Do the ESG scores help to select the most successful companies?

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Abstract:

Financial performance, the main purpose for the investors, is easily measured by financial reporting. On the other hand, its numerous causes, for example the combination of the knowledge and the acts of the employees of the company, remain anonymous and are not reported. This article uses the ESG scores measured by financial analysts and portfolio managers of a French SRI fund to assess the respective influences of environmental, social, governance activities in order to select the most successful companies. For that, these scores are combined with a set of financial indicators of 143 European listed companies, collected from the database of the SRI Fund. The Companies are followed over a period of 5 years. Governance scores are significant but not those related to the environment and social activities. In order to explain the discriminant power of governance, its scores are broken down into sub scores. The tests are significant for financial communication: the reliability of published information, the transparency, quality and stability of the management team as well as for organizational characteristics such as the separation of tasks and the quality of internal control. The results confirm the classification of companies in the two chosen categories which differ in their level of financial performance. The results suggest that governance activities are highly valued by financial analysts. This should encourage business leaders and their teams to put in place an effective governance policy. The argument is equally strong for practitioners, especially portfolio managers, who should not underestimate governance issues in their search of the most successful companies.

Key words *Environmental score, Social score, Corporate governance score, socially responsible fund, most successful companies.*

Introduction

What are the respective weights of environmental, social and governance performance scores to select the most successful companies?

The search for excellence and performance is a continuous concern for investment funds. Over the last 40 years, this led to numerous and sometimes inconclusive studies having searched the link between CSR practice and financial performance. For example, Meng Ling (2006), Managi, Okimoto, Matsuda (2012); 0oi, Lajbcygier (2013), Rathner (2013), have worked on the failure of SRI funds to beat the market, and Chatterji, Levine, Toffel, (2009) and Chatterji (2016) discussed the reliability of the information available on the subject.

Financial information has long been recognized as having information content by market participants but it now appears that with more than 23 trillion invested in CSR investments at the global level, and more than 2 trillion, one third of the total investment managed by 289 ETF and index funds under ESG mandates in France, that information published on CSR facilitate investment decisions. Early mentioned by Capon et al. (1990), through their extensive review of socially responsible investments, and the Renneboog et al. (2008) study for the US, the UK, and other European countries, CSR and governance policies have become important as proven by the many decrees and laws passed in OECD countries over the past 40 years, and the increasing attention paid by companies and stakeholders to the GRI and the IIRC reports. Thus, assuming the search for financial performance by financial analysts, the research question investigates the link between ESG performance scores and their specific influence on the identification of most successful companies (MSC) for portfolios 'selection.

Recently several meta-analysis by Malik (2014), Margolis et al. (2009) and Orlitzky et al. (2003), have invited the academic community to accept the idea of a positive relationship between ESG and financial performance. The contribution of this research on the subject is threefold. First, Europe and particularly France and Germany form the general context of the present study. Europe has imposed the highest standards in the domain and is often considered as a pioneer for CSR. According to the environmental performance index calculated by Yale and Columbia universities, 18 of the 20 first countries of their ranking in 2012 are European. Since the creation of Eurosif and the law on New Economic Regulation in France in 2001, there has been a growing flow of demanding regulations on CSR for companies. Take as examples the Principles for CSR investment (2006), the Eurosif transparency Code (2008), the law on Bank and Financial Regulation (France 2010), the Law Grenelle II § 224 requiring mandatory declaration of their use of ESG criteria by investment companies (France 2011), the EU directive on reporting demanding non-financial disclosures (2014), the governmental certificates on CSR, and the French law on energetic transition (2015 § 173) which extended the reporting obligations of the listed companies to all companies employing more than 500 people, having 100 million EUR annual turnover and also to the institutional investors. Second, we use a unique sample and distinct ESG scores to test whether CSR policies can differentiate most successful companies (MSC) and less successful companies (LSC). This prospective approach tries to know if it is possible, several years in advance, at the beginning of a given period, to select the most successful companies (MSC) and then use their ESG scores to check the persistence of their financial performance during the next period, here 2009- 2013. The fact that the ESG measures are not aggregated and represent distinct scores help to test the explanation power of each of these scores.

Third, this research covers the period of 5 years 2009-2013 and uses a unique information source. It is based on ESG scores of a single private SRI fund. The scores calculated by the fund are exclusively tailored to prepare investment decisions and are not disclosed externally. The Fund has repeatedly beaten European stock market indexes since the beginning of its ESG approach in 2009. The sample of this research includes many multinational groups, from 17 countries. Most of them are German and French. The sample has been divided into two populations because the study does not search to find a general and linear relationship between aggregated ESG criteria and financial performance. The best performing entities are selected using well known financial performance criteria. Then their ESG scores are considered, along

with their influence on the persistency of financial performance. Regression models are used to explain how the ESG scores are associated with the two sets of companies for performance prediction. The intent is to seize the preoccupation of financial analysts and managers of a single fund, who have to select very successful companies and manage portfolios. The assumption is that the analysts' choices and the success of the Fund may represent the behaviors of the other professional analysts.

