THE CONTRIBUTION OF ESG TO THE FINANCIAL PERFORMANCE OF BANKS: MULTINATIONAL STUDY

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Abstract

The subprime mortgage crisis and the COVID-19 crisis have severely damaged banks' image and the climate of trust they enjoy with their customers. As a result of this deterioration, social responsibility is increasingly being developed within banking establishments to overcome the undesirable effects of these crises. This study aims to evaluate the contribution of environmental, social, and governance (ESG) to the financial performance of banks. The final sample is made up of 52 banks from different countries, and our study covers the period from 2007 to 2020. The results show that the overall ESG score, environmental, social, and governance scores separately, and the bank size are positively correlated with banks' financial performance measured by return on assets (ROA) and return on equity (ROE). On the other hand, debt is negatively correlated with the latter variables. Also, for more robustness, we assessed the effect of each ESG criterion on banks' financial performance. The contribution of this work can be seen in the fact that it is the first multinational analysis including 52 banks to assess the relationship between ESG and financial performance during the period of the subprime and COVID-19 crises.

Keywords: Corporate Social Responsibility, Environment, Social, Governance, Financial Performance, Subprime, COVID-19

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1. INTRODUCTION

The successive global crises, particularly economic, financial, and, more recently, humanitarian and health crises linked to the current COVID-19 pandemic, have demolished the world's economies and sidelined the development of a sustainable economy. The world of finance, and, therefore, of banking, is focusing increasingly on integrating social responsibility (Chancel, 2021). By integrating environmental and social issues into the way companies operate, corporate social responsibility (CSR) is now an integral part of corporate strategy (Bocquet et al., 2017). CSR has encouraged companies to provide information about their environmental and social activities (Hamrouni et al., 2020).

The CSR concept has an important place in the world of business and entrepreneurship, and is, therefore, the subject of much debate. It is defined by the International Organization for Standardization's (ISO) standard ISO 26000:2010 as an organisation's responsibility for the impacts of

its decisions and activities on society and the environment, resulting in ethical and transparent behaviour that contributes to sustainable development, including the health and well-being of society; takes into account stakeholder expectations; respects applicable laws and is consistent with international standards of behaviour; and is integrated throughout the organisation and implemented in its relationships (ISO, 2010). These environmental, social, and governance (ESG) criteria are becoming increasingly important, attracting the attention of investors who are now looking for companies that have developed ESG investment strategies and companies that regularly publish CSR reports. These criteria are known as ESG.

The recent COVID-19 health and financial crisis severely damaged the banking sector's public image and climate of confidence. As a result, the world of finance, and, therefore, of banks, is increasingly focused on integrating CSR practices into banking establishments. This practice enables banks to obtain a positive image with their customers, improve group satisfaction, and consequently improve the economic and financial performance of banks (Ambec & Lanoie, 2008). CSR increases company performance due to positive results for employees (Jeon et al., 2020). Indeed, the practice of CSR improves consumers' perception of service quality, which leads to an increase in company performance (Sinthupundaja et al., 2019).

However, investing in ESG measures can be costly in the short term, which is why we should expect to see positive effects in the long term. In fact, several researchers have shown that there is a negative link between ESG and the financial performance of companies. Friedman (1970) considers that ESG is a costly phenomenon for the company, as it requires a significant cost commitment. This implies a negative relationship between ESG and financial performance. Cherry (2021) assessed the effect of ESG criteria on the financial performance of companies in Belgium. His study was based on historical data of ESG scores assigned by Bloomberg, as well as return on assets (ROA) and return on equity (ROE). The results show that ESG criteria would not have a negative effect on the ROA and ROE of companies from the Belgian index BEL 20 in the short term. Using stakeholder theory, several researchers confirm the positive relationship between financial performance and ESG (Allouche & Laroche, 2005). This theory supports the positive relationship between the variables linking the two concepts of social and financial performance. This makes it possible to improve group satisfaction and consequently to improve the company's economic and financial performance.

