0.006)	-0.069***	(0.007)	-0.047***	(0.006)			
<i>Return on assets_(t-1)</i>	0.630***	(0.228)	2.412***	(0.173)	2.782***	(0.175)	2.110***	(0.184)	2.615***	(0.160)	2.371***	(0.171)			
<i>Sales growth_(t-1)</i>	0.036	(0.026)	0.061**	(0.030)	0.071***	(0.025)	0.014	(0.018)	0.079***	(0.027)	0.036	(0.028)			
<i>R&D_(t-1)</i>	1.284***	(0.218)	0.704**	(0.311)	1.512***	(0.134)	0.455**	(0.203)	0.590	(0.452)	1.204***	(0.143)			
<i>R&D_{dummy(t-1)}</i>	0.039***	(0.007)	0.006	(0.012)	0.041*	(0.023)	0.013*	(0.007)	0.041**	(0.020)	0.009	(0.014)			
<i>Advertising_(t-1)</i>	0.977**	(0.395)	-0.263	(0.532)	0.625	(0.631)	0.832**	(0.351)	0.162	(0.811)	0.976**	(0.382)			
<i>Advertising_{dummy(t-1)}</i>	0.013	(0.010)	0.021	(0.027)	0.012	(0.033)	0.027*	(0.014)	0.000	(0.027)	0.044**	(0.018)			
<i>Leverage_{t-1}</i>	0.049***	(0.014)	-0.071	(0.043)	0.014	(0.051)	-0.043*	(0.024)	-0.083	(0.057)	-0.072**	(0.036)			
<i>Capex_(t-1)</i>	0.125	(0.109)	-0.559***	(0.159)	-0.414*	(0.217)	-0.053	(0.101)	-0.326	(0.192)	-0.030	(0.111)			
<i>Dividend_(t-1)</i>	-0.107	(0.310)	-0.793*	(0.408)	-0.682	(0.435)	-0.285	(0.370)	-0.246	(0.359)	-0.551	(0.357)			
<i>IO_(t-1)</i>	-0.086	(0.068)	-0.129	(0.091)	0.064	(0.056)	-0.205**	(0.079)	-0.119	(0.112)	-0.031	(0.085)			
<i>IO_(t-1) × IO_(t-1)</i>	0.137	(0.102)	0.356***	(0.122)	0.239***	(0.071)	0.310***	(0.103)	0.182	(0.133)	0.068	(0.106)			
<i>Age_(t-1)</i>	-0.005	(0.004)	-0.013***	(0.003)	-0.012*	(0.006)	-0.006**	(0.003)	0.000	(0.007)	-0.012***	(0.004)			
<i>Year-fixed effects</i>	Yes				Yes				Yes						
<i>Industry-fixed effects</i>	Yes				Yes				Yes						
<i>Area-fixed effect</i>	Yes				Yes				Yes						
<i>Adj-R² (percentage)</i>	0.2752		0.4279		0.4971		0.4430		0.4840		0.5056				
<i>Number of observations</i>	3,786		3,665		2,489		4,964		2,973		3,872				

This table displays the results of fixed-effects time series regression analysis for firm value over the period of 2002–2011. Our sample is split with respect to firm size, ROA and the country's press freedom index (PFI), respectively. The dependent variable is proxied by the natural logarithm of Tobin's Q. The main variables of interest are ESG controversies and CSP scores while controlling for other well-known determinants of market value. All variables are defined in Table 1. All regressors are one-year lagged to account for a possibly endogenous interdependence and winsorized at the 1% and 99% level to mitigate the effect of outliers. Robust standard errors adjusted for clustering by firm are in parentheses. ***, ** and * denote statistical significance at the 1, 5, and 10% levels, respectively. † denote statistical significance of difference between the coefficients of the two subsamples.

F-stat (ROA) = 17.697***; F-stat (PFI) = 6.392** ; F-stat (SIZE) = 28.457***

Table 3.6. ESG controversies and firm value: The role of firm visibility

	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 4</i>		<i>Model 5</i>		<i>Model 6</i>	
<i>Dependent variable</i>	<i>Ln(Q)</i>		<i>Ln(Q)</i>		<i>Ln(Q)</i>		<i>Ln(Q)</i>		<i>Ln(Q)</i>		<i>Ln(Q)</i>	
<i>Attention proxy</i>	<i>GSV</i>				<i>Analyst coverage</i>				<i>CSR Awards</i>			
<i>Attention regime</i>	<i>Low</i>		<i>High</i>		<i>Low</i>		<i>High</i>		<i>No</i>		<i>Yes</i>	
<i>Constant</i>	1.344***	(0.323)	1.259***	(0.165)	1.398***	(0.333)	1.545***	(0.236)	1.130***	(0.191)	1.429***	(0.213)
<i>ESG_{Controversies(t-1)}</i>	-0.013	(0.052)	-0.028	(0.027)	-0.035	(0.023)	-0.032	(0.043)	0.035	(0.023)	-0.135***	(0.038)
<i>CSP_{Score(t-1)}</i>	0.082**	(0.038)	0.053**	(0.023)	0.025	(0.020)	0.054	(0.038)	0.063*	(0.037)	0.046	(0.032)
<i>CSP_{Score(t-1)} x ESG_{Controversies(t-1)}</i>	0.083	(0.066)	0.114***†	(0.026)	0.066	(0.042)	0.143***†	(0.047)	0.025	(0.039)	0.248***†	(0.042)
<i>Size_(t-1)</i>	-0.061***	(0.012)	-0.053***	(0.007)	-0.053***	(0.014)	-0.070***	(0.010)	-0.053***	(0.008)	-0.055***	(0.008)
<i>Return on assets_(t-1)</i>	1.991***	(0.234)	2.640***	(0.148)	2.224***	(0.094)	2.516***	(0.174)	2.536***	(0.175)	2.343***	(0.160)
<i>Sales growth_(t-1)</i>	0.039	(0.031)	0.050***	(0.013)	0.031	(0.020)	0.061***	(0.022)	0.038**	(0.019)	0.044	(0.033)
<i>R&D_(t-1)</i>	1.598***	(0.319)	0.749***	(0.186)	1.458***	(0.208)	0.554***	(0.166)	0.969***	(0.215)	0.850***	(0.318)
<i>R&D_{dummy(t-1)}</i>	0.056***	(0.013)	0.025**	(0.009)	0.051***	(0.010)	0.021**	(0.009)	0.041***	(0.004)	0.032	(0.020)
<i>Advertising_(t-1)</i>	-0.663	(0.734)	0.730	(0.422)	-0.558	(0.743)	1.400***	(0.541)	0.522	(0.529)	0.548	(0.452)
<i>Ad_{dummy(t-1)}</i>	0.011	(0.044)	0.026**	(0.011)	-0.007	(0.027)	0.046**	(0.022)	0.015	(0.017)	0.040**	(0.016)
<i>Leverage_(t-1)</i>	-0.036	(0.040)	-0.069**	(0.032)	0.082**	(0.033)	-0.150***	(0.022)	0.020	(0.027)	-0.128***	(0.030)
<i>Capex_(t-1)</i>	0.165	(0.155)	-0.395**	(0.179)	-0.240	(0.163)	-0.381**	(0.160)	-0.412***	(0.134)	-0.143	(0.285)
<i>Dividend_(t-1)</i>	-0.804	(0.683)	-0.310	(0.246)	-0.974	(0.708)	-0.168	(0.170)	-0.395	(0.439)	-0.402	(0.341)
<i>IO_(t-1)</i>	0.083	(0.166)	-0.144	(0.073)	-0.121	(0.098)	-0.065	(0.070)	-0.046	(0.110)	-0.126**	(0.050)
<i>IO_(t-1)*IO_(t-1)</i>	0.056	(0.237)	0.286***	(0.093)	0.293**	(0.139)	0.214**	(0.089)	0.230	(0.147)	0.196**	(0.082)
<i>Age_(t-1)</i>	0.012	(0.008)	-0.011***	(0.002)	-0.012	(0.006)	-0.001	(0.003)	0.004	(0.005)	-0.013**	(0.006)
<i>Year-fixed effects</i>	Yes		Yes		Yes		Yes		Yes		Yes	
<i>Industry-fixed effects</i>	Yes		Yes		Yes		Yes		Yes		Yes	
<i>Area-fixed effect</i>	Yes		Yes		Yes		Yes		Yes		Yes	
<i>Adj-R² (percentage)</i>	43.53		51.10		47.41		50.61		49.75		46.84	
<i>Number of observations</i>	1,958		5,490		2,578		4,092		3,808		3,345	

This table reports results of fixed-effects time series regression for firm value as measured by Tobin's Q on CSP score, ESG controversies, an interaction between CSP score and ESG controversies and other selected control variables. All regressors are one-year lagged to account for a possibly endogenous interdependence and winsorized at the 1% and 99% level to mitigate the effect of outliers. The sample is split with respect to several measures of firm-specific investors' attention as measured by GSV of firm names; analyst following and the firm's CSR awards. All variables are defined in Table 1. Robust standard errors adjusted for clustering by firm are in parentheses. ***, ** and * denote statistical significance at the 1, 5, and 10% levels, respectively. † denote statistical significance of difference between the coefficients of the two subsamples.

Table 3.7. ESG controversies and financial performance: Evidence from different firm performance measures

<i>Dependent variable</i>	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 4</i>		<i>Model 5</i>	
	<i>Ln(QCP)</i>		<i>Ln(MB)</i>		<i>OIA</i>		<i>OIS</i>		<i>ROE</i>	
<i>Constant</i>	1.806***	(0.202)	2.211***	(0.239)	0.302***	(0.019)	0.204***	(0.043)	0.347***	(0.047)
<i>ESGCONTR(t-1)</i>	-0.072	(0.071)	-0.009	(0.046)	-0.014***	(0.004)	-0.029***	(0.006)	-0.034**	(0.016)
<i>CSPSCORE(t-1)</i>	0.133***	(0.041)	0.148***	(0.036)	0.013***	(0.002)	-0.005	(0.010)	0.014*	(0.007)
<i>CSPSCORE(t-1) x</i>	0.227***	(0.062)	0.160***	(0.035)	0.031***	(0.003)	0.040***	(0.006)	0.067***	(0.019)
<i>Size(t-1)</i>	-0.113***	(0.007)	-0.084***	(0.007)	-0.012***	(0.000)	-0.007***	(0.001)	-0.012***	(0.001)
<i>Return on assets(t-1)</i>	4.254***	(0.262)	3.442***	(0.278)						
<i>Sales growth(t-1)</i>	0.061	(0.067)	0.085**	(0.035)	0.028***	(0.005)	0.055***	(0.008)	0.061***	(0.007)
<i>R&D(t-1)</i>	1.696***	(0.158)	0.834***	(0.202)	-0.034	(0.035)	0.222***	(0.044)	-0.121**	(0.047)
<i>R&D_dummy(t-1)</i>	0.106***	(0.018)	0.043**	(0.017)	-0.005**	(0.002)	0.009***	(0.003)	0.004	(0.004)
<i>Leverage(t-1)</i>	0.923*	(0.517)	1.343**	(0.605)	0.076*	(0.043)	0.508***	(0.061)	-0.012	(0.084)
<i>Ad_dummy(t-1)</i>	0.044***	(0.012)	0.058***	(0.020)	-0.002	(0.002)	0.029***	(0.003)	0.012***	(0.004)
<i>Leverage(t-1)</i>	0.807***	(0.085)	0.255***	(0.035)	-0.044***	(0.005)	0.041***	(0.010)	-0.015	(0.020)
<i>Capex(t-1)</i>	0.503**	(0.232)	-0.571***	(0.191)	0.092***	(0.022)	0.239***	(0.029)	0.086**	(0.036)
<i>Dividend(t-1)</i>	-0.985*	(0.568)	0.038	(0.823)	0.355***	(0.048)	0.771***	(0.089)	1.119***	(0.094)
<i>IO(t-1)</i>	-0.315***	(0.121)	-0.083	(0.107)	-0.049***	(0.008)	-0.045	(0.029)	-0.045**	(0.018)
<i>IO(t-1)*Io(t-1)</i>	0.645***	(0.160)	0.269*	(0.157)	0.081***	(0.013)	0.112**	(0.043)	0.100***	(0.023)
<i>LnAge(t-1)</i>	-0.014***	(0.004)	-0.021***	(0.004)	0.003***	(0.000)	0.003*	(0.001)	-0.001	(0.002)
<i>Year-fixed effects</i>	Yes		Yes		Yes		Yes		Yes	
<i>Industry-fixed effects</i>	Yes		Yes		Yes		Yes		Yes	
<i>Area-fixed effect</i>	Yes		Yes		Yes		Yes		Yes	
<i>Adj-R² (percentage)</i>	4528		38.89		27.02		17.52		15.06	
<i>Number of observations</i>	6,401		7,452		7,337		7,336		7,107	

This table reports results of fixed-effects time series regression for firm value as measured by Tobin's Q on CSP score, ESG controversies, an interaction between CSP score and ESG controversies and other selected control variables. All regressors are one-year lagged to account for a possibly endogenous interdependence and winsorized at the 1% and 99% level to mitigate the effect of outliers. The sample is split with respect to several measures of firm-specific investors' attention as measured by GSV of firm names; analyst following and the firm's CSR awards. All variables are defined in Table 1. Robust standard errors adjusted for clustering by firm are in parentheses. ***, ** and * denote statistical significance at the 1, 5, and 10% levels, respectively. † denote statistical significance of difference between the coefficients of the two subsamples. F-stat(GSV): 28.218***; F-stat(Analysts): 6.994*** ; F-stat(CSR Awards): 9.414***

Table 3.8. Addressing endogeneity: Alternative estimation methods

	<i>Model 1</i>		<i>Model 2</i>				<i>Model 3</i>	
	<i>OLS</i>		<i>2SLS</i>					
	<i>Firm-fixed effects Included</i>		<i>No Firms-fixed effects</i>		<i>Firms-fixed effects Included</i>			
		<i>First stage</i>	<i>Second stage</i>	<i>First stage</i>	<i>Second stage</i>	<i>First stage</i>	<i>Second stage</i>	
Constant	3.650*** (0.339)	-1.639*** (0.057)	1.646*** (0.140)	-0.332*** (0.118)	3.823*** (0.253)			
ESG_{Controversies(t-1)}	-0.038** (0.019)	0.089*** (0.006)	-0.024 (0.027)	0.014*** (0.004)	-0.078** (0.039)			
Industry-year Average CSP_{Score (t-1)}		0.576*** (0.028)		0.330*** (0.028)				
Pred. CSP_{Score(t-1)}			0.202*** (0.065)		-0.217 (0.137)			
CSP_{Score(t-1)}	0.019 (0.029)							
CSP_{Score(t-1)} x ESG_{Controversies(t-1)}	0.055** (0.025)							
Pred. CSP_{Score(t-1)} x ESG_{Controversies(t-1)}			0.118*** (0.042)		0.150** (0.075)			
Size_(t-1)	-0.144*** (0.015)	0.084*** (0.002)	-0.067*** (0.007)	0.026*** (0.005)	-0.149*** (0.011)			
Return on assets_(t-1)	0.261*** (0.076)	0.320*** (0.031)	2.246*** (0.100)	0.045 (0.029)	0.092* (0.055)			
Sales growth_(t-1)	0.006 (0.013)	-0.072*** (0.009)	0.064*** (0.021)	-0.006 (0.006)	0.013 (0.012)			
R&D_(t-1)	-0.225 (0.426)	0.782*** (0.072)	0.886*** (0.200)	-0.165 (0.127)	-0.251 (0.315)			
R&D_{dummy(t-1)}	-0.054** (0.026)	-0.052*** (0.006)	0.034*** (0.011)	-0.047*** (0.012)	-0.040* (0.023)			
Advertising_(t-1)	-1.171 (0.725)	-0.222 (0.262)	1.104*** (0.401)	0.575 (0.394)	-0.450 (0.871)			
Advertising_{dummy(t-1)}	-0.041 (0.032)	-0.010 (0.012)	0.051*** (0.016)	0.033** (0.016)	0.009 (0.032)			
Leverage_(t-1)	-0.022 (0.062)	0.003 (0.016)	-0.072** (0.029)	0.036* (0.021)	-0.093** (0.041)			
Capex_(t-1)	-0.101 (0.107)	0.012 (0.049)	-0.191 (0.125)	-0.012 (0.050)	-0.130 (0.094)			
Dividend_(t-1)	0.331* (0.186)	1.097*** (0.093)	-0.308 (0.199)	0.282*** (0.085)	0.832*** (0.167)			
IO_(t-1)	-0.133* (0.073)	-0.253*** (0.032)	-0.122** (0.059)	-0.126*** (0.031)	-0.122** (0.062)			
IO_(t-1)*IO_(t-1)	0.164 (0.104)	0.113*** (0.042)	0.317*** (0.077)	0.093** (0.042)	0.217*** (0.082)			
Age_(t-1)	-0.000 (0.006)	-0.006** (0.002)	-0.010* (0.005)	-0.005* (0.003)	0.003 (0.008)			
Firm-fixed effects	Yes	No	No	Yes	Yes			
Year-fixed effects	Yes	Yes	Yes	Yes	Yes			
Area-fixed effects	No	Yes	Yes	No	No			
Industry-fixed effects	No	Yes	Yes	No	No			
R² (percentage)	42.60	44.40	48.40	25.81	45.55			
Number of observations	7,812	10,522	5,786	10,939	5,905			

This table explores the relationship between Tobin's Q, both ESG controversies and the CSP score and the interaction between ESG controversies and CSP score, while addressing endogeneity issues. The first Model investigates the inclusion of firm-fixed effects. The second and third Models are estimated in two stages. The first-stage regression involves regressing CSP score on all exogenous independent variables, ESG controversies, fixed effects, and the instrument (mean industry-year CSP score excluding the focal firm). While, the second-stage regression results use the predicted values of the CSP score from the first-stage regressions. Only Model 1 and Model 3 include firm-fixed effects.

CHAPTER IV

THE MISSING LINK BETWEEN CSR AWARDS AND FINANCIAL PERFORMANCE: AND THE WINNER IS ...

“The fundamental scarcity in the modern world is the scarcity of attention”
Herbert Simon, Nobel prize of economics

CHAPTER 4. THE MISSING LINK BETWEEN CSR AWARDS AND FINANCIAL PERFORMANCE: AND THE WINNER IS...