The first test relates to which of the three factors: environment, social and governance is the most predictive of a high financial performance. The analysis is further completed by a break-down of the governance score into its sub-scores because it appears to be the most significant driver of financial performance. Then follows a discussion of the findings and their possible usefulness for financial analysts and private investors.

The paper is organized as follows. The next section presents the literature review and the three hypotheses selected. It is followed by a presentation of the research methodology and finally of the results.

1. Literature review and hypotheses

The factors of performance for listed companies have been studied for long. For example, theories of performance were synthesized by Kirby (2005). Collins, Porras and others have attempted to identify, compare, or analyze business practices of the best organizations. De Waal (2012) explained these factors.

In 2002, Frigo, Needles and Powers have studied the link between strategy and value creation with their "return driven strategy" model, again for identification of the financial characteristics of the most successful companies.

They also conducted several studies exploring the connection between strategy, its implementation, and financial performance features for companies of several countries: USA, Australia, India and Turkey (Needles, Powers, Shigaev, Frigo, 2008; Needles, Powers, Shigaev, 2010).

Similarly, in the past decade, a growing number of studies have emphasized the disclosure of non-financial information focusing on its advantages for companies engaged in CSR.

Many insisted on the positive outcomes, some arguing for the reduction of external threats such as governmental regulations (Branco and Rodrigues, 2006), concerns from activists and non-governmental organizations (Fairchild, 2008; Chatterji et al. 2009) and business competition (Surroca et al. 2010). Promoting material efficiency, reduction of energy consumption and waste elimination were suggested by Dhaliwal et al. (2011), Lyon and Maxwell (2008). Several other benefits also flow from CSR policies, creation of intangible capital such as company reputation (Schnietz and Epstein, 2005; Orlitzky, 2003, 2008; Roberts and Dowling, 2002; Hussainay and Salama, 2010), or enhancement of its image (Banker and Mashruwala, 2007; Edmans, 2011).

Some writings consider an improvement of motivation of the work force for attracting talented people (Brammer et al. 2007; Vitaliano, 2010), the signal of good credit ratings (Attig et al. 2013), or investors' willingness to pay a share premium on the shares of companies engaged in CSR activities (Lyon and Maxwell, 2008).

It is therefore not surprising that these drivers of company performance would de facto result in benefits in the financial area. Positive relationships were thus found between CSR and financial performance showing the relevance of this type of information (Cochran and Wood, 1984; Kahneman et al.,1986; Barth and Mc Nichols, 1994; Pava and Krausz, 1996; Posnikoff, 1997; Toms, 2002; Hasseldine et al., 2005; Banker and Mashruwala, 2007; Magness, 2009; Hussainey and Salama, 2010; Surroca et al.,2010; Lev et al., 2010; Edmans, 2011; Dhaliwal et al., 2011). An alternative contribution based on behavioral finance came from Orlitzky (2013) who argued the existence of unexpected and unfavorable consequences of CSR policies on stock market competition.

In fact CSR which combines environmental protection, stakeholder relations and sane governance practices can be considered being at the intersection of several theories: legitimacy theory assimilating CSR activities as an excuse for business leaders; knowledge and resources based theories that pose that CSR policies contribute to build specific assets; the agency theory for which CSR and good governance activities may be perceived as bonding expenditures for managers searching the maximization of their wealth. Ultimately, the usefulness perspective of accounting information also states that CSR policies may have an information content (Scott, 2003). Thus, it seems relevant to assess the predictive effects of the ESG scores on firm ranking, precisely to verify whether company's behavior and activities for environmental protection, social responsibility and governance, influence detection of the best companies (MPC).

Since a long time, emphasis has been placed on urgency and efforts made by companies of all sizes, often constrained by legal requirements, to address the environmental issues. It is then legitimate to test the relationship between the environmental score and financial performance even if the relationship is not yet definitely established (Clemens and Bakstran, 2010), or if found sometimes positive in the European context (Moneva and Ortas, 2010). The following hypothesis is tested:

(H1): There is a positive relationship between the environmental performance score and a high financial performance.

All things equal otherwise, social considerations have grown in influence, since long in France often considered a social country and Germany and to a certain extent in the EU. Good education, increase knowledge and the prompt diffusion of information by modern media and technologies call for more security, protection and motivation for the people employed. The observed trend for improving working conditions is thus easily understandable if companies want to attract and retain talented and qualified people. Following the work by Hatch and Dyer (2004), Kor and Leblebici (2005), Shrader and Siegel (2007), linking financial performance, human capital and competitive advantage, the second hypothesis :

(H2): There is a positive relationship between the social performance score and a high financial performance.

Fifty years ago and before, governance issues were in no way considered a priority by corporations at the end of the Europe reconstruction phase after the destructions of the second

world war. Nowadays, principles like quality of reporting, reliability of the information disclosed, transparency, management quality, CEO compensation, separation of tasks and internal control, democracy in annual general meetings are common and considered of great importance in modern enterprises and this will be increasingly the case. Then, governance characteristics and the way organizations are managed invite to check whether the governance score has a positive influence on financial performance. Johnson and Greening (1999), Berthelot et al. (2010), Bebchuk et al. (2013) studied respectively this subject with different results. This leads to propose:

(H3): There is a positive relationship between the governance score and a high financial performance.