This work aims to evaluate the contribution of ESG to the financial performance of banks during the subprime and COVID-19 crises. The main question is as follows:

RQ: What is the contribution of ESG to the financial performance of banks?

This work is divided into the following parts. Section 2 provides a review of the previous literature regarding two dominant theoretical approaches within which the relationship between ESG and corporate performance can be interpreted. It compares the neoclassical theory and stakeholder theory, and then examines the contribution of ESG to ensuring certain returns and sustainable global growth. Section 3 presents the sample of the study, which consists of 52 banks from different countries, as well as the variables retained and the statistical methods used. Section 4 analyses the empirical results obtained in order to conclude the validation of the hypothesis. Section 5 discusses the findings and, finally, Section 6 outlines the conclusion.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

There are two dominant theoretical approaches within which the relationship between CSR and corporate performance can be interpreted. In the first theoretical approach, the neo-classical approach, Friedman (1970) argued that because executive directors are legal agents and employees of business owners, they are only responsible for maximising shareholder wealth. Friedman (1970) considered that any activity aimed solely at maximising profit would generate higher costs for the company and conflicts of interest with shareholders, and would ultimately diminish performance in general. Focusing more on CSR rather than profit maximization leads to a failure of market mechanisms and an inability to achieve an optimal allocation of resources. Friedman (1970) affirmed that the primary objective of companies should be to maximise profit in order to satisfy shareholders, and that companies, therefore, have no responsibility towards society, but only towards their shareholders. With the popularisation of CSR, companies' objectives are no longer solely financial this time, but are based on stakeholder theories. The second dominant theoretical approach contradicts the shareholders' point of view. In contrast to neo-classical theory, the stakeholder theory developed by Freeman (2010) considered that the objective of the company is not to maximise the utility of shareholders, but to maximise the overall well-being of all the company's stakeholders, such as shareholders, employees, customers, suppliers, etc. According to Freeman (2010), responding to stakeholder needs enhances a company's reputation in a way that positively impacts its performance. According to Freeman's stakeholder theory, shareholders are considered as one of multiple stakeholders, including external and internal constituents (Ruf et al., 2001). Since the shareholder value of companies can be reduced in the event of unfavourable confrontations with stakeholders, certain negative social costs are unavoidable for companies (Ruf et al., 2001). A stakeholder-driven firm also maximises shareholder profit while generating value for stakeholder groups (Mishra & Suar, 2010). According to Freeman (2010), since a "managerial vision" is more complicated than a "production vision", from a social point of view, companies are expected to act responsibly towards the government, investors, customers, and to manage employees responsibly so as to create sustainable value for the company. El Jaafari et al. (2025) found that the environmental factor is positively correlated with company performance, reflecting the growing market acceptance of environmentally friendly practices. The social factor, on the other hand, shows mixed results, with positive impacts often observed in employee satisfaction and community relations. Finally, with

regard to the governance variable, the researchers emphasise the importance of the board of directors, whose effective governance affects the company's overall strategy, investment choices, and decisions, and the development of organisational policies.

The subprime crisis of 2008 showed that CSR was only a fragile facade. As profits began to disappear, good intentions disappeared, but this did not stop dividend payments, stock options, and end-of-year bonus payments. In 2007 (before the crisis) and 2010 (after the crisis), dividends paid out by the CAC 40 grew from 31 to 40 billion, and more recently to 50 billion in 2019. As a result, economic players are faced with various risks in their activities that can endanger their reputation, their image, and their relationship with the various stakeholders. As a result, adopting CSR strategies as a crisis management tool enables companies to ensure the continuity of their activities and, subsequently, their performance in the current economic and financial climate. CSR has become a sustainable performance lever for companies, especially in the post-crisis period.

