

Impact of CSR on the financial performance of listed Moroccan companies

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Abstract: This paper aims to study empirically the relationship between corporate social responsibility (CSR) and financial performance (FP) in the Moroccan context. We opted for a longitudinal study of listed companies over the period 2012-2017. We have used the accounting and financial indicators to assess FP. In the absence of an index that measures the score of the PS, we opted for a dichotomous variable which takes a value of 1 if the company is labeled CSR by the CGEM and value 0 if not. Control variables are measured by size, age, risk, and industry. Panel data are used as well to analyze data. The findings of this study indicate mixed results. Indeed, we have found a positive impact of CSR on PF, when using ROA as a proxy for FP. However, when using ROE as a proxy for FP, we do not find any impact of CSR on FP (neutral impact). We found that ROS is linked negatively with CSR.

Keywords: CSR, social performance, financial performance, panel data, listed Moroccan companies, CGEM, ROA, ROE, ROS.

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1. INTRODUCTION

Nowadays, Corporate Social Responsibility (CSR) is gaining great interest in emergent and developing countries. For example, in Morocco, CSR is formalized by CSR labels delivered by the general confederation of Moroccan Companies (CGEM). CSR in Morocco is still in a very early stage of development, despite favorable conditions under which CSR can flourish, such as Moroccan culture characterized by solidarity and transparency or the free trade between Morocco and many developed countries which are more aware of social and environmental concerns, thus implying to Moroccan companies to present the same interest and involvement in these concerns (El Yaagoubi and Benali, 2018). Moreover, the actions conducted to motivate companies to be socially responsible did not permit CSR to be widely discussed and adopted in this context. We can cite primarily among these actions the label for corporate social responsibility, set up in 2007 the CGEM in partnership with Vigéo

The Vigéo group launched its activity in Morocco in 2004. Vigéo is a European social responsibility rating agency, and it is the scientific partner of the CGEM in the drafting of the CGEM charter and the CSR label. It presents the listed companies according to six evaluation domains (environment, human rights, human resources, corporate governance, market behavior, and societal commitment).

This is considered as the only initiative of its kind in Africa and the Arab world, attesting the conformity of company management practices with the objectives of the CSR Charter drawn up by the confederation. This

charter is the main reference for awarding the label, it is materialized by nine axes inspired by the principles of the ISO 26000 standards and adapted to the Moroccan legislation.

The nine axes are the following: respect for human rights, continuous improvement of employment conditions and work and professional relations, preservation of the environment, prevention of corruption, respect for the rules of healthy competition, strengthening the transparency of corporate governance, respect for the interests of customers and consumers, promoting the social responsibility of suppliers and subcontractors, and development of the commitment to the community.

Although, the commitment to CSR does not come for free. The reason for being of companies is to make a profit, hence researchers raised the question of the relationship between CSR and financial performance (FP) to show the interest in engaging to CSR. Researchers are divided into two opposing groups on this issue: researchers presenting theories against CSR and others introducing positive theoretical arguments for CSR. Friedman (1970), a neoclassical economist, states that the only social responsibility of the firm is to make a profit. In other words, if the company invests in social concerns, it wastes stockholders' resources which is a breach of trust (Sternberg, 1994). Other neoclassical scholars (Ladd, 1984; Ranken, 1987; Velasquez, 1985; Crook, 2005) consider that social responsibility concerns only individuals who can carry out socially responsible actions independently or in a personal dimension, not in the name of the firm. Because the company is not a creation of the society and consequently it does not owe any social responsibility. There are even those who believe that CSR is a dangerous concept for society (Levitt, 1958).

On the other hand, stakeholders' theory asserts that the company should not consider stockholders as of the only stakeholder which must satisfy. Freeman, the predecessor of this theory, defines the concept of stakeholder as any individual or group of individuals who contribute to the achievement of the firm's objectives (Freeman, 1984). According to Donaldson and Preston (1995), customers, employees, suppliers, investors, governments, political groups, unions, natural environment, and communities are important stakeholders which should not be neglected (EL Yaagoubi, 2019). They see the stakeholder theory as a framework for describing, assessing, and managing the responsibilities of the business.

Supporters of this theory explain that by adopting CSR, companies develop a good and transparent relationship with their stakeholders and consequently build a positive reputation which ultimately returns in good financial performance.