2. Methodology: sample and model

2.1. The sample and the companies' selection process

The research objective aims to identify if ESG performance measurement would help the process of selecting the most successful companies (MSC). In case of a positive response, this will draw investor's attention. The following sections present the sample, the criteria for selecting the MSC companies, the ESG scores and the explicative model.

The sample is one whose companies are followed by the financial analysts of a French asset management firm created in 2006, specialized in SRI, and managing a total investment amount of tens of billions euros. The enterprises were tracked over a period of 5 years, from 2008 to 2013 to identify those showing the best financial performance. From the 283 eligible companies found in the data base at the beginning and after exclusion of insurance, finance and holding entities, the selection retained the 143 companies present over the whole period, whose data were continuously available on the listings of the EURO STOXX 600. Half of them are large European multinationals, with hundreds of subsidiaries and associates, often quoted as the best companies in their industry. The sample is highly representative. The ISR Fund classifies the companies into 5 groups: Consumer Goods, Industry, Health Care, Technology-Media, Telecommunications and Energy (Appendix 1). The SRI activities cover the whole of the EU. All companies are seriously studied according to three metrics: environment, social responsibility and governance. The analysts use all kinds of relevant disclosures and sustainable development reports which differ across countries. The ESG scores given by the analysts rely mainly upon mandatory and voluntary disclosed information and the indicators thereon selected by the Fund. The analysts frequently hear the chief executive officers and the chief financial officers. Updates are done at least each semester or at any time if new information are published.

A selection of companies showing the best financial performance over the whole period is searched. This requires the use of several criteria for their identification whose measurement will always be somehow arbitrary and dependent on the data available.

Given the previous work on MSC companies by Needles and Powers, the decision was made, to use analogous criteria, consistent with usual financial statement analysis: operating performance measured by the ROI, growth rate and return for the shareholders, those dimensions expressing value creation at a rather high level:

• **Exceptional ROI :** For a period of 5 years, the firm's returns (ROI) must have exceeded its cost of capital by 2x or more, proving the efficiency of resource allocation and ability to generate a high profitability.

• **Strong and persisting growth**: For the same period, the company must have stimulated its profitability by reinvesting its gains in herself, as if much like a high interest bank account. This matching between ROI and growth rate should normally translates to rapidly growing economic value added.

. **Permanence of return for the shareholders**: Total returns to shareholders relative to the market index EURO STOXX 600 must be consistent with ROI and growth rate. This characteristic takes into consideration "embedded expectations" by the analysts and it is expressed by a professional judgment.

The sample was thus split into two groups: the most successful companies (MSC) and the others (LSC). The criteria were: the cash flow return on investment (Madden, 1999) the assets growth rate for the 2009-2013 period and the total shareholder return defined as follows:
- Cash flow return on investment (CFROI) must be twice as high as the average cost of capital over the same period;
- Assets growth rate (AGR) must be higher than European average GDP growth rate used as a benchmark;
- Total shareholder return (TSR) must exceed 5 years average of the Stoxx Europe 600 index.

For each company, the TSR is compared to the mean of the TSR STOXX Europe 600 index over the whole period. The STOXX Europe 600 Index, which the Fund uses, represents large, mid and small companies' capitalizations across 18 European countries. Its data are considered as a benchmark for the companies' TSR of the SRI Fund. The growth rate for total assets is compared to the average growth rate of the EU GDP using World Bank statistics for GDP and Thomson Financials for the assets growth rate. Finally, using Thomson Financials data, the CFROI is compared to twice the cost of capital (Gebhardt, 2002) calculated with 3% risk free rate and 6% market premium for all these years. The bêta coefficient, calculated using Datastream data for the five-year period, is the unlevered bêta in order to cancel the debt effect. As a result of the selection process and with the conjunction of the three criteria, 26 identified companies (MSC) show the highest performance for the period (2009-2013). This outcome was discussed with the Fund's analysts who have approved the choices made. The remaining 117 companies are classified as LSC. This difference in numbers is not surprising as prior research has shown that the MSC enterprises represent in practice a very small percentage of the mother population according to the log-normal distribution that companies follow.
Table 1 shows the performances of the two sets of companies (MSC and LSC), the former showing superior performance given the three selected criteria.
Variation coefficients are higher for the less successful companies but despite the differences between the two sets of companies, we can notice that the LSC group has an average TSR equal to 23.72% and a CFROI equal to 19 % while showing an assets growth rate of 14.9%.

This is much less than the best performing group (MSC) on the whole period but it means, on average, acceptable results for the second company group.

Table 1. Descriptive statistics for MSC and LSC, period 2009-2013.