Although CSR has received sustained attention from researchers, the results obtained on the relationship between CSR and company performance are still mixed. In the literature, inconsistent conclusions on the relationship between CSR and firm performance have been attributed to the multi-dimensionality of CSR and that there is currently no shared global understanding or uniform application of CSR across the world (Ağan et al., 2016). Furthermore, it has been found that the importance of CSR and its effect on firm value varies across the world depending on the national, institutional, and economic environment (Marti et al., 2015). Indeed, despite their variety in published research, all definitions of CSR agree on the idea that companies seek to meet societal expectations when developing their environmental management strategies (Saeidi et al., 2015). According to the Bloomberg financial group, ESG assets, or corporate assets whose objective is sustainable development, will exceed 37 trillion dollars by the end of 2021 and could reach 53 trillion dollars by 2025, representing more than a third of total assets. This rise in popularity among investors is likely to have been reinforced by the coronavirus health crisis of 2020. In fact, research published in March 2020 by Bank of America showed that companies that incorporate CSR into their strategies improve their stock market performance by 5 to 10 points compared with benchmark indices. In addition, a report drawn up by France's strategy showed that CSR is a means of ensuring that a company runs smoothly and performs better. As a result, by adopting CSR practices during a period of crisis, companies can have an influence on their stakeholders and affect their reputation.

The literature on CSR shows that the majority of studies conclude that the relationship between ESG and financial performance is positive. Allouche and Laroche (2005) confirmed this positive relationship. The results of their study show that out of 93 empirical analyses that evaluated the link between these variables, 49 concluded a positive relationship between ESG and the financial performance of companies. Benali et al. (2021) validated the hypothesis that ESG communication is positively related to financial performance. This hypothesis was also confirmed by Jo et al. (2015) and Martinez-Conesa et al. (2017). Similarly, Velte (2017) found that German companies for which ESG has a positive impact on certain performance indicators, such as ROA, as well as performance indices related to the governance aspect of ESG, have a greater positive impact than those on the environmental or social part.

Indeed, the impact of corporate governance and CSR on company performance is studied separately in the relevant literature; their joint effect on company performance has not yet been studied in depth. The governance dimension of ESG has a stronger impact on performance than the other components (Velte, 2017). As a result, corporate governance is a crucial pillar of a sustained CSR orientation (Jamali et al., 2008), and because these two factors are interdependent (Karim et al., 2020), it is essential to examine their combined impact on different corporate performance indicators. The governance score is made up of criteria such as transparency, the composition of the board of directors, and executive pay. Edmans et al. (2023) considered that organisations where employees are satisfied perform better than their competitors. Cherry (2021) considered that a company that functions better internally is able to improve its financial performance. Gruszczynski (2006) assessed the relationship between corporate governance score and the financial performance of companies. His study was based on a sample of Polish companies. The results show a positive and significant link between the governance score used and financial performance. This study was confirmed by Bauer et al. (2008) on a sample of Japanese companies.

Based on the results obtained by Friede et al. (2015) from more than 2000 empirical studies, ESG criteria and corporate financial performance are positively related in various regions and approaches. In fact, the in-depth study by Friede et al. (2015) showed that 90% of existing empirical studies found a non-negative relationship between CSR and corporate financial performance (the majority of which were positive). However, other studies have shown negative (Makni et al., 2009) or insignificant (van Beurden & Gössling, 2008) relationships between CSR and company performance. In some economies, companies do not consider social and non-financial disclosure as a mechanism to increase market value, and investors are not willing to pay a premium for CSR (Buallay et al., 2020). In addition to cross-national differences, Sudana et al. (2019) investigated differences between CSR and Tobin's Q across industries and CSR dimensions. They found that corporate social activities related to the environment positively affect Tobin's Q in the mining sector, but negatively in the production of consumer goods. In particular, in a competitive business environment, a better reputation has a significant impact on a company's economic value (Hamrouni et al., 2020). Aydoğmuş et al. (2022) noted the absence of a direct relationship between environmental initiatives and corporate profitability or valuation. These researchers note that environmental actions require a longer period of time to generate concrete results, unlike initiatives focused on social or governance dimensions.