Based on that, we approach in our article the question of the impact of CSR on the financial performance of Casablanca stock exchange companies by first demonstrating the theoretical and empirical literature review, followed by the econometric method, and finally presenting and discussing the empirical results.

2. LITERATURE REVIEW

A. Theoretical background

Many theoretical hypotheses developed by Preston and O'Bannon (1997) constitute basic linear models used in the majority of studies to explain the SP-FP link which can be positive, negative, or synergetic.

Social Impact Hypothesis: This hypothesis suggests that good (bad) social performance generates good (bad) financial performance. It is inspired by the stakeholders' theory that has marked the literature on the relationship between CSR and corporate performance (Allouche and Laroche, 2005; Wang and al., 2016). It postulates that if a company satisfies its stakeholders, by for example carrying out social projects, it will improve its image and its reputation and thus its financial performance (Waddock and Graves, 1997). On the other hand, if the company fails to achieve a positive social impact, this will create fears among its stakeholders around its image which will increase costs and decrease profits (Cornell and Shapiro, 1987).

Available Funds Hypothesis: This hypothesis suggests that good (bad) financial performance generates good (bad) social performance. Here, we have as a starting point the financial performance, contrary to the first hypothesis; it is the FP that influences the SP. It is based on the resources' theory which states that the more (less) the company is financially efficient, the more (less) it will be on the social level. When the company has a surplus in financial resources, it can devote itself to social projects to improve its relationship with its stakeholders (Waddock and Graves, 1997; Allouche and Laroche, 2005), and therefore better financial performance leads companies to become more socially involved.

Trade-off Hypothesis: Inspired by the liberal vision, this hypothesis postulates that the more the company is socially efficient, the less it will be financially. Indeed, if the company is interested in social objectives, it means that it spends money on projects that fall outside its responsibilities, as suggested by Friedman (1970). In addition, allocating a budget for such projects represents additional financial costs to the firm which will be a competitive disadvantage compared to less or non-socially responsible firms (Vance, 1975; Preston and O'Bannon, 1997; Jensen, 2002).

Managerial Opportunism Hypothesis: According to this hypothesis, the more the enterprise is financially efficient, the less socially it will be. This is explained by the fact that when managers fail to achieve a good financial performance, they invest in social actions to justify their poor performance. However, when FP is high, they achieve maximum gain by avoiding investing in social actions to increase their private gain in the short term (Preston and O'Bannon, 1997).

Positive Synergy: This hypothesis is based on the two hypotheses with a positive link (social impact and available funds hypothesis). It states that a good social performance makes a good financial performance, which gives the company more resources to carry out social actions again (Preston and O'Bannon, 1997; Waddock and Graves, 1997; Allouche and Laroche, 2005).

Negative Synergy: This hypothesis postulates that poor social performance generates poor FP, which does not leave enough resources to invest in social projects (Allouche and Laroche, 2005).

In addition to these hypotheses, there are other theoretical models which assert a neutral relationship because of the existence of indirect relationships between the two constructs (Ullman, 1985) which means that other variables mediate the relationship. Or this neutrality could be due to the mutual independence of CSR and FP (Aupperle and al., 1985). For some authors, the relationship between CSR and FP cannot be linear only. For Schaltegger and Synnestvedt (2002), this linearity does not precisely describe reality. Alternative models of more complex relationships exist as well (Moore 2001).

A concave (inverted-U) shape postulates that a lower level of CSR generates poor FP, and an average level of CSR can lead to an optimum PF level, beyond which PF may decrease (Bowman and Haire, 1975, Schaltegger and Synnestvedt, 2002).

A convex form (in U) postulates that companies that positively influence their stakeholders can offset the costs generated by social actions. Those with an average level of SP, do not have good relations with stakeholders, which is why even with some social actions, they cannot compensate for social costs. On the other hand, those with a lower SP level can achieve a good FP due to the absence of social costs (Barnett and Salomon, 2012).

B. Empirical studies

The statistical results of existing studies are varied and can be used to support different theories.

Positive relationships are the main result of the CSR-FP relationship studies. Indeed, Orlitzky and al. (2003) analyzed 52 studies published over the period 1970-2002. This meta-analysis dealing with 30 years of research on the issue, confirms the existence of the positive relationship between CSR and FP.