Abstract

The aim of this paper is to address the conditions and mechanisms under which corporate responsibility (CR hereafter) awards may enhance financial performance. Specifically, we argue that investor attention as measured by stock popularity is relevant for the relationship between CR awards and financial performance. Using a balanced panel of 879 firms from 25 countries over the 2005-2014 period, linear OLS regression first suggested that there is no relationship between CR awards and Tobin's Q, even after controlling for investor attention. We go beyond this result and implement a panel-threshold regression (PTR) analysis to study whether there is an optimal investor attention level which may result in threshold effect and asymmetrical responses of the financial performance to CR awards. Interestingly, empirical results show that returns on CR awards are either not significant or negative below the threshold and then become significantly positive above it. Our results remain robust under several different proxies, estimation methods and sample compositions. Overall, this study indicates that CR awards enhance financial performance indirectly through improved firm visibility, but only from a point at which investor attention is optimal.

Keywords: *Corporate responsibility awards, Market value, Investor attention, Panel threshold regression.*

JEL Classification: C58, G14, G15, G32.

Résumé

Le but de cet article est d'aborder les conditions ainsi que les mécanismes grâce auxquels les prix de responsabilité sociale de l'entreprise (RSE) améliorent sa performance financière. Plus précisément, nous prévoyons que l'attention de l'investisseur, telle que mesurée par la popularité d'une entreprise sur internet, est pertinente pour la relation entre les prix de RSE et la performance financière. Utilisant un panel calibré de 879 entreprises provenant de 25 pays entre 2005 et 2014, la régression linéaire par la méthode des moindres carrés ordinaires (MCO) semble, tout d'abord, indiquer qu'il n'y a pas de relation entre les prix de RSE et le Q de Tobin, même après avoir contrôlé pour l'attention de l'investisseur. Ensuite, souhaitant aller au-delà de ce résultat, nous avons mis en place une régression en panel à effet de seuil pour tester l'existence d'un niveau d'attention minimum qui pourrait aboutir à une réponse asymétrique de la performance financière aux prix de RSE. Fait intéressant, les résultats empiriques montrent que les répercussions financières positives des prix de RSE ne sont significatives qu'au-dessus d'un certain seuil au niveau de l'attention de l'investisseur, mais qui s'avère négative et non significative au-dessous de ce seuil. Nos résultats demeurent robustes à l'utilisation de différentes mesures de nos variables, différentes méthodes d'estimation et différentes compositions de l'échantillon d'étude. Dans l'ensemble, cette étude indique que les prix de RSE améliorent indirectement la performance financière par l'intermédiaire d'une meilleure visibilité de l'entreprise, mais seulement à partir d'un niveau minimum de l'attention de l'investisseur.

Mots clés : *Prix de responsabilité sociale de l'entreprise, Performance financière de l'entreprise, Attention de l'investisseur, Régression en panel à effet de seuil.*

JEL Classification: C58, G14, G15, G32.

4.1. Introduction

Despite the well-documented shareholder wealth effects, there is little consensus about the underlying dynamics associated with additional benefits of corporate social responsibility (CSR hereafter). For example, it remains unanswered whether stock market reactions to favorable social performance are solely attributable to the positive information content or to additional effects. The first motivation of this research is to investigate the relative effectiveness of investor attention as a channel through which corporate responsibility (CR hereafter) awards may affect corporate financial performance (CFP hereafter). This intuition is derived from studies that analyze investors' delayed and biased reactions to information (Grossman and Stiglitz 1980). An assumption often made by these studies is that, if investors have limited resources and ability to collect, interpret, and finally trade on value-relevant information, we would expect asset prices to incorporate information only gradually, and as investor attention intensifies. We therefore echo the intuition of Madsen and Rodgers (2015) suggesting that firms will benefit from effective stakeholder management when stakeholders are paying attention to firm activities. As firms engage in community-centric responses, they attract positive attention from stakeholders that can, in turn, benefit the firm. CR awards are defined as prizes awarded to the company for its social, ethical, community, or environmental activities or performance. Our aim is to test threshold and interaction effects in the relationship between CR awards, Tobin's Q (Servaes and Tamayo 2013; Jiao 2010), and investor attention.

From an instrumental standpoint, CSR commitment is a form of investment, entailing initial costs for future financial benefits (Branco and Rodrigues 2006). The environmental dimension has been one of the greatest interests in terms of the market's attitude toward CSR (Bird et al. 2007; Flammer 2013; Krüger 2015). For example, Klassen and McLaughlin (1996) suggest that improved financial performance is a result of environmental performance as proxied by environmental awards. Similarly, Kassinis and Vafeas (2006) and Welford et al. (2008) find the environment to be one of the most important concerns for stakeholders in a company's CSR efforts. Recently, a growing stream of literature focuses on the social dimension of CSR policies. Edmans (2011, 2012) provides evidence that there are benefits to being in the top level of employee satisfaction. He constructs a value-weighted portfolio of the "100 Best Companies to Work For in America" and shows that this portfolio significantly outperforms industry benchmarks.

Regarding research design, some scholars have used cross-sectional data to study the relationship between socially responsible activities and financial performance, but have recognized the limitations of using such procedure to establish causal effects, especially in an international context (McWilliams and Siegel 2000; Rodriguez et al. 2006). Recent studies rather suggest that the relationship between CSP and CFP may not be linear depending on other underlying factors and mechanisms. For example, H. Wang et al. (2008) show that benefits of corporate philanthropy will increase more slowly with each additional rise in philanthropic contributions.. More recently, relying on the regression discontinuity design, Flammer (2015a) find evidence that CSR has decreasing marginal returns. Similarly, using the path analysis, Harjoto et al. (2015) show that higher CSR commitment reduces firm risk at a decreasing rate indirectly through its effect on institutional ownership.

These studies strongly suggest a non-linear relationship between CSR commitment and financial benefits. The empirical approaches are various but one common premise of these studies suggest that CSR improves financial performance, which is consistent with the view that CSR is a valuable resource for firms (O. Hart 1995; Russo and Fouts 1997; Branco and Rodrigues 2006; Aragon-Correa and Sharma 2003). That being said, the “stock” of CSR resources that is already in place may influence the benefits having a CR award which in turn enhances financial performance. In the present paper, we propose the use of threshold regression techniques to examine whether any relationship between CSR and financial performance may depend upon a third conditioning threshold variable. We moved away from evidencing a non-linear CSP-CFP relationship (Barnett and Salomon 2012) and attempted to respond to a call for the use of new empirical settings in CSR research who noted the premise of using alternative methodologies (Rupp et al. 2006; Rupp et al. 2013; Flammer 2015a).

The general approach of comparing outcomes just above and below a threshold is known as “Panel threshold regression” (PTR) in the economic literature. In our setting, the discontinuity arises because, around a particular threshold in investor attention, high values lead to a discrete change (i.e., a discontinuity) in the impact of CSR awards on corporate value. This paper explores if there exists an optimal level of investor attention, which may result in threshold effect and asymmetrical responses of the firm value to CR awards. It also could be assumed that CR awards only affects financial performance once a “critical value” of investor attention is reached, in which case the relationship is positive.

Relying on a sample of 8,790 firm-year observations from 25 countries and from a range of industries from 2005 to 2014, we assume that such sample would be helpful in demonstrating CSR outcomes in a worldwide context. This is important to account for different regulatory

frameworks since CSR has not yet been adequately addressed and literature yields confounding results. Elsewhere, we use the setting of Hansen (1999) to support the non-linear relationship between CR awards and financial performance. As previously mentioned, investor attention is defined as the threshold variable, and is used to split the sample into two groups, which we may call regimes. Indeed, the presence of thresholds is found to be determined by two regimes of investor attention. In particular, the threshold approach allows for the conclusion that the effect of CR awards on financial performance is stronger for firms with relatively higher levels of investor attention.

Empirical results argue that firms can “*do well by doing good*”, in line with a number of empirical studies documenting a positive relationship between CSR activities and financial performance (Waddock and Graves 1997a; Margolis and Walsh 2003; Orlitzky et al. 2003; Barnett and Salomon 2006, 2012; Choi and Varian 2009; A. Kacperczyk 2009; Eccles et al. 2014; Flammer 2015a; Minor and Morgan 2011; Margolis et al. 2009). In particular, we add to this literature by highlighting the role of investor attention in shaping the positive impact of CR awards on financial performance. Therefore, this study echo the view of CSR as a valuable resource, in line with the resource-based view of the firm (S. L. Hart 1995; Russo and Fouts 1997), the instrumental stakeholder theory (T. M. Jones 1995) and the shared value argument (Porter and Kramer 2006, 2011). Additionally, this reasoning bears on stakeholder-theory research suggesting that firms’ ability to buttress stakeholder’s support through CSR depends on stakeholder perceptions of the social benefits of such behavior (Godfrey et al. 2009). Since we emphasize that the relationship between CR awards and financial performance is not linear, we argue that CSR pays off only after a certain threshold of investor attention. Before this point is reached, additional CSP is either decreasing financial performance or is not significant. Finally, our findings would partially constitute a counterpoint to a long-standing contention that corporate pro-social behavior reduces both corporate and societal welfare (M. Friedman 1970).

This paper contributes to previous literature in distinctive aspects. First, we deviate from the classical debate on the CSP-CFP relationship and move towards elucidating the mechanisms through which CR awards can influence financial performance (Flammer 2013; Servaes and Tamayo 2013). We also contribute to an emerging literature which has made strides in applying empirical techniques to better control for factors potentially endogenous to social responsibility when examining the valuation effects of CSR (H. Wang et al. 2008; M. Wang et al. 2011; Flammer and Luo 2014; Flammer 2015a, 2015b). In contrast with the traditional linear model, the non-linear threshold model can describe the “trade-off” between the

reputational benefits of CR awards and the disadvantages of costs from additional CSR expenditure that may damage the corporate value. Second, to the best of our knowledge, this paper provides the first evidence that positive returns to CR awards start from an optimal level of investor attention. However, it is also worth noting that under the threshold CR awards are negatively related to corporate value, in line with the agency cost theory (Jensen and Meckling 1976; Aupperle et al. 1985; Marsat and Williams 2013; Boyle et al. 1997) as well as in support to the limited investor attention evidence (Tetlock 2011; Da et al. 2014). Third, instead of operationalizing social responsibility as an aggregated construct, we isolate the effects of distinct types of CSR (C. M. Chen and Delmas 2011; Mattingly and Berman 2006; Rowley and Berman 2000) such as environmental awards and social labels. This paper's evidence is mixed and reveals that corporate value is positively connected to social labels above an optimal level of investor attention, while environmental awards are not relevant for financial performance in both attention regimes. Finally, we maintain that there are positive financial payoffs to CSP that are associated with the acquisition of critical resources controlled by shareholders such as their attention. These benefits are, however, subject to gradual level off because obviously, CSR benefits cannot increase indefinitely but most importantly, investor attention is a scarce and valuable resource (Kahneman 1973). Given that firms with higher levels of investor attention benefit from CR awards, as opposed to low-attention firms, CSR commitment may influence corporate value at certain levels of investor attention. Regardless of today's information dissemination technology, news fail to grab everyone's attention at the same time. Instead, it diffuses gradually across networks of investors. An important reason for such gradual diffusion is limited investor attention. To the best of our knowledge, the potential existence of an attention threshold effect in financial literature has not yet been empirically studied. So far, only one paper focuses on the impact of investor attention on the valuation of CSP. Madsen and Rodgers (2015) show, among other pieces of evidence, that CSR benefits increase as the attention devoted to social activities among stakeholders is higher.

The remainder of the paper is organized as follows. Section 2 discusses prior literature and develops relevant hypothesis. Section 3 briefly presents the sample selection and the regression variables used in the study, whereas section 4 explains the econometric methodology and reports empirical results. Section 5 tests the validity of results which are discussed in Section 6. Section 7 sets forth concluding remarks.

4.2. Literature review and hypotheses development

Although stakeholders' theory (Freeman 1984) provides enough good reasons why CSR adds value, empirical evidence is rather divergent in this regard (Margolis et al. 2009) Before we propose the main hypotheses, some discussion of prior literature needs to be addressed first. We began by highlighting the previous literature on the CSP-CFP relationship and discuss the channels through which such link may be plausible. Then, we specifically focus on the relevance of investor attention as a key mediator of the CSP-CFP relationship.

4.2.1. CSP does not matter

The first impression drawn from the CSR literature is that there are mixed results regarding the CSP-CFP relationship. Earlier literature found a neutral relationship (Abbott and Monsen 1979; Aupperle et al. 1985; McWilliams and Siegel 2000). For example, M. A. Cohen et al. (1995) and Fogler and Nutt (1975) do not find any significant relation between environmental policies and financial performance. Similarly, Seifert et al. (2004) investigate the relationship between corporate philanthropy and profitability while controlling for ownership concentration, differentiation, and industry and find no significant evidence. More recently, Cheung (2011) investigated the stock market reaction to announcements of index additions (deletions) to (from) the Dow Jones Sustainability World Index (DJSWI) from 2002 to 2008. Empirical results do not find any significant impact on the stock returns of U.S. firms that are included or excluded from the DJSWI. Thus, the first hypothesis is as follows:

Hypothesis 1. Corporate responsibility awards are not linked to financial performance.

4.2.2. CSP as a cost

Another strand of literature argues that there is a cost involved by CSR practices which may be reflected in firm financial performance. For example, M. Friedman (1970) and Jaffe et al. (1995) posit that CSR presumes higher direct and indirect costs, which would further burden a firm's financial performance and competitiveness. W. B. Gray and Shadbegian (1993) also show that stringent environmental practices can have a negative effect on a firm's productivity. Similarly, Lioui and Sharma (2012) find a negative direct relationship between a firm's market value and environmental KLD scores and suggest that investors perceive environmental strengths as an additional cost or penalties. In a related vein, Oberndorfer et al. (2013) show that inclusion of German corporations in Dow Jones STOXX sustainability

index as well as the Dow Jones sustainability world index leads to negative stock returns. This leads to the following hypothesis:

Hypothesis 2. Corporate responsibility awards are negatively and directly linked to financial performance.

4.2.3. CSP as a valuable resource

One of the oldest and important questions in CSR literature is whether “*doing good*” pays off. As previously discussed, earlier literature has first supported a negative relationship between social responsibility and financial performance (Aupperle et al. 1985; M. Friedman 1970). However, subsequent research emphasizes the potential value of CSR. Sustainability practices can, for example, improve financial performance as a result of market gains and cost savings in the firm’s operations (Klassen and McLaughlin 1996). Accordingly, because of confounding results, investigating the relationship between CSR and CFP becomes an active area of research.

Changes in CSP lead to subsequent changes in value, and firms are seen to be acting in the best interests of shareholders when improving the level of engagement with CSR (Kim et al. 2012; Gregory and Whittaker 2013). In the spirit of Freeman’s (1984) stakeholder theory, CSR can be defined as the set of practices that firms adopt towards the interests of everyone who can substantially affect, or be affected by the welfare of the company (Agle et al. 2008). In particular, the instrumental view of stakeholder theory argues that CSR efforts are initiatives taken to benefit stakeholders with the ultimate goal of benefiting shareholders (T. M. Jones 1995). Furthermore, the conflict-resolution view of CSR argues that firms with high CSP allow managers to gain greater stakeholder commitment and loyalty, leading to a more efficient use of financial resources (Jo and Harjoto 2011, 2012; Harjoto and Jo 2011; Jiraporn and Chintrakarn 2013a) and thus to increase shareholders’ wealth. Indeed, high levels of CSP may mitigate the tension between managers and stakeholders, and decrease opportunistic behaviors in firms (T. M. Jones 1995). For example, investors could consider that managers of socially responsible firms use financial resources more efficiently because they can more easily focus on maximizing firm value. Furthermore, for high CSR firms, decision-making is facilitated because CSR policies reduce the likelihood of lawsuits, media campaigns, or boycotts. However, Barnett (2007) suggests that effective stakeholder relationships are not build instantaneously, arguing that only those firms with a real commitment to CSR activity are likely to realize the long term benefits of such investment.

Elsewhere, even though the agency-view theory (Jensen and Meckling 1976) argues that entrenched managers in a firm with strong corporate governance may use CSR activities to get higher managerial discretion and extract private benefits, the corporate governance role of CSR was also found to be effective in reducing the agency problems associated with many decisions namely, the cash holdings decision (Arouri and Pijourlet 2015). This justifies studies such as Verwijmeren and Derwall (2010), Bae et al. (2011) and Girerd-Potin et al. (2011), which suggest that firms should pay particular attention to relationships with their stakeholders in their financial decisions in order to exploit the financial benefits related to the implementation of CSR policies.

Among others, a seminal meta-analysis of Margolis et al. (2009) report that 167 studies have focused on the CSR-CFP link between 1972 and 2007. Typically, this literature often regress measures of CFP (e.g., Tobin's Q, operating performance, etc.) on proxies of CSR (e.g., the CSP scores) and the majority of these studies conclude that the correlation between CSR and CFP is positive but small. Beyond traditional measures of financial performance, Dhaliwal et al. (2011) find that the voluntary disclosure of CSR activities leads to a reduction in a firm's cost of capital, higher institutional investor ownership, and broader analyst coverage. Most prior studies in the CSR literature deal exclusively with environmental performance and its financial consequences (Al-Tuwaijri et al. 2004; Barth and McNichols 1994; Clarkson et al. 2004; Moneva and Cuellar 2009; Flammer 2013; Capelle-Blancard and Laguna 2010). Corporate environmental performance could be defined as the firm ability, relative to its peers, in reducing its impact on the environment (Klassen and McLaughlin 1996). Based on a sample of 140 events between 1987 and 1991, Klassen and McLaughlin (1996) find a positive market reaction to the announcements of environmental awards. Specifically, the authors find significantly positive (negative) associations between CAR and strong (weak) environmental management, indicating that better environmental performance improves future stock market performance (CAR). The authors find abnormal returns of 0.82% around the announcement of environmental awards. Similarly, Flammer (2013) finds abnormal returns of 0.84% around the announcement of eco-friendly news. Eccles et al. (2014) also show a positive link between a firm's financial and sustainability performance and Derwall et al. (2005) suggest that portfolios of companies with strong environmental responsibility generate risk-adjusted excess returns. Elsewhere, Edmans (2011) finds risk-adjusted excess returns for portfolios with high CSR levels, but as measured by high employee satisfaction. In a very close setting, Edmans (2012) shows that firms listed in the "100 Best Companies to Work For in America" experience 2.3% to 3.8% higher abnormal returns per year from 1984 to 2011.

