

Corporate Governance as a Key Driver of Corporate Sustainability in France: The Role of Board Members and Investor Relations

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Abstract

This paper examines the relationships between corporate governance and corporate sustainability by focusing on two main components of companies' governance structure: boards of directors and investor relations officers. We propose an original empirical strategy based on the 120 biggest French capitalizations for the year 2013, allowing us to measure boards of directors' independence and expertise, as well as investor relations officers' convictions and communication on corporate sustainability. Our results show that corporate governance has an ambiguous impact on corporate sustainability because of opposing forces: internal, external and intermediate forces. On the one hand, the higher the proportion of inside directors, the higher the company's environmental and governance performance, while the higher the proportion of general experts in the board room, the lower the company's governance performance. On the other hand, investor relations officers' beliefs that corporate sustainability is primarily driven by investors' ethical values appear negatively related to companies' governance performance. In sum, corporate sustainability appears positively related to internal forces (inside directors) and negatively related to external forces (general expert directors and investor activist engagement). The results of this study demonstrate the need to carry out efforts to train BoDs (specifically inside directors) and IROs to respond to corporate sustainability and to take more of a leadership role in this area.

Keywords: investor relations officers (IROs), Board of Directors (BoDs), environmental, social, and governance (ESG) criteria, socially responsible investment (SRI), corporate sustainability and corporate social responsibility (CSR), France.

Classification JEL: M14; G30

1. INTRODUCTION

The governance of corporations has received a considerable attention in the literature in the past decades. Numerous corporate and financial scandals, accounting fraud and corruption since the 1990s have revealed severe shortcomings in corporate governance and prompted calls on both sides of the Atlantic for corporate governance reforms. Parallel to these phenomena, the past decades also witnessed an increasing concern for sustainability in corporate strategies and governance, the so-called corporate social responsibility (CSR) movement, fueled by the recurrence of financial market crises which revived public interest in debates on governance and ethics with a fundamental core question: “what interests should the company serve?”

The traditional definition of corporate governance, characteristics of the agency theory, refers to the set of (formal and informal) rules and structures that shape managerial decision and accountability, given the generic separation of ownership and control of organizations. Such a definition emphasizes the importance of creating value for shareholders and aligning manager interests with shareholder interests. But other stakeholders, such as employees, communities, suppliers or customers also have vested interests in how the firm is run, and for the proponents of the “stakeholder society” management and governance structures should internalize the externalities their decisions impose on various groups (Tirole, 2006).

Interestingly, the corporate sustainability movement is challenging for both the shareholder and the stakeholder models of corporate governance. The shareholder model, that gives priority to minority shareholder interests, is somewhat reluctant to consider other interests, whether environmental or social, in business conduct. But, the principle of balancing divergent interests inherent to the stakeholder model of corporate governance often gives

priority to direct constituencies, namely shareholders and labor, with remote stakeholders, like consumers, environment and local communities, ignored as in the shareholder model (Crifo and Reberioux, 2016). In this paper, we are specifically interested by the interplay between corporate governance and corporate sustainability. This issue has been identified as an important question in the literature. Recent research for instance point at governance factors as crucial determinants of the corporate sustainability-corporate performance relationship (Dam and Scholtens, 2013), or underline that corporate governance factors do influence the firm's decision to become socially responsible (Aguilera et al. 2007, Barnea and Rubin, 2010).

Corporate governance mechanisms are fundamental to align shareholder (and/or other stakeholders) and manager interests and can be split into two categories, internal and external (Weir et al., 2002, Walsh and Seward, 1990). Internal mechanisms include board structure, shareholder voting rights, managers' remuneration systems, internal trade-union associations or audits, debt financing etc. One particular structure among internal mechanisms is the board of directors and its composition, with a vivid debate in the literature on independent boards as a perceived mechanism to increase managerial accountability towards shareholders or stakeholders (Adams et al., 2010; Wintoki et al., 2012). External mechanisms stem from three types of market forces (Dessain et al., 2008): the market for company executives (in particular, talent and compensation), the market for acquisitions (in particular takeovers threat and bids), and the market for financial information (in particular investors' information and relations). Interestingly, the literature highlights that internal and external mechanisms are not independent and may even be substitutes (Rediker and Seth, 1995; Kini et al., 1995).

In this article, we analyze the relationships between corporate governance and corporate sustainability, and examine in particular the role of three main components of the companies' internal, external and intermediate governance mechanisms: boards of directors

and investor relations officers. More precisely, we investigate whether corporate sustainability, measured by environmental, social and governance (ESG) performance, is determined by board composition and investor relations officers' beliefs and communication.

Our motivation is twofold. First, we aim at examining whether internal, external and intermediate governance mechanisms act as drivers of corporate sustainability. Second, we question how these mechanisms interact and whether they are substitutable inputs of corporate sustainability. For this purpose, we focus on two particular internal, external and intermediate forces: boards of directors and investor relation.

Boards of directors have received considerable attention in the literature, because this type of entity plays a crucial role between CEOs and shareholders to efficiently discipline CEOs, represent shareholders, and eventually represent other stakeholders. Boards of directors have two major roles: monitoring and advising the management. The monitoring role implies management oversight, ensuring financial transparency and serving as a 'watchdog' for shareholders, whereas the advisory role involves giving advice to the CEO, setting strategy (in particular corporate sustainability strategies) and approving major expenditures, mergers and acquisitions (Demb and Neubauer, 1992; Hermalin and Weisbach, 2003; Adams, 2009; Kim et al., 2014).

Unlike boards of directors (henceforth BoDs), the role of Investor Relations Officers (IROs) has been much less investigated. The role of an IRO¹ is to provide 'timely, accurate and complete information' about a corporation's business fundamentals and future to the financial community – notably security analysts, investors and potential investors - to help them make better informed decisions (Farragher et al. 1994; Marston and Straker, 2001). To assess the company's business fundamentals, investors have traditionally asked for strategic and financial information. Yet, the demand for extra-financial data – so-called environmental,

¹ IR is an abbreviation of Investor Relations. IRO is an abbreviation of Investor Relations Officer. In this study, both the abbreviations and the long versions of these two expressions are used interchangeably.

social and governance (ESG) or Corporate Sustainability or Corporate Social Responsibility (CSR) data²- is growing as investors increasingly consider non-financial aspects in their assessment of companies (Hockerts and Moir, 2004; Hoffman and Fieseler, 2012; Wagemans et al., 2013). If most OECD countries' regulations now require companies (listed and/non listed) to disclose extra-financial information in annual reports (see Crifo and Rebérioux, 2016), many actors also consider ESG factors as a potential (but disputed) source of competitiveness and performance (for a survey on the determinants of CSR strategies and their impact on performance (see Margolis et al, 2009; Bénabou and Tirole, 2010; Kitzmüller and Shimshack 2012; Endrikat et al., 2014; Crifo and Forget; 2015).

Moreover, socially responsible investment (SRI) is gaining momentum (Eurosif, 2016) and both board members and IROs could play a strategic role in obtaining the support of important financial stakeholders (Dolphin, 2004). Consequently, it is important to advance in the knowledge of how such a company's governance structure might matter for CSR strategies (Van den Berghe and Louche, 2005).

The literature on corporate governance and CSR is growing but remains still thin. Several recent studies point to governance factors as a key driver of CSR decisions, and potentially crucial determinants of the CSR-performance relationship (see Dam and Scholtens, 2013).

Playing a decisive role in the link between a company and the financial community, IROs and BoDs appear as two essential layers in the governance structure of the company. Indeed they are at the interface between financial market actors and their firms' top executives, with whom they have close relationships, and are therefore inherently influenced by internal, external and intermediate forces. In this article, we consider that IROs and BoDs

² Corporate Sustainability or Corporate Social Responsibility (CSR) can be defined considering three main dimensions: environmental, social and governance (the so-called ESG factors). The ESG acronym describes corporate social responsibility and governance actions of a firm. In this paper, ESG and CSR data and ESG and CSR performance could be treated as synonyms considering that ESG performance is used by the stock market as a proxy of company's integration of CSR in their strategy.

play a key role in firms' strategies, and especially corporate sustainability. Our main objective is to examine whether and how corporate governance, and its two pillars BoDs and IROs, might be a significant driver of corporate sustainability, measured by environmental, social and governance (henceforth ESG) performance. In particular, we investigate the role of internal, external and intermediate forces in the corporate governance–corporate sustainability relationship. Accordingly, the research question that we raise is the following: Is ESG performance higher in companies influenced by internal, by external or by intermediate governance forces?

In order to answer these research questions, we propose an original empirical (econometric) analysis based on the 120 biggest French listed companies for the year 2013, relying on three sources of data: (1) IR department data drawn from a survey that we administered in partnership with the French Investor Relations Professional Association³, (2) board composition and financial data from the Datastream database, and (3) corporate sustainability (ESG factors) data from the Vigeo extra-financial agency database. Concretely, we employ an Ordinary Least Squares (OLS) regressions model and a Probit regressions model.

We find that corporate governance has no clear cut influence on corporate sustainability because of opposing internal, external and intermediate forces. A firm with a high proportion of inside directors might have a higher environmental and governance performance, and having more general experts on the board tends to lower governance performance. However, the IRO's belief that corporate sustainability is primarily driven by investors' ethics seems negatively related to the company's governance performance. Corporate sustainability appears to be positively related to internal forces (inside directors) and negatively related to external forces (general expert directors and activist engagement).