The period from 2003 to 2012 was also covered by a meta-analysis conducted by Wang and al. in 2016. Among 42 studies analyzed, the positive relationship between SP and FP is the dominant one, confirming that it is the SP that influences FP and refutes the opposite.

In 2010, El Malki concluded that social performance has a positive impact on the companies established in Morocco in the textile sector when using the dimension of "employees" as an indicator of SP, and in the chemical sector when using the dimensions of "employees", "territories" and "communities".

Two years later, Bayoud and al. (2012) studied the impact of CSR on FP by analyzing the content of the annual reports of 40 Libyan companies. They confirm the positive link between CSR and the ROA, ROE, and the turnover of these companies.

Ta and Bui (2018) studied the relationship between the CSR communication operationalized by a set of indicators deduced from the content analysis of the annual reports of 43 companies of the Vietnam Stock Exchange and ROA over 11 years (2006-2016). Through a panel data analysis, they highlighted a positive relationship between CSR and FP, even though CSR is not yet governed by standards and rules in Vietnam to guide companies' actions in this area.

Lin and al. (2018) found a positive link between CSR and FP when they used the "community" dimension and the "environment" dimension as CSR proxy and for FP the MBV. Another positive link exists, this time between the "employee" dimension, the "value for money and supplier relations" dimension, and the "Tobin's Q" in Taiwan.

In Europe, Schönborn and al. (2018) presented a new way of dealing with the CSR-FP relationship. They studied the relationship between socially sustainable business culture (social sustainability culture) based on the CSR principles formulated by GRI and FP or as they call it financial success. They found that the spread of a culture based on the principles of CSR has a positive impact on the financial success of European companies.

Although the majority of studies found positive effects of CSR adoption on FP, there are negative relationships discovered as well.

Xintao and al. (2014) studied oil companies over the period 2010-2013. They concluded that the relationship between CSR and risk (as an indicator of FP) is negative.

Masoud and Halaseh (2017) studied the relationship between CSR and FP in Jordan over the period 2002-2011. They assessed FP using several accounting indicators (ROA, ROE, ROS, and ROCE) and stock market indicators (such as stock market performance, EPS, and MBV). They concluded that there is a negative relationship between CSR and EPS.

Recently, Ngoc (2018) developed an indicator score measured by the CSR communication content analysis method for banks in Vietnam. He studied its impact on the ROA. The conclusion is that there is a negative relationship between the two variables.

Other authors found no direct relationship between the two constructs. For instance, Haryono and Iskandar (2015) studied the direct relationship between CSR communication and the two "Tobin's Q" and "MBV" indicators for 44 listed companies in Indonesia. They concluded that there is no relationship between these variables. They subsequently introduced mediating variables namely ROA, ROE, and risk. These researchers found that the indirect relationship across the ROA or ROE is positive, whereas across the risk variable is insignificant.

Strouhal and al. (2015) also support the hypothesis of the neutral relationship between CSR and FP. Indeed, they studied the impact of CSR communication on both the ROA and MVA indicators and found that even CSR reporting does not influence FP of Czech and Estonian companies. Adenye and Ahmed (2015) found no significant relationship between CSR and FP as they approached it by total assets. This is also the case for Angelia and Suryaningsih (2015) who studied companies listed on the stock exchange in Indonesia. These authors concluded that the relationship between CSR and ROA is not significant.

The difference in results and the lack of consensus on the CSR-FP relationship remain the main features of the studies presented above. Based on the theoretical framework of the stakeholder approach and studies previously conducted in the literature, we assume that the relationship between CSR and FP is positive, since social engagement allows the company to satisfy its stakeholders and, as a result, generates more profitability. Therefore, our main research hypothesis is that CSR has a positive impact on financial performance.

3. DATA AND VARIABLES

To test our main hypothesis, we chose the panel data econometric model since we have a cross-sectional dimension observed over a period (time dimension).

A. Sample

The sample consists of selected labeled and non-labeled companies listed in the Casablanca stock exchange. We have assembled a panel of 28 companies studied over six-year¹ period (2012-2017) with a total observation of $28 \times 6 = 168$.

B. Variables

We will present our selected variables based on the most used variables in the literature.

