

Impact of CSR on financial performance of Casablanca Stock Exchange companies: A longitudinal study

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ABSTRACT: This study deals with the relationship between corporate social responsibility (CSR) and financial performance (FP) of Casablanca stock exchange companies. Our investigation covers the period 2012-2017. CSR is approached by a dummy variable which takes value of 1 if the company is labeled by CGEM CSR label, and value of 0 if not. Accounting and financial performance indicators were used to assess the FP: Return On Assets (ROA), Return On Equity (ROE), Return On Sales (ROS) and Market to Book Value (MBV). Control variables are measured by size, age, risk, and industry. Panel data are used as well to analyze data. Descriptive statistics, regression and correlation analyses were carried out. Findings of this study indicate mixed results which might be explained by the early stage of CSR in Morocco. Indeed, we have found a positive impact of CSR on PF, when using ROA as proxy in FP. This result supports social impact hypothesis. The study however didn't find any impact of CSR on FP when using ROE as proxy in FP, sustaining the neutrality hypothesis. When using ROS, the relationship is found negative and supports since then the tradeoff hypothesis. The model testing the impact of CSR on MBV was not significant.

KEYWORDS: Corporate social responsibility, social performance, Return On Assets, Return On Equity, Return On Sales, Market to Book Value, panel data, listed Moroccan companies.

1 INTRODUCTION

Nowadays, Corporate Social Responsibility (CSR) is gaining a great interest in emergent and developing countries. For example, in Morocco, CSR is formalized by CSR label delivered by the general confederation of Moroccan companies (CGEM¹). 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 [1]. Moreover, the actions conducted in order 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 by the CGEM in partnership with Vigéo. This is considered as the only initiative of its kind in Africa and in 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 standard².

¹ Confédération Générale des Entreprises marocaines.

² 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

Although, the commitment to CSR does not come for free. The reason for being of companies is to make 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 [2] states that the only social responsibility of the firm is to make profit. In other words, if the company invests in social concerns, it wastes stockholders' resources which is a breach of trust.

Other neo-classical scholars ([3], [4], [5], [6], [7]) 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 it any social responsibility [8]. There are even those who believe that CSR is a dangerous concept for society [9].

By contrast, stakeholders' theory asserts that the company should not consider stockholders as the only stakeholder which must satisfy. 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 [10].

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 BACKGROUND

At this stage, we will present the theoretical and the empirical background of the relationship between CSR and financial performance.

2.1 THEORETICAL BACKGROUND

Many theoretical hypotheses developed by Preston and O'Bannon [11] constitute basic linear models used in the majority of studies to explain the SP-FP link which can be positive, negative or synergetic.

2.1.1 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 ([12], [13]).

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 [14]. 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.

2.1.2 AVAILABLE FUNDS HYPOTHESIS

This hypothesis suggests that good (bad) financial performance generates good (bad) social performance. Here, it is the FP that influences the SP. It is based on resources' theory which states that more (less) the company is financially efficient, more (less) it will be on the social level. When the company has a surplus or available financial' resources, it can spend it on social projects to improve its relations with its stakeholders [14, 12] and therefore better FP drives companies to perform better socially.

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.

2.1.3 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 [2]. 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 ([15], [11], [16]).

2.1.4 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 [11].

2.1.5 POSITIVE SYNERGY

This hypothesis is based on the 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 ([12], [17]).

2.1.6 NEGATIVE SYNERGY

This hypothesis postulates that poor social performance generates poor FP, which does not leave enough resources to invest in social projects [12].

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 [18] which means that other variables mediate the relationship. Or this neutrality could be due to mutual independence of CSR and FP [19].

For some authors, the relationship between CSR and FP cannot be linear only. For Schaltegger and Synnestvedt [20], this linearity does not precisely describe reality. Alternative models of more complex relationships exist as well [21].

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 ([22], [21]).

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 are able to achieve a good FP due to the absence of social costs [21].

2.2 EMPIRICAL BACKGROUND

The empirical 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 [24]. 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 [13]. 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 refute the opposite.