However, there are several reasons for the disparity in results. The data used in the studies come from different time periods or from different

geographical areas. Similarly, the ESG indicators used are not identical between the different research studies. A variety of indices are available, ranging from general ESG scores calculated by large groups, such as Bloomberg, to very specific indicators on aspects of ESG, such as the number of women on the board of directors or the amount of waste recycled. There are also a number of indicators for measuring a company's financial performance, such as ROE, ROA, earnings before interest and taxes (EBIT), and Tobin's Q. For this reason, the results obtained on the relationship between ESG and financial performance are mixed. Crifo et al. (2016) considered that although the relevant literature has provided mixed results, studies have tended to expose the positive relationship between green practices, human resources, customer and supplier dimensions, and company performance. Increased CSR leads to improved financial performance (Fernández-Gago et al., 2016), and corporate initiatives that support sustainability are profitable (Kuzey & Uyar, 2017). A favourable CSR position of companies towards key stakeholder groups creates satisfaction among stakeholders, which in turn brings cost benefits and efficiency gains to companies (Mishra & Suar, 2010).

H1: ESG has a positive influence on financial performance.

3. RESEARCH METHODOLOGY

This part links theoretical concepts to empirical data by translating the theoretical conceptual study into several empirical elements illustrating this definition or dimension. This phase presents the final sample of our study and the dependent and independent variables affecting bank performance, as well as their measures.

3.1. Definition of the sample

The majority of previous studies have focused on a comparative study between different sectors to assess the relationship between ESG and company performance, such as telecommunications, technology, health, energy, industry, finance, consumer goods, materials, and retail (Feng et al., 2017; Blasi et al., 2018). The homogeneity of the sectors included in the sample weakens the comparability of the results of these previous studies across sectors. Therefore, our study overcomes their limitation by reducing the sample to the banking sector. Indeed, according to our research, we have noticed that the COVID-19 crisis affects the performance of banks in some countries, such as: Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, the Netherlands, Poland, Spain, Sweden, Switzerland, Russia, and the United Kingdom. These countries suffered the same consequences following the subprime crisis in 2008 and, more recently, the COVID-19 health crisis, and these are the European countries where ESG practices are most developed.

For these reasons, our study focused on banks. The final sample was made up of 52 banks in these different countries. The information was obtained from the DataStream database, and we attempted to collect the data required for our variables over the period from 2007 to 2020.

3.2. Definition of study variables

This section allows us to summarize the statistical methods used to test our general hypothesis on the contribution of ESG to the development of financial performance. The general regression model is a "panel data" study.

$$ROA_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 GOV_{i,t} + \beta_3 LEV_{i,t} + \beta_4 TAIL_{i,t} + \varepsilon_i \quad (1)$$

$$ROE_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 GOV_{i,t} + \beta_3 LEV_{i,t} + \beta_4 TAIL_{i,t} + \varepsilon_i \quad (2)$$

where,

- *ROA* — performance variable return on assets;
- *ROE* — performance variable return on equity;
- β — constant;
- *ESG* — ESG global score;
- *GOV* — governance pillar score;
- *LEV* — debt variable leverage;
- *TAIL* — taille variable;
- ε — error term.

3.2.1. Dependent variables

With regard to financial performance, two financial ratios were chosen: *ROA* and *ROE*. The reason for selecting these financial performance indicators is that they are commonly used in several sectors. Companies with high sustainability ratings have better financial performance in terms of *ROA* and *ROE* (Fernández-Gago et al., 2016).

- *ROA*: This variable represents the profitability of the company in relation to its assets (Taskin, 2015; Ben Ahmed & Khelil-Rhouma, 2020).
- *ROE*: This variable is an accounting measure of the company's profitability in relation to shareholders' equity (Kolish, 2015).