Independent variables: Our independent variable is approached by a dummy variable which takes the value of 1 if the company is labeled by CGEM CSR label, and a value of 0 if not. Several previous studies have measured CSR through a dichotomous variable, such as Cardebat and Sirven (2009) who categorized the companies included in their sample according to whether they published a social report or not. Chetty and al. (2015) divided firms according to the inclusion or exclusion of the CSR index of the Johannesburg Stock Exchange.

Dependent variables: FP is approached in our study by three accounting-based measures: ROA (Return On Assets), ROE (Return On Equities), and ROS (Return On Sales); and one financial-based measure: MBV (Market to Book Value).

- ROA is an indicator of the efficiency of management in terms of the ability of its assets to generate profits. It is one of the most used and accurate indicators of financial performance evaluation (Boaventura and al., 2012; Griffin and Mahon, 1997). A lot of authors used ROA to study the link

¹ Except for the variable MBV which the study is carried out over five years period since we do not have enough data for 2012.

between SP-FP, such as Rodriguez-Fernandez (2015); Choi and al. (2018); Ngoc (2018); Ta and Bui (2018).

- ROE calculates the profitability that the shareholder obtains about his or her investment in the company. ROE is frequently used in research on the topic, for instance by Simionescu and Gherghina (2014); Dumitrescu and Simionescu (2015); Jitaree (2015); Lin and al. (2015).
- ROS indicates the profitability of the company according to its volume of activity. It was used by several authors, namely Bidhari and al. (2013); Simionescu and Gherghina (2014); Chtourou (2016).
- MBV is a stock market indicator that compares the book value and the market value of the firm to assess the financial health of the firm. Hirigoyen and Poulain-Rhem (2014), Adenye and Ahmed (2015), Masoud and Halaseh (2017), Laskar et al. (2017), Laskar (2018) used this indicator to measure the financial performance.

Control Variables: To avoid estimation bias, we include four variables to control the relationship between CSR and FP.

- The first variable is Size. Anderson and Dejoy (2011) insist on the importance of including size as a control variable since it has an explanatory power on the SP-FP relationship. The majority of the studies used it as a control variable but it was approached differently: either by the number of employees (Simionescu and Gherghina, 2014; El Malki, 2010), or by total assets (Ahmed and al., 2016; Maqbool and Zameer, 2017; Choi and al., 2018; Ngoc 2018), or by the total of sales (Simionescu and Gherghina, 2014). In our study, we will use it as total assets.
- The second is the Age. Some authors confirm that older companies differ from new ones because they can be more rigid, less flexible towards new managerial practices and innovation in general (Shumway, 2001). For this, it is important to take age into account as a control variable, as many researchers did: Simionescu and Gherghina (2014); Dumitrescu and Simionescu (2015); Chtourou (2016); Choi and al. (2018). In our study, we measure age by the number of years of listing on the stock market.
- The third is the Risk. It measures the relationship between capital financed by borrowers and by shareholders. It should be considered as a control variable in the relationship of SP-FP (Orlitzky and Benjamin, 2001). Authors like Khelif (2015), Platonova and al. (2018), Choi and al. (2018) used it in their study on the SP-FP relationship. Based on an empirical study, Suto and Takehara (2016) suggest that reducing risks by engaging companies in CSR activities leads to more value creation in the long term.
 - The fourth variable is Industry. It is considered among the most important variables to be included in the CSR-FP relationship model (Anderson and Dejoy, 2011). It was used by several recent studies (Khelif, 2015; Lin and al., 2015; Choi and al., 2018). In our study, we will take into account the following four industries: NICT² sector (this includes companies operating in new technologies, manufacturing, and sales of computer hardware and software); Energy industry and companies with high environmental sensitivity (covers companies operating in electricity, mining, and chemistry that are highly sensitive to the environment); Services sector (grouping service

² NICT: New Information and Communication Technologies.

companies: telecommunications, banks, utilities, etc.); Agri-food industry (grouping companies operating in the food industry).

4. EMPIRICAL RESULTS

A. Descriptives statistics

According to table 1 below, ROA's means value over the period 2012-2017 is nearly 13% which means that the firms in our sample derive sufficient profitability from their resources. The minimum is -23%, which is an alarming negative percentage showing that some companies are generating loss compared to the use of their resources to gain profits. In terms of ROE, the companies in our sample derive, on average, 18% profitability from the capital made available to them by shareholders. Forty-four percent is the ROS mean value which proves that these companies are profitable in terms of commercial profitability based on their sales volumes. Concerning the mean value of MBV, it is below 100% which indicates that these companies are in good financial health. In terms of control variables, companies' size ranges between 7.92 and 11.50 with a mean value of 9.51. The mean value of risk is 18% which means that companies of our sample do not depend much on financing by debts. The age of companies ranges from 1 year to 77 years with a mean value of 24 years old.