³ Called "CLIFF" in French - see <http://cliff.asso.fr/en>

Therefore, our paper provides both theoretical and practical implications. From a theoretical perspective, in times of great debate about the role of the BoDs in driving corporate performance, it shows that research on corporate governance needs to move beyond the paradigms of agency theory to overcome the shortcomings of different theories. The conclusions of this research can help academics explain why BoDs and IROs are considered as possible drivers of a CSR approach for companies. From a practical perspective, the results provide useful insights to different market actors (managers, firms, regulators and investors) interested in the corporate sustainability performance of companies and in the important role played by BoDs and IROs. Moreover, these findings should encourage BoDs and IROs (practitioners) to integrate ESG issues into their practices and to become more closely involved in the strategic management of their firms.

The remainder of this study is organized as follows: Section 2 reviews the relevant literature while Section 3 describes the methodology, including the econometric model, data and study variables. Section 4 presents empirical results. Section 5 concludes the study.

2. THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

Corporate governance and corporate sustainability: the role of IROs and BoDs

Over the past two decades, corporations have struggled to become, or at least to appear, socially responsible. In 2013, 93% (against 64% in 2005) of the 250 largest US companies and 71% (against 41% in 2005) of the 100 largest companies in industrialized countries published reports on their CSR policies (KPMG, 2013, 2005). Similarly, Socially

Responsible Investment⁴ (henceforth SRI) has grown rapidly in Europe since the late 1990s, particularly in France (Crifo and Mottis, 2013).

Multiple definitions of CSR have been proposed, often based on overlapping and complementary terms: social responsibility, corporate sustainability, corporate accountability, business ethics, etc. (Bush et al., 2015). The CSR definition adopted by the European Commission (2011) states that being responsible means that beyond legal constraints, firms take responsibility for their impacts on society. Hence, CSR means firms go beyond the law and integrate social, environmental, ethical, human rights and consumer concerns into their business operations and core strategy.

Top managers may in turn consider ESG integration strategies motivated by different types of drivers, which can be broadly classified into two groups: external, e.g. increasing reputational pressure and stakeholder requirements, or internal, e.g. pressures to incorporate ESG criteria into company strategy and to generate internal value, and pressure to ensure better shareholder returns by preparing the company for the long term (see Basu and Palazzo, 2008; Sakuma-Keck and Hensmans, 2013).

Recent research on this topic in turn investigates ‘how’ to engage in CSR activities (see e.g. Brammer et al., 2006; Akpinar et al., 2008; Delmas et al., 2011; Tang et al., 2012) and in particular how managers tend to prioritize stakeholders when designing their CSR strategies. In particular, how do external (market led) forces affect corporate sustainability compared to internal forces?

In the context of growing concerns for corporate sustainability, both CSR and SRI, corporate governance might play a decisive role. In a narrow sense, corporate governance involves a set of relationships between a company’s management, its board, its shareholders, and other stakeholders. Broadly defined, corporate governance refers to the set of formal and

⁴ Socially responsible investment is “an investment discipline that considers ESG criteria to generate long-term competitive financial returns and positive societal impact” (US-SIF, 2015), in order to contribute to sustainable development goals (Bush et al., 2015).

informal rules and structures that shape managerial decisions and accountability (based on the Cadbury Report, 1992). This raises the following two fundamental questions: what interests should the company serve, and how are top executives monitored? Over the last three decades, two alternative models have been developed: the shareholder model and the stakeholder model of governance (see Charreau and Desbrières, 2001, Freeman, 1984).

According to the shareholder model (sometimes called the ‘financial’ or ‘outsider-based’ model), the company should be run in the sole interests of its shareholders (or owners). This model gives priority to minority shareholder interests (it is often based on highly dispersed ownership, mainly held by institutional investors such as pension funds or mutual funds), and is somewhat reluctant to consider the interests of other stakeholders (Donaldson and Davis, 1994; Davis et al., 1997; Jensen and Meckling, 1976). This model is often associated with Anglo-Saxon countries.

By contrast, the stakeholder model (or pluralist model) relies on the idea that if the firm respects the interests of its shareholders, it also represents broader social interests that must be taken into account as much as those of capital providers (Jensen, 2001; Freeman, 1984; Carroll, 1979). In particular, managers are depicted as mediating and balancing the interests of shareholders (minority and blockholders) and the interests of labor. Indeed, among the many constituencies having a stake in the firm, workers are usually considered as playing a crucial role. Contrary to consumers or local communities for example, they invest and risk their human capital in the company. In the stakeholder model, the control mechanism is based on internal pressures: the capital needs are satisfied by concentrated shareholders in countries with less developed (historically) financial markets, e.g. continental Europe, in which managers are disciplined by large blockholders as well as workforce representatives (Aglietta and Reberioux, 2005). Therefore, most stakeholder model proponents advocate board level representation for workers, with voting rights just like shareholder representatives (the so-

called ‘co-determination’ that is especially adopted in Germany).

Overall, corporate governance debates support the need for an institution between CEOs and shareholders to efficiently discipline CEOs, represent shareholders, and possibly other stakeholders. In turn, this amounts to allocating a key role to boards of directors and investor relations departments, two central components of the governance of the company, in the design and conduct of CSR strategies responding to stakeholders’ demands (Crifo and Rebérioux, 2016). Therefore, it seems necessary to examine the relationships between corporate sustainability and these two main governance mechanisms: boards of directors and investor relations officers.

Regarding IROs, several papers examine the determinants, organizations and financial impact (cost, price, liquidity) of IR activities (see e.g. Farragher et al. 1994; Brennan and Tamarowski, 2000; Marston, 2004; Hong and Huang, 2005; Bollen et al. 2006; Laskin, 2006; Bushee and Miller, 2012); but, to the best of our knowledge, only a few papers (Hockerts and Moir, 2004; Fieseler, 2011) examine the issue of CSR strategies and the integration of ESG factors by IR departments.

With reference to BoDs, an increasing number of studies now consider the issue of CSR strategies and the impact of BoDs on corporate sustainability (see e.g. Boubaker and Nguyen, 2012, Dienes and Velete, 2016) but more research is needed on this topic.

Here, we consider more specifically that IROs and boards of directors might play a particular role in CSR strategy depending on the nature of the forces, internal, external and intermediate, influencing them. As will be detailed in the following section, BoDs are impacted by strong internal (resp. external) forces, for instance when the proportion of inside directors, i.e. executives or employees (resp. outside directors, i.e. independent or experts), is high (see Cavaco et al., 2017). Similarly, IROs are impacted by strong external forces when factors such as beliefs on investors’ activist engagement or outside pressure to promote

corporate sustainability are important in their daily activities.

Corporate governance and corporate sustainability: Internal versus external forces

The relationship between corporate sustainability and corporate governance is receiving increasing attention in the literature, but the literature on IROs and BoDs is sparse.

Concerning IROs, one of the most relevant articles is the study of Hockerts and Moir (2004). They analyze the role of the IR function in the light of rising investor concern about CSR. Drawing on interviews with IR professionals in 20 firms from 10 OECD countries, the authors show in particular that the company's engagement with CSR issues increasingly exposes IR to a broader audience including NGOs and governments, thereby widening the IR function's duties as well as driving the integration of IR with other departments in the firm. Their results also indicate that the role of IR in relation to CSR issues has been changing from a broadcasting mode towards a more interactive relationship between a firm and the financial markets, suggesting that IR officers are emerging as an important driver of corporate transformation. They propose that further research be conducted to explore more broadly whether the role of IROs generally has expanded beyond external marketing toward impacting strategic choices, in particular CSR choices. Recently, Fieseler (2011) highlights the importance of IROs in including CSR parameters in the redefinition of financial communication strategies for German listed firms. IR specialists may play a crucial role in helping investors make an informed decision, and more generally they may be important in reducing information asymmetries between business insiders and outsiders, in particular on ESG issues. They are therefore influenced by internal (personal conviction) as well as external (outside interactions) factors (Botosan and Plumlee, 2002).

Regarding boards of directors, considerable attention has been paid to the empirical

relationship between board independence and firm performance, without conclusive results (see e.g. Wintoki et al., 2012, Rebeiz, 2017). However, some recent papers consider both the independence and expertise of BoDs as crucial factors of company performance (Cavaco et al., 2016). The main benefits and costs of independence are related to board functioning. Benefits lie in the lower propensity of collusion with corporate executives, which limits agency costs and strengthens the effectiveness of board monitoring, and in the provision of important resources and relational connections to the company (Hillman and Daziel, 2003). The main costs of board independence lie in the potential conflict, lack of cooperation and insufficient communication with top executives. Boards in fact depend substantially on the CEO for firm-specific information, and executives might be reluctant to share such information with dissimilar (independent) directors, thereby compromising both monitoring and advisory effectiveness (Adams and Ferreira, 2007, Ferreira, 2010).

In the shareholder model of governance, IROs would be expected to concentrate on communicating financial information, considering that CSR information is not requested from external pressures, with no (or even a negative) relationship with company ESG performance. Board members are expected to reflect the interests of shareholders, with more independent and general experts, and fewer insiders (Cavaco et al., 2017).