Another important area of corporate social performance that draws significant stakeholder attention is corporate philanthropy. Philanthropy is a part of CSR initiatives that differs in kind and degree from the mandatory conformance with economic, legal, or ethical dimensions of CSR (Carroll 1979). This discretionary manifestation of CSR has progressively gained greater legitimacy (Margolis and Walsh 2003; Sharfman 1994) and investors are more willing to invest in firms that are known for their corporate philanthropy (Barnett and Salomon 2006; Graves and Waddock 1994; R. A. Johnson and Greening 1999).

Finally, it may be worth noting that short run cash flows are somehow adversely affected while the impact on the long run future cash flows is positive. For instance, Russo and Fouts (1997) draw attention to the short run financial risk of investing in pollution prevention technology when the company expects long run rewards. Barnett and Salomon (2012) support this assumption by providing similar evidence. However, although there may be a short term negative impact on profitability, investors will reward firms with serious commitment to a CSR agenda and value those firms accordingly. This reward represents higher valuations despite negative short term profits. This leads to our first hypothesis:

Hypothesis 3. Corporate responsibility awards are positively and directly associated with financial performance (signaling hypothesis).

4.2.4. How CSP pays off: The channels

As can be noticed, although most studies conclude to a positive correlation, the CSP-CFP relationship appears complex and results are inconclusive. It may be that this is due to the omission of intervening (mediators and moderators) variables in prior literature.

CSR commitment has a number of non-financial outcomes which in turn enhance financial performance. For example, it may help firms improve the effectiveness of the marketing policies (C. J. Fombrun 2005), attract and retain high quality employees (Greening and Turban 2000), gain greater employee satisfaction (Albinger and Freeman 2000; Greening and Turban 2000; Peterson 2004; Pfeffer 1994; Vogel 2005; Turban and Greening 1997), increase demand for products and services (Navarro 1988), provide superior access to valuable resources (Cochran and Wood 1984) and foster the use of more efficient technologies or processes (e.g., environment-friendly technologies). A common premise of these studies is that CSR allows firms to have stronger social capital because they tend to have better relationships with stakeholders, providing insurance like protection that can mitigate harm

from negative events (Flammer 2013) and negative regulatory or legislative action (Hillman and Keim 2001).

In light of the resource-based view (RBV) of the firm, companies may engage in CSR in order to increase their efficiency through improved reputation and greater legitimacy and trust (Barney 1991; S. L. Hart 1995; Porter 1991; Porter and Kramer 2006, 2011; Russo and Fouts 1997; Pelozo 2006; Varadarajan and Menon 1988). Such actions may thus attract new “green” customers, increase the companies’ financial performance, and enhance their competitive advantage (Porter and Kramer 2006, 2011). Evidence has also revealed that improved reputation and competitive advantage induce higher levels of customer satisfaction (E. W. Anderson and Sullivan 1993; Matzler and Hinterhuber 1998; Walsh et al. 2006), a finding confirmed by Galbreath and Shum (2012) who agree that reputation is an outcome of customer satisfaction. Furthermore, G. R. Dowling (2004) argues that reputational capital associated with favorable CSR policies can help insulate and protect firms in tough economic times.

In line with economic intuition, recent developments in microeconomic theory suggest a non-linear relationship between CSP and CFP (Manasakis et al. 2013, 2014; García-Gallego and Georgantzís 2009), which has thinly been tested. Recently, Flammer (2015a) argues that CSR has decreasing marginal returns; i.e., the CSR–CFP relationship is concave. In other words, as companies keep increasing their social performance, the returns from an additional CSR initiative may decrease. They further examine the channels through which CSR increases shareholder value and find that shareholders CSR proposals improve job satisfaction and help companies cater to customers that are responsive to sustainable practices.

Considering reputational benefits as well agency costs simultaneously, H. Wang et al. (2008) propose an inverted U-shaped relationship between corporate philanthropy and financial performance. Similarly, Barnett (2007) suggests that only firms with high levels of investment in CSR make net benefits, with a lower degree of commitment failing to generate benefits greater than costs, resulting in a U-shaped relationship between CSP and financial performance. Fisman et al. (2008) also suggest that there is a non-linear relationship between CSR and financial performance through product differentiation and advertising. Building on this evidence, we propose the following hypothesis.

Hypothesis 4. Corporate responsibility awards are positively and indirectly related to financial performance.

4.2.5. *Investor attention as a mediator*

As mentioned above, it could be that the returns to socially responsible behavior are captured through the reputation of the firm (C. Fombrun et al. 2000). Underlying the positive returns of CR awards is the idea that the firm's various stakeholders will further reward it for behaving responsibly, so that a firm that receives a CR award may enjoy stronger and lasting relationships with these stakeholders inducing lower costs and higher quality inputs (Freeman 1984; S. L. Hart 1995; T. M. Jones 1995; Porter and Van der Linde 1995; Godfrey 2005; Porter and Kramer 2006; Barnett 2007; T. Wang and Bansal 2012). Empirical work has provided consistent evidence with this, given the benefits of a strong relationship between the firm and its stakeholders such as consumers (Casadesus-Masanell et al. 2009; Fosfuri et al. 2015), employees (Turban and Greening 1997), suppliers (Hillman and Keim 2001), investors (Mackey et al. 2007; Cheng et al. 2014), analysts (Ioannou and Serafeim 2015; X. Luo et al. 2015), activists and communities (Baron 2001; Baron and Diermeier 2007; Henisz et al. 2014), and regulators (Koh et al. 2014), with these benefits being stronger, the greater the attention to and salience of social activities among stakeholders (Lev et al. 2010; Flammer 2013; Servaes and Tamayo 2013; Madsen and Rodgers 2015; Aouadi and Marsat 2016).

A substantive implication of this evidence is that firms should not only consider CSR as an element of corporate strategy policies but investigate the channel through which CSR efforts are willing to be more visible. Most importantly, firms will benefit from effective stakeholder management only when stakeholders are paying attention to firm activities (Madsen and Rodgers 2015). This finding dates back to Copeland and Galai (1983) which reveal that investors intensify their engagement and liquidity increases as more information about the firm is publically available. Barber and Odean (2008) also show that investors are more likely to buy a stock that previously caught their attention. They develop a model of decision making and suppose that agents face many different investment alternatives and demonstrate that investors consider primarily those alternatives that first caught their attention. Similarly, a vivid example is given in Huberman and Regev (2001), who conducted a case study on the price discovery of EntreMed, a biotech company. The authors document that stock returns more than tripled in May 1998 as a consequence of seemingly breaking news made public on a front-page article in the New York Times. Anecdotally, this article was based on stale news and the substance of the story had already been released months earlier - in a less attention-grabbing manner in the less widely read scientific magazine "*Nature*". Therefore, attention-based stock demand through increased media presence could push stock prices, affect buying

behavior and generate additional trading volume. Another argument which can be cited to relate CSR policies with investor attention is the impact of CSR on brand preference and brand loyalty (Rust and Oliver 2000; Holt et al. 2004). Du et al. (2007) report that favorable CSR policies lead to stronger brand recognition, brand loyalty, and brand advocacy. Therefore, we argue that CSR commitment translates into increased loyalty from customers and even other stakeholders towards a firm.

Although shareholders' perceptions of a firm's corporate philanthropy are not directly observable, evidence (Godfrey et al. 2009; Muller and Kräussl 2011; Flammer 2013; Madsen and Rodgers 2015) reveals that financial markets incorporate the impact of socially responsible activities on a broad set of stakeholders' attitudes and behavior and, thus, on the future cash flows and value of the firm (see Mackey et al. 2007 for a further discussion). As firms receive CR awards, they attract positive attention from stakeholders that can benefit the firm (Madsen and Rodgers 2015; Muller and Kräussl 2011; Aouadi and Marsat 2016).

Considering an indirect relation between CR awards and market value, a non-linear association through investor attention is quite plausible. However, while investor attention is expected to be a necessary condition for perceptions of CR awards to arise, it is not likely to be sufficient. Although theories related to the threshold effect of shareholder attention on the CSP-CFP relationship are inexistent, limited investor attention has been widely documented in the context of financial information (Tetlock 2011; Da et al. 2014), earnings announcements (Engelberg 2008; DellaVigna and Pollet 2009; Hirshleifer et al. 2009), economic shocks (L. Cohen and Frazzini 2008), and investment choices (Barber and Odean 2008; D. H. Solomon et al. 2014). Furthermore, Sims (2006) emphasizes that attention constraints may be nonlinear. A number of papers have applied the Sims' (2006) view of rational inattention to a variety of different decision problems, not only to price setting problems (Maćkowiak and Wiederholt 2015; Y. Luo 2008).

Because investors are limited in their ability to attend to the various actions of organizations (Madsen and Rodgers 2015; Kahneman 1973), we should thus expect that returns on CR awards would be greater for firms whose actions do not only attract greater investor attention or that operate under greater stakeholder scrutiny, but above the required threshold. In the following section, we build on these ideas by presenting the following hypotheses:

Hypothesis 5. Corporate responsibility awards are indirectly related to financial performance through investor attention.

Hypothesis 5a. Corporate responsibility awards are negatively or insignificantly related to financial performance when investor attention is under the threshold.

Hypothesis 5b. Corporate responsibility awards are positively related to financial performance when investor attention is above the threshold.

4.3. Regression variables and sample

4.3.1. Corporate social performance

We collect information on corporate responsibility awards (CR awards) as well as CSP scores from the Thomson Reuters-ASSET4. The database provides comprehensive environmental, social, and governance (ESG hereafter) data on over 3,400 firms worldwide as of 2002. Asset4 data are updated biweekly and collected from publicly available sources (e.g., annual reports, NGO websites, and media outlets) which are relevant for the purpose of this paper since publicity is a prerequisite of human attention.

In this study, the main measure of CSP is CR awards. As defined by Asset4, CR awards is a dummy variable which takes one if the company received an award for its social, ethical, community, or environmental activities or performance and 0 otherwise. When investigating the value effect of CR awards, we control for the CSP score²⁷. However, we retain only social and environmental factor²⁸ since CR awards relate specifically to social and environmental commitment (El Ghoul et al. 2016a; Lys et al. 2015). Further details of the ESG sub-factors are provided in Appendix 4.2.

4.3.2. Corporate value

We follow John Y. Campbell (1996) and Harjoto and Jo (2015) and measure firm value based on the Fama–French 48 industry-adjusted Tobin’s Q (*Adj_Q*, hereafter). Tobin’s Q was first introduced by Brainard and Tobin (1968) and constitutes a forward-looking measure of firm performance, widely used as a proxy of corporate value in empirical finance and economics (Servaes and Tamayo 2013). It is the ratio between the market and replacement value of the

²⁷ Asset4 provides the “Equal Weighted Rating”, which captures a balanced view of the firm’s performance in four areas, environmental, social, governance and economic. In this paper, we do not use the “Equal Weighted Rating” as denoted “14IR” by Asset4 but rather purge the economic and governance dimensions from this score. The remaining factors are described in detail in Appendix 4.2, as presented by the ASSET4 documentation.

²⁸ In untabulated robustness tests, we include governance score and find similar results. Findings are available upon requests from the authors.

same physical asset. A value below one indicates poor use of resources while, a value greater than one indicates that the forward-looking market value is higher than the current value of total assets. Adj_Q is actually the firm's Tobin's Q minus the industry-median Tobin's Q. Firms are first classified into different industries using Fama–French 48 industry classification and then we subtract the median of firms' Tobin's Q for each industry.

Using this proxy is appealing because stakeholders' rewards may occur in response to favorable social performance without immediately materializing for some types of financial performance proxies. For example, even though CSP accrue reputational insurance (Godfrey 2005; Gardberg and Fombrun 2006), leniency from regulators (Godfrey et al. 2009), or decreased public activism (Hiatt et al. 2009; B. G. King and Whetten 2008; Lounsbury et al. 2003), costs may exceed benefits in the short run. Yet the expected value of CFP over the long term may still be positive (Madsen and Rodgers 2015). As Godfrey et al. (2009) assert, “*CSR activities can provide an insurance mechanism to preserve—rather than to generate—CFP*”. Expected benefits are thus more visible in market measures of firm performance such as stock price than in short-term accounting measures of firm performance (Orlitzky and Benjamin 2001).

4.3.3. Investor attention

In contrast to laboratory experiments in psychological research, attention in stock markets can hardly be proxied directly. When testing theories of attention, empiricists face a substantial challenge since investor attention is difficult to measure. Many indirect proxies were employed such as extreme returns (Barber and Odean 2008), trading volume (Barber and Odean 2008; Gervais et al. 2001; Hou et al. 2009), news and headlines (Barber and Odean 2008; Yuan 2008), advertising expense (Grullon et al. 2004; Lou 2014; Chemmanur and Yan 2010), and price limits (Seasholes and Wu 2007).

Attention could be defined as an individual taking notice of a piece of information (Pashler et al. 2001). Da et al. (2011) propose Google search volume (GSV hereafter) of stock tickers as a proxy for investor attention and find that weekly GSV is positively associated with market capitalization, turnover, analyst following and media attention. The authors conclude that GSV is a more direct and timely proxy for attention than prior proxies. As in Da et al. (2011) and Drake et al. (2012), we employ GSV as provided by Google Trends²⁹ as a proxy of

²⁹Google Trends is a free tool provided by Google that can be used to monitor trends in public keyword search queries. The application provides the popularity of a term over a given time period or geographical location. Search term queries can be filtered by search type (i.e., image, news), geography (i.e., country, city), time range,

investor attention given that it measures the stock popularity as evidenced by internet activity. We simply choose to identify a stock using its ticker. Since a firm's ticker³⁰ is always uniquely assigned, identifying a stock using its ticker avoids the problem of multiple reference names. We assume that as market participants search the internet for firm-specific information, they are paying attention to that stock.

4.3.4. Control variables

To determine the value effect of CR awards, we must control for other factors with predictable influences on the current market value of the firm. The choice of control variables is based on prior research findings. For instance, prior studies report that firm size and risk affect both financial performance and CSR (Waddock and Graves 1997a; Moore 2001; Aras et al. 2010). Appendix 4.1 gives summary information about all the variables used in this study.

In the current study, we attempt to ensure that the model is correctly specified and control for:

- Firm size

A number of empirical papers assume that firm size influences the relationship between CSP and financial performance (Moore 2001; Stanwick and Stanwick 1998). For example, Burke et al. (1986) suggest that smaller firms are less likely to openly engage CSR expenditure than larger firms which attract greater stakeholders' attention and benefit from higher information intermediaries (Gode and Mohanram 2003). Trotman and Bradley (1981) also find some evidence that companies which disclose CSR information are larger than firms that do not disclose and that the amount of information disclosed is also positively correlated with the firm size. It follows that size will alleviate information asymmetry, leading to less uncertainty and cheaper equity financing since larger firms are better known to investors. Elsewhere, Ullmann (1985) suggest that there is a significant relationship between firms size and CSR activities given that larger companies are subject to more public scrutiny and are more likely

and category (e.g., automotive, finance, travel). One caveat of this application is that Google Trends data do not reflect the actual search volume and are presented as a relative scale. Historical data are available from Google Trends starting January 1, 2004.

³⁰ We are cautious about using tickers with a generic meaning such as "GPS" and "ALL". Such issue induces that GSV of these tickers would usually be inflated that may have nothing to do with attention paid to the stocks with these ticker identifiers. While we report the results using all tickers to avoid sample selection bias, we confirm that our results are insensitive to the exclusion of the "noisy" tickers we identified (about 3% of all the stocks under analysis).

to have the required financial, managerial, and technical expertise to engage in CSR activities, like reducing emissions for example, than are their smaller peers (Barnett 2014).

The increased visibility increases the likelihood that stakeholders will notice and attend to corporate initiatives. Different proxies for firm size were employed such as sales volume, total assets (Trotman and Bradley 1981) and turnover (Moore 2001). In this research, we use the log of total assets (Aras et al. 2010; Tsoutsoura 2004).

- ***Risk***

To measure risk, literature has proposed the level of debt (Tsoutsoura 2004; Waddock and Graves 1997a) and the debt to equity ratio (R. W. Roberts 1992). It appears important to control for firm risk which we specify as long-term debt scaled by total assets (Aras et al. 2010; Waddock and Graves 1997a). Several studies (Aras et al. 2010; Perrini et al. 2008; Kapopoulos and Lazaretou 2007) suggest a significant negative correlation between the level of risk and financial performance. Another strand of literature finds a negative relationship between CSR and firm risk (R. W. Roberts 1992). The negative link can be attributed to the fact that firms with lower levels of risk are expected to be more able to participate in social responsible activities as a result of a stable pattern of stock market returns due to the low level of risk.

- ***Dividend***

Dividend is the ratio of dividends to net assets. Jiao (2010) pinpoints the role of dividend yield as determinant of corporate value.

- ***Capital expenditures***

Erhemjamts et al. (2013) investigate the relationship between CSR commitment and a firm's investment policy and explain that the level of CSP impacts firms' investment decisions. For example, they show that high CSR firms invest more in capital expenditures given that high CSP induces additional investments such as "*equipment and facility to reduce pollution, waste, energy, and water usage, as well as additional office space, and computers necessary for CSR-implementation.*" We control for capital expenditures which is calculated by the ratio of capital expenditures to total assets.

- ***Return on assets***

According to Jayachandran et al. (2013), more profitable firms are expected to have higher valuations. Profitability is proxied on the basis of return on assets, that is, the ratio of net income before extraordinary items to total assets (ROA).

- ***Sales growth***

Sales growth is the growth in sales compared to the previous fiscal year. Growth opportunities constitute a greater fraction of firm value rather than total assets since they induce sales growth. We thus expect a positive relationship between sales growth and firm value.

- ***R&D***

McWilliams and Siegel (2000) argue that some studies investigating the CSP-CFP relationship suffer from several important theoretical and empirical limitations due to the omission of R&D intensity as a control variable. R&D expenditure is seen as major contributor to information asymmetry (McWilliams and Siegel 2000). However, R&D may yield a positive return in the long run which in turn improves financial performance. We measure a firm's R&D by its R&D expenses scaled by assets. Consistent with prior studies, we set R&D expenses to zero if they are missing (Barnett and Salomon 2012).

- ***Advertising expenditure***

It is calculated as advertising expenditure to net sales and is set to zero if missing. We also control for the presence of data by a dummy variable (Barnett and Salomon 2012). Servaes and Tamayo (2013) use advertising expenditure as a proxy of consumer awareness and find that it explains the positive valuation effect of CSR. The argument behind this evidence is that advertising expenditure provides insights into a firm's information environment (Nelson 1974).