Companies		**MSC**	LSC	Non parametric test	
Number of companies		**group 1**	**group 0**	Mann Whitney	
		26	**117**	Z	Signif
Total shareholder return(TSR)	Mean	193,64	23,72	-7,29	0,000 (***)
	Standard deviation	165,32	55,62		
	Min	93,02	-96,06		
	Max	876,25	246,43		
Cash Flow return on investment(CFROI)	Mean	0,348	0,190	-4,35	0,000 (***)
	Standard deviation	0,164	0,257		
	Min	0,157	-1,787		
	Max	0,909	1,156		
Assets growth rate (AGR)	Mean	0,461	0,149	-4,27	0,000 (***)
	Standard deviation	0,315	0,335		
	Min	-0,100	-0,854		
	Max	1,155	1,298		
(***) significant at the 1% level; Group 1: Most successful companies (MSC), Group 0: Other companies.					

2.2. ESG, financial and control variables

2.2.1. ESG criteria

Environmental, social and governance scores are produced by the team of full-time buy-side analysts employed by the SRI Fund which has built its own database since its origin in 2008, in order to develop an offer of several socially responsible funds. The headquarters are located in Paris, where many conferences of listed companies are organized to meet investors' expectations. The Fund has won several awards for the quality of its research and the performance of its investments. At the time of the study, the rating system was made of 86 evaluation criteria. The SRI activities cover the whole of the EU. All companies are seriously studied according to three metrics: environment, social responsibility and governance. The analysts use all kinds of relevant disclosures and sustainable development reports which differ across countries. The ESG scores obtained are based on mandatory and voluntary disclosed

information from companies and the indicators thereon selected by the Fund. The analysts frequently hear the chief executive officers and the chief financial officers. Updates are done at least each semester or at any time if new information are published.

The analysts rate companies which mainly belong to the Stoxx Europe 600 index. They calculate three scores, about environmental performance (23 indicators), social performance (31 indicators), and governance performance (32 indicators). Within each sub-score, several criteria are defined with a given weight (see Appendix 2). When metrics are quantitative and available, thresholds are defined in advance and raw data are transformed into scores scaled from 1 to 5. If data is not available, analysts can ask the company to provide it. If the information is not communicated, the score is then put at a minimum of 1.

Other sub-criteria need a qualitative analysis, with a checking process and a final validation by the senior analyst. Most of the time, the assessment relies upon publicly available information, but analysts regularly attend information meetings organized by companies. They can require private interviews. Controversies are also scrutinized through an analysis of the media. When analysts are finally not convinced by managerial answers or explanations, they do not hesitate to lower their scores, which they do not have to justify as ratings remain private and are not disclosed, sold or communicated to external parties.

This organization ensures objectivity and independence of the evaluation process; ratings being only used for internal purpose. On the contrary, other non-financial rating agencies such as the largest ones, that may use up to several hundreds of criteria, may communicate their ratings to companies directly, and engage in a dialogue about the scores.

2.2.2. Variables

The study aims to detect the factors of high and uncommon high financial performance. For financial performance measurement, we first started with ROE (return on equity) and ROA (return on assets) but because of possible multi-collinearity problems we replaced them with the market-to-book ratio which in some sense exemplifies the spread between the market value of the share and the accounting value. This ratio is used as a proxy of future financial performance expectations. Other factors selected to check an eventual influence on our classification are respectively the leverage ratio as the MSC are less indebted (Capon et al., 1990; Needles et al., 2010) and turnover growth rate which indicates the capacity of the company to increase its market share. These two variables are often associated with high performance (Capon et al.,1990). Three other control variables are selected: the company size measured by the logarithm of total assets, the company branch and the country.

2.3. Models for explaining financial performance

A set of association tests were made to check for links between the ESG scores of the SRI Fund, financial performance and the status obtained by the separation of the sample in two parts: in one hand, companies showing the best financial performance (MSC) and on the other hand the second group of companies (LSC).

Models and analysis hereafter rely upon logistic regression. Logistic regression, i.e. a regression with a binary dependent variable, is used to check the relevance of scores and control variables to explain the status of companies classified among the most successful companies

(MSC) and the other companies (LSC). If appropriate, regression results illustrate classification accuracy (Upadhyay, Bandyopadhyay, Dutta, 2012).

The next section describes the two explicative models in accordance with the ESG criteria. The first model takes the whole set of variables. Given the results of the first regression, the second model addresses the influence of governance scores.

The binary variable to explain superior performance takes the value 1 for MSC and 0 for companies. The two groups differ in so far as the former one shows a higher performance. Explicative variables are those described hereafter: environment, social and governance scores along with accounting and financial variables: market-to-book ratio, turnover growth rate, debt ratio, asset size, sector and country (control variables).