On the other hand, in the stakeholder model of governance, IR officers would be expected to communicate on both financial and extra-financial information, considering that CSR information is influenced by external pressures, with a positive relationship to a company's ESG performance, whereas board members are expected to reflect the interests of stakeholders other than shareholders, with more insiders and sectoral experts (Cavaco et al. 2017).

Finally, when disaggregating corporate sustainability into various ESG factors, the new stakeholder view (Post et. al. 2002a, b) – posits that the capacity of a firm to generate

financial and extra-financial performance— is determined by its relationship with critical stakeholders in relation to three strategic dimensions: resource–base, industry–market and social–political arena. The resource–base stakeholders are suppliers of capital, labor and customers/users; the industry–market stakeholders are supply chain associates, joint venture partners and alliances, regulatory authorities and unions; and the social–political arena stakeholders are composed of governments, communities and NGOs. While the first two categories refer to direct ‘business’ or ‘voluntary’ stakeholders, the third category refers to ‘nonbusiness’ or ‘involuntary’ stakeholders (concerning community relations and environmental issues, i.e. stakeholders who are rather adversely affected by externalities such as pollution or congestion). In terms of governance, this implies that there should be some synergies (positive mutual benefits) between corporate sustainability practices that positively affect voluntary business stakeholders and some trade-offs (negative conflict effects) between corporate sustainability practices that positively affect nonbusiness stakeholders. In other words, governance factors relying on synergies among voluntary stakeholders would have a positive impact on corporate sustainability, whereas governance factors exacerbating possible conflicts among voluntary and involuntary stakeholders would have a negative impact on corporate sustainability (Cavaco and Crifo, 2014).

Currently, the evolution of the governance practices has encouraged the need to integrate the advantages of the shareholder and stakeholder corporate governance models in a hybrid corporate governance model, which is maximizing shareholder value and providing a meaningful protection of the interests of a larger stakeholder group (Kakabadse and Korac-Kakabadse, 2002). The literature highlights that in this hybrid model, board composition thereby reflecting internal (inside directors), external (independent and general expert directors) and hybrid/intermediate (sectoral expert directors) forces (Crifo and Reberieux, 2016).

In terms of the relationship between corporate governance and corporate sustainability, we thus make the following hypotheses:

H1: Corporate governance factors based on internal forces have a positive impact on corporate sustainability due to synergies among voluntary stakeholders (resource-base)

H2: Corporate governance factors based on external forces have a negative impact on corporate sustainability due to possible conflicts among voluntary stakeholders (resource-base) and involuntary stakeholders (environment and society)

H3: Corporate governance factors based on intermediate forces have a neutral impact on corporate sustainability due to both synergies and possible conflicts between voluntary and involuntary stakeholders (industry).

3. METHODOLOGY

3.1 Sampling and data collection

Our dataset consists of a sample of the 120 biggest French companies listed on the French SBF120 index in 2013. The SBF120 index comprises the top 120 French listed companies, including the CAC40, the 40 biggest French multi-national companies.

We have based our research on France because its SRI market growth is still very dynamic among the leading European SRI funds markets both in terms of number of funds and assets under management (EUROSIF, 2016). It is also the largest European SRI retail market – 35% of the total (Vigeo, 2015). Moreover, France has become a world leader in ESG integration in recent years. In fact, the assets including ESG constraints in France were €338 billion in 2015 (EUROSIF, 2016).

We have focused on 2013 because Article 225 of Grenelle II requires all French companies with more than 500 employees to provide non-financial information in their annual report beginning in 2012 and describe their societal commitments for sustainable

development (Eccles and Armbrester, 2011). Therefore, French companies in 2013 are a particularly suitable case for testing our hypotheses because the ESG disclosure requirement could help to collect robust information on CSR issues that seems to be determinant to make sustainability ratings more reliable.

In order to answer the hypothesis of the study, three sources of data are needed: extra-financial data to measure ESG performance as a dependent variable; economic and financial data as control variables; and corporate governance data –board composition and IR department data– to define internal, external and intermediate forces in corporate governance, as independent variables. In the following we explain the sources of information and data.

Extra-financial data

To measure CSR, we rely on the Vigeo database. Vigeo is the leading European extra-financial rating agency. It evaluates CSR performance and risk factors on Environmental, Social and Governance (ESG) criteria of European firms listed on the DJSTOXX 600 and MSCI World indices (595 European firms). It supplies this information notably to investors and asset managers. This database has been used in previous studies—e.g., by Igalens and Gond, (2005), Cavaco and Crifo (2014) and Girerd-Potin et al. (2014)—to examine issues related to sustainability.

Concretely, Igalens and Gond (2005) carry out an exploratory empirical analysis of Vigeo-ARESE⁵ data, concluding that the raw data that this agency has been developing comprises a relatively reliable and appropriate measurement of corporate social performance (CSP) in French companies in the year 2000. Cavaco and Crifo (2014) study the interactions between various dimensions of CSR that mediate the relationship between CSR and financial

⁵ The French sustainability rating agency ARESE was transformed and became Vigeo in 2002. We assume that former ARESE data and Vigeo data are similar as the same methodology applies.

performance. To measure CSR they rely on continuous scores and ratings provided by Vigeo. Girerd-Potin et al. (2014) perform a principal component analysis using the six sub-categories provided by Vigeo database and they highlight three main socially responsible dimensions related to (1) the direct non-financial stakeholders (employee, customers and suppliers), (2) the indirect stakeholders (environment and society) and (3) the financial stakeholders (stockholders and debt holders). These studies demonstrate the suitability of Vigeo database to evaluate CSP.

Vigeo measures CSR on a positive screening basis (identifying companies that are the best performers on various indicators) on six broad dimensions: human rights, environment, human resources, business behavior towards customers and suppliers, corporate governance, and community involvement. For each dimension, there is a subset of criteria describing how the firm manages the particular aspect of CSR. However, not all of the six domains are investigated by Vigeo for the whole sample because before companies are rated, an analysis is done to identify the key CSR issues within the business sector. This determines which criteria in each of the six areas will be activated. Vigeo's analysis then focuses on how each company addresses each criterion in terms of Leadership, Implementation, and Results. The evaluation is realized by Vigeo via a questionnaire, and not by the firms themselves. The ratings model is based on internationally recognized CSR standards. For each criterion, the questionnaire is based on three items and nine approaches. Each criterion is weighted depending on a sectoral analysis done by Vigeo and depending on three considerations: CSR criteria of a sensitive nature for the firm, CSR criteria of a fundamental nature for the firm, and CSR criteria of a vital nature for the firm.

Vigeo provides two types of evaluation of CSR practices: continuous scores and ratings. Scores are established on a scale from 0 to 100 (a firm's absolute score), so that a score of 0 shows little evidence of commitment (poor to very poor guarantee of risk

management), whereas a score of 100 shows an advanced commitment (social responsibility objectives actively promoted). Ratings are attributed depending on how far scores deviate from the average in the sector. In each area the firm may be ranked as the least performing, below average performer, average performer, active performer, or leading performer in the sector. A firm is considered as a CSR leader (ESG sectoral leadership) when the firm adopts a global CSR commitment. This implies not only good ESG performance but also the integration of ESG factors into corporate strategies.

To measure CSR, we rely on continuous scores and ratings provided by Vigeo. The CSR scores are defined over the [0,100] interval. The CSR ratings are represented by a dummy variable that takes the value of 1 (resp. 0) if the firm is ranked above (resp. below) the sectoral average in the corresponding CSR dimension. The interest of such industry-adjusted ratings is that they are applicable to different firms across sectors and comparable across different dimensions.

The multidimensionality of ESG aspects affects the commensurability of corporate social performance (CSP). It makes it difficult to measure several CSP dimensions and to obtain robust overall CSP assessments of companies, considering one single score could imply the possible compensation of unsatisfactory results among different dimensions (Escrig-Olmedo et al., 2014).

Moreover, as highlighted by Cavaco and Crifo (2014), ESG dimensions reflect corporate sustainability towards direct (voluntary) and indirect (involuntary) stakeholders. Our paper therefore studies each dimension (ESG) thereby helping to understand the heterogeneity between each dimension within the company's overall sustainability policy.

We restrict our analysis to four main dimensions which are among the most

commonly measured areas of corporate social performance (see Muller and Kolk, 2010)⁶: governance (CG), human resources (HR) business behavior towards customers and suppliers (CS) and environment (ENV), with the first three factors referring to direct, voluntary, stakeholders and the last one to indirect, involuntary, stakeholders (see Cavaco and Crifo, 2014).

Definition and descriptive statistics of the CSR variables are reported in Table 2.

Economic and Financial data

Regarding firm characteristics, we control for the number of employees (to proxy firm size), return on assets (ROA), and the leverage ratio (debt/equity) according to the previous literature on CSR performance (Waddock and Graves, 1997; McWilliams and Siegel, 2000; Surroca et al., 2010; Cavaco and Crifo, 2014).

The characteristics of a firm's business sector have been considered a key influence on its CSR (e.g. McWilliams and Siegel, 2000). In this study, to control for differences between industries, we include industry dummies according to the sectoral classification provided by INSEE (the French National Statistical Office), which is widely used for the national accounts. The classification includes accounts for the following seven sectors: Manufacturing, Construction, Transport Hotel and Trade, Media and IT, Finance and Real Estate, Health and Education, and Science Services and Administrative Support.