- ***Industry effects***

We suppose that investors may consider social performance as a waste if a firm is much more involved in CSR than its peers. Moreover, it is well-known that the level of CSR commitment may vary according to industry characteristics (McWilliams and Siegel 2001; Waddock and Graves 1997a; El Ghouli et al. 2011; Cottrill 1990; Holder-Webb et al. 2009). For instance, Balabanis et al. (1998) suggest that industries with a significant and more visible impact on the environment are less able to avoid public attention. Therefore, those firms receive more pressures to increase their CSR commitment and thereby improve their reputation. Besides, according to Balabanis et al. (1998), the industry in which a company is operating could also affect its financial performance. In particular, they state that the visibility of the "damage" to the environment of a firm, with significant more impact on the environment, could negatively affect the behavior of stakeholders to the firm which in turn may decrease the financial performance. Similarly, Cai et al. (2012) suggest that the level of CSR may vary considerably across industries due to differences in the nature of the products produced, regulatory environment and shifts in social norms.

Some studies that controlled for industry used either the 4-digit Standard Industrial Classification (SIC) code (Waddock and Graves 1997a; Holder-Webb et al. 2009) and the KLD's industry categorization (Ruf et al. 2001). In this paper, different industries are defined according to the Fama and French (1997) classification as in (Ghoul et al. 2016).

- ***Geographic effects***

The impact of CSP is region-specific. Q. Wang and Pirinsky (2010) show that the geographic location plays an important role in financial decision-making. The authors conclude that this segmentation “*exposes the firm to a wide variety of individual and institutional characteristics from the region*”. Jiraporn et al. (2014) also review the literature on the connection between geography and social responsibility.

- ***Year effects***

We include year dummies in all estimations. Indeed, the relationship between CSP and financial performance has evolved over time (Flammer 2013) and such procedure allows to control for shifting macroeconomic conditions that affect stock prices, which, in turn, may influence corporate value and to reduce cross-individual correlation.

4.3.5. Sample

We investigate an international panel of 3,468 firms collected from the Thomson Reuters-DataStream database. We collected company data from 2000 to 2015 and constructed an unbalanced panel of nearly 55,488 firm-year observations. Then, we applied a number of standard data restrictions. First, in order to use the panel threshold regression that requires a balanced panel, firms with missing data were removed, so that the resulting dataset includes a total of 9,910 firm-year observations about 991 firms. Second, firms operating in financial sectors (banks, insurance and life assurance companies and investment trusts) were excluded since they are subject to different accounting considerations and do not have the same regulatory frameworks (El Ghoul et al. 2011; Antoniou et al. 2008; Viet A Dang 2011; Viet Anh Dang et al. 2012; Ozkan 2001). This may also allow us to avoid unnecessary confounding effects. Our final sample consists of 879 companies: 8,790 firm-year observations, with the longest time series of 10 years over the period 2005–2014.

<Insert Table 4.1 here>

Table 4.1 reports the industry (48 industry classification as in Fama and French (1997)) and country distributions. As it appears from Panel A, there is wide variation in the number of firm-years across countries. As expected, the United States and Japan are the most

representative countries while Brazil and Luxembourg are the least representative countries, with only one firm-year observation each. According to Table 4.1, we can assume that the sample is fairly dispersed across industries, with no single industry group representing more than 10% of the sample observations. Although some clustering is evident in the sample, the firm-year observations are fairly evenly spread across industries and countries.

4.4. Methodology and empirical results

The objective of this paper is to investigate the role of investor attention on the CSP-CFP relationship. We first apply a multivariate regression and then complement the analysis by the panel threshold regression (PTR). The intuition behind this research approach is that investor attention does not only play a role in connecting CSP to CFP, but above a particular threshold. From a purely econometric point of view, as a benchmark for the PTR results, we first estimate the panel linear case. Moreover, since a panel data approach has some drawbacks such as the assumption of parameter homogeneity over cross-section units, PTR seems to be an alternative to alleviate such a pitfall.

4.4.1. Descriptive statistics and correlations

Table 4.2 reports summary statistics. The mean corporate value as measured by *Adj_Q* is about 0.018. The CSP scores vary from 7.9% to 95.8 % with a mean of 64.4%, while the average of investor attention in our sample is about 3.036. Our sample includes large as well as small firms in terms of total assets. Sales growth (mean 1.133) varies from 0.070 to 6.810. Average return on assets is 6.6 % with a maximum of 26.9 % and a minimum of -11.9 %.

<Insert Table 4.2 here>

The correlation results are reported in Table 4.3. Most of the correlation coefficients among control variables are no more than 50%, mitigating concerns for multicollinearity. It appears that investor attention is correlated with a number of firm attributes such as *Adj_Q*, size and return on assets. Otherwise, CSP scores appear to be highly correlated to CR awards (47.6%) and firm (46.7%) which would constitute a concern. To alleviate this pitfall, we test for multicollinearity using VIFs which are widely used as reliable indicators of multicollinearity. To avoid the VIF to be inflated, we re-estimate a transformed model using the OLS method, which removes the fixed effects from the estimation but still produces the same estimated coefficients as in the fixed effect model (Gormley and Matsa 2014). Reassuringly, as can be

seen in Table 4.2, VIFs do not exceed 2 for all the variables under analysis, confirming the absence of multicollinearity. Furthermore, as is common practice, we winsorize extreme values of all variables of interest prior to estimating a regression model in order to alleviate the effect of outliers. Thus, all variables are winsorized at the 1 and 99 % level.

<Insert Table 4.3 here>

4.4.2. Preliminary analysis

Given differences in the corporate visibility across firms, the relationship between CSP and corporate value may vary across firms as a result of differences in investor attention. We start with a two-sample t-test in order to gather some insights on the role of investor attention. For that purpose, the sample is split into two sub-samples using the Google search volume proxying for investor attention as discriminating variable. Particularly, we conducted a series of two-sample t-tests comparing firm attributes across the high-investor attention and low-investor attention subsamples. The results are reported in Table 4.4.

<Insert Table 4.4 here>

At first sight, the sub-sample of high-attention firms exhibits a higher average *Adj_Q* (0.045 vs. -0.008) but a lower average advertising expenditure. These tests lend some insights to the idea that attention mediates the relationship between CSR and CFP. Indeed, the test for differences in means, shown in Table 4.4 highlights interesting varieties in firm characteristics. For example, high attention firms are those which are larger, more performing and more closely followed by analysts. Hence, the attention hypothesis has to be taken into account in the analysis. This assumption is further supported by the significant correlation coefficient between investor attention and firm attributes, as previously discussed. Yet, correlation analysis as well as the test for difference of means may still serve as a benchmark and a first look at the nexus between different variables. In the next section, the role of investor attention will be analyzed in a more rigorous framework, namely multivariate regression.

4.4.3. The mediating effect of investor attention on the CR-CFP relationship

4.4.3.1. Model specification and estimation

Before investigating the threshold effect of investor attention on the CSP-CFP relationship, we first test its mediating effect through an interaction term. The model we estimate is as follows:

$$Tobin's\ Q_{i,t} = \beta_0 + \beta_1 CR_{AWARDSi,t} + \beta_2 Attention_{i,t} + \beta_3 CR_{AWARDSi,t} * Attention_{i,t} + \alpha Controls_{i,t} + \mu_i + \varepsilon_{i,t} \quad (1)$$

Where $CR_{AWARDSi,t}$ and $Attention_{i,t}$ denote CR awards and investor attention respectively, for firm $i=1, \dots, N$ at time $t=1, \dots, T$. $Controls_{i,t}$ is the set of performance determinants as previously documented in the literature. If $\beta_3 > 0$, no matter whether $\beta_1 > 0$ or $\beta_1 < 0$, then investor attention is beneficial to the value effect of CSP. If $\beta_1 > 0$, CSP benefits the corporate value and investor attention improves this positive impact; whereas if $\beta_1 < 0$, CSP is negatively related to the corporate value, in line with the agency cost theory (Jensen and Meckling 1976), but this negative effect is tempered by greater firm visibility through greater investor attention. Thus, the influence of investor attention is positive. All regression analyses include Fama and French (1997) 48 industry dummies, country dummies and year dummies. The t-statistics are estimated based on standard errors clustered by the firm level³¹.

We present the results from estimating the direct and indirect effects of CR awards on market value in Table 4.5. The findings provide some valuable insights. As Table 4.5 shows, the coefficient on CR awards is positive but not significant. Similarly, the coefficient on the interaction term is not significant but negative, meaning the mediating effect of investor attention is not significant and hypothesis 1 is supported. We further investigate the effect of particular CR awards on Adj_Q , namely environmental awards and social labels as defined in Appendix 4.1. The pattern is qualitatively similar when we look at more specific dimensions of CR awards. In contrast, the coefficient on investor attention is positive and highly significant for all types of awards. Elsewhere, most coefficient estimates of control variables are statistically significant and corroborate with their expected signs.

<Insert Table 4.5 here>

Given the high correlation between CR awards, the interaction term and the CSP score, we transform these variables by subtracting their mean value from each value to mitigate the

³¹ We have also lagged all explanatory variables to mitigate simultaneity concerns, the results remain the same.

structural multicollinearity problem in our regressions. In addition to the VIF's, this method is known as centering the predictor and is commonly used to reduce multicollinearity (Ruppert 2004; Harjoto et al. 2015). The results remain the same suggesting that multicollinearity is not concern in our setting.

From the analysis of the interaction effect above, we cannot achieve definitive remarks. The only definitive observation is that the coefficients on all interaction terms are not significant, supporting the CR awards are not valued by the market. Nonetheless, the interaction term only allows us to roughly examine the mediating effect of the investor attention on the main variables of interest and does not allow us to have more observations. In the threshold model analysis below, we can differentiate distinct regimes of investor attention as well as their potential effects on the relation between CR awards and financial performance.

4.4.3.2. Evidence from sample splits

There may be concerns that the results reported in Table 4.5 are confined to certain stocks. For instance, larger firms have more visibility in the market. As a result, it is very much possible that CSR practices get noticed in these firms more than less visible firms for which CSR commitment may remain unnoticed. In order to address these concerns, we divide our sample into two groups – first group containing firms with above average investor attention and second group containing firms with below average investor attention– and re-estimate the base linear model for both groups. In addition, we test for the significance of difference of means between the two subsamples. The results are reported in Table 4.6.

<Insert Table 4.6 here>

Remarkably, there are differences between the two subsamples. Furthermore, the coefficients on the level as well as interaction term of the different CR awards proxies are not consistent across different categories of awards. Specifically, for high-attention firms, the direct effect of CR awards is significantly negative at 95% confidence level; however its interaction with investor attention is positive and significant. This suggests that investor attention is beneficial to the valuation effect of CR awards. These effects are similar for environmental awards and social labels but not significant. In contrast, for low attention firms, the interaction between investor attention and CR awards is negatively significant suggesting that investor attention exert an unfavorable impact on the valuation effect of CR awards.

This analysis provides evidence that investor attention may play a relevant role as a determinant of the CSP-CFP relationship. However, the evidence is mixed: CR awards are

negatively related to Adj_Q for low attention firms while they are positively assessed by the market for high attention firms. Therefore, this emphasizes the possible existence of a threshold level, from which investor attention may operate.

4.4.4. The threshold effect of investor attention

4.4.4.1. General specification

As seen above, we cannot draw definitive conclusions from the analysis of the interaction effect. Most importantly, this approach does not allow to test whether the valuation effect of CR awards differs under different investor attention regimes. Specifically, in the threshold model analysis below, we can differentiate distinct effects of CR awards on Adj_Q across different regimes of investor attention.

As a special case of regime switching models (RSM), the panel threshold regression model describes a simple form of nonlinear regression with piecewise linear specifications and regime switching that occurs when an observed variable crosses unknown thresholds. PTR specifications are quite popular as they are easy to estimate and interpret, and able to produce interesting nonlinearities and rich dynamics. First introduced into a univariate time series context (Tong 1983), the appropriate econometric techniques for threshold regressions with panel data were initially outlined by Hansen (1999).

Threshold models are widely used in economic literature. The general intuition is that a process may behave differently when the values of a variable exceed a particular threshold. This means that a different model may apply when values are greater than the threshold value than when they are below it.

The general specification of threshold models takes the following form:

$$\dot{y}_{i,t} = \mu_i + \sum \beta_{k+1} x_{i,t} I(\gamma_k < q_{i,t} \leq \gamma_{k+1}) + \beta_{k+1} x_{i,t} I(\gamma_k < q_{i,t} \leq \gamma_{k+1}) + \varepsilon_{i,t} \quad (2)$$

μ_i is the firm specific fixed effect and $\varepsilon_{i,t}$ is the error term assumed to be independent and identically distributed (iid) with mean zero and finite variance σ^2 . The subscripts i and t refer to cross-section and period, respectively. $I(\cdot)$ is an indicator function indicating the regime defined by the threshold variable $q_{i,t}$, and the threshold parameter γ . $y_{i,t}$ is the dependent variable and the vector of explanatory variables. Equation (2) allows for (k) threshold values and thus $(k+1)$ regimes. In each regime, the marginal effect of $x_{i,t}$ may be different.

As previously mentioned, threshold regression models allow individual observations to be divided into regimes based on the value of an observed variable. Allowing for fixed individual

effects, the panel threshold regressions (PTR) model divides observations into two or more regimes, depending on whether a threshold variable is smaller or larger than the threshold value. These regimes are then distinguished by producing different regression slopes.

The PTR approach can be summarized into three steps. First, the threshold value estimate is obtained by a grid search selection over its possible values, choosing that value which minimizes the sum of squared errors (SSE) from least squares (LS) estimates of the model structural equation. Second, inference about the statistical significance of the threshold effect is made by using a bootstrapping procedure to simulate the asymptotic distribution of a likelihood ratio test for the null hypothesis that the parameters estimated for the different regimes are equal. Finally, to check for the consistency of the estimated threshold value, confidence intervals are constructed using a likelihood ratio statistic.

4.4.4.2. Testing for a threshold

Before estimating the threshold regression model, we should test if there exist threshold effects. If we cannot reject the null hypothesis, the threshold effect doesn't exist. Hansen (1999) suggested a "bootstrap" method to compute the asymptotic distribution of testing statistics in order to test the significance of threshold effect. Furthermore, when the null hypothesis doesn't hold, which means, the threshold effect does exist, K.-S. Chan (1993) proved that OLS estimation of threshold is super consistent, the asymptotic distribution is derived. Hansen (1999) used simulation likelihood ratio test to derive the asymptotic distribution of testing statistic for a threshold and proposed to use two-stage OLS method to estimate the panel threshold model.

Inspired from the Hansen's (1999) model, we set up single threshold model as follows:

$$v_{it} = \begin{cases} \mu_i + \theta' h_{it} + \alpha_1 d_{it} + \varepsilon_{it} & \text{if } d_{it} \leq \gamma \\ \mu_i + \theta' h_{it} + \alpha_2 d_{it} + \varepsilon_{it} & \text{if } d_{it} > \gamma \end{cases} \quad (3)$$

The threshold regression model of (3) can also be set as follows:

$$v_{it} = \mu_i + \theta' h_{it} + \alpha_1 d_{it} I(d_{it} \leq \gamma) + \alpha_2 d_{it} I(d_{it} > \gamma) + \varepsilon_{it} \quad (4)$$

Where $I(\cdot)$ represents an indicator function. The dependent variable v_{it} represents firm value as proxied by Adj_Q . The independent variable d_{it} represents investor attention, which is the threshold variable. h_{it} is the set of control variable as previously defined. Besides μ_i , the fixed effect, represents the heterogeneity of companies under different operating conditions.

The error term ε_{it} is assumed to be independent and identically distributed with mean zero and finite variance $\sigma^2(\varepsilon_{it} \sim iid(0, \sigma^2))$. i and t are symbols for cross section and time periods.

As can be noticed, the observations are divided into two investor attention regimes depending on whether the threshold variable d_{it} is smaller or larger than the threshold value (γ). The regimes are distinguished by differing regression slopes, α_1 and α_2 . We will use known v_{it} and d_{it} to estimate the parameters (γ , α , θ and, σ^2).

This paper follows the bootstrap method to get the approximation of F statistic and then calculate the p-value.

4.4.4.2. The threshold regression results

If the relation between CR awards and market value is non-linear and the indirect effect of CSR on value is mediated by investor attention, the threshold will be significant at least under the single threshold test. In unreported results, we find that the test for a double threshold and a triple threshold are insignificant for all CR awards categories. We thus conclude that there exists a single threshold effect of the investor attention on the valuation effect of CR awards. This suggests that there are only two regimes in investor attention. Therefore, for the remainder of this paper, we continue with the single threshold model.

According to the results above, there exists an optimal level of investor attention. When investor attention increases, the effect of CR awards on financial performance is intuitively expected to increase. However, on the other side, CSR costs may increase which offset the positive effect of investor attention. Furthermore, greater public exposure means higher firm accountability towards different stakeholders. Thus, this paper aims at examining not only whether a threshold effect exists, but how corporate value responds to CR awards under different investor attention's regimes.

<Insert Table 4.7 here>

As shown in Table 4.7, more interesting results are observed as compared to the linear regression analysis. The effect of CR awards on corporate value differs across different regimes. The threshold variable – investor attention – divided the sample into two regimes, where the switching regime value is 3.738 (>75th percentile), where the border values: 3.701 and 3.745. The estimated coefficient for CR awards indicates that firms with low investor

attention levels have stronger effects of awards on value. In particular, the coefficient on the CR awards proxy under the threshold estimate is significantly negative at the 1% significance level, while the effect above the threshold is positive and significant as well. Moreover, the magnitude is larger (in absolute value) in the high regime than in the low regime.

In other words, CR awards decrease firm value up to a point at which investor attention reach an optimal level. This finds support from the agency cost theory (Jensen and Meckling 1976) and empirical studies such as (Oberndorfer et al. 2013; Lioui and Sharma 2012; M. Friedman 1970). This result can also be related to diminishing returns to CSR. However, above the threshold estimate, the relationship between CR awards and *Adj_Q* becomes positive in line with Servaes and Tamayo (2013) and Madsen and Rodgers (2015).

Most prominent within our results is the fact that when we disaggregate CR awards into its two sub-components, the results are not the same. In particular, while the evidence is mixed for CR awards, the results are more clear and uniform for social labels. The coefficient on social labels is significantly positive in the high attention regime, supporting the hypotheses 4 and 5b, but is negative but insignificant in the regime with low investor attention, leading support to the hypotheses 2 and 5a, respectively. Moreover, the estimated coefficient for social labels in this transitional regime indicates a stronger effect of CSP on value of about 2 times the effect for the low regime.