Model 1. Explanation of the highest financial performances – all variables

$$\boldsymbol{MSC}\ i,T = \alpha + \beta 1\ \boldsymbol{ENV}\ i,T-1 + \beta 2\ \boldsymbol{SOC}\ i,T-1 + \beta 3\ \boldsymbol{GOV}\ i,T-1 + \beta 4\ \boldsymbol{MTB}\ i,T-1 + \beta 5\ \boldsymbol{GRTO}\ i,T-1 + \beta 6\ \boldsymbol{LEV}\ i,T-1 + \beta 7\ \boldsymbol{lnTA} i,T-1 + \beta 8\ \boldsymbol{COUNT} i,T-1 + \beta 9\ \boldsymbol{SECTOR}\ i,T-1 + \boldsymbol{E}\ i,T-1$$

With: i= Company; T: 5 year period: preceding year of this 5 year period

MSC i, T	=1 if company achieves a higher performance over the 5-year period, otherwise 0.
ENV i, T-1	Environment score, company i, period T-1
SOC i, T-1	Social score, company i, period T-1
GOV i, T-1	Governance score, company i, period T-1
MTB i, T-1	Market-to-book ratio, company i, period T-1
GRTO i, T-1	Growth rate Turnover company i, period T-1
LEV i, T-1	Leverage ratio, company i, period T-1
LnTA , T-1	Control variable: Natural log of total assets company i, period T-1
COUNT i, T-1	Control dummy variable (French company 1; otherwise 0)
SECTOR i, T-1	Control dummy variables (consumption, industry, tech. media telecom, energy)
Ei, T-1:	Error term.

In model 2 all the explicative variables relate to governance i.e.: management of sustainable development, fraud and accounting risks, financial disclosure quality, executive committee quality, control committee quality, interest alignment and power of shareholders (Appendix 2).

Model 2. Explanation of the highest financial performances – governance variables.

$$\boldsymbol{MSC}\ i,T = \alpha + \beta 1\ \mathbf{MANSD}\ i,T-1 + \beta 2\ \mathbf{ACCRISK}\ i,T-1 + \beta 3\ \mathbf{FINCOM}\ i,T-1 + \beta 4\ \mathbf{ECQ}i,T-1 + \beta 5\ \mathbf{CTRQ}i,T-1 + \beta 6\ \mathbf{INT}i,T-1 + \beta 8\mathbf{POWER}i,T-1 + \beta 9\mathbf{MTB}i,T-1\beta 10\ \boldsymbol{GRTO}\ i,T-1 + \beta 11\ \boldsymbol{LEV}\ i,T-1 + \beta 12\ \boldsymbol{lnTA}i,T-1 + \beta 13\ \boldsymbol{COUNT}i,T-1 + \beta 14\ \boldsymbol{SECTOR}\ i,T-1 + \boldsymbol{E}\ i,T-1$$

With: i= Company; T:5 year period, T-1: preceding year of this 5 year period

MSCi, T+5 =1	if company achieves a higher performance over the 5-year period, otherwise 0.
MANSDi, T-1	Management of sustainable development by company i, year T-1
ACCRISKi, T-1	Accounting risk (fraud) by company i, year T-1
FINCOMi, T-1	Financial disclosure quality by company i, year T-1
ECQi, T-1	Executive committee quality (stability), company i, year T-1
CTRQi, T-1	Control committee quality, company i, year T-1
INTi, T-1	Interest alignment
POWERi, T-1	Power of shareholders
MTBi, T-1	Market to book ratio, company i, year T-1
GRTOi, T-1	Turnover growth rate, company i, year T-1
LEVi, T-1	Leverage ratio, company i, period T-1
LnTA, T-1	Control variable: Natural log of total assets company i, period T-1
COUNTi, T-1	Control dummy variable (French company 1; otherwise 0).
SECTORi, T-1	Control dummy variable (consumption, industry, tech. media telecom, energy)
Ei, T-1:	Error term.

3. Results

Results for univariate and multivariate analysis are presented for model 1 and model 2.

3.1. The univariate analysis results

Tables 2 and 3 disclose the results of the univariate analysis and its significant relationships. Table 2 which relates to the year 2008 compares the ESG and accounting and financial variables for the two groups of companies: MSC and LSC, given their performances during the full period 2009-2013. According to the Mann Whitney non-parametric test and the Chi Square test, the two groups significantly differ for governance variables (<1% level) and for the social score and the market-to-book ratio (10% level). These results show the high effect of the governance score and to a lesser extent that of the social score and market expectations of future financial performance. The environment performance and all other control variables are never significant.

Table 2. ESG and financial differences between MSCand LSC

Companies		**MSC**	**LSC**	Non parametric test	
		group 1	**group 0**	Mann Whitney	
Number of companies		26	117	Z	Signif
SOC	Mean	3.20	3.03	**-1.774**	*** 0.076**
	St. Dev.	0.45	0.43		
GOV	Mean	3.55	3.27	**-3.481**	***** 0.000**
	St. Dev.	0.25	0.40		
MTB	Mean	2.65	1.94	**-1.848**	*** 0.065**
	St. Dev.	2.57	2.39		

(***) significant at the 1% level. (**) significant at the 5% level. (*) significant at the 10% level. Group 1: Most successful companies (MSC); Group 0: Other companies (LSC).

Table 3. Governance differences between MSC and LSC.