3.2.2. Independent variables

According to the hypothesis already posed, the explanatory variables in this work are: global *ESG*, environmental (*ENV*), social (*SOC*), and governance (*GOV*) scores, leverage (*LEV*), and *SIZE*.

- Global *ESG* score of bank *j* in country *i* in year *t*. This is an indicator for measuring ESG performance, for evaluating a bank's relative ESG performance in an objective and open manner.
- The environment pillar score (*ENV*) of bank *j* in country *i* in year *t*. This relates to the ecological impact of the bank's choices and activities on the environment in general, for example, climate change, air pollution, carbon footprint, water pollution, soil pollution, and energy consumption.
- The social pillar score (*SOC*) of bank *j* in country *i* in year *t* concerns the impact of the bank's choices and activities on social issues, for example: employee conditions, access to healthcare, human rights, etc.
- The governance pillar score (*GOV*) of bank *j* in country *i* in year *t*. It concerns the bank's management in terms of governance, such as: the bank's transparency, the distribution of salaries, the diversity of the board of directors, and the relationship with shareholders.

3.2.3. Control variables

De Andres et al. (2005) consider that the debt burden borne by the company may have an effect on managerial discipline. André and Schiehll (2004) confirm the hypothesis that debt has a negative and highly significant relationship with the company's financial performance. This result contradicts the study by Peter et al. (2005). Leverage (*LEV*) is the ratio of financial debts to total assets (Ben Ahmed & Khelil-Rhouma, 2020).

Bank size (*SIZE*) is considered to be a key variable in explaining financial performance. The majority of studies have shown that there is a positive and significant relationship between company size and financial performance (Durnev & Kim, 2003; Bohren & Odegaard, 2001). However, other studies have found the opposite, that these variables are negatively correlated (André & Schiehll, 2004). The *SIZE* variable is the natural logarithm of total assets (Bauer et al., 2008; Ben Ahmed & Khelil-Rhouma, 2020). The reason for not using the number of employees and the volume of sales as measures of the *SIZE* variable is that we can find larger companies with a small number of employees or a low volume of sales.

4. RESEARCH RESULTS

This section presents the statistical results obtained in order to assess the nature of the relationship between the dependent and independent variables.

4.1. Descriptive statistics

Before moving on to the interpretation of the results, it will be interesting to present the descriptive statistics of the variables.

Table 1. Summary statistics of all variables

Variable	*Obs.*	*Mean*	*Std. dev.*	*Min*	*Max*
ESG	694	58.51435	20.48174	6.63	94.47
ENV	694	64.27156	27.22047	0	97.55
SOC	694	59.68389	22.19672	2.9	97.58
GOV	694	57.96561	23.5758	3.62	97.37
LEV	728	0.212232	0.1428953	-0.0886744	0.6985765
TAIL	728	19.55357	1.780978	15.49208	24.28146
ROE	710	5.445479	13.55065	-91.52	36.98
ROA	728	4.408915	11.45125	-92.31093	65.59654

According to the results obtained, the descriptive statistics show a difference between the numbers of observations per variable. It should be noted that the database used reveals many missing values, particularly for the overall *ESG* score and the *ENV, SOC*, and *GOV* scores. This explains why our sample contains some banks that had only recently integrated ESG into their strategies. For this reason, it is difficult to obtain ESG indicators published over the last 10 years. It should also be noted that the overall *ESG* score and *ENV, SOC*, and *GOV* scores have a close average, around 60. In addition, the standard deviation of these variables is all close, as are the minimum and maximum values. This explains why the banks in our sample are, for certain reasons, more likely to meet the *ESG* criteria in relation to the *ENV, SOC*, and *GOV* variables. In terms of financial performance, measured by *ROA* and *ROE*, it should be noted that the general averages are positive and close for the banks.

4.2. Correlation test

In probability and statistics, the correlation coefficient is used to study the strength of the link between two or more variables.