In 2010, El Malki [25] 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 et al [26]. 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 [27] 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 an 11-year period (2006-2016). Through a panel data analysis, they highlighted a positive relationship between CSR and FP, despite the fact that CSR is not yet governed by standards and rules in Vietnam to guide companies' actions in this area.

Lin and al [28]. 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 et al [29]. 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 et al [30]. studied oil companies over the period 2010-2013. They concluded that the relationship between CSR and risk (as an indicator of FP) is negative.

In fact, Masoud and Halaseh [31] 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 [32] 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 [33] 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. Strouhal and al [34]. 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 [35] found no significant relationship between CSR and FP as they approached it by total assets. 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 stakeholder theory, 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:

H1: CSR has a positive impact on financial performance.

3 MATERIALS AND METHODS

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).

3.1 SAMPLE

The sample consists of selected labeled and non-labeled companies listed in Casablanca stock exchange. We have assembled a panel of 28 companies studied over six year³ period (2012-2017) with a total observation of $28 \times 6 = 168$.

3.2 VARIABLES

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

³ Except for the variable MBV which the study is carried out over five years period since we do not have enough data for 2012.

3.2.1 INDEPENDENT VARIABLES

Our independent variable is approached by a dummy variable which takes value of 1 if the company is labeled by CGEM CSR label, and value of 0 if not. Several previous studies have measured CSR through a dichotomous variable, such as Cardebat and Sirven [36] who categorized the companies included in their sample according to whether they published a social report or not.

3.2.2 DEPENDENT VARIABLES

FP is approached in our study by accounting indicators: ROA, ROE, and ROS and financial indicator: MBV.

ROA (RETURN ON ASSETS)

It is an indicator of the efficiency of management in terms of the ability of its assets to generate profits. A lot of authors used ROA to study the link between SP-FP (e.g [37]., [32], [27]).

ROE (RETURN ON EQUITY)

It calculates the profitability that the shareholder obtains in relation to his or her investment in the company. ROE is frequently used in researches on the topic (e.g [38], [28]).

ROS (RETURN ON SALES)

ROS indicates the profitability of the company according to its volume of activity. It was used by several authors, namely [39], [40].

MBV (MARKET TO BOOK VALUE)

It is a stock market indicator which compares the book value and the market value of the firm to assess the financial health of the firm. Masoud and Halaseh [31] and Laskar [41] used this indicator to measure the financial performance.

3.2.3 CONTROL VARIABLES

To avoid estimation bias, we include four variables to control the relationship between CSR and FP. They are size, age, risk and industry.

SIZE

Anderson and Dejoy [42] insist on the importance of including size as a control variable since it has an explanatory power on SP-FP relationship. The majority of the studies used it as a control variable but it was approached differently: either by number of employees [43], or by total assets ([44], [45], [32]), or by total of sales [43]. In our study, we will use it as total assets.

AGE

Some authors confirm that older companies differ from new ones because they can be more rigid, less flexible towards new managerial practices and towards innovation in general. For this, it is important to take age into account as a control variable, as many researchers did: [39], [37]. In our study, we measure age by the number of years of listing on the stock market.

RISK

Risk 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 [46]. Authors like Khelif [47], Platonova and al [48]. and Choi and al [37]. used it in their study on SP-FP relationship.

INDUSTRY

It is considered among the most important variables to be included in the CSR-FP relationship model [42]. It was used by several recent studies ([47], [28], [37]). In our study, we will take into account the following four industries: NICT⁴ sector (this includes companies operating in new technologies, manufacturing and sales of computer hardware and software); Energy industry and companies with high environmental sensitivity (this covers companies operating in electricity, mining and chemistry that are highly sensitive to the environment, now called "Energy"); Services sector grouping service companies (telecommunications, banks, utilities, etc.) and Agri-food industry grouping companies operating in the food industry.

We recap our variables in the table below:

Table 1. Abstract of variables

Variable	
FP measures (dependant variable)	
ROA	Operating Profit / Total Assets
ROE	Operating Profit / Equity
ROS	Net Profit / Turn Over
MBV	Book Value of the firm / Market value of the firm
CSR Measure (independant variable)	
CSR	Dummy variable which takes 1 if the company is labelled and 0 if not
Control variables	
Size	Log of Total Assets

4 RESULTS

4.1 DESCRIPTIVE STATISTICS

According to table 2 below, ROA mean 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 term of ROE, the companies in our sample derive, on average, 18% profitability from the capital made available to them by shareholders.