Companies		**MSC**	**LSC**	**Non-parametrical Test**	
		group 1	**group 0**	Mann Whitney	
Statistical units		26	117	Z	Signif
FINCOM	Mean	3.42	3.05	-2.037	** 0.042
	St. Dev.	0.82	0.83		
ECQ	Mean	3.38	2.96	-2.882	*** 0.004
	St Dev.	0.58	0.63		
CTRQ	Mean	3.77	3.29	-2.949	*** 0.003
	St. Dev.	0.58	0.77		

(***) significant at the 1% level (**) significant at the 5% level.Tests conducted on all variables of the equation: MANSD: Management of sustainable development by company; ACCRISK: Accounting risk (fraud) by company; FINCOM: Financial disclosure quality; ECQ: Executive Committee Quality (stability); CTRQ: Control Committee Quality; INT: Interest alignment; POWER: Power of shareholders

Some governance variables are more important than others. The actual and significant differences between the two groups of companies relate to the governance practices such as the quality of financial communication (reliability of the information disclosed, transparency) and

the quality of direction and control organs: quality of management, stability of the management team along with the separation of tasks and internal control quality (appendix 2).
This shows a strong commitment towards governance, at the highest level. All of these characteristics are associated with a better valuation by the market and a higher social score.
If we check the effect of governance (Table 3) we find no significant difference regarding management of sustainable development, the accounting risks, interest alignment, and the power of shareholders. This absence of differentiation indicates similar management behaviors and controls for these activities. The actual differences relate to the governance practices like financial communication (FINCOM), executive committee quality(ECQ) and that of the control organs (CTRQ).

3.2 The results of logistic regressions

Before proceeding to logistic regressions, we checked correlations between the explicative variables. The environmental, social and governance scores are significantly correlated at the 1% level. Governance is independent from the financial and control variables. The large companies have a lower growth rate, borrow more and seem more environment friendly. There is a country effect for social performance, confirming that the institutional environment caused by the enforcement of strict laws has an influence.

Table 4. Correlation matrix of dependent and control variables

	Variable	1	2	3	4	5	6	7	8
1	ENV	1.00							
2	SOC	*** 0.57	1.00						
3	GOV	*** 0.48	*** 0.45	1.00					
4	MTB	0.06	0.11	0.01	1.00				
5	GRTO	**-0.16	0.08	-0.03	*** 0.27	1.00			
6	LEV	0.05	**-0.16	-0.09	-0.01	-0.08	1.00		
7	ln TA	*** 0.37	-0.03	0.10	-0.01	***-0.24	*** 0.42	1.00	
8	COUNTRY	-0.10	*** 0.28	-0.08	***-0.29	0.07	-0.08	***-0.38	1.00

(***) significant at the 1% level (**) significant at the 5% level.

The logistic regressions were then made for model 1 and 2. In both cases the relevance of these variables to predict the companies' status were checked.

Table 5. Logistic regression results: Model 1. Effect of all selected variables

Variables	β	E.S	Wald	signif	Exp(β)
ENV (Environment)	-0,223	0,456	0,238	0,625	0,800
SOC (Social)	-0,398	0,823	0,234	0,628	0,671
GOV (Governance)	3,079	0,912	11,388	***** 0,001**	21,739
LEV (Leverage)	0	0,001	0,051	0,822	1,000
MTB (Market to Book)	0,15	0,144	1,089	0,297	1,162
GRTO (Turnover growth)	-2,34	1,902	1,514	0,219	0,096
ln TA (Ln Total Assets)	-0,145	0,14	1,074	0,300	0,865
Country (France)	0,584	0,549	1,13	0,288	1,793
Consumption Sector	0,271	0,952	0,081	0,776	1,311
Energy Sector	-20,827	8660,87	0	0,998	0
Industry Sector	-0,97	0,911	1,136	0,287	0,379
Tech. Media Telecom. Sector	-1,11	0,831	1,781	0,182	0,33
Constante	-7,446	3,639	4,187	**** 0,041**	0,001
Statistical units	143				
R square Nagelkerke	0.34				
-2Log-likelihood	110.77				
Chi- square value	*** 0.001				
% classification	83.80				
Significance level: *** (P<0.001). ** (P<0.05). *(P<0.1)					
The variable to be explained is binary variable: MSC=1 for most successful companies. otherwise 0 for LSC					

The first model shows a R Square Nagelkerke around 34%, significant at the 1% level (CHI Square equals 0.001). Results show a good fit (table 5). The percentage of companies correctly classified in each of the two groups (MSC vs LSC) reaches 83.8%. The governance variable is significant at the 1% level. The positive influence of the governance score (H3) is verified (β= 3.079. sign equals 0.001). Exp(β) value is higher than 1 (21.73) with a positive β. This means that companies with good governance practices have a higher propensity for financial performance. Results also show that all other variables are not significant. Thus governance practices appear to have a major influence.

In order to check which of the governance activities explain the classification, the regression for model 2 was made. Results are shown in table 6.

Table 6. Model 2. Logistic regression results: effect of governance variables.