In contrast, regarding the environmental awards, the relationship between awards and firm value is not significant regardless the two regimes of investor attention in line with hypotheses 1 and 5a but in contrast to Klassen and McLaughlin (1996). Elsewhere, the effects of other control variables on corporate value are generally consistent with the findings in financial literature for all components of CR awards.

Overall, this evidence reveals that the influence of investor attention on the valuation effect of CSP varies across different CR awards categories. That result can be reasoned based on the sample split analysis and therefore, linked to the hypothesis 5b assuming that the relationship between corporate responsibility awards and financial performance is significantly positive when investor attention is above the threshold. However, the soundness of social commitment appears to be more important to corporate value than that of environmental responsibility, in contrast to Klassen and McLaughlin (1996), Flammer (2013) and Krüger (2015) but as an extension to Edmans (2011, 2012).

4.5. Robustness checks

In this section, we first check the validity of the results obtained from OLS linear regression and then control for the robustness of the PTR framework.

4.5.1. Addressing endogeneity

The aim of this paper is to complement and extend prior literature on the determinants of the CSP-CFP link. A limitation frequently raised by prior literature is that CSP is endogenous with respect to financial performance (McWilliams and Siegel 2000; Rodriguez et al. 2006). CSP likely correlates with unobservable firm characteristics that may also affect financial performance. For example, it is more likely that companies engage in CSR because they are more profitable or they have favorable expectations with respect to profitability.

In this section, we employ alternative estimation methodologies in order to address these concerns. Since a randomized controlled experiment is challenging to implement, we rather implement alternative research design choices (e.g., firm fixed effects and instrumental variables approaches) which attempt to approximate randomization (El Ghouli et al. 2016b; Reeb et al. 2012).

Fixed effects can partly mitigate endogeneity concerns due to omitted variable bias (Wooldridge 2003). That is, we use both ordinary least square (OLS) regressions and two stage least square (2SLS) regressions with panel data, both with robust standard errors to correct the problem of heteroscedasticity. Particularly, we analyze and address the concern of endogeneity that occurs due to firm characteristic omitted variables, unobserved variables and the issue of reverse causality. The issues were resolved primarily using time and firm fixed effects, lagged variables and Instrumental Variables (IV).

First, we control for firm fixed effects even though it may remove the theoretical and cross-sectional variation when the changes are sticky over time (Zhou 2001). Linear fixed effects models provide a primary workhorse for causal inference with panel data in the social sciences (Angrist et al. 2009). We base our analysis on firm fixed effect model and obtain similar results as in Table 4.5. Indeed, as can be evidenced by Table 4.8, the results are similar to those obtained without controlling for firm fixed effects given that the interaction between investor attention and CR awards remain negative and not significant. Furthermore, unreported results provided evidence that even when we lagged explanatory variables, the results remain the same.

<Insert Table 4.8 here>

Elsewhere, OLS regression analysis implicitly assumes that CSP is an exogenous variable. We follow the common approach and construct a simultaneous equation system in order to account for the potentially reciprocal dependence between CSP and firm performance as previously noticed by literature (Attig et al. 2013; Ioannou and Serafeim 2015; Jo and Harjoto 2011, 2012).

We employ a two stage least square (2SLS) analysis using the mean industry-year CSP score (while excluding the focal firm) as an instrument for the CSP score (Kim et al. 2014; El Ghouli et al. 2016a). Good instrumental variables should have high correlation with the original variable and no direct correlation with the dependent variable from our main analysis.

In unreported results, the analysis from the first stage regression shows that the instrument is significantly related to the raw values of the CSP score. We then retain the predicted values of CSP scores and use them in the regressions examining the effect of CR awards on financial performance. As reported in the right-hand panel of Table 4.8, results from the second-stage regressions strongly support OLS regression analysis and confirm that endogeneity is not a concern in our study, regardless the inclusion of firm fixed effects.

4.5.2. Alternative measures of financial performance

The results above combine to provide a complex, yet interesting picture of the relationship between CR awards and corporate value. This section investigates financial performance in a broader setting, for both the long and short run respectively.

Due to the complexity and multi-dimensionality of financial performance, it remains difficult to find an ideal proxy that combines all dimensions of performance. Since there is no ideal measure able to capture all aspects, we test whether our results depend on the financial performance indicator. Literature has distinguished two main measurements. Davidson and Worrell (1990) promote the market-based measures and suggest that they relate more closely to shareholders' wealth. Otherwise, Wu (2006) rather prefers accounting-based measures as a better predictor of social performance and explains that studies using market proxies report a smaller relationship between CSP and CFP because of the choice of performance proxy.

We follow recent equity pricing research and use the industry-adjusted market-to-book (*Adj_MB* hereafter) ratio instead of *Adj_Q* as a corporate value indicator (Galema et al. 2008; Edmans 2011). The ratio is formally computed as the ratio of the book value of shareholders' equity plus deferred taxes and investment tax credits (if available) minus the book value of

preferred stock to the market value of equity. As for *Adj_Q*, we adjusted for industries' effect as previously performed for Tobin's Q. Vassalou and Xing (2004) show that the MB ratio is a good proxy for the organization's default risk and market value. In particular, firms with high MB ratios enjoy higher ex post returns (Fama and French 1992).

Given that the MB ratio is closely related to Tobin's Q, we further check whether the impact of CR awards on firm value, with respect to operating performance measures as used in Servaes and Tamayo (2013). In particular, we compute three profitability measures³²: operating income on assets (OIA), operating income on sales (OIS), and return on equity (ROE). ROE is computed by dividing net income by shareholders' equity, whereas OIA and OIS are calculated by dividing operating income by assets and sales, respectively. These measures reflect the internal efficiency of the firm, which is potentially influenced by the corporate social performance. Davidson and Worrell (1990) suggest that investors are concerned about accounting-based measurements only when they may affect shareholders' wealth. As before, we computed the industry-adjusted measures of OIA, OIS and ROE instead of raw values and adjusted for industry, year and country fixed effects in all specifications.

< Insert Table 4.9 here >

The evidence is mixed across different performance metrics. In particular, from the results of Table 4.9, we are able to identify two distinct sets of results. The first set consists of cases where the transition variable used is investor attention, the regime-dependent variable is CR awards and the dependent variable is a market based measure and precisely, the Market-to-book ratio. Thus, in terms of the coefficient of the long-run effects of CR awards, its sign is empirically plausible, the same as when we use *Adj_Q* as the dependent variable. Most importantly, the coefficient on CR awards varies from -0.006 for the low regime to 0.069 for the high attention regime. It confirms that the impact of CR awards on corporate value changes across different investor attention regimes. However, when we employ *Adj_MB* ratio instead of *Adj_Q*, the coefficient on CR awards is not significant in the low attention regime. The second set consists of cases where the transition variable used is investor attention, the regime-dependent variable is CR awards and the dependent variable is an accounting-based measure and precisely, the operating income to assets, the operating income to sales and return on equity, respectively. In particular, Table 4.9 shows that the coefficient of CR awards

³² Note that ROA is dropped from the control variables in conducting this robustness check test

to ROE is highly and significantly lower for the first regime: -0.001 versus 0.013 for the second regime (about 13 times). Moreover, under the threshold, the coefficient is not significant while it becomes significantly positive above the threshold. The results are similar for CR awards to OIS as well as to OIA. However, the threshold estimate is only significant for operating income to sales.

The common finding is that there are significant asymmetries in the effect of CR awards on financial performance. Indeed, under the threshold, the relationship between CR awards and financial performance is either insignificant or negative supporting hypothesis 1-2, while above the threshold the relationship becomes stronger and positive supporting hypothesis 3 and 5b. More importantly, the estimated coefficient for CR awards in this transitional regime indicates a stronger effect of awards on financial performance of about, at least, 9 times the effect for the low regime. Indeed, for high investor attention regime, the increase in financial performance is larger and statistically significant for all measures of financial performance.

Research shows that there is some difference in the prediction of financial performance between market-based and accounting-based measures of CFP (Orlitzky et al. 2003; Wu 2006). In the present paper, employing both measurements provides a relatively full picture of financial performance and reconciles prior research streams.

4.5.3. Additional sensitivity tests

We also perform additional robustness checks, which are reported in Table 4.10. In particular, we check whether our main findings above are robust to alternative sample specifications, different proxies and other methodologies. The main dependent variable in this analysis is *Adj_Q*, the regime-dependent variable is CR awards and the regressions, are again estimated using PTR, include the same control variables as in Table 4.7 and adjust for industry, country, and year fixed effects.

<Insert Table 4.10 here>

First, as previously discussed, we have noticed in Table 4.1 that the sample is predominately composed by U.S. and Japanese firms. We test whether the main findings hold when we exclude these firms, which make up 59.27% of our sample. The coefficient on CR awards remains positive and significant at the 1% level for high attention regime and negative and significant under the threshold, with the magnitude of the coefficient qualitatively the same as above. These results indicate that the relation between the CR awards and corporate value is

not driven by U.S. and Japanese firms. Moreover, the coefficients on all control variables continue to have the expected sign.

Second, prior research suggests that the level of CSR may vary according to industry characteristics (Waddock and Graves 1997a; McWilliams and Siegel 2001; El Ghoul et al. 2011). Therefore, in an attempt to make our proxies for CSR more comparable across industries, we adjust CSP scores for the industry based on Fama and French (1997) 48 industry classification in each year. As shown in the second column of Table 4.10, the results corroborate our earlier findings, suggesting that industry effects in CSP scores are not driving our results.

Third, we assume that there is no perfect proxy for investor attention and employ the number of analysts following a firm as an alternative proxy of investor attention, as in Blankespoor et al. (2013). The intuition behind this choice is that analysts play an important role in financial markets and especially in increasing firm visibility (Irvine 2003; Bushee et al. 2010). Furthermore, security analysts play a critical role to enhance information transparency between managers and external investors. As shown in the third column of Table 4.10, empirical results are not sensitive to the use of an alternative attention proxy.³³

Finally, the main PTR analysis uses investor attention as the threshold variable, but the latter is not included as an explanatory variable. Linear OLS regression as well as prior studies have shown that investor attention is relevant for stock market activity (Drake et al. 2012; Da et al. 2011). Therefore, one could believe that the effect of CR awards will change when investor attention is controlled for. We thus include investor attention in our main specification to check the robustness of empirical findings. As can be seen, the results are qualitatively the same, with only minor changes in estimated coefficients. The evidence is thus robust to controlling for the direct effect of investor attention.

4.6. Discussion and implications for future research

This work argues that firms can “*do well by doing good*”, as found in empirical studies documenting a positive effects of social performance (Waddock and Graves 1997a; Margolis and Walsh 2003; Orlitzky et al. 2003; Barnett and Salomon 2006, 2012; A. Kacperczyk 2009; Minor and Morgan 2011; Eccles et al. 2014; Flammer 2013; Margolis et al. 2009). Underlying the positive relationship between CSP and financial outcomes is the idea that effective CSR strategies can attract stakeholders, such as socially conscious consumers and

³³ It is also worth noting that in untabulated analysis, all the empirical results of this paper hold after employing analyst following instead of GSV of stock tickers as a proxy of investor attention.

investors, to increase their willingness to buy and invest, respectively. In particular, firms that undertake CSR may enjoy stronger and lasting relationships with stakeholders, resulting in lower costs and higher quality inputs, and providing a sustainable competitive advantage (Freeman 1984).

Most importantly, this paper explores a previously unexplored premise of this argument—that investors' rewards to CSR should only be expected to accrue if they pay attention to the firm's CSR activities. This being the case, many of the previously hypothesized stakeholder-generated benefits to firms as a result of their CSR commitment should be contingent on the extent that these CSR activities manage to attract stakeholder attention. Our analysis finds partial support for this view, demonstrating that investor attention partially mediate the relationship between CR awards and firm financial benefits as in Madsen and Rodgers (2015) and Servaes and Tamayo (2013).

Indeed, findings suggest that CR awards are relevant for corporate value, even though the influence may be just passive. In light of the analysis of investor attention as the threshold variable, we can draw some clear patterns and discuss possible implications for several actors who might be involved in this process. First, an immediate managerial implication of our findings suggests that in order for CSR to add value in the long run, planning and considerable resources should be dedicated to the visibility of CSR commitment, given that CR awards do not pay off immediately, but only after a threshold of investor attention has been reached. All news stories are not created equal. In the best of circumstances, human attention is a fluid but scarce resource (Kahneman 1973). Drawing to empirical results, beyond a certain threshold, the more that is asked of this resource, the better CSP performs. Higher investor attention is also correlated with the development of firm visibility, in turn impacting the value due to their linkage documented in the literature (Aouadi and Marsat 2016; Barber and Odean 2008; Merton 1987). Second, a higher investor attention improves the value effect of CSP possibly through influencing the mechanisms of stock trading. The firm's operating performance may also improve because of increased monitoring by investors and/or by enhanced access to capital markets and due to a lower cost of information asymmetry as a result of greater consumption of information by investors and analysts.

However, under the optimal level of investor attention, the returns to CR awards are negative supporting the view of CSR as a cost as previously proposed by hypothesis 2. This result finds support from Lioui and Sharma (2012) who show a negative direct relationship between a firm's market value and environmental KLD scores, but a positive indirect effect. They suggest that environmental performance increases R&D expenditure, which enhances market

value. Some authors have also posit that CSR involves higher costs without ensuring immediate benefits (Barnett 2007) in light of the view of M. Friedman (1970) arguing that corporate prosocial behavior reduces both corporate and societal welfare. From such standpoint, managers are seen as inefficient and incapable of enabling social change (Friedman 1970), and CSR is argued to be a diversion of scarce firm resources by managers as agents towards unproductive activities.

The value effect of environmental awards above the threshold is not as relevant as that of social labels. The evidence thus reveals that investor attention plays a more important role for social performance. Several articles in the management literature argue that by nurturing the relationship to its employees, a company can attract, motivate, and retain the most talented employees in the industry (Greening and Turban 2000; Albinger and Freeman 2000; Vogel 2005; Turban and Greening 1997; Pfeffer 1994; Peterson 2004). From the stakeholder theory lens (Freeman 1984), firms that are reported in lists of 'best companies to work for' may find it easier to recruit top quality employees, potentially resulting in improvement in productivity at relatively low cost (Moskowitz 1972). Talented and satisfied employees allow for better productivity, improve sales and help deliver superior customer service (Korschun et al. 2014), enhancing firm financial value (Edmans 2011). Indeed, Edmans (2011, 2012) shows that companies with higher job satisfaction earn higher abnormal returns compared to their peers. Consistent with this evidence, Galema et al. (2008) report a positive relationship between employee relations scores derived from KLD scores and individual stock returns over the period 1992-2006, using pooled cross-sectional regressions. Our findings complement and extend this literature; however we suggest that social labels are desired, but to the limited extent that they attract and improve investor attention to a particular threshold.

Drawing on sustainability and CSR literature, there is no definitive evidence that all green investments pay off in financial terms (Ambec and Lanoie 2008; Cordeiro and Tewari 2015). Furthermore, these investments may be seen as agency problems. For instance, Bénabou and Tirole (2010) and Baron (2008) both propose that one explanation for environmental investment is managerial self-entrenchment. The authors argue that managers may over-invest in environmental expenditure in order to burnish their own private reputations as environmental protector or simply to serve self-interest and generate intrinsic rewards simply due to personal taste for environmental causes. Thus, environmental over-investment can be classified as agency costs that are detrimental to investors who might not systematically share such enthusiasm (Barnea and Rubin 2010; Gillan et al. 2010).

Finally, while the value gains from CR awards may seem small compared to other financial information (relative to earnings announcements, mergers, and other major corporate events), they appear nevertheless economically significant. Stock market participants determine a firm's stock price and consequent market value and base their decisions on perceptions of past, current, and future stock returns (Orlitzky et al. 2003). Within other factors, evidence has revealed that perceptions are influenced by social performance (Boyle et al. 1997). This can also be justified by benchmarking our empirical results against the findings from other CSR studies (Henisz et al. 2014; Hawn and Ioannou 2016). For example, Servaes and Tamayo (2013) find that consumer awareness as proxied by advertising expenditure explains the positive valuation effect of CSR. This evidence is attributed to the fact that advertising expenditure provides insights into the firm's information environment (Nelson 1974). Thus, CSR signaling for improved reputation would reduce the expected legitimacy gap between the firm and its stakeholders through lower information asymmetry.

4.7. Conclusion

While it seems intuitively clear that attention can potentially be both limited (i.e. be "*too low*") or excessive (i.e. "*too high*"), the literature so far has devoted surprisingly little effort to investigate this issue in more depth. Apart from few notable exceptions (e.g. Hou et al. (2009)), studies look at one side only. They often focus on limited attention and interpret the uncovered return patterns as evidence for investor underreaction due to slow information diffusion. Alternatively, they refer to the idea of excessive attention and argue that findings are in line with investor overreaction due to uninformed demand shocks. So far, it is not sufficiently clear from the literature which quantifiable conditions exactly cause which investor behavior and which market reaction. At least to some degree, the well-known critique of Fama (1998) comes into mind in this context. Fama argues that, according to behavioral finance research, investors appear to underreact about as often as they appear to overreact in event studies, leaving a blurry picture which eventually might also be consistent with the idea of efficient markets.

In light of the stakeholder theory (Freeman 1984), the literature has previously documented that CSR strengths may contribute to financial performance (Donaldson and Preston 1995; T. M. Jones 1995; Servaes and Tamayo 2013). Another stream of financial literature suggested that investor attention exerts a significant influence on stock market activity (Peng and Xiong 2006; Drake et al. 2012; Bank et al. 2011). We add to the two strands of literature and investigate how investor attention shape the relationship between CR awards and market

value, i.e., whether attention plays an intermediate role and under which conditions, still awaits an investigation. We explore this issue by applying the panel threshold model inspired from Hansen (1999), that allows us to perform a deeper analysis as compared to using interaction effects.