TABLE 1 DESCRIPTIVE STATISTICS

Variable	N	Mean	Std. deviation	Min.	Max.
ROA	168	0.1285029	0.6667048	-0.2304548	8.592546
ROE	168	0.1802137	0.8574961	-5.131439	8.592546
ROS	168	0.4398327	1.368807	-0.7608531	8.592546
MBV	140	0.6465201	0.7271992	-1.888707	4.776839
CSR	168	-	-	0	1
Size	168	9.507861	0.9334083	7.919607	11.5043
Risk	168	0.1844285	0.8157089	0	8.592546
Industry	168	-	-	1	4
Age	168	24.60714	22.93313	1	77

Source: The authors based on Stata 14 output.

Moreover, it's usually considered that correlation coefficients higher than 0.8 or 0.9 are indicative of a multicollinearity problem between variables in question (Gujarati, 2009). In our matrix, the highest coefficients are between "risk" and "ROA" (0.79) and between "risk" and "ROE" (0.60) which can predict a problem of multicollinearity that we have to test in the econometric model. Otherwise, it seems that the correlation between dependent variables is not strong (see table 2: correlation matrix).

TABLE 2 CORRELATION MATRIX

	ROA	ROE	ROS	MBV	Risk	Size	Age
ROA	1.00						
ROE	0.7879	1.00					
ROS	0.5182	0.4319	1.00				
MBV	-0.0090	-0.1123	0.2106	1.00			
Risk	0.7893	0.6052	0.4005	-0.0072	1.00		
Size	-0.0790	-0.1278	-0.1981	-0.2202	0.0822	1.00	
Age	-0.0648	-0.0703	-0.1350	-0.1799	0.0161	0.3473	1.00

Source: The authors based on Stata 14 output.

B. Results analysis

To test our hypothesis, four models were made. Each model studies the impact of SP on an indicator of FP (ROA, ROE, ROS, and MBV). We employed different estimation methods as part of the panel data (linear regression model estimated by the OLS method, fixed-effects model, and random effects models). To choose the best model that fits our data, we concluded the convenient tests (F-test to choose between the linear model estimated by OLS and the fixed effects model, Hausman test to choose between fixed effects model and random effects model, Breush-Pagan tests to choose between linear model estimated by OLS and random-effects model). We will present here 3 models (the statistically significant ones) where FP is measured either by ROA, ROE, or ROS. For MBV, all the models are not significant.

Model 1: Regression results using ROA as a proxy for FP

After conducting the models and tests described above, we found that the model that fits the data is the linear regression one estimated by the OLS method. So now we have to test for heteroscedasticity, autocorrelation, and multicollinearity to decide if our model needs adjustment or not. The results of these tests show that there is no multicollinearity and no autocorrelation in between our variables but heteroscedasticity exists in the model. To adjust it and to correct standard errors we have to use the Pooled OLS method which gives robust standard errors (De Bourmont, 2012).

The results are summarized in Table 3 below, they show that the model is significant at 0.1 with a satisfying fit quality of 65%. The results also show the positive relationship between CSR and ROA, where labeled companies exceed the non-labeled ones, if all other variables are the same, by 11% of ROA. The link between ROA and size is negative as well as with the belonging to the energy sector. On the other side, it is positive with risk, indeed if the ROA increases by one unit, risk will increase by 0.65.

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$$\text{ROA} = 0.76 + 0.11 \text{ CSR} - 0.07 \text{ Size} + 0.65 \text{ Risk} - 0.17 \text{ Energy}$$

Model 2: Regression results using ROE as a proxy for FP

After conducting the models and tests described above, we found that the model that fits our data is the linear regression one estimated by the OLS method. We did the same tests as in the previous model for adjustment.