Definition and descriptive statistics of the economic and financial variables are reported in Table 2.

⁶ In the Vigeo database, two other criteria are present: human rights and community involvement. However, those criteria are not activated for all sectors, and therefore not all companies in the sample are systematically rated on those two dimensions. Hence, following the literature and given the possible issue of missing data, we choose not to take those two dimensions into account.

Corporate governance data

We rely on two types of corporate governance data: board composition and IR department data.

BoDs composition data: The board composition variables we use are based on data on directors' independence and expertise (see Cavaco et al., 2016).

To define independence, we use the standard AFEP/MEDEF⁷ code definition: independence is assumed to be compromised if the director of a company⁸ (1) is or has been, within the previous five years, a corporate executive or an employee of that company or of its affiliates; (2) is employed as an executive of another company where any of that company's executives sit on the board; (3) has been a director of the company for more than 12 years; (4) is a representative of a large blockholder (with at least 10% of stock or voting rights); (5) has a significant business relationship with that company or its affiliates (as customer, supplier, banker or auditor); or (6) is related by close family ties to an executive director.

We use past or current professional experience to define expertise (see Anderson et al., 2011; Dass et al., 2014). A director is then defined as an industry-expert if he/she has or has had professional experience in the industry (Cf. definition in Table 2) of the firm where he/she sits. And a director is defined as a general expert if he/she has an academic training in economics and/or finance. We use the proportion of directors on each company's board who are independent, sectoral experts, and general experts.

Considering in particular these two main board characteristics (independence and expertise), the corporate governance-CSR nexus can be studied according to the shareholder

⁷ AFEP (*Association Française des Entreprises Privées*) and MEDEF (*Mouvement des Entreprises De France*) are two associations representative of business at the national level.

⁸ Firms are allowed to adopt a "comply or explain" approach. Most firms apply all criteria of independence. We take here firm disclosure in order to evaluate the impact of independence as defined by practitioners. We do not take into account stricter definitions of independence (see Crespi-Cladera and Pascual-Fuster, 2014 for discussion).

perspective (Harjoto and Jo, 2011) or that of the stakeholder (Hillman et al., 2001).

The shareholder perspective reflects how directors represent shareholders in the decision-making process (Adams et al., 2010). The literature highlights the role of independent directors in protecting minority shareholders' interests and the role of insiders in supporting the CEO. Nevertheless, the stakeholder perspective relies on stakeholder representation inside the boardroom (Hillman et al., 2001) and involves more broadly the stakeholders in the decision-making process (Aglietta and Reberioux, 2005). From this perspective, the selection of outside members will provide more resources, information, and legitimacy to the board.

The French model is defined as a hybrid where both shareholders' and stakeholders' demands may be directly taken into account, with board composition thereby reflecting internal (inside directors), external (independent and general experts directors) and intermediate (sectoral expert directors) forces (Crifo and Reberioux, 2016).

Moreover, there is an increasing interest in industry expertise in order to strengthen the board advisory function (Dass et al., 2014). On the one hand, directors depending on their background and their employment do not recognize the same stakeholders, and treat them differently (Wang and Coffey, 1992). On the other hand, the direct representation of stakeholders inside the boardroom acknowledges the firm's interest in the changing demands of various stakeholders.

In our sample, the proportions of independent directors and insiders on the board are 54% and 10% of the observations respectively. Regarding expertise, we have 53% of sectoral experts. Definitions and descriptive statistics of the board members' characteristics are reported in Table 2.

Investors Relations Department (survey data): To gather data on IR departments, we conducted a survey among the companies of our sample (SBF120). For this purpose we contacted each IR department of the CLIFF members, the French Investor Relations Professional Association for the SBF120, and conducted a self-administered web survey.

A self-administered web survey uses internet technology and server-client architecture that does not require the use of an interviewer. The advantages of this technique are the following: (i) it enables the study of a large number of both objective and subjective aspects that are not directly observable (Bourque and Fielder 2002); (ii) a lower cost of data collection (Tourangeau et al., 2004); (iii) comparable response rates with other methodologies (Kaplowitz et al., 2004); (iv) reduced bias that might result from personal characteristics of interviewers (Bourque and Fielder 2002); and reported preference of respondents for the self-administered mode compared to other methodologies (Smyth et al., 2010).

The questionnaire was discussed with many people involved in the matter, and formally tested through a one-hour interview on three IROs in the spring 2014. The questionnaire for the study was made up of 15 items and included four main sections: (1) demographic questions; (2) questions about extra-financial issues; (3) questions related to interaction with external stakeholders, and (4) a set of questions about interaction with internal stakeholders in the fourth section.

The answers to the questionnaire were collected between May and October 2014 (with all questions concerning the year 2013) and the final sample was composed of 41 firms, corresponding to a response rate of 41%, which is rather standard. Definitions of the main characteristics of IROs are reported in Table 1.

Table 1: Investor relations officers' characteristics

Demographic characteristics of the respondents	Frequency (n)	Relative frequency (f)
Age <29	3	7.32%
Age 29-39	12	29.27%
Age 39-49	16	39.02%
Age >49	8	19.51%
Gender (woman/man)	27/14	65.85%/34.15%
Education BA	4	9.76%
Education MA	27	65.85%
Education PhD	10	24.39%
Expertise Finance& Accounting	21	51.22%
Expertise Business & Management	17	41.46%
Expertise Science & others	3	7.32%
Seniority <3 years	11	26.83%
Seniority 3-7 years	12	29.27%
Seniority >7 years	18	43.90%

For every IRO, we obtain the following personal information: age, gender, educational background, professional experience, and seniority. Looking at the present profile of IR teams, they appear to be relatively senior actors, both in terms of age and professional experience in the field. Our sample is 40 years old on average, and a majority has more than seven years of experience in the field (43.90%). In addition, more than two thirds of the sample hold Finance and Accounting degrees (51.22% of the sample) and Business and Management degrees (41.46% of the sample), which testifies to a high level of education (65.85% had obtained a master's degree). According to Hoffmann and Fieseler (2012) a qualified staff and the quality of its activities have a direct impact on a company's perception by investors.

Muller and Kolk (2010) highlight that companies are driven both externally and internally by stakeholders to engage in CSR. In this context, IR teams can help companies to understand the interactions among different stakeholders and firms' strategies.

For Hockerts and Moir (2004), investors are increasingly putting pressure on companies to address CSR issues. The external pressures for CSR integration could motivate companies to consider ESG issues more and may encourage them to incorporate aspects of

ESG into their management strategies (Tian et al., 2015). Two main variables are used from our survey to reflect how IROs perceive and integrate ESG issues in their daily work and how they are influenced by external forces: communication on ESG issues with external stakeholders, and conviction that ESG integration by mainstream investors is based on activist engagement. Those variables prove to be the most discriminating among our set of surveyed IROs.

Considering the first variable, communication on ESG issues with external stakeholders, depending on whether the company is structured on a shareholder-oriented or a stakeholder-oriented governance model, IROs will interact with external stakeholders on financial only or on both financial and extra financial issues.

In the shareholder approach, IROs communicate mostly on financial issues with external stakeholders. In this model, the priority is the expansion or enhancement of engagement with existing shareholders for whom ESG concerns are considered peripheral or anecdotal, therefore IR communication is focused on financial aspects (Marston, 2004). In the stakeholder approach, IROs seek to communicate not only on financial but also on extra-financial ESG issues with external stakeholders including outside investors, rating agencies, proxy advisors or asset managers.

In our sample, 10% of the IROs interact on ESG issues mostly with external stakeholders.

Considering the second variable, the conviction that ESG integration by mainstream investors is based on activist engagement, depending on whether the company is structured on a shareholder-oriented or a stakeholder-oriented governance model, mainstream investors are supposed to look for financial performance only in the shareholder model, and for financial and extra-financial performance in the stakeholder model. Therefore the motivation for mainstream investors to look for ESG performance should be pure personal conviction in the

shareholder model, but also in the stakeholder model.

This argument is supported by several recent studies arguing that investors' values and personal beliefs are increasingly reflected in their investment decisions (Trinks and Scholtens, 2015) and during their engagement process. This is consistent with Chatterji et al. (2009), who distinguish four motivations for investors to look for ESG performance: financial (believing that CSR increases firm performance), deontological (not willing to profit from unethical or heinous actions), consequentialist (rewarding good behavior and providing incentives), and expressive (expressing personal identity to yourself or others).

Our data shows that 10% of IROs consider that the key motivation for mainstream investors to look for strong ESG performance is to implement their convictions.

3.2 Variable description

Definitions and descriptive statistics of the variables are reported in Table 2. All variables are observed for year 2013 (except when specified).