Variables	β	E.S	Wald	Signif	Exp(β)
MANSD	-.039	.368	.011	.917	.962
ACCRISK	.707	.668	1.118	.290	2.027
FINCOM	-.162	.394	.169	.681	.850
ECQ	1.502	.796	3.565	*** .059**	4.492
CTRQ	.806	.411	3.847	**** .050**	2.238
INT	-.390	.541	.519	.471	.677
POWER	.738	.451	2.684	.101	2.092
LEV (Leverage)	.000	.002	.008	.929	1.000
MTB (Market-to-Book)	.106	.161	.432	.511	1.112
GRTO (Turnover growth)	-1.625	1.923	.714	.398	.197
ln TA (Ln Total Assets)	-.010	.193	.002	.961	.990
COUNTRY (France)	.821	.623	1.740	.187	2.274
Consumption Sector	.106	1.026	.011	.918	1.112
Energy Sector	-21.136	8518.004	.000	.998	.000
Industry Sector	-1.479	.995	2.208	.137	.228
Tech. Media Telecom Sector	-1.324	.857	2.387	.122	.266
Constant	-10.585	4.851	4.761	**** 0.029**	.000
Number of observations	143				
R-square Nagelkerke	0.38				
-2Log-likelihood	97.08				
Sign Chi-square	*** 0.001				
% classification	82.40				

Significance level: *** (P<0.001). ** (P<0.05). *(P<0.1).

The variable to be explained is binary variable: MSC=1 for most successful companies. otherwise 0 for LSC.

Regarding the quality of the model, the R-square Nagelkerke reaches 38% and is significant at the 1% level. The 2-Log likelihood is equal to 97.08, allowing a correct classification of 82,4%. The (CTRQ) variable is significant at the 5% level. It represents the Control Committee Quality, i.e. the separation of duties at the executive level, the board of director's experience and diversity, the audit committee competence and independence, that of the remuneration

committee, and the auditor 's presence on the board of officers. While only at the 10% level, the quality of the Executive Committee (ECQ) i.e. the quality of the top management team, its experience and stability is also important. This positive influence is confirmed (β=1.502, sign equals 0.059) with an Exp (β) higher than 1 (4.492 with positive bêta). A high quality of corporate governance in management bodies, at the highest level, propels companies into the best successful companies. Finally, with a positive relationship (β=0.806, sign equals 0.050) CTRQ i.e. internal control quality (separation of tasks, experience of the board, independence of control committees...) help companies to reach superior financial performance.

4. Discussion and conclusion

Different ESG scores and explicative variables have been tested and the two first hypotheses: the association of environmental and social scores with high financial performance were rejected at the 1% level which was confirmed by model 1 logistic regression results. The situation is different for governance activities and policy. They are significant in all cases to signal and select the most successful companies. Control variables such as size, country and industry are not significant except in construction industry.

We may wonder why, in our sample of European companies, environmental and social policies are not associated with high and uncommon financial performance. These surprising results seems to oppose some of the prior studies referred supra and recent ones such as Guenster and Bauer(2011) for corporate eco-efficiency, Clarkson(2013) for prediction of financial performance (2013), Halbritter and Dorfleitner (2015) who strongly questioned whether there is a relationship between ESG and returns, or Dhaliwal et al. (2014) who found that the financial and CSR information can be substitued for each other to reduce the cost of capital, but are similar to those of Moneva and Ortas (2010) and Nollet et al., (2015) who have used firms listed in the S&P500 stock market index. In fact, the power of influence that we do not find for the environmental score and social does not mean they are not relevant by themselves, but simply that their signal is not sufficient and that this information has for long been incorporated in the share prices for companies listed on the stock market and that these companies adopt comparable CSR policies as they need to comply with similar standards. Clearly countries like France and Germany and to some extent other countries in the EU have a long interventionist tradition for the protection of people and environment. Active groups of investors in ESG funds no longer ignore this fact. In those areas, the companies pursue from now on similar targets and value CSR practices without expecting economic benefits. This illustrates ethical behavior in opposition to the legitimacy theory and bonding costs of agency theory. Another possible explanation lies with the SRI fund itself which specializes in ESG investments, or the composition of the sample because all the companies belong to the EU before its enlargement to the Eastern countries and the Baltic republics, thus excluding companies that have not been constrained by strict CSR rules.

The period itself characterized by a sluggish economy may play a role. It is likely that in difficult times many companies are trying to limit their investment in environmental and social fields towards acceptable targets, thus focusing on their core business. This can mean that some CSR activities have a positive income elasticity (Nollet et al., 2015). Or, as mentioned by Renneboog (2008) we may wonder whether CSR is properly priced by capital markets. From this, business leaders temporarily think that they can no longer afford some of these

investments creating less value for their shareholders. They can also consider that such investments have reached a decreasing level of efficiency with a U-shaped cost curve. But that may be unlikely as overall and functional strategies need consistency to succeed in the long run.

As a matter of fact, acceptation of hypothesis 3 is less surprising and easier to explain the dichotomist results. Governance mindsets and laws in most continental countries of Europe are recent. For instance, the market economy and its corollaries: the transparency of information, separation of duties, appointment of independent administrators, internal control consideration, importance of internal audit, to name a few, is still an installation process under way.