Even in this model, we only have the problem with heteroscedasticity which we will adjust in the same manner (POLS). Results are summarized in table 3, they show no statistically significant relationship between CSR and ROE. Just two variables participate in the explanation of the model positively (risk) and negatively (energy sector). The whole model is significant at 0.01 with $R^2 = 40\%$.

$$\text{ROE} = 1.61 + 0.06 \text{ Risk} - 0.17 \text{ Energy}$$

TABLE 3 RESULTS SUMMARY

Variable	Model 1 : ROA	Model 2 : ROE	Model 3 : ROS
CSR	0.110699*	0.0898075	-0.2773548***
	(0.0586691)	(0.1116252)	(0.0999404)
Size	-0.0700909*	-0.0967328	-0.3100925***
	(0.0402337)	(0.08167)	(0.111309)
Risk	0.64658**	0.6383905***	0.6319106**
	(0.3033329)	(0.0652998)	(0.2768254)
Age	-0.0013511	-0.0012645	-0.0034022
	(0.0014985)	(0.0028414)	(0.0030532)
Energy	-0.175908**	-0.2890515*	-0.4355692*
	(0.0716294)	(0.1563278)	(0.2550415)
Services	-0.0911784	-0.2216961	-0.1958267
	(0.085456)	(0.2147963)	(0.3241005)
Agri-food	-0.0679568	-0.1341258	-0.2938498
	(0.0644993)	(0.1962121)	(0.3402425)
Constante	0.7609736*	1.161671*	3.689948***
	(0.364043)	(0.7053502)	(0.993593)
F-Test (model)	2.08*	15.50***	5.42***
R2	0.65	0.40	0.21
N	168	168	168

***/**/* Significant at 1%/5%/10% respectively. Values in parentheses represent robust standard errors.

Source: the authors based on Stata 14 output.

Model 3: Regression results using ROS as a proxy for FP

After conducting the models and tests described above, we found that the model that fits the data is the linear regression one estimated by the OLS method. We detected the heteroscedasticity and we run the POLS. Our results (Table 3) show a negative relationship between CSR and ROS which means that ROS of labeled companies is less than non-labeled ones by 28% if all other variables are the same. Size and energy sector are negatively related to ROS. Risk is positively related to it. The whole model is significant at level 0.01 with $R^2 = 21\%$.

$$\text{ROS} = 3.69 - 0.28 \text{ CSR} - 0.31 \text{ Size} + 0.63 \text{ Risk} - 0.43 \text{ Energy}$$

5. EMPIRICAL RESULTS

According Based on the results above, we invalidate our main hypothesis stating that CSR positively impacts FP. Our findings show mixed results as in many previous studies: Bayoud and al. (2012); Chetty and al. (2015); Lin and al. (2018). Indeed, being labeled CSR by CGEM increased ROA. This supports the social impact hypothesis which states that socially responsible companies create good relationships with stakeholders which create in return profits via favorable image and reputation (Choi and al., 2018; Ta and Bui, 2018). In our case, labeled companies have gained the credibility of their stakeholders and increased their returns.

However, when using ROE as a proxy for FP, we do not find any impact of CSR on FP sustaining since then neutrality hypothesis (Hirigoyen and Poulain-Rhem, 2014; Chetty and al., 2015). This

hypothesis may indicate an indirect relationship between CSR and FP which means that some variables are mediating this relationship (Gond, 2006).

We found that ROS is linked negatively with CSR, our findings are in agreement with the results of El Malki (2010), Simionescu, and Gherghina (2014) and support the trade-off hypothesis. Engaging in social projects and seeking to be labeled represent huge costs for the company which makes it at a disadvantage compared to others who are not socially responsible (Jensen, 2002). Cornell and Shapiro (1987) explain this negative relationship by the inability of these companies to turn these costs into profits because they could not impact their stakeholders and create a good reputation.

Whether adopting CSR is profitable or not depends on how it's managed and benefits are expected from it. We can conclude that the company should know very well its main stakeholders to define their needs. Based on that, it can engage in social and environmental projects. According to Baldini et al. (2018), to ensure its sustainability, the company would be able not only to create economic value for shareholders and other stakeholders but also to manage the social and environmental impacts of these projects.

Finally, it should be noted that our study suffers from certain limitations. The main limitation concerns the measurement of social performance. The fact of being based on a dichotomous variable could never replace the composite score, calculated by Vigéo, but remains a score not yet published. Our study covers only companies listed over a very short period from 2011 to 2017, which is another limitation. An extension of the sample to non-listed companies could be a research perspective to explore.

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