Table 2: Variables definition and descriptive statistics

Variable	Definition	Mean (SD)	Min – Max
CSR Variables			
HR score	Human resources score over [0,100]	47.14 (14.32)	8 –76
ENV score	Environmental score over [0,100]	47.31 (14.21)	10 –77
CS score	Behavior towards customers and suppliers score over [0,100]	42.80 (12.20)	12 –65
CG score	Corporate governance score over [0,100]	48.27 (10.54)	18 –82
LAG HR score	Lagged (1 year) human resources score over [0,100]	43.72 (15.42)	6 –76
LAG ENV score	Lagged (1 year) environmental score over [0,100]	42.21 (15.29)	4 –70
LAG CS score	Lagged (1 year) customers and suppliers score over [0,100]	40.81 (13.02)	7 –67
LAG CG score	Lagged (1 year) corporate governance score over [0,100]	43.83 (10.94)	12 –70
LAG CSR score	Lagged (1 year) CSR score (over six dimensions) over [0,100]	42.97 (11.14)	15 –61
Leader HR	= 1 if HR ranking \geq average in the sector and 0 otherwise	0.83 (0.38)	0 –1
Leader ENV	= 1 if ENV ranking \geq average in the sector and 0 otherwise	0.75 (0.44)	0 –1
Leader CS	= 1 if CS ranking \geq average in the sector and 0 otherwise	0.68 (0.47)	0 –1
Leader CG	= 1 if CG ranking \geq average in the sector and 0 otherwise	0.33 (0.47)	0 –1
Economic and financial variables			
ROA	Return on assets = net profits/total assets	4.07 (8.81)	-36.97– 63.89
Nb employees	Number of employees (/1000)	55.38 (76.53)	0–421.391
Leverage	Total debt over total equity	166.90 (618.41)	0.32–6665.1
Primary	Manufacturing, Energy, Agrifood, Transport, hotels and trade,	0.496 (0.50)	0 –1
Secondary	Construction	0.118 (0.32)	0 –1
Tertiary	Finance real estate, Services, Health and education	0.385 (0.48)	0 –1
Board members variables			
% Independents	Percentage of independent directors on the board	0.54 (0.19)	0 –1
% Insiders	Percentage of insider directors on the board	0.10 (0.10)	0 –0.5
% Sector Experts	Percentage of sector experts on the board	0.53 (0.21)	0.1 –1
% General Experts	Percentage of general experts on the board	0.53 (0.19)	0 –0.889
Investor relations officers ESG variables			
IROs' Convictions	IRO consider that the key motivations for mainstream investors to look for strong ESG performance is to implement their convictions (activist engagement)	0.10(0.30)	0 –1
IROs' Interactions	IRO interacts on ESG issues mostly with external stakeholders	0.10(0.30)	0 –1

Detailed results of the study are presented below: first we present the methodology used (econometric regressions), and in the next section we detail and discuss our empirical results to check whether our hypotheses are maintained or not.

3.3 Econometric model

To test our hypotheses, we run two types of econometric regressions: OLS regressions on absolute ESG scores, and Probit regressions on dummies for ESG sectoral leadership.

The equations are the following:

$$Y_i = \alpha_1 + \beta_1 X_i + \delta Z_i + \gamma_i \quad , i=1..n \quad (1)$$

$$y_i^* = \alpha_1 + \beta_1 X_i + \delta Z_i + \mu_i \quad , i=1..n \quad (2)$$
$$y_i = 1 \text{ if } y_i^* > 0 \text{ , and } 0 \text{ otherwise}$$

Equation (1) corresponds to a linear relationship between CSR performance (ESG scores) as the dependent variable, labeled Y, and a set of independent variables: corporate governance variables (BoDs and IROs variables) labeled X, and control economic and financial company variables (ROA, firm size and Leverage) labeled Z.

System of equations (2) corresponds to a Probit relationship between CSR leadership as the dependent variable, where y is our observed variable indicating if the firm is a sectoral leader on each CSR issue (dummy variable), y* is a latent variable measuring the unobserved gain for a company to be a sectoral leader on each CSR dimension, and X and Z are the independent variables: corporate governance variables (BoDs and IROs variables) labeled X, and control economic and financial company variables (ROA, firm size and Leverage) labeled Z.

A firm is considered as a CSR leader (ESG sectoral leadership) when its score is higher than the sectoral average score of its competitors.

4. RESULTS

4.1 ESG performance and corporate governance

This section first shows the results of OLS regression, and then discusses the main findings.

Tables 3a, 4a, 5a and 6a present the results of the models with ESG performance as the dependent variable. The models have good explanatory power with adjusted-R² around 0.7. Model (1) reports only economic and financial company variables. Model (2) includes BoDs variables and Model (3) incorporates IROs ESG variables.

In Table 3a, we present the estimation results of Equation (1) with environmental performance as the dependent variable.

First, note that the coefficient on previous environmental score (LAG ENV score) is positive and significantly correlated with environmental performance in all three models in Table 3a.

Second, regarding BoDs variables, the percentage of inside directors is positively and significantly related to the company's environmental performance in Models (2) and (3). This suggests that inside directors (corporate executives, employees or directors in business relationships with the company), reflecting an internal governance force, seem to be concerned by environmental issues.

Third, regarding economic and financial performance, the ROA (Return on Assets) is negatively correlated with the environmental score, suggesting that companies' environmental performance may be either a way to compensate for poor financial performance or a costly investment for firms.

In summary, the OLS regression results presented in Table 3a suggest that the

propensity to integrate environmental issues seems positively correlated with past corporate environmental performance and stakeholder-oriented governance variables, and negatively correlated with financial performance.

Table 3a: OLS regressions on environmental score (ENV_score)

Variable	Model 1	Model 2	Model 3
LAG ENV score	0.763*** (0.055)	0.770*** (0.059)	0.764*** (0.060)
% Independents		6.748. (4.251)	7.024 (4.338)
% Insiders		17.100* (8.774)	16.299* (9.051)
% Sector Experts		1.238 (4.008)	1.334 (4.071)
% General Experts		0.008 (5.066)	-0.021 (5.144)
IROs' Convictions			0.528 (2.801)
IROs' Interaction			1.101 (2.531)
ROA	-0.328 (0.206)	-0.246 (0.211)	-0.243 (0.214)
Nb employees	-0.015 (0010)	-0.017 (0.010)	-0.017 (0.011)
Leverage	0.001 (0.007)	0.005 (0.007)	0.006 (0.007)
Constant	20.680*** (3.169)	14.272** (6.271)	14.289** (6.400)

*** p < 0.01; ** p < 0.05; * p < 0.10; standard-errors between brackets.

Sectoral dummies are included in the regressions

As reported in Table 4a, the positive and significant coefficient on the previous human resources score (LAG HR score) is persistent, meaning human resources performance

depends substantially on its own past realizations. Moreover, there is no significant relation between corporate governance aspects and IROs' behavior characteristics/convictions to human resources performance. With respect to the control variables, we find a positive and significant relationship (p-value <0.05) between leverage and human resources score. This is not consistent with previous results showing a negative relationship between CSR performance and debt/equity ratios (e.g. Cavaco and Crifo, 2014). Firms with greater levels of debt have limited resources for investment in CSR policies (Brammer and Pavelin, 2006).

Table 4a: OLS regressions on human resources score (HR score)

Variable	Model 1	Model 2	Model 3
LAG HR score	0.749*** (0.052)	0.747*** (0.059)	0.737*** (0.063)
% Independents		-1.449 (3.952)	-1.465 (4.028)
% Insiders		0.619 (8.289)	0.584 (8.564)
% Sector Experts		2.006 (3.741)	2.485 (3.802)
% General Experts		0.395 (4.667)	0.605 (4.708)
IROs' Convictions			2.505 (2.631)
IROs' Interaction			-0.605 (2.333)
ROA	-0.045 (0.185)	-0.014 (0.195)	-0.007 (0.196)
Nb employees	0.004 (0.010)	0.005 (0.010)	0.006 (0.010)
Leverage	0.013** (0.006)	0.013** (0.007)	0.013** (0.007)
Constant	12.867*** (2.837)	12.368** (5.704)	12.131** (5.758)

*** p < 0.01; ** p < 0.05; * p < 0.10; standard-errors between brackets.
Sectoral dummies are included in the regressions

Regarding the customers and suppliers' performances (Table 5a), the conclusions are similar to the previous category (HR score). Once again, it is important to note that current CS performance is positively and significantly correlated, at least at a 1% level, with previous customers and suppliers scores (LAG CS score). Regarding corporate governance aspects, the

relationship between the percentage of general experts sitting on the company's board and the CS score is significantly positive (model (2) and (3)) at the 10% level, suggesting that the presence of general experts directors promote CS performance. Hence, Table 5a shows that CS performance is not well predicted by corporate governance variables, IROs' behavior characteristics/ convictions and control economic and financial company variables.

Table 5a: OLS regressions on customers and suppliers score (CS score)

Variable	Model 1	Model 2	Model 3
LAG CS score	0.712*** (0.064)	0.710*** (0.066)	0.693*** (0.066)
% Independents		3.549 (4.129)	4.402 (4.103)
% Insiders		-6.131 (8.438)	-8.358 (8.432)
% Sector Experts		0.281 (3.889)	0.706 (3.851)
% General Experts		9.284* (4.797)	9.722** (4.741)
IROs' Convictions			3.456 (2.675)
IROs' Interaction			3.394 (2.355)
ROA	-0.100 (0.196)	-0.087 (0.202)	-0.060 (0.199)
Nb employees	-0.002 (0.010)	-0.001 (0.011)	-0.002 (0.011)
Leverage	0.006 (0.007)	0.003 (0.007)	0.004 (0.007)
Constant	13.415*** (3.250)	6.201 (6.104)	5.536 (6.030)

*** p < 0.01; ** p < 0.05; * p < 0.10; standard-errors between brackets.
Sectoral dummies are included in the regressions

From a corporate governance (CG) perspective, Table 6a presents the regression results linked to corporate governance performance (CG score). As for the previous variables, corporate governance performance is significantly and positively related to past corporate governance scores (p-value 0.01). Furthermore, we observe a positive and significant relationship between the proportion of independent directors and governance performance at least at a 5% level. This might explain why most national corporate governance codes have strongly focused on board independence as a key element of good governance (see e.g. Crifo and Reberieux, 2016). It is also important to point out that there is a positive, significant correlation (p-value <0.05) between IROs' interaction on ESG issues with external stakeholders and 'CG score'.