The change in behaviors and attitudes takes time especially if managers are reluctant to share their power and prefer opacity and centralization. In that case, only the most innovative companies engage in decisive managerial changes. Other things being equal, they see in the governance policy a strategic resource able to make the difference with competitors.

By dividing the governance score into its sub-scores, significant differences appear between the two group of companies: CTRQ and ECQ at less than 1% level; FINCOM at 5% level with a confirmation of the CTRQ and ECQ variables at 5% level in logistic regression 2. The significance of CTRQ (Control committee quality), indicates the strength of internal control. It refers to control organs and 6 indicators: separation of duties, composition and independence of the audit committee, honorarium and independence of the external auditors, auditors' budget, corruption risks. Moreover, these strengths are completed by the quality of the Executive Committee (ECQ) represented by management quality, stability of the team and compensation of top managers. The results also show that the most successful companies provide a higher level of information.

Other interesting governance characteristics like management of sustainable development (MANSD), accounting opportunity and risks (ACCRISK), interest alignment (INT), power of the shareholders(POWER) do not differentiate the companies thus showing the existence of a hierarchy in governance activities. It is not an all-or-nothing practice.

Finally, we cannot exclude some limitations mitigating the results, may be the European context, the good financial condition of the companies, the sample composition with its many French and German companies and the origin of ESG data, not issued from large data bases, and strictly oriented towards the investment needs of a specific SRI Fund. The main result is that the governance score and its sub-components confirm the classification of the companies into two categories, MSC(Most successful companies) and LSC (Less successful companies) which differ by their financial performance while no influence from environmental and social scores appear between them. These original results suggest that activities that improve governance are taken into account by financial analysts and stakeholders. This will certainly stimulate indirectly CEO’s and their management teams to put in place an effective governance policy. This corresponds to a contemporary demand. The argument is strong for practitioners, specially portfolio managers and investors, not to underestimate governance issues in their search for the most successful companies. This also justifies the incentives for good governance that have emerged, in the last decade, in many European countries and elsewhere, their stakeholder interest and the growing influence of governance policies within companies. These encouraging perspectives also call for further research to verify the contribution of governance policies and of their good practices in company management.

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Appendix 1. Distribution of companies by branch and country

(number of companies)	Sector or country	**MSC** Group 1	**LSC** Group 0	**Total**
Sector	CONSUMER GOODS	6	8	14
	INDUSTRY	6	35	41
	HEALTH CARE	4	8	12
	TECH. MEDIA TELECOM.	10	47	57
	ENERGY	0	19	19
Country	AUSTRIA	0	2	2
	BELGIUM	1	5	6
	SWITZERLAND	0	4	4
	GERMANY	3	16	19
	DENMARK	1	2	3
	SPAIN	1	4	5
	FINLAND	2	1	3
	FRANCE	14	62	76
	GREAT BRITAIN	2	1	3
	GREECE	0	1	1
	ITALY	0	4	4
	LUXEMBURG	0	2	2
	FRANCE & MOROCCO	0	1	1
	NETHERLANDS	2	8	10
	PORTUGAL	0	1	1
	SWEDEN	0	3	3
TOTAL		26	117	143
Group 1: Most successful companies (MSC), Group 0: Other companies				

The list of the companies of the sample is available on request.

APPENDIX 2. CRITERIA AND INDICATORS FOR ESG SCORES

Score	Weight	Criteria for Sub-scores	Indicators	Number of indicators
ENV	0.25	Management of the environment	Existence of a dedicated function/organ represented in the Executive Committee.	5
	0.25	Opportunities and risks	Pure player environment.	6
	0.4	Performance environment	Energy and detailed fluid consumption.	8
	0.1	Externalities	Biodiversity and waste management.	4
SOC	0.28a	Organization of human capital	Existence of a function/ organ represented in the Executive Committee.	3
	0.36a	Management of human capital	Quantitative and specific ratios related to wages, productivity, age, growth of staff employed, retirement benefits, contingent liability rights.	6
	0.36a	Working conditions	Training, employee satisfaction, turnover…	8
	0.2b	Regulation	Ability to operate within regulation constraints.	1
	0.4b	Clients	Evaluation, fidelity, market share...	5
	0.2b	Suppliers	Quality of relationship and products.	1
	0.2b	Local communities	Signs of interest towards local communities.	1
	0.2c	Structural	Brands, culture, pricing power, innovation.	6
GOV	0.1	Management of Sustainable development	Existence of a function/ organ dedicated to sustainable development reporting to the executive committee.	7
	0.2	Accounting opportunities and risks	Quality of reporting, anteriority of sustainable management, audits.	5
	0.15	Financial disclosure quality	Reliability of the information disclosed, transparency.	3
	0.1	Organs of direction	Management quality, stability of the management team.	3
	0.2	Control organs	Separation of duties and internal control quality	6
	0.15	Interest alignment	CEO compensation and variety of contracts with specific benefits.	4
	0.1	Power of the shareholders	Democracy in annual general meetings…	4
TOTAL				86

For SOC: (a) refer to Human capital (weight 0.55) (b) refer to relational capital (weight 0.25)(c) refer to structural capital (weight 0.2)