First, we investigate whether there is any empirical association between CR awards and corporate value as proxied by industry-adjusted Tobin's Q. Although stakeholders' theory (Freeman 1984) provides enough good reasons why such a relationship should exist, empirical evidence is rather divergent in this regard (Margolis et al. 2009). Perhaps, one potential reason is that most studies deal exclusively with the US stock market, where it seems that results are significantly affected by an endogeneity problem. This problem is due to the fact that, in the U.S., social performance seems to be mainly driven by financial performance. Evidently, in such a case financial and social performance are simultaneously determined. Trying to alleviate such a concern, the present paper relies on an international dataset which covers 879 firms from 25 countries from 2005 to 2014 and provides new evidence on the non-linear relationship between CR awards and financial performance. In particular, we establish that the main mechanism by which CSR commitment is translated into improved financial performance is when investor attention reaches a particular threshold. This evidence holds for market-based measures of financial performance as well as accounting-based measures. Furthermore, in contrast to Krüger (2015), Flammer (2013) and Klassen and McLaughlin (1996), environmental performance is found to be not relevant for *Adj_Q*, regardless the investor attention regime. Conversely, social labels are positively related to *Adj_Q* for firms with high attention regime, in line with Edmans (2011, 2012).

The results in this paper make a contribution to the literature for the following reasons. First, the literature on CSP has extensively focused on whether CSR adds value (Kumar et al. 2002; Hart and Ahuja 1996; Ramchander et al. 2012; Stanwick and Stanwick 1998; Clacher and Hagedorff 2012; Servaes and Tamayo 2013). We complement these works by showing that the positive association between CSR and financial performance is more likely due to the attention allocation hypothesis rather than positive returns on those investments. Such results indicate the relevance of attention to accelerate the resolution of information asymmetry among firms. Second, this novel explanation suggests that prior research provides an incomplete assessment of the relationship between CSR and financial performance. Therefore, the financial managers should take steps to increase firm visibility levels in the low attention regime. Third, the finding that CSP is significantly associated to financial performance is also relevant to the ongoing debate on the potential merits of CSR given the

controversial results and the absence of consensus. Precisely, the paper provides new evidence on the resource-based view (RBV) of CSR based on early built panel threshold estimation techniques. Overall, the results indicate that investor attention might be an important variable explaining the value of CSR, while controlling for corporate attributes.

Our findings that “doing good” pays off has potentially far-reaching implications for corporate decision making and strategic management. In particular, companies may find it worthwhile to devote sufficient resources to developing the visibility of their CSR strategy if they want to gain returns on their investments. From a broader perspective, this insight suggests an important, and perhaps unique, feature of CSR: shareholders are undoubtedly the active players of the additional benefits of CSR. Two caveats are in order. First, as with most empirical work, unobserved firm heterogeneity could explain our findings, but the fact that our results survive a large battery of checks mitigates this concern. In addition, there may be other channels through which firms can profit from their CSR strengths. Investigating these channels and studying their relative efficacy compared to prior channels would be a fruitful avenue for further work. Finally, given the lack of a consistent theoretical framework on the role of investor attention on the CSP-CFP relationship, our preliminary analysis has to be interpreted with caution. For example, we assume that investor attention somehow, ‘magically’ or at least unproblematically, reaches firms which is an ideal framework in need of further investigation.

Appendix 4.1. Description of variables

<i>Variables</i>	<i>Definition</i>	<i>Source</i>
<i>Dependent variables</i>		
<i>Adj_Q</i>	Tobin's Q is calculated as follows: $Ln((\text{market value of equity} + \text{book value of assets} - \text{book value of equity} - \text{balance sheet deferred taxes}) / \text{book value of assets})$. <i>Adj_Q</i> is the Tobin's Q minus the industry-median Tobin's Q based on the Fama–French (1997) 48 industries classification (excluding financials firms)	Authors calculations
<i>Adj_MB</i>	The Market-to-book is calculated as follows: $Ln((\text{Sum of market value of equity, long-term debt, debt in current liabilities, liquidation value of preferred stock, and deferred taxes and investment credit}) / \text{total assets, measured at the end of fiscal year } t)$. <i>Adj_MB</i> is the MB minus the industry-median MB based on the Fama–French (1997) 48 industries classification (excluding financials firms)	Thomson Reuters-Worldscope
<i>Adj_OIA</i>	OIA is calculated as the operating income by assets. <i>Adj_OIA</i> is the OIA minus the industry-median OIA based on the Fama–French (1997) 48 industries classification (excluding financials firms)	As above
<i>Adj_OIS</i>	OIS is calculated as the operating income by sales. <i>Adj_OIS</i> is the OIS minus the industry-median OIS based on the Fama–French (1997) 48 industries (excluding financials firms)	As above
<i>Adj_ROE</i>	Return on assets is the net income by shareholders' equity. <i>Adj_ROE</i> is the ROE minus the industry-adjusted ROE based on the Fama–French (1997) 48 industries classification (excluding financials firms)	As above
<i>Independent variables</i>		
<i>Corporate responsibility Awards</i>	As provided by Thomson Reuters-Asset4, equals 1 if the company received an award for its social, ethical, community, or environmental activities or performance, 0 otherwise	Thomson Reuters-Asset4
<i>Environmental Awards</i>	As provided by Thomson Reuters-Asset4, equals 1 if the company received product awards with respect to environmental responsibility?	As above
<i>Social labels</i>	As provided by Thomson Reuters-Asset4, equals 1 if the company won an award or any prize related to general employment quality or "Best Company to Work For"?	As above
<i>A4_CSPscore</i>	The CSP score is equal to the average of environmental and social performance. Environmental performance measures a firm's impact on living and non-living natural systems, including the air, land, and water, as well as complete ecosystems. Social performance measures a firm's capacity to generate trust and loyalty with its workforce, customers, and society, through its use of best management practices.	As above
<i>Investor attention</i>	$Ln(\text{mean of Google search volume of the stock ticker})$ for year t	www.google.com/trends/
<i>Analyst following</i>	Analyst coverage is defined as the number of analysts providing current fiscal year earnings estimates, averaged over the previous year. Analyst following is the natural log of one plus the number of analysts.	I/B/E/S
<i>Firm size</i>	Firm size is measured as the natural logarithm of total assets in millions of \$US.	Thomson Reuters-Worldscope
<i>Research and Development</i>	Research and development expense scaled by net sales for fiscal year t	As above
<i>Advertising expenditure</i>	Advertising expenditure scaled by net sales for fiscal year t	Factset Fundamentals
<i>Firm risk</i>	The long-term debt and debt in current liabilities divided by total assets, measured at the end of fiscal year t	Thomson Reuters-Worldscope
<i>Press freedom index</i>	As provided annually by Reporters without Borders. Scores range from 0 to 100, with 0 being the best possible score and 100 the worst. We multiply this score by (-1) such that higher values indicate more press freedom.	Freedom House

This table describes the proxies for the variables considered in the paper. The data set is a panel of 879 firms collected from different sources and consists of 8,790 firm-year observations from 2005 to 2014.

Appendix 4.2. Description of ASSET4 ESG performance indicators

Environmental performance

Resource reduction: The resource reduction category measures a company's management commitment and effectiveness toward achieving an efficient use of natural resources in the production process. It reflects a company's capacity to reduce the use of materials, energy or water, and to find more eco-efficient solutions by improving supply chain management.

Emission reduction: The emission reduction category measures a company's management commitment and effectiveness toward reducing environmental emission in the production and operational processes. It reflects a company's capacity to reduce air emissions (greenhouse gases, F-gases, ozone-depleting substances, NO_x and SO_x, etc.), waste, hazardous waste, water discharges, spills or its impacts on biodiversity and to partner with environmental organizations to reduce the environmental impact of the company in the local or broader community.

Product innovation: The product innovation category measures a company's management commitment and effectiveness toward supporting the research and development of eco-efficient products or services. It 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, dematerialized products with extended durability.

Social performance

Product responsibility: The customer/product responsibility category measures a company's management commitment and effectiveness toward creating value-added products and services upholding the customer's security. It reflects a company's capacity to maintain its license to operate by producing quality goods and services integrating the customer's health and safety, and preserving its integrity and privacy also through accurate product information and labeling.

Employment quality: The workforce/employment quality category measures a company's management commitment and effectiveness toward providing high-quality employment benefits and job conditions. It reflects a company's capacity to increase its workforce loyalty and productivity by distributing rewarding and fair employment benefits, and by focusing on long-term employment growth and stability by promoting from within, avoiding lay-offs and maintaining relations with trade unions.

Health and safety: The workforce/health and safety category measures a company's management commitment and effectiveness toward providing a healthy and safe workplace. It reflects a company's capacity to increase its workforce loyalty and productivity by integrating into its day-to-day operations a concern for the physical and mental health, wellbeing and stress level of all employees.

Training and development: The workforce/training and development category measures a company's management commitment and effectiveness toward providing training and development (education) for its workforce. It reflects a company's capacity to increase its intellectual capital, workforce loyalty and productivity by developing the workforce's skills, competences, employability and careers in an entrepreneurial environment.

Diversity and opportunity: The workforce/diversity and opportunity category measures a company's management commitment and effectiveness toward maintaining diversity and equal opportunities in its workforce. It reflects a company's capacity to increase its workforce loyalty and productivity by promoting an effective life-work balance, a family friendly environment and equal opportunities regardless of gender, age, ethnicity, religion or sexual orientation.

Appendix 4.2. (Continued)

Social performance(Continued)

Human rights: The society/human rights category measures a company's management commitment and effectiveness toward respecting the fundamental human rights conventions. It reflects a company's capacity to maintain its license to operate by guaranteeing the freedom of association and excluding child, forced or compulsory labor.

Community: The society/community category measures a company's management commitment and effectiveness toward maintaining the company's reputation within the general community (local, national and global). It reflects a company's capacity to maintain its license to operate by being a good citizen (donations of cash, goods or staff time, etc.), protecting public health (avoidance of industrial accidents, etc.) and respecting business ethics (avoiding bribery and corruption, etc.).

Corporate governance performance

Board Structure: The board of directors/board structure category measures a company's management commitment and effectiveness towards following best practice corporate governance principles related to a well-balanced membership of the board. It reflects a company's capacity to ensure a critical exchange of ideas and an independent decision-making process through an experienced, diverse and independent board.

Compensation Policy: The integration/vision and strategy category measures a company's management commitment and effectiveness towards the creation of an overarching vision and strategy integrating financial and extra-financial aspects. It reflects a company's capacity to convincingly show and communicate that it integrates the economic (financial), social and environmental dimensions into its day-to-day decision-making processes.

Board Functions: The board of directors/board functions category measures a company's management commitment and effectiveness towards following best practice corporate governance principles related to board activities and functions. It reflects a company's capacity to have an effective board by setting up the essential board committees with allocated tasks and responsibilities.

Vision and Strategy: The integration/vision and strategy category measures a company's management commitment and effectiveness towards the creation of an overarching vision and strategy integrating financial and extra-financial aspects. It reflects a company's capacity to convincingly show and communicate that it integrates the economic (financial), social and environmental dimensions into its day-to-day decision-making processes

Table 4.1. Sample distribution

<i>Panel A. By country</i>			<i>Panel B. By industry (Continued)</i>		
<i>Country</i>	<i>Obs.</i>	<i>Percentage(%)</i>	<i>Industry</i>	<i>Obs.</i>	<i>Percentage(%)</i>
<i>Australia</i>	100	1.14	<i>Construction</i>	340	3.87
<i>Austria</i>	70	0.80	<i>Construction materials</i>	210	2.39
<i>Belgium</i>	90	1.02	<i>Consumer goods</i>	250	2.84
<i>Brazil</i>	10	0.11	<i>Defense</i>	10	0.11
<i>Canada</i>	180	2.05	<i>Electrical equipment</i>	120	1.37
<i>China</i>	40	0.46	<i>Electronic equipment</i>	430	4.89
<i>Denmark</i>	80	0.91	<i>Entertainment</i>	50	0.57
<i>Finland</i>	90	1.02	<i>Food products</i>	250	2.84
<i>France</i>	370	4.21	<i>Healthcare</i>	40	0.46
<i>Germany</i>	330	3.75	<i>Machinery</i>	520	5.92
<i>Greece</i>	20	0.23	<i>Measuring and control equipment</i>	170	1.93
<i>Hong Kong</i>	180	2.05	<i>Medical equipment</i>	180	2.05
<i>Ireland</i>	40	0.46	<i>Non-metallic and industrial metal mining</i>	80	0.91
<i>Italy</i>	90	1.02	<i>Personal Services</i>	20	0.23
<i>Japan</i>	2,390	27.19	<i>Petroleum and natural gas</i>	520	5.92
<i>Luxembourg</i>	10	0.11	<i>Pharmaceutical products</i>	290	3.30
<i>The Netherlands</i>	130	1.48	<i>Precious Metals</i>	10	0.11
<i>Norway</i>	80	0.91	<i>Printing and publishing</i>	90	1.02
<i>Portugal</i>	20	0.23	<i>Recreation</i>	90	1.02
<i>Singapore</i>	30	0.34	<i>Restaurants, hotels, motels</i>	150	1.71
<i>Spain</i>	140	1.59	<i>Retail</i>	710	8.08
<i>Sweden</i>	220	2.50	<i>Rubber and plastic products</i>	20	0.23
<i>Switzerland</i>	230	2.62	<i>Shipbuilding and railroad equipment</i>	30	0.34
<i>The United Kingdom</i>	130	11.72	<i>Shipping containers</i>	40	0.46
<i>The United States</i>	2,820	32.08	<i>Steel works</i>	260	2.96
All Countries	8,790	100	<i>Textiles</i>	10	0.11
<i>Panel B. By industry</i>			<i>Tobacco products</i>	40	0.46
<i>Industry</i>	<i>Obs.</i>	<i>Percentage(%)</i>	<i>Transportation</i>	450	5.12
<i>Agriculture</i>	20	0.23	<i>Utilities</i>	540	6.14
<i>Aircraft</i>	130	1.48	<i>Wholesale</i>	230	2.62
<i>Apparel</i>	50	0.57	<i>Almost nothing</i>	20	0.23
<i>Automobiles and trucks</i>	350	3.98	All industries	8,790	100
<i>Beer and liquor</i>	120	1.37			
<i>Business Services</i>	740	8.42			
<i>Business suppliers</i>	150	1.71			
<i>Candy and soda</i>	30	0.34			
<i>Chemicals</i>	490	5.57			
<i>Communication</i>	350	3.98			
<i>Computers</i>	190	2.16			

Table 4.2. Descriptive statistics

	<i>Obs.</i>	<i>Mean</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>VIF</i>
<i>Adj_Q</i>	8,790	0.018	0.291	-1.593	1.620	--
<i>Investor attention</i>	8,790	3.036	0.817	0.360	4.369	1.37
<i>Environmental</i> _{Awards}	8,790	0.128	0.334	0.000	1.000	1.19
<i>Social</i> _{Labels}	8,790	0.033	0.179	0.000	1.000	1.26
<i>CR</i> _{Awards}	8,790	0.513	0.500	0.000	1.000	1.11
<i>CSP</i> _{Score}	8,790	0.644	0.274	0.079	0.958	1.32
<i>Capex</i>	8,790	5.577	4.818	0.040	27.460	1.55
<i>Size</i>	8,790	22.929	1.289	20.021	27.345	1.22
<i>Return on assets</i>	8,790	0.066	0.060	-0.119	0.269	1.13
<i>Sales growth</i>	8,790	1.133	0.744	0.070	6.810	1.29
<i>Dividend</i>	8,790	2.115	1.727	0.000	8.810	1.71
<i>Advertising</i>	8,790	56.137	229.030	0.000	1676.190	1.34
<i>R&D</i>	8,790	2.743	4.984	0.000	26.730	1.11
<i>Press freedom</i>	8,790	-19.687	4.884	-41.000	-10.000	1.16
<i>Leverage</i>	8,790	0.236	0.157	0.000	0.693	1.23

This table reports the descriptive statistics of the dependent variable as well as all variables under analysis. In addition to the mean controlling for the distribution's central tendency, this table reports the minimum, maximum, standard deviation of the variables and variance inflation factors (VIFs). All variables are defined in Appendix 4.1. The sample spans from 2005 to 2014.

Table 4.3. Correlation matrix

	<i>Adj_Q</i>	<i>CR_{Awards}</i>	<i>Env_{Awards}</i>	<i>Social_{Labels}</i>	<i>Investor attention</i>	<i>CSP_{Score}</i>	<i>Leverage</i>	<i>Size</i>	<i>Return on assets</i>	<i>Sales growth</i>	<i>Dividend</i>	<i>Advertising</i>	<i>Capex</i>	<i>R&D</i>	<i>Press freedom</i>
<i>Adj_Q</i>	1.000														
<i>CR_{Awards}</i>	0.032***	1.000													
<i>Env_{Awards}</i>	-0.039***	0.285***	1.000												
<i>Social_{Labels}</i>	0.007	0.073***	0.003	1.000											
<i>Investor attention</i>	0.114***	0.048***	0.012	0.024**	1.000										
<i>CSP_{Score}</i>	0.010	0.476***	0.269***	0.120***	0.021*	1.000									
<i>Leverage</i>	-0.112***	0.087***	0.047***	-0.007	0.031***	0.127***	1.000								
<i>Size</i>	-0.112***	0.317***	0.189***	0.051***	0.106***	0.467***	0.315***	1.000							
<i>Return on assets</i>	0.407***	0.013	-0.088***	0.019*	0.078***	-0.068***	-0.294***	-0.185***	1.000						
<i>Sales growth</i>	0.003	0.037***	0.007	-0.001	0.031***	0.043***	0.017	0.133***	0.053***	1.000					
<i>Dividend</i>	-0.042***	0.116***	0.008	0.046***	-0.022**	0.275***	0.202***	0.192***	-0.073***	-0.036***	1.000				
<i>Advertising</i>	-0.044***	0.068***	0.064***	0.050**	-0.012	0.090***	-0.048***	0.124***	-0.055***	0.007	-0.024**	1.000			
<i>Capex</i>	0.134***	0.002	-0.007	0.027**	0.045***	-0.030***	0.076***	0.065***	0.117***	0.036***	-0.055***	-0.039***	1.000		
<i>R&D</i>	0.049***	0.031***	0.023**	-0.079***	-0.020*	0.091***	-0.242***	-0.026**	0.023**	-0.019*	-0.147***	0.036***	-0.193***	1.000	
<i>Press freedom</i>	0.060***	-0.023**	0.020*	0.050***	0.170***	0.031***	-0.022**	-0.091***	0.098***	0.037***	-0.065***	-0.087***	-0.010	0.055***	1.000

This table reports correlation coefficients among variables of interest for the 8,790 firm-year observations from 2005 to 2014. All variables are defined in Appendix 4.1. ***, ** and * denote statistical significance at the 1, 5, and 10% levels, respectively

Table 4.4. Difference of means test

	<i>Full sample</i> <i>N=8,790</i>	<i>High-attention firms</i> <i>N= 4,394</i>	<i>Low-attention firms</i> <i>N=4,396</i>	<i>t-statistics</i>	<i>Sig</i>
<i>CSP_{Score}</i>	0.644	0.650	0.638	-2.062	**
<i>CR_{Awards}</i>	0.512	0.537	0.487	-4.679	***
<i>Environmental_{Awards}</i>	0.128	0.128	0.128	0.023	
<i>Social_{Labels}</i>	0.033	0.036	0.030	-1.55	
<i>Size</i>	22.929	23.046	22.812	-8.547	***
<i>R&D</i>	2.743	2.551	2.935	3.614	***
<i>Advertising</i>	56.137	48.975	63.295	2.932	***
<i>Leverage</i>	0.236	0.241	0.231	-3.131	**
<i>Press freedom</i>	-19.687	-18.958	-20.415	-14.139	
<i>Return on assets</i>	0.066	0.072	0.060	-9.173	***
<i>Adj_Q</i>	0.018	0.045	-0.008	-8.748	***
<i>Dividend</i>	2.115	2.095	2.135	1.071	
<i>Sales growth</i>	1.133	1.164	1.101	-3.967	***
<i>Capex</i>	5.576	5.750	5.403	-3.381	***
<i>Analyst following</i>	2.614	2.676	2.551	-10.215	***

This table presents the means and the t-statistics for comparing the means of main variables between high-attention and low-attention firms. The sample contains 8,790 firm-year observations for 879 firms from 2005 to 2014. The variables are described in Appendix 4.1. A firm is placed in the high-attention group if it has an above or equal to mean total Google search volume(GSV), and it is placed in the low-attention group if it has a below mean total GSV. *, **, and *** indicate whether differences are statistically significant at indicate unilateral statistical significance at 10, 5, and 1% levels, respectively.