Previous studies show that boards of directors with a high proportion of independent directors tend to facilitate voluntary disclosure with external stakeholders (Donnelly and Mulcahy 2008; Li et al. 2008). Our findings provides supporting evidence that firms that perform better on corporate governance show a high interaction of their IROs departments with external stakeholders.

With respect to the control variables, we find a negative and significant relationship between firm size and corporate governance score.

Table 6a: OLS regressions on corporate governance score (CG score)

Variable	Model 1	Model 2	Model 3
LAG CG score	0.727*** (0.062)	0.660*** (0.075)	0.676*** (0.074)
% Independents		9.529** (3.835)	10.247*** (3.776)
% Insiders		8.713 (7.404)	6.453 (7.332)
% Sector Experts		2.425 (3.359)	2.209 (3.315)
% General Experts		1.068 (4.165)	1.101 (4.108)
IROs' Convictions			-1.074 (2.286)
IROs' Interaction			4.684** (2.035)
ROA	-0.161 (0.171)	-0.130 (0.175)	-0.112 (0.173)
Nb employees	-.018** (0.009)	-0.019** (0.009)	-0.023*** (0.009)
Leverage	-0.004 (0.006)	-0.002 (0.006)	-0.001 (0.006)
Constant	18.444*** (3.407)	13.688** (5.687)	12.702** (5.662)

*** p < 0.01; ** p < 0.05; * p < 0.10; standard-errors between brackets.
Sectoral dummies are included in the regressions

Our first set of results on CSR scores suggest that, apart from very few exceptions, corporate sustainability performance is not well predicted by corporate governance variables, whether based on BoDs or IROs characteristics, and control company variables. However, these preliminary results should be taken with caution. In fact, as put forward by Brammer and Pavelin (2006), the salience of each stakeholder group varies across industries; therefore corporate sustainability measurement should be subject to notable differences across sectors.

In turn, to account for differences across sectors in the corporate sustainability–corporate governance relationship, we will use in our estimations industry-adjusted CSR performance rather than CSR continuous scores. Such a measure allows comparisons across sectors and across various ESG dimensions. Moreover, contrary to CSR scores, they cannot be affected by potential multicollinearity due to correlation across scores (see Cavaco and Crifo, 2014).

4.2 ESG leadership and corporate governance

To rely on industry-adjusted CSR performance rather than CSR scores, we now use the company’s ESG sectoral leadership variables. This implies re-estimating our models on a binary variable that takes the value 1 if the company is a sectoral leader on the ESG dimension considered and 0 otherwise, by means of a Probit regression (see equation 2).

Results are reported in Tables 3b, 4b, 5b and 6b with ESG sectoral leadership as the dependent variable. Model (1) reports only economic and financial company variables. Model (2) includes BoDs variables and Model (3) incorporates IROs ESG variables. These models are all based on robust cluster variance estimator.

Table 3b reports the results of Probit regressions of environmental leadership (Leader ENV) and corporate governance aspects and control economic and financial company variables.

First, we can observe that environmental leadership is significantly and positively related to past environmental scores at the 1% level in Models (1) to (3). This result, consistent with that of Chatterji et al. (2009), implies that a good past environmental performance may explain current environmental performance.

Regarding board characteristics, in Models (2) and (3), there is a negative but not significant relationship between the proportion of independent directors, general expert director and environmental sectoral leadership. In contrast, on the one hand, there is a positive and significant relationship between the percentage of inside directors and environmental leadership. This evidence supports the idea that inside directors (H1) are more likely to work looking for good results in environmental terms. On the other hand, we see that there is a negative and significant relationship between the share of sectoral experts in the boardroom and environmental leadership (p-value <0.05). In other words, internal governance forces (percentage of inside directors) have a positive impact and intermediate governance forces (proportion of sectoral expert directors), have a negative impact on environmental leadership, which validate hypotheses 1 and 3 for two board level variables (insiders and sectoral experts). These findings are consistent with previous literature indicating that board governance characteristics have an impact on strong environmental performance. Specifically, De Villiers (2011) finds evidence of higher environmental performance in firms with higher board independence, considering that level of independence is generally related to the proportion of inside directors to outside directors on the board.

Regarding IR departments' variables, our results show that there is a positive correlation between IROs' Convictions and 'Leader ENV' while there is a negative correlation between IROs' interaction on ESG issues with external stakeholders and 'Leader ENV'. Hence, it seems that IROs' external communication on corporate sustainability is negatively related to companies' environmental performance. However, some recent literature documents a positive association between good environmental performance and environmental disclosure (Clarkson et al., 2008; Cormier et al., 2011). Others, such as Walls et al. (2012), highlight that shareholder activism is weakly and negatively associated with environmental strengths.

Regarding the sign of the relationship between environmental sectoral leadership and

financial performance, we see that a high financial performance (ROA) has a negative impact on the environmental sectoral leadership. Environmental threats seem to be more important for poor economic performers. This result is consistent with the work of Peng et al. (2014), showing that firm financial performance measured by return on assets is negatively correlated to firm CSR engagement assessed by the DJSI index as of 2010. However, this is not consistent with a number of studies that have shown that firms with better environmental performance experience superior economic performance (Bansal and Clelland, 2004; Sharfman and Fernando, 2008).

Finally, we find a positive and significant effect for firm size (number of employees/1000). This result is consistent with the literature showing that smaller firms might invest less in CSR than larger firms (Lepoutre and Heene, 2006).

Table 3b: Probit regressions on environmental sectoral leadership (Leader ENV)

Variable	Model 1	Model 2	Model 3
LAG ENV score	0.108*** (0.027)	0.185*** (0.059)	0.217*** (0.073)
% Independents		-1.752 (1.716)	-1.995 (1.841)
% Insiders		4.756* (2.747)	6.253* (3.210)
% Sector Experts		-4.090** (1.886)	-4.596** (2.083)
% General Experts		-2.027 (1.888)	-1.743 (2.032)
IROs' Convictions			0.960 (1.474)
IROs' Interaction			-1.606 (1.406)
ROA	-0.068 (0.056)	-0.113* (0.068)	-0.097 (0.074)
Nb employees	0.018* (0.010)	0.038** (0.018)	0.040** (0.019)
Leverage	-0.001 (0.003)	-0.002 (0.004)	-0.001 (0.004)
Constant	-2.891*** (0.936)	-1.016 (2.055)	-2.037 (2.347)
Log likelihood	-20.610	-14.132	-13.496
LRChi2	70.67	80.28	81.55
Prob > chi2	0.000	0.000	0.000
Pseudo R2	0.632	0.740	0.751
Nb. of obs.	99	97	97

*** p < 0.01; ** p < 0.05; * p < 0.10; standard-errors between brackets.

Sectoral dummies are included in the regressions

Table 4b displays the Probit regression analysis for human resources sectoral leadership. As for previous estimations, the set of instruments is composed of the dependent variable, the 'Leader HR' (dummies), and the control variables.

Past human resources performance appears positively and significantly correlated with the human resources leadership. This is consistent with Lepoutre and Heene (2006). Moreover, two external governance variables referring to board composition variables and IROs' propensity to integrate ESG issues appear to be negatively but not significantly correlated with 'Leader HR': the percentage of independent directors, the percentage of general expert directors, and the convictions of IROs. In other words, internal governance forces have no impact, whereas external governance forces have a negative although no significant impact on human resources leadership (direct stakeholders), which invalidate hypotheses 1 to 3 for human resources.

Table 4b: Probit regressions on human resources sectoral leadership (Leader HR)

Variable	Model 1	Model 2	Model 3
LAG HR score	0.072*** (0.018)	0.077*** (0.023)	0.080*** (0.023)
% Independents		0.040 (1.279)	-0.068 (1.295)
% Insiders		1.237 (2.176)	0.879 (2.369)
% Sector Experts		0.118 (1.052)	0.034 (1.086)
% General Experts		-1.716 (1.546)	-1.745 (1.572)
IROs' Convictions			-0.596 (1.065)
IROs' Interaction			0.747 (1.106)
ROA	-0.019 (0.050)	-0.005 (0.054)	-0.013 (0.055)
Nb employees	0.009 (0.007)	0.010 (0.007)	0.010 (0.007)
Leverage	0.001 (0.003)	0.004 (0.004)	0.004 (0.005)
Constant	-1.373* (0.788)	-0.789 (1.544)	-0.681 (1.588)
Log likelihood	-25.193	-22.621	-22.322
LRChi2	40.42	41.63	42.23
Prob > chi2	0.000	0.000	0.000
Pseudo R2	0.445	0.479	0.486
Nb. of obs.	99	97	97

*** p < 0.01; ** p < 0.05; * p < 0.10; standard-errors between brackets.
Sectoral dummies are included in the regressions

Regarding customers and suppliers, Table 5b indicates that there is no statistical difference between customers and suppliers' sectoral leadership and corporate governance variables and economic and financial variables. This invalidates our hypotheses 1 to 3 for

customer and supplier responsible leadership.