44% is the ROS mean value which proves that these companies are profitable in terms of commercial profitability based on their sales volumes.

With regard to the mean value of MBV, it is below than 100% which indicates that these companies are in good financial health.

In term 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. Age of companies ranges from 1 year to 77 years with a mean value of 24 years old.

⁴ NICT: New Information and Communication Technologies.

Table 2. 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
RSE	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 author, based on Stata 14 output.

Table 3. 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 author, based on Stata 14 output.

Moreover, it's usually considered that correlation coefficients higher than 0.8 or 0.9 is indicative of a multicollinearity problem between variables in question [49]. 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 correlation between dependent variables is not strong.

4.2 REGRESSION ANALYSIS

To test our hypothesis, four models were made. Each model study 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 OLS⁵ 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 test 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.

After conducting the models and tests described above, we found that the model that fits the data is the linear regression one estimated by OLS method. 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 [50].

⁵ OLS: Ordinary Least Square.

The results are summarized in table 4 below. The model 1 is significant at 0.1 with a satisfying fit quality of 65%. The results also show the positive relationship between CSR and ROA, where labelled companies exceed the non labelled 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 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.

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

Even in model 2 we only have the problem with heteroscedasticity which we will adjust with the same manner (POLS). Results are summarized in table 4, they show no statistically significant relationship between CSR and ROE. Just two variables participate to the explanation of the model positively (risk) and negatively (energy sector). The whole model is significant at 0.01 with R2 = 40%.

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

Our results show a negative relationship between CSR and ROS (model 3) which means that ROS of labelled companies is less than non labelled 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 R2 = 21%.

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

Table 4. Results Abstract

Variable	Model 1: ROA	Model 2: ROE	Model 3: ROS
CSR	0.110699* (0.0586691)	0.0898075 (0.1116252)	-0.2773548*** (0.0999404)
Size	-0.0700909* (0.0402337)	-0.0967328 (0.08167)	-0.3100925*** (0.111309)
Risk	0.64658** (0.3033329)	0.6383905*** (0.0652998)	0.6319106** (0.2768254)
Age	-0.0013511 (0.0014985)	-0.0012645 (0.0028414)	-0.0034022 (0.0030532)
Energy	-0.175908** (0.0716294)	-0.2890515* (0.1563278)	-0.4355692* (0.2550415)
Services	-0.0911784 (0.085456)	-0.2216961 (0.2147963)	-0.1958267 (0.3241005)
Agri-food	-0.0679568 (0.0644993)	-0.1341258 (0.1962121)	-0.2938498 (0.3402425)
Constante	0.7609736* (0.364043)	1.161671* (0.7053502)	3.689948*** (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 author, based on Stata 14 output.

5 DISCUSSION

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 (e.g [26], [51], [28]). Indeed, being labelled CSR by CGEM increased ROA. This supports social impact hypothesis which states that socially responsible companies creates good relationships with stakeholders which create in return profits via favorable image and reputation [37], [27]. In our case, labeled companies have gained the credibility of their stakeholders and increased their returns.

However, when using ROE as proxy for FP, we do not find any impact of CSR on FP sustaining since then neutrality hypothesis [52], [51]. This hypothesis may indicate an indirect relationship between CSR and FP which means that there are some variables mediating this relationship [53].

We found that ROS is linked negatively with CSR, our findings are in agreement with results of El Malki [25], Simionescu & Gherghina [43] 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 [16]. Cornell and Shapiro [54] 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 good reputation.

6 CONCLUSION

Whether adopting CSR is profitable or not depends on how it's managed and what are benefits expected from it. We can conclude that the company should know very well its main stakeholders in order to define their needs. Based on that, it can engage in social and environmental projects.

Therefore, the company will be able to measure performance of these actions according to goals preset and to whom these projects are addressed.

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