Table 4.5. The interactions between CR awards and investor attention on corporate value

	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>	
<i>Dependent variable</i>	<i>Adj_Q</i>		<i>Adj_Q</i>		<i>Adj_Q</i>	
<i>Awards proxy</i>	<i>CR_{Awards}</i>		<i>Environmental_{Awards}</i>		<i>Social_{Labels}</i>	
<i>CSP_{SCORE}</i>	<i>CSP_{Score}</i>		<i>Environmental_{Score}</i>		<i>Social_{Score}</i>	
<i>Awards</i>	0.011	(0.018)	-0.002	(0.025)	0.020	(0.162)
<i>Investor attention</i>	0.036***	(0.007)	0.034***	(0.006)	0.034***	(0.006)
<i>Awards* Investor attention</i>	-0.005	(0.006)	-0.002	(0.008)	-0.013	(0.048)
<i>CSP_{Score}</i>	0.014	(0.021)	0.004	(0.019)	0.015	(0.017)
<i>Leverage</i>	-0.063	(0.041)	-0.063	(0.041)	-0.064	(0.042)
<i>Size</i>	-0.064***	(0.009)	-0.064***	(0.009)	-0.064***	(0.009)
<i>Sales growth</i>	1.015***	(0.090)	1.013***	(0.090)	1.014***	(0.090)
<i>ROA</i>	-0.000	(0.002)	-0.000	(0.002)	-0.000	(0.002)
<i>Dividend</i>	-0.009***	(0.002)	-0.009***	(0.002)	-0.009***	(0.002)
<i>Advertising</i>	0.000*	(0.000)	0.000*	(0.000)	0.000*	(0.000)
<i>Advertising_dummy</i>	0.032*	(0.019)	0.031*	(0.019)	0.032*	(0.019)
<i>Capex</i>	0.003***	(0.001)	0.003***	(0.001)	0.003***	(0.001)
<i>R&D</i>	-0.000	(0.002)	-0.000	(0.002)	-0.001	(0.002)
<i>R&D_dummy</i>	-0.021	(0.014)	-0.021	(0.014)	-0.021	(0.014)
<i>Press freedom index</i>	0.003	(0.002)	0.003	(0.002)	0.003	(0.002)
<i>Constant</i>	1.442***	(0.230)	1.445***	(0.230)	1.462***	(0.231)
<i>Year-fixed effects</i>	Yes		Yes		Yes	
<i>Country-fixed effects</i>	Yes		Yes		Yes	
<i>Industry-fixed effects</i>	Yes		Yes		Yes	
<i>R² (percentage)</i>	11.38		11.37		11.38	
<i>Number of observations</i>	8,790		8,790		8,790	

This table depicts results of fixed-effects time series regression for firm value as measured by industry-adjusted Tobin's Q (*Adj_Q*) based on the Fama–French 48 industries (excluding financials firms), on CSR awards variables, namely CR awards, environmental awards and social labels. The estimated panel models employ clustered robust firm effects. Unreported industry controls are based on the Fama and French (1997) industry classification. The variables are defined in Appendix 4.1. Robust standard errors are in parentheses. Our sample spans from 2005 to 2014. ***, ** and * denote statistical significance at the 1, 5, and 10% levels, respectively.

Table 4.6. The mediating effect of investor attention on CR awards and firm value: Evidence from sample split

	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 4</i>		<i>Model 5</i>		<i>Model 6</i>	
<i>Dependent variable</i>	<i>Adj_Q</i>		<i>Adj_Q</i>		<i>Adj_Q</i>		<i>Adj_Q</i>		<i>Adj_Q</i>		<i>Adj_Q</i>	
<i>Sample composition</i>	<i>Low-attention</i>		<i>High-attention</i>		<i>Low-attention</i>		<i>High-attention</i>		<i>Low-attention</i>		<i>High-attention</i>	
<i>Awards' type</i>	<i>CR_{Awards}</i>		<i>CR_{Awards}</i>		<i>Environmental_{Awards}</i>		<i>Environmental_{Awards}</i>		<i>Social_{Labels}</i>		<i>Social_{Labels}</i>	
<i>Awards</i>	0.044	(0.025)	-0.159**	(0.071)	0.035	(0.038)	-0.014	(0.067)	0.133	(0.261)	-0.234	(0.166)
<i>Investor attention</i>	0.045***	(0.011)	-0.001	(0.019)	0.036***	(0.010)	0.022	(0.019)	0.036***	(0.010)	0.019*	(0.019)
<i>Awards* Investor attention</i>	-0.022**	(0.010)	0.042**	(0.019)	-0.020	(0.015)	0.004	(0.018)	-0.064**	(0.095)	0.057	(0.048)
<i>CSP_{SCORE}</i>	0.030	(0.030)	0.017	(0.029)	0.021	(0.027)	-0.008	(0.027)	0.019	(0.024)	0.027	(0.023)
<i>Leverage</i>	-0.143**	(0.060)	-0.027	(0.052)	-0.144**	(0.061)	-0.026	(0.053)	-0.145**	(0.060)	-0.026	(0.053)
<i>Size</i>	-0.051***	(0.010)	-0.058***	(0.010)	-0.051***	(0.010)	-0.057***	(0.010)	-0.051***	(0.010)	-0.060***	(0.010)
<i>Return on assets</i>	0.881***	(0.139)	1.034***	(0.115)	0.879***	(0.139)	1.035***	(0.116)	0.880***	(0.139)	1.031***	(0.115)
<i>Sales growth</i>	-0.001	(0.004)	0.002	(0.003)	-0.000	(0.004)	0.002	(0.003)	-0.001	(0.004)	0.002	(0.003)
<i>Dividend</i>	-0.012***	(0.003)	-0.004*	(0.003)	-0.013***	(0.003)	-0.004	(0.003)	-0.013***	(0.003)	-0.004*	(0.003)
<i>Advertising</i>	0.000*	(0.000)	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
<i>Advertising_dummy</i>	0.039*	(0.021)	0.004	(0.029)	0.038*	(0.021)	0.003	(0.029)	0.037*	(0.021)	0.004	(0.029)
<i>Capex</i>	0.003**	(0.002)	0.003**	(0.001)	0.003**	(0.002)	0.003**	(0.001)	0.003**	(0.002)	0.003**	(0.001)
<i>R&D</i>	-0.000	(0.003)	0.002	(0.003)	-0.000	(0.003)	0.002	(0.003)	-0.000	(0.003)	0.002	(0.003)
<i>R&D_dummy</i>	-0.024	(0.020)	-0.023	(0.018)	-0.024	(0.020)	-0.024	(0.018)	-0.024	(0.020)	-0.024	(0.018)
<i>Press freedom</i>	0.003	(0.003)	0.002	(0.004)	0.003	(0.003)	0.002	(0.004)	0.003	(0.003)	0.002	(0.004)
<i>Constant</i>	1.364***	(0.251)	1.361***	(0.276)	1.373***	(0.250)	1.266***	(0.277)	1.391***	(0.250)	1.328***	(0.278)
<i>Year-fixed effects</i>	Yes				Yes				Yes			
<i>Country-fixed effects</i>	Yes				Yes				Yes			
<i>Industry fixed effects</i>	Yes				Yes				Yes			
<i>R² (percentage)</i>	24.82		24.70		24.77		24.18		24.60		24.40	
<i>Number of observations</i>	4,396		4,394		4,396		4,394		4,396		4,394	

This table displays the results of OLS regression analysis of industry-adjusted Tobin's Q (*Adj Q*) based on the Fama–French 48 industries (excluding financials firms), on CR awards and other control variables over the period of 2005–2014. Our sample is split with respect to investor attention as measured by GSV of stock tickers. The main variables of interest are CR awards, environmental awards and social labels while controlling for other well-known determinants of market value. All variables are defined in Appendix 4.1. Robust standard errors clustered by firms are presented in parentheses. ***, ** and * denote statistical significance at the 1, 5, and 10% levels, respectively.

Table 4.7. Threshold effect of investor attention on CR awards and firm value

	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>	
<i>Dependent variable</i>	<i>Adj_Q</i>		<i>Adj_Q</i>		<i>Adj_Q</i>	
<i>Regime dependent variable</i>	<i>CR_{Awards}</i>		<i>Environmental_{Awards}</i>		<i>Social_{Labels}</i>	
Threshold estimates						
$\hat{\gamma}$	3.738***		2.609		3.833***	
<i>C.I.</i>	[3.701, 3.745]		[2.386, 2.791]		[3.772, 3.890]	
Impact of Corporate responsibility Awards						
<i>Investor attention</i> < $\hat{\gamma}$	-0.013***	(0.005)	0.038	(0.032)	-0.032	(0.024)
<i>Obs.</i>	6916		3808		7295	
<i>Investor attention</i> > $\hat{\gamma}$	0.016**	(0.007)	-0.006	(0.007)	0.068***	(0.022)
<i>Obs.</i>	1874		4982		1495	
Control variables						
<i>CSP_{score}</i>	-0.005	(0.015)	0.006	(0.014)	0.024*	(0.014)
<i>Leverage</i>	-0.044	(0.028)	-0.181***	(0.009)	-0.176***	(0.028)
<i>Size</i>	-0.109***	(0.007)	-0.172***	(0.008)	-0.173***	(0.008)
<i>Return on assets</i>	0.905***	(0.044)	0.001	(0.003)	0.002	(0.003)
<i>Sales growth</i>	0.000	(0.002)	1.579***	(0.049)	1.577***	(0.049)
<i>Dividend yield</i>	-0.010***	(0.002)	-0.018***	(0.002)	-0.018***	(0.002)
<i>Advertising</i>	0.000**	(0.000)	0.000***	(0.000)	0.000***	(0.000)
<i>Advertising_{dummy}</i>	0.027**	(0.012)	0.022	(0.014)	0.022	(0.014)
<i>Capex</i>	0.002***	(0.001)	0.005***	(0.001)	0.005***	(0.001)
<i>R&D</i>	-0.005***	(0.002)	-0.008***	(0.002)	-0.008***	(0.002)
<i>R&D_{dummy}</i>	-0.025**	(0.013)	-0.026*	(0.014)	-0.026*	(0.014)
<i>Press freedom</i>	0.004**	(0.002)	0.003	(0.002)	0.003*	(0.002)
<i>Constant</i>	2.596***	(0.168)	4.440***	(0.189)	4.462***	(0.189)
Firm fixed effects	Yes		Yes		Yes	
Year-fixed effects	Yes		Yes		Yes	
R²(percentage)	11.40		43.80		43.90	
Number of observations	8,790		8,790		8,790	

This table provides threshold regression estimation results of corporate value as measured by industry-adjusted Tobin's Q (*Adj Q*) based on the Fama–French 48 industries (excluding financials firms), on corporate responsibility awards while controlling for the presence of a threshold in investor attention as proxied by Google search volume of stock tickers. All models include time-specific dummies and firm-fixed effects. The confidence interval for the threshold parameter estimate is obtained using Hansen's (1999) approach. P-values are bootstrap-based on over 1000 replications. Robust standard errors clustered by firms are in parentheses. See Appendix 4.1 for definition of variables.

Table 4.8. Robustness to endogeneity

	<i>Model 1</i>		<i>Model2</i>		<i>Model 3</i>	
<i>Estimation method</i>	<i>OLS</i>		<i>2SLS</i>		<i>2SLS</i>	
<i>Dependent variable</i>	<i>Adj_Q</i>		<i>Adj_Q</i>		<i>Adj_Q</i>	
<i>Firm-fixed effects</i>	<i>Included</i>		<i>Not included</i>		<i>Included</i>	
<i>CR_{Awards}</i>	0.012	(0.015)	0.009	(0.060)	-0.003	(0.026)
<i>Investor attention</i>	0.037***	(0.005)	0.036***	(0.007)	0.037***	(0.005)
<i>CR_{Awards} *Investor attention</i>	-0.006	(0.005)	-0.005	(0.005)	-0.007	(0.005)
<i>CSP_{score}</i>	-0.008	(0.015)	0.047	(0.919)	0.287	(0.389)
<i>Leverage</i>	-0.051 *	(0.028)	-0.062**	(0.029)	-0.056*	(0.030)
<i>Size</i>	-0.110***	(0.007)	-0.066	(0.070)	-0.124***	(0.021)
<i>Return on assets</i>	0.912***	(0.044)	1.025***	(0.054)	0.917***	(0.045)
<i>Sales growth</i>	0.001	(0.002)	-0.000	(0.007)	-0.001	(0.004)
<i>Dividend</i>	-0.009***	(0.002)	-0.009***	(0.003)	-0.009***	(0.002)
<i>Advertising</i>	0.000**	(0.000)	0.000*	(0.000)	0.000**	(0.000)
<i>Advertising_dummy</i>	0.031**	(0.012)	0.031**	(0.013)	0.032**	(0.013)
<i>Capex</i>	0.002***	(0.001)	0.003**	(0.001)	0.002**	(0.001)
<i>R&D</i>	-0.004**	(0.002)	-0.000	(0.003)	-0.005**	(0.002)
<i>R&D_dummy</i>	-0.022*	(0.012)	-0.020	(0.026)	-0.016	(0.015)
<i>Press freedom index</i>	0.002	(0.002)	0.003	(0.002)	0.003*	(0.002)
<i>Constant</i>	2.360***	(0.163)	1.460	(1.168)	2.555***	(0.309)
<i>Firm-fixed effects</i>	Yes		No		Yes	
<i>Year-fixed effects</i>	Yes		Yes		Yes	
<i>Country-fixed effects</i>	No		Yes		No	
<i>Industry-fixed effects</i>	No		Yes		No	
<i>R² (percentage)</i>	12.00		11.30		7.79	
<i>Number of observations</i>	8,790		8,760		8,760	

This table explores the relationship between industry-adjusted Tobin's Q (*Adj Q*) based on the Fama–French 48 industries (excluding financials firms), CR awards and the interaction between CR awards and investor attention as measured by Google search volume, while controlling for endogeneity concerns. The first model investigates the inclusion of firm-fixed effects. The second and third models are estimated in two stages. The first-stage regression involve regressing of the endogenous variable namely, the CSP score on all independent variables, year effects, and the instrument (mean industry-year CSP score). While, the second-stage regression results use the predicted values of the CSP score from the first-stage regressions. Only model 1 and model 3 include firm-fixed effects. All variables are defined in Appendix 4.1. Robust standard errors adjusted for clustering by firm are in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 4.9. Robustness to financial performance measures

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
<i>Dependent variable</i>	<i>Adj_MB</i>	<i>Adj_OIA</i>	<i>Adj_OIS</i>	<i>Adj_ROE</i>
<i>Regime-dependent variable</i>	<i>CR_{Awards}</i>	<i>CR_{Awards}</i>	<i>CR_{Awards}</i>	<i>CR_{Awards}</i>
Threshold estimates				
$\hat{\gamma}$	3.767***	3.858	3.999***	4.012
<i>C.I.</i>	[3.719, 3.773]	[3.718, 3.867]	[3.971, 4.005]	[3.954, 4.017]
Impact of Corporate responsibility Awards				
<i>Investor attention</i> < $\hat{\gamma}$	-0.006 (0.008)	0.000 (0.001)	-0.001 (0.001)	-0.001 (0.002)
<i>Obs.</i>	7050	7385	7815	7853
<i>Investor attention</i> > $\hat{\gamma}$	0.069*** (0.013)	0.004*** (0.001)	0.009*** (0.002)	0.013*** (0.004)
<i>Obs.</i>	1740	1405	975	937
Control variables				
<i>CSP_{Score}</i>	0.032 (0.026)	-0.000 (0.003)	0.007* (0.004)	0.006 (0.007)
<i>Leverage</i>	0.797*** (0.046)	-0.030*** (0.004)	-0.001 (0.007)	0.107*** (0.012)
<i>Size</i>	-0.154*** (0.013)	-0.006*** (0.001)	0.009*** (0.002)	-0.003 (0.003)
<i>Return on assets</i>	0.797*** (0.077)	0.328*** (0.008)	0.367*** (0.011)	-0.000 (0.001)
<i>Sales growth</i>	0.005 (0.004)	0.001** (0.000)	0.000 (0.001)	1.662*** (0.019)
<i>Dividend yield</i>	-0.038*** (0.003)	0.000 (0.000)	0.000 (0.000)	0.002*** (0.001)
<i>Advertising</i>	0.000** (0.000)	0.000* (0.000)	0.000 (0.000)	0.000 (0.000)
<i>Advertising_dummy</i>	0.051** (0.022)	0.003 (0.002)	0.002 (0.003)	0.004 (0.005)
<i>Capex</i>	0.006*** (0.001)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
<i>R&D</i>	-0.004 (0.003)	-0.003*** (0.000)	-0.005*** (0.000)	0.003*** (0.001)
<i>R&D_dummy</i>	-0.024 (0.022)	-0.005** (0.002)	-0.007** (0.003)	-0.009 (0.006)
<i>Press freedom</i>	0.008*** (0.003)	0.000 (0.000)	0.001** (0.000)	0.000 (0.001)
<i>Constant</i>	3.509*** (0.293)	0.150*** (0.029)	-0.196*** (0.041)	-0.062 (0.074)
<i>Firm-fixed effects</i>	Yes	Yes	Yes	Yes
<i>Year-fixed effects</i>	Yes	Yes	Yes	Yes
<i>R²(percentage)</i>	8.12	25.30	17.00	40.70

This table provides threshold regression estimation results of financial performance on CR awards while controlling for the presence of a threshold in investor attention as proxied by GSV of stock tickers. The dependent variable is proxied by the following industry-adjusted performance measures based on the Fama–French 48 industries classification (excluding financials firms), namely the MB ratio, operating income on assets, operating income on sales and return on equity. All models include time-specific dummies and firm-fixed effects. The confidence interval for the threshold parameter estimate is obtained using Hansen's (1999) approach. P-values are bootstrap-based on over 1000 replications. See Appendix 4.1 for definition of variables.