Table 5b: Probit regressions on customers and suppliers sectoral leadership (Leader CS)

Variable	Model 1	Model 2	Model 3
LAG CS score	0.093*** (0.020)	0.092*** (0.021)	0.092*** (0.021)
% Independents		1.470 (1.106)	1.523 (1.140)
% Insiders		-2.094 (2.132)	-2.241 (2.226)
% Sector Experts		0.437 (0.975)	0.423 (0.981)
% General Experts		0.197 (1.235)	0.186 (1.240)
IROs' Convictions			-0.066 (0.724)
IROs' Interaction			0.143 (0.608)
ROA	-0.018 (0.049)	-0.027 (0.056)	-0.029 (0.059)
Nb employees	0.004 (0.004)	0.004 (0.004)	0.004 (0.004)
Leverage	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)
Constant	-2.648*** (0.837)	-3.280** (1.592)	-3.240** (1.604)
Likelihood ratio	-35.176	-31.048	-31.015
LRChi2	52.72	57.90	57.96
Prob > chi2	0.000	0.000	0.000
Pseudo R2	0.428	0.483	0.483
Nb. of obs.	99	97	97

*** p < 0.01; ** p < 0.05; * p < 0.10; robust standard-errors between brackets.
Sectoral dummies are included in the regressions

Finally, in Table 6b, Probit regressions show that corporate governance sectoral leadership is significantly positively related to past scores. This is consistent with Jo and Harjoto (2012), who show that the lagged value of the CG score positively influences CSR scores.

With respect to board-level variables, we find that the share of inside directors, reflecting an internal governance force, is positively and significantly correlated with corporate governance sectoral leadership. On the other hand, the coefficient of general experts sitting on the company's board, reflecting an external governance force, is negatively and significantly linked to the CG sectoral leadership. Moreover, the variable IROs' convictions is negatively and significantly ($p\text{-value} < 0.10$) related to the CG sectoral leadership.

In other words, internal governance forces have a positive and external governance forces have a negative impact on corporate sustainability, which validates our hypotheses 1, 2 and 3, for two board level variables (insiders and general experts in the boardroom).

Table 6b: Probit regressions on corporate governance sectoral leadership (Leader CG)

Variable	Model 1	Model 2	Model 3
LAG CG score	0.053*** (0.016)	0.059*** (0.020)	0.064*** (0.021)
% Independents		0.927 (0.859)	1.119 (0.894)
% Insiders		3.401** (1.719)	3.170* (1.802)
% Sector Experts		1.080 (0.788)	0.998 (0.803)
% General Experts		-1.490 (0.933)	-1.810* (0.985)
IROs' Convictions			-1.095* (0.581)
IROs' Interaction			0.677 (0.461)
ROA	-0.054 (0.039)	-0.064 (0.044)	-0.065 (0.045)
Nb employees	-0.001 (0.002)	-0.002 (0.002)	-0.002 (0.002)
Leverage	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.002)
Constant	-2.502*** (0.857)	-3.278** (1.415)	-3.255** (1.470)
Log pseudolikelihood	-54.077	-49.180	-46.566
LRChi2	17.88	24.66	29.88
Prob > chi2	0.007	0.006	0.003
Pseudo R2	0.142	0.200	0.243
Nb. of obs.	99	97	97

*** p < 0.01; ** p < 0.05; * p < 0.10; robust standard-errors between brackets.
Sectoral dummies are included in the regressions

A first test of the validity of the obtained results is to re-estimate our models, excluding the variables related to the interactions of IROs that could be a source of endogeneity bias. In fact, the dependent variable, leadership or performance on ESG issues, and the interactions of IROs on ESG issues with external stakeholders are two measures of corporate sustainability behaviors⁹. Comparing Model (2) and (3) in Tables 3a to 6b, show that the estimated coefficients appear reasonably robust to this exclusion.

A second test relates to the potential endogeneity bias resulting from IROs answering (or not) the questionnaire on their interactions on ESG issues with external stakeholders. To do so, we have re-estimated our models, taking into this potential bias. Results (available upon request) are robust to the inclusion of a variable capturing whether the IROs has replied or not to the IROs questionnaire on their interactions on ESG issues with external stakeholders.

However, a deeper investigation of endogeneity of IROs' interaction with external stakeholders on ESG issues is necessary and reported in the following section.

4.3. Endogeneity issue and marginal effects

Our empirical approach based on regressions with a binary outcome (ESG sectoral leadership) presents special difficulties in terms of endogeneity, particularly when the endogenous regressor of interest is also binary, which is the case for our variable IROs' interactions with external stakeholders on ESG issues. To address this issue, we rely on the maximum-likelihood bivariate Probit or Biprobit approach (Heckman, 1978).

Our results¹⁰ show that the correlation coefficient between the bivariate outcomes of

⁹ IROs convictions are not a measure of corporate sustainability performance.

¹⁰ We do not report here the bivariate outcome model coefficients for all the estimations, only for the bivariate Probit models that are significant, but they are available upon request.

customer and supplier sectoral leadership and IROs' external interaction on ESG issues is not significant, and the results from separate Probit models are almost identical to those from bivariate Probit model. The same applies to the correlation coefficient between the bivariate outcomes of human resources leadership and IROs' external interaction on ESG issues, and the correlation coefficient between the bivariate outcomes of corporate governance leadership and IROs' external interaction on ESG issues. In those three cases, there is thus no need to perform the bivariate Probit model and separate Probit regressions are valid

However, the same does not hold for the environmental dimension. In this case, the correlation coefficient between the bivariate outcome of ENV leadership and IROs' interaction on ESG issues is negative and significant, meaning that the bivariate Probit model is adapted.

We thus report in Table 7a the bivariate outcome model coefficients for environmental sectoral leadership with IROs' interaction with external stakeholders on ESG issues. And in Table 7b we report the outcome model coefficients of the separate Probit models for customers and suppliers sectoral leadership, human resources sectoral leadership, corporate governance sectoral leadership and IROs' interaction with external stakeholders on ESG issues.

Table 7a: Biprobit regressions on Environmental sectoral leadership, and IROs' interaction with external stakeholders on ESG issues

Variable	Biprobit Leader ENV	IROs' interaction
LAG ENV score	0.188*** (0.059)	0.052** (0.023)
% Independents	-1.566 (1.753)	-1.764 (1.129)
% Insiders	4.627* (2.742)	5.557** (2.599)
% Sector Experts	-4.072** (1.865)	0.988 (1.147)
% General Experts	-1.698 (1.764)	1.187 (1.299)
IROs' Convictions	0.197 (1.181)	0.933 (0.622)
ROA	-0.102 (0.072)	0.022 (0.065)
Nb employees	0.035** (0.017)	0.004 (0.003)
Leverage	-0.001 (0.004)	-0.001 (0.002)
Constant	-1.538 (1.914)	-5.455** (2.204)
rho	-1*** (0)	-1*** (0)
Log pseudolikelihood		-40.318
Wald Chi2		31.84
Prob > chi2		0.080
Nb. of obs.		97

p***p < 0.01; ** p < 0.05; * p < 0.10; robust standard-errors between brackets.
Sectoral dummies are included in the regressions

Table 7b: Probit regressions on social sectoral leadership (Leader HR, Leader CS and Leader CG), and IROs' interaction with external stakeholders on ESG issues

Variable	Probit Leader CS & IROs' interaction		Probit Leader HR & IROs' interaction		Probit Leader CG & IROs' interaction	
	Probit Leader HR	IROs' interaction	Probit Leader CS	IROs' interaction	Probit Leader CG	IROs' interaction
LAG HR score	0.078*** (0.023)	0.036** (0.017)				
LAG CS score			0.093*** (0.021)	0.010 (0.018)		
LAG CG score					0.059*** (0.020)	-0.026 (0.022)
% Independents	-0.005 (1.283)	-1.651 (1.111)	1.491 (1.128)	-1.293 (1.032)	0.976 (0.875)	-0.898 (1.075)
% Insiders	1.341 (2.200)	4.605** (2.096)	-2.112 (2.143)	2.924 (1.820)	3.406* (1.767)	1.969 (1.833)
% Sector Experts	0.042 (1.082)	0.140 (1.096)	0.431 (0.977)	0.389 (1.017)	0.986 (0.793)	0.366 (1.022)
% General Experts	-1.666 (1.556)	0.922 (1.175)	1.190 (1.239)	0.390 (1.137)	-1.649* (0.953)	-0.056 (1.154)
IROs' Convictions	-0.334 (1.062)	0.719 (0.517)	-0.071 (0.726)	0.854 (0.522)	-0.935 (0.569)	0.913* (0.526)
ROA	-0.009 (0.055)	0.013 (0.058)	-0.028 (0.059)	-0.007 (0.053)	-0.066 (0.045)	-0.022 (0.055)
Nb employees	0.010 (0.007)	0.003 (0.003)	0.004 (0.004)	0.003 (0.002)	-0.002 (0.002)	0.004* (0.002)
Leverage	0.004 (0.004)	-0.0003 (0.002)	0.001 (0.002)	-0.0002 (0.002)	-0.001 (0.001)	-0.0004 (0.002)
Constant	-0.776 (1.540)	-3.691** (1.707)	-3.275** (1.594)	-2.282 (1.585)	-3.043** (1.452)	-0.529 (1.616)
Log pseudolikelihood	-22.573	-28.975	-31.043	-31.258	-47.642	-30.699
LR Chi2	41.72	18.48	57.91	13.91	27.73	15.03
Prob > chi2	0.000	0.071	0.000	0.238	0.004	0.181
Pseudo R2	0.480	0.242	0.483	0.182	0.225	0.197
Nb. of obs.	97	97	97	97	97	97

*** p 0.01; ** p 0.05; * p 0.10; robust standard-errors between brackets.

Sectoral dummies are included in the regressions

We observe that ESG performance is persistent (positive and significant correlation between ESG past score and ESG sectoral leadership). We also see that the percentage of inside directors is positively and significantly correlated with environmental and governance sectoral leadership; the proportion of sectoral expert directors is negatively and significantly correlated with environmental leadership; and the proportion of general expert directors is negatively and significantly correlated with governance leadership.

Finally, we have a positive and significant relationship between environmental and human resources past performance and IROs' interaction on ESG issues with external stakeholders; a negative relationship between independent directors and IROs' interaction on ESG issues with external stakeholders; and a positive and significant relationship between inside directors and IROs' interaction on ESG issues with external stakeholders. Note also that IROs' interaction is positively correlated with IROs' conviction about activist engagement.

Finally, in terms of marginal effects, we have the following results¹¹:

Internal governance forces:

- A one unit change in the percentage of insiders in the board room increases the probability of being an environmental sectoral leader by 59% and increases the propensity of IROs in HR leader companies to interact with external stakeholders on ESG issues by 76%.

External governance forces:

- A one unit change in the percentage of independent directors decreases the propensity of IROs in HR leader companies to interact with external stakeholders on ESG issues by 27%.
- A one unit change in the IRO's belief that the key motivations for

¹¹ Only significant coefficients are reported here. Full tables of marginal effects are available upon request.

mainstream investors to look for strong ESG performance is to implement their convictions increases the propensity of IROs in CS leader companies to interact with external stakeholders on ESG issues by 15%.

To sum up our results and discuss our hypotheses, we have obtained the following results (Table 8).

Table 8: Summary of the main regression results (tables from 3a to 6b)

Dependent variable	Positively and significantly related to...	Negatively and significantly related to...
Environmental performance (ENV score) is	- past ESG scores - the proportion of insiders in the board room	
Environmental sectoral leadership (Leader ENV) is	- past ESG scores - the proportion of insiders in the board room - firm size	- the proportion of sectoral experts in the board room - financial performance (ROA)
Human Resources performance (HR score) is	- past ESG scores - leverage	
Human resources sectoral leadership (Leader HR) is	- past ESG scores	
Customers and suppliers performance (CS score) is	- past ESG scores - the proportion of general experts in the board	
Customers and suppliers sectoral leadership (Leader CS) is	- past ESG scores	
Corporate governance performance (CG score) is	- past ESG scores - the proportion of independent directors - IROs' external communication on CSR	- firm size
Corporate governance sectoral leadership (Leader CG) is	- past ESG scores - the proportion of insiders in the board room	- the proportion of general experts in the board room - IRO's conviction about investors activist engagement on ESG issues

Good results in terms of company environmental performance are positively and significantly related to the proportion of insiders in the board room (internal governance force) and negatively related to the proportion of sectoral experts in the board room (intermediate governance force).

Good results in terms of companies' governance performance are positively and significantly related to the proportion of independent directors (external governance force) and insiders in the board room (internal governance force). However, a higher proportion of general experts in the board room (external governance force) is negatively and significantly correlated to companies' governance performance. In addition, investor relations officers' beliefs that corporate sustainability is primarily driven by investors' ethical values (external force) appears negatively related to companies' governance performance.

In terms of hypotheses 1 to 3, corporate sustainability appears positively related to inside forces (inside directors) and negatively related to outside forces (general expert directors and investors' activist engagement) as follows:

Table 9: Hypothesis confirmed

	Hypothesis 1: Positive internal forces	Hypothesis 2: Negative external forces	Hypothesis 3: Neutral intermediate forces
Environmental leadership	Yes for: - insiders in the BoD	No	Yes - sectoral experts in the BoD
Human resources leadership	No	No	No
Customer and suppliers leadership	No	No	No
Corporate governance leadership	Yes for: - insiders in the BoD	Yes for: - general experts in the BoD - IRO conviction on investors' activist engagement on ESG	Yes

5. DISCUSSION AND CONCLUSION

The management of financial assets that integrate some ESG criteria is developing quickly around the world and involves all kinds of actors (asset owners, asset managers, brokers, analysts, etc.). In this article we make the assumption that boards of directors and investor relations officers play a key role in understanding the interactions between financial markets and firms' strategies, and especially corporate sustainability

Hockerts and Moir (2004) suggest that IROs emerge as an important driver of corporate transformation. They propose that further research be conducted to explore more broadly the role of IROs as an interface between financial markets actors and their firm's top executives, with whom they have close relationships. Moreover, as a key interface between the firm and the market, IROs have to realize the need to integrate ESG concerns into their activities. The rapid development of the "integrated report" concept (IIRC, 2015) is another illustration of the challenge faced by these IR departments: producing not only information on financial performance, but also on ESG performance with a rationale meeting the needs of both shareholders and stakeholders.

Nevertheless, from our knowledge, the literature still does say much about how both IROs and BoDs have impact on corporate sustainability.

In this context, from a theoretical perspective, this study provides an original contribution to the existing literature studying how BoDs and IROs integrate ESG issues into their practices to understand how such a key component of the company's governance structure might be a driver of CSR strategies and results. That is, this paper studies whether ESG performance is correlated to internal, external and intermediate governance mechanisms.

Uncovering this information will help to explain the role played by IROs and BoDs in enhancing CSR performance and ESG integration.

To that end, an econometric analysis of the 120 biggest French companies has been developed based on three sources of data: extra-financial, economic and financial, and corporate governance data –board composition and IR department data–. Therefore, our work contributes to the literature by combining elements of corporate governance and CSR, which could provide a new perspective to understand the CSR and firm performance relationship, considering the integration of ESG issues into IR practices to a key component of the company's governance structure.

Our results show that corporate governance has an ambiguous impact on corporate sustainability because of opposing forces: internal, external and intermediate. Concretely, corporate sustainability appears positively related to inside forces (inside directors) and negatively related to outside forces (general expert directors and investors activist engagement).

Analyzing each dimension of corporate sustainability, it is possible to conclude that on the one hand, a higher proportion of inside directors is positively correlated to better results in terms of company's environmental and governance performance; a higher proportion of general experts in the board room is negatively correlated to companies' governance; and a higher proportion of sectoral experts in the board room is negatively correlated to companies' environmental performance. Accordingly, we conclude that several characteristics of BoDs (e.g. inside directors) play a key role to determine environmental and governance corporate performance. The results of this study suggest that it is necessary to better equip inside directors to address corporate sustainability issues and to take more of a leadership role in this area.

On the other hand, IROs' beliefs that corporate sustainability is primarily driven by

investors' ethical values appear negatively related to companies' corporate governance performance. Moreover, the results of the questionnaire show that the integration of ESG factors by IROs is still in progress, and that much remains to be done to integrate ESG issues into traditional IR practices.

Therefore, these findings create new opportunities for academics for further research related to the relationships between corporate sustainability, measured by ESG performance, and two main corporate governance mechanisms: BoDs and IROs.

From a practical perspective, the results of this study could be of interest to shareholders, boards, and regulators by highlighting the BoDs and IROs characteristics they should consider if they want to enhance corporate environmental performance.

Moreover, the results can be used by decision makers in organizations –who face growing demands and pressures for moving toward more sustainable business practices (Hahn et al., 2017)– in different ways: 1) to encourage BoDs and IROs (practitioners) to integrate ESG issues in their practices and in the strategic management of their firm; 2) to foster more interactive dialogue between a company and its investors on ESG issues; and 3) to develop familiarity with the ESG issues that are most important for their business and to create a proactive strategy for communicating with investors on ESG performance.

As with any empirical research, we understand that this study has a number of limitations that might open new areas for future research. Firstly, empirical results are conditioned by the sample and the availability of information (only 41% of IROs responded to the survey). Secondly, the CSR variables used could determine the final findings of our study. CSR is a multidimensional concept which makes it difficult to measure corporate social performance (CSP) and to obtain a robust overall CSP assessment of companies (Escrig-Olmedo et al., 2014). Thirdly, we have studied two main components of companies' governance structure. Future research could focus on other attitudes, such as the nationality of

directors or their level and kind of education. Finally, larger samples are needed to test the robustness of the results, and for this reason future work will seek to extend the study of the ESG integration into IR departments from France to a European level. Hence, further research is strongly encouraged along the issues highlighted in this paper.

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