Table 4.10. Additional robustness tests

	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 4</i>	
<i>Robustness test</i>	<i>US. and Japanese firms excluded</i>		<i>Industry-adjusted CSP_{Score}</i>		<i>Alternative attention proxy</i>		<i>Investor attention included</i>	
<i>Dependent variable</i>	<i>Adj_Q</i>		<i>Adj_Q</i>		<i>Adj_Q</i>		<i>Adj_Q</i>	
<i>Regime-dependent variable</i>	<i>CR_{Awards}</i>		<i>CR_{Awards}</i>		<i>CR_{Awards}</i>		<i>CR_{Awards}</i>	
<i>Threshold variable</i>	<i>GSV of stock tickers</i>		<i>GSV of stock tickers</i>		<i>Analyst following</i>		<i>GSV of stock tickers</i>	
<i>Threshold estimates</i>								
$\hat{\gamma}$	4.011**		3.738**		3.1781***		3.7381**	
<i>C.I.</i>	[3.996, 4.015]		[3.701, 3.745]		[3.113, 3.218]		[3.701, 3.745]	
<i>The impact of corporate responsibility awards</i>								
<i>Investor attention < $\hat{\gamma}$</i>	-0.015**	(0.007)	-0.012***	(0.005)	-0.013***	(0.004)	-0.013***	(0.005)
<i>Obs.</i>	3197		6916		7537		6916	
<i>Investor attention > $\hat{\gamma}$</i>	0.045***	(0.014)	0.018**	(0.007)	0.027***	(0.008)	0.017**	(0.007)
<i>Obs.</i>	383		1874		1253		1874	
<i>Control variables</i>								
<i>Investor attention</i>							0.034***	(0.006)
<i>CSP_{score}</i>	-0.011	(0.027)	-0.048***	(0.017)	-0.004	(0.015)	-0.008	(0.015)
<i>Leverage</i>	-0.081*	(0.044)	-0.044	(0.028)	-0.044	(0.028)	-0.034	(0.028)
<i>Size</i>	-0.085***	(0.011)	-0.108***	(0.007)	-0.111***	(0.007)	-0.117***	(0.007)
<i>Sales growth</i>	0.937***	(0.065)	0.905***	(0.044)	0.000	(0.002)	0.896***	(0.044)
<i>Return on assets</i>	0.002	(0.004)	0.000	(0.002)	0.899***	(0.044)	0.000	(0.002)
<i>Dividend yield</i>	-0.007***	(0.002)	-0.010***	(0.002)	-0.010***	(0.002)	-0.010***	(0.002)
<i>Advertising</i>	0.000***	(0.000)	0.000**	(0.000)	0.000**	(0.000)	0.000**	(0.000)
<i>Advertising_dummy</i>	0.084***	(0.020)	0.027**	(0.012)	0.028**	(0.012)	0.027**	(0.012)
<i>Capex</i>	0.002**	(0.001)	0.002***	(0.001)	0.002***	(0.001)	0.002***	(0.001)
<i>R&D</i>	0.000	(0.003)	-0.005**	(0.002)	-0.005***	(0.002)	-0.005**	(0.002)
<i>R&D_dummy</i>	-0.025	(0.016)	-0.025**	(0.012)	-0.026**	(0.013)	-0.024*	(0.012)
<i>Press freedom</i>	0.004**	(0.002)	0.003**	(0.002)	0.003**	(0.002)	0.003**	(0.002)
<i>Constant</i>	2.010***	(0.253)	2.566***	(0.168)	2.629***	(0.168)	2.670***	(0.168)
<i>Firm fixed effects</i>	Yes		Yes		Yes		Yes	
<i>Year fixed effects</i>	Yes		Yes		Yes		Yes	
<i>R²(percentage)</i>	12.80		11.50		11.50		11.70	
<i>Number of observations</i>	3,580		8,790		8,790		8,790	

This table provides additional robustness tests. All columns report the threshold regression estimation results of corporate value as measured by industry-adjusted Tobin's Q (*Adj_Q*) based on the Fama and French 48 industries (excluding financials firms) on CR awards while controlling for the presence of a threshold in investor attention. All models include time-specific dummies and firm-fixed effects. The confidence interval for the threshold parameter estimate is obtained using Hansen's (1999) approach. P-values are bootstrap-based on over 1000 replications. See Appendix 4.1 for definition of variables.

GENERAL CONCLUSION

“It is the task of a lifetime. You can never know enough, never work enough, never use the infinitives and participles oddly enough, never impede the movement harshly enough, never leave the mind quickly enough.”

— Anne Carson, *Plainwater: Essays and Poetry*

GENERAL CONCLUSION

The main question we asked over this thesis was: ‘Does investor attention shape the reward or punishment of the corporate social impact? The answer is clear: investor attention does really matter. However, this assertion is nuanced and subject to a set of conditions and requirements. As strategy theories demonstrate growing concerns for the elusive ‘business case’ of CSP and fund managers increasingly ‘invest with a conscience,’ our thesis places the spotlight on the relation between CSP and financial outcomes and supports that information-based mechanisms should account for investor attention to investigate the eventual shareholder value impact of CSP. The scarce attention rather than information accessibility becomes an increasingly severe problem in decision-making (Peng 2005). In this sense, we investigate whether the attention effect, in the short and long-terms, follows the predictions of visibility theory or the RBV of the firm.

We contend that the conflicting findings on CSR may be attributed to several issues. First, much attention has been devoted to support an unambiguous direct link between CSR and financial value (McWilliams and Siegel 2000). It may be that a more nuanced perspective is required, which builds on the role of complementary factors in the CSR-shareholder wealth relationship (X. Luo and Bhattacharya 2009). For instance, an additional (non-mutually exclusive) possibility that investors may simply be inattentive to, or unaware of, the CSR disclosures (Merton 1987; Barber and Odean 2008). For example, Barber et al. (2006) show that attention-grabbing information, such as marketing and advertising, significantly affect the purchase decisions of mutual fund investors. Rogers et al. (2013) find causal evidence that news dissemination affects stock prices. If investors are inattentive, then the dissemination of firms’ CSR efforts could direct investors’ attention to this information. Second, CSR is a multi-faceted construct, with certain CSR types, such as environment, product, diversity, corporate governance, and employee based socially responsible efforts, having a more verifiable effect on key stakeholders than community-based philanthropic efforts. However, research has not placed much attention on distinguishing CSR types (Jayachandran et al. 2013). Third, the metrics used to assess CSR’s financial value have been observed to influence findings (Margolis et al. 2009). Yet, no study has taken a full picture of shareholder wealth.

The strong interest in CSR combined with the uncertain outlook towards its shareholder implications and consistent evidence about the role of investor attention to shape asset prices represents an interesting paradox, with continuing investigations into this puzzle providing important guidance to theory, empirical research and practice.

Implication for theory

This research enriches the CSR literature as well as the stakeholder attention literature as proposed by Madsen and Rodgers (2015). However, although the theory developed in this paper may apply to CSR generally, only one type of CSR—disaster relief CSR—was examined, and their results may not automatically apply to other ESG pillars. Furthermore, their measure of stakeholder attention is a global measure, rather than a measure targeted to specific stakeholder group. In our research, we focus on stakeholder attention in a more granular manner by particularly investigating investor attention as a determinant of the CSP-CFP relation. Therefore, an immediate implication for theory is that investor attention plays a key role in translating CSR initiatives into market value. However, despite the significance of the impact that investor attention may play in shaping the financial implications of firm CSR, research had not previously theorized explicitly the role of investor attention in this process. The evidence of investor attention to firm CSR as a mediator of the CSP-CFP relationship may also fill in many gaps of the CSR literature. Researchers have struggled for decades to establish causal links between CSR and CFP (see the seminal reviews by Margolis and Walsh, 2003; Orlitzky et al., 2003). This paper answers recent calls to identify the precise mechanisms through which CSR influences CFP (Lev et al. 2010). This being the case, the introduction of the concept of shareholder attention to firm activities may be a significant contribution to stakeholder theory. Thus, many of the previously hypothesized stakeholder-generated benefits to firms as a result of their CSR commitment should be contingent on the extent that these CSR activities manage to attract investor attention. Finally, one can argue that CSR is desired, but to the limited extent that it does not conflict with investors' interests and attention.

Implications for research

The aim of this thesis is to introduce investor attention as the bridge without which the CSP-CFP link can be distant or illusive. Yet, with it, the link can be made clearer. While prior research has mostly focused on CSR initiatives targeting customers and employees (Du et al. 2010; Schuler and Cording 2006; Chitrabhan B Bhattacharya et al. 2011) and emphasized the

role of consumer awareness in accentuating the business value of CSR (Servaes and Tamayo 2013), our study highlights the importance of investor attention to CSR, an underexamined yet critically important stakeholder group.

We contribute to existing literature by demonstrating the role of investor attention as a key information intermediary for stock prices to incorporate CSP. Specifically, we explicate the mechanism by which CSP influences firm financial performance, i.e., by identifying how investor attention act as information channel to clarify the value and relevance of CSP for investors and reduce information asymmetry. In particular, our results suggest that returns on the social impact can be better materialized when investors heed the firm's CSP. This can be warranted by benchmarking our results against the findings from other CSR studies.

In particular, Madsen and Rodgers (2015) explore a previously unexplored premise — that stakeholder rewards to CSR should only be expected to accrue to the extent that stakeholders pay attention to firm CSR activities. This assumption finds support from empirical analysis, demonstrating that stakeholder attention partially mediate the relationship between disaster CSR initiatives and firm financial benefits. However, accurately measuring a firm's stakeholder attention remains difficult is that overall measures of the effects of corporate actions on the welfare of stakeholders do not exist. For example, corporate policies those benefit communities might turn out to be harmful to employees. Furthermore, companies with higher visibility (e.g., greater media exposure, a large number of stakeholders, etc.) are particularly expected to be more sensitive to stakeholders' demands for CSP because they are under greater scrutiny in the range and quality of their corporate citizenship profiles (Chiu and Sharfman 2009).

We also developed the misspecification logic of McWilliams and Siegel (2000), proposing that the positive relationship between variations of CFP and CSP may be spurious, and suppose that it would be simply the result of variations in investor attention. Our model also explains the neutral or negative relationships between CSP and CFP evidenced by prior studies (Hillman and Keim 2001). Clearly, when CSP does not attract investor attention, neutral or negative associations may emerge. Our study therefore emphasizes the importance of accounting for variations in investor attention in further studies of CSP-CFP linkages. Lack to control for investor attention may in part explain some of the mixed findings that have occurred in the past.

Finally, our main results suggest that both the firm's CSR capacity to attract investor attention and the capability of attention to improve financial performance are determined in the interplay with market forces. Specifically, we have provided evidence for the importance of

investor attention, showing that firms are more likely to translate CSP into CFP through investor attention in high-visible firms, for which some scholars expected a stronger linkage between CSP to CFP (Chiu and Sharfman 2009; Cordeiro and Tewari 2015). One could interpret these insights to mean that improving such a relation requires more investor attention that is more likely to be formed for highly visible firms (Madsen and Rodgers 2015).

Implications for practice

The above mentioned theoretical and empirical implications contribute to both CSR theory and stakeholder theory and suggest several concrete strategies that firm leaders could use to increase returns on their social investments.

If the amount of attention a firm receives influences its stock price, managers of a neglected firm have an incentive to draw attention to their firm. In the limited attention capital asset pricing model proposed by Merton (1987), investors form diversified portfolios only from the set of firms they are aware of. Specifically, the identification of the firm visibility and in particular, investor attention as factors that influence the relationship between CSP and financial performance may stimulate organizations to become more involved in CSR activities instead of greenwashing. Thus, neither a positive statistical and even causal relationship between CSP and CFP can guarantee that CSR investments will eventually pay off unless investor have paid attention (Vogel 2005). Furthermore, since attracting investor attention towards a company's CSR activities is a key prerequisite for improving CSP, it is imperative for managers to have a deeper understanding of key issues related to CSR communication. These include questions surrounding what to communicate (i.e. message content), where to communicate (i.e. message channel), as well as an understanding of the company and shareholder attention-related factors that impact the effectiveness of CSR communication.

The application of our results may also allow managers to more effectively allocate social investments. A number of the results reported above involve specific CSR factors that have to be under managerial control. For example, our analysis showed that the social awards increase investor attention to firm's CSR initiatives relative to other CSR awards. This finding implies that managers can increase the positive publicity their firms receive for their social activities by contributing to improvement of the visibility of their social commitment. Similarly, we find that ESG controversies direct investor attention to the CSP score inducing the increase of market value. This finding holds only for high performing firms. Thus, managers can increase the amount of investor attention their CSP receive by being quick to respond following a

controversy and capitalizing on being under the spotlight of shareholders. Third, our results indicate that a firm's corporate governance news headlines receive more investor attention.

This finding suggests that firms may generate greater returns on social investments if they pay particular attention to corporate governance pillar in the causes they involve themselves with. Such an approach could prove beneficial to both the investors (reduced information asymmetry and information acquisition costs) and managers (which should receive greater investor attention).

Limitations and directions for future research

First, there are many fruitful directions for future research on investor attention. One question is how attention interacts with cognitive biases and affects the association between CSP and financial performance. It is possible, for example, that other dimensions of the investor behavior (e.g., risk aversion, emotions, overconfidence) moderate the causal links among our model variables. Investor attention emanates from distaste for psychological informational risks, hence it would be interesting to investigate the relationship between investor attention, risk aversion and decision making in the CSR context. Therefore, more research is warranted on the relationship between CSP and financial outcomes. The substantial heterogeneity in attention dynamics across individuals and over time suggests that there are other drivers of attention still to be discovered. For example, attention in down-markets imposes an immediate cost—getting the bad news—but a delayed gain for loss-averse investors—from resetting the loss-aversion wealth reference point. This prediction could be tested either by looking for behavioral indicators of time preference or by measuring time preference as well as other individual characteristics with an online survey. The impact of changing technology (e.g., automated web-based interfaces) on attention and on the investment advisory process is another natural research issue. Attention may also play a role in episodes of investor exuberance (Shiller 2000), since trading requires, first and foremost, attention.

Qualifying these perspectives, we recognize some weaknesses in our thesis. Weaknesses thereby create future research opportunities. As the first attempt to document the role of investor attention to CSR activities to improve financial performance, this study is limited in a number of ways.

First, while theoretical models predict that limited investor attention can lead to predictability in asset prices (Peng and Xiong 2006; Huang and Liu 2007), attention allocations are extremely difficult to observe in practice. As a result, our understanding of this potentially important area of decision-making continue to represent something of a black box for

researchers. Thus, our measures of investor attention could be seen as a limitation. Measuring investor attention is notoriously difficult, and for many proxies, it is challenging to pinpoint the true impact of pure attention effects. In addition, most existing proxies tend to have the advantage of being simple, intuitively appealing, and backed up by casual evidence but they are typically not directly derived from theoretic work on limited attention. This literature prominently includes Barberis and Shleifer (2003), Gabaix and Laibson (2005), Mullainathan (2002), Van Nieuwerburgh and Veldkamp (2009), Peng (2005), Peng and Xiong (2006), and Sims (2003). To give an example, in a recent study, Michaely et al. (2013) claim that the findings of DellaVigna and Pollet (2009) are not driven by investor inattention on Fridays, but simply by firm heterogeneity. Furthermore, trading volume which is frequently used as a proxy for investor attention may also be used as a proxy for many other firm or investor characteristics, including liquidity and the likelihood of informed trading. Extreme returns may also trigger excessive attention, but at the same time, excessive attention may trigger demand shocks and thus eventually also cause extreme returns. This makes it difficult to get a better feeling for the general validity of most proxies across settings, methodologies, and samples. Together, there is still a considerable gap in the literature with regard to novel, creative, theoretically appealing, or otherwise improved approaches of quantifying investor attention. A paper that addresses the above mentioned concerns by coming up with a better and more pure attention proxy and by comprehensively verifying its validity might become well published for that contribution alone. That is, it would also be useful to use natural experiments (e.g., changes in CSR disclosure regulations, laboratory and experimental manipulation or functional magnetic resonance imaging (fMRI) of attention) to elucidate the relation between CSP and CFP. For instance, we can compare the behavior of a treatment group (i.e. a subset of market participants likely to be attentive on average) to the behavior of an unaffected control group. The critical issue here clearly is to identify situations suited for natural experiments.

Perhaps in no other management domain is the role of investor attention to firm activities more crucial than in the translation of CSP to CFP—where the degree of attention that investors pay to a firm's CSR initiatives may crucially shape their decisions to reward or punish that firm for its social impact. There is clearly more to follow, for instance: (1) additional moderating factors of the CSP-CFP relation may be considered, (2) since our focus was at the individual-level, looking at particular classes of investors may also yield differential outcomes, and (3) it remains unclear whether investor attention might influence the relationship between CSP and CFP as a whole or through CSP or CFP and finally (4)

while the literature on investor attention is by now vibrant and rapidly growing, many questions both at the individual investor level and at the aggregate stock level still remain unanswered, and thus offer a road map for future work. In this context, convincingly decoupling the true role of pure attention effects from confounding factors remains one of the most fundamental and critical issues, despite a lot of progress in recent years.

Clearly, investor attention provides a channel through which the causal impact of CSP on CFP can be assessed. It seems that only a handful of papers have somewhat followed this approach so far, leaving much room for the analysis of novel settings. In a broader setting, it is also becoming increasingly important to consider how can we understand—and capture—the quality of attention, and not only the quantity, that individuals are able to allocate under varying conditions.

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