Table 2. Correlation test for *ESG, ENV, SOC, GOV, LEV, TAIL, ROE*, and *ROA*

Variable	*ESG*	*ENV*	*SOC*	*GOV*	*LEV*	*TAIL*	*ROE*	*ROA*
ESG	1.0000							
ENV	0.7922	1.0000						
SOC	0.9184	0.7403	1.0000					
GOV	0.7800	0.4394	0.4975	1.0000				
LEV	0.1081	0.0585	0.1560	0.0518	1.0000			
TAIL	0.4702	0.5027	0.4683	0.2714	-0.0291	1.0000		
ROE	0.0339	0.0227	0.0090	0.1183	-0.1000	0.1586	1.0000	
ROA	0.0795	0.1887	0.0907	0.0289	-0.2288	0.0595	0.8788	1

Before examining the relationship between the various ESG variables and performance, we will assess the nature of the correlation between these variables. The results show that the overall *ESG* score is highly correlated with the other three scores. In addition, the correlation between the two financial performance indicators, *ROA* and *ROE*, is strong at 0.8788, which seems logical since they both represent the bank's profitability.

The variance-covariance matrix shows a negative covariance between the *ROA, ROE*, and *LEV* variables, meaning that financial performance is negatively correlated with debt. On the other hand, the covariance is positive between *ROE, ROA*, and the other variables, meaning that financial performance is positively correlated with the *ESG, ENV, SOC, GOV,* and *TAIL* variables. This justifies increasing the variables that are positively correlated with *ROE* and *ROA*, and reducing the variables that are negatively correlated with *ROE* and *ROA*. Based on this study, we have verified that there is a relationship between *ROE, ROA,* and *ESG, ENV, SOC*, *GOV*, *LEV*, and *TAIL* and that these variables interact.

5. DISCUSSION OF THE RESULTS

Before moving on to evaluate the regression between the variables, it is interesting to evaluate the homogeneity test to show that our model is a panel data model. Therefore, the Hausman test shows that Prob > Chi^2 is less than 5% for the different models, in this case, the models to be studied are fixed effect panel data models.

Table 3. Regression results

Variable	*1st ROA model*	*2nd ROE model*	*3rd ROA model*	*4th ROE model*
ESG	1.00643*** (2.69)	1.22862*** (2.65)	-	-
ENV	-	-	0.1178893*** (4.94)	0.0571254** (1.90)
SOC	-	-	0.0386823* (1.80)	0.0799636** (2.14)
GOV	-	-	0.0584249*** (2.93)	0.0938378*** (3.81)
LEV	-1.65213*** (-5.94)	-1.43097*** (-2.84)	-1.47182*** (-5.58)	-0.911291*** (-2.44)
TAIL	1.320664*** (4.89)	1.734402*** (5.21)	1.39295*** (5.16)	1.82935*** (5.51)
_cons	-0.59981*** (2.99)	-0.26426*** (-4.55)	-0.20334*** (-2.71)	-0.72784*** (-4.30)
Number of obs.	694	679	694	679
F-stat	18.07	10.04	20.06	10.54
Prob > F	0.0000	0.0000	0.0000	0.0000
R-squared	0.1363	0.0822	0.1272	0.0726
Adj. R-squared	0.1287	0.0740	0.1209	0.0658
Root MSE	10.613	12.981	10.661	13.039

*Note: t-statistic in parentheses. MSE — mean square error. *, **, *** significant at the 10%, 5%, and 1% levels, respectively.*

The analysis of variance (ANOVA) results allow us to evaluate the multiple regression models globally and to answer the first question, which is the explanatory power of the models. For example, for the first model, the R-squared shows that the independent variables explain 13.63% of the *ROA* variability, and the same is true for the other models. The ANOVA results can also answer a second question concerning the overall significance test for the models. The results show that the F-statistic is significant at the 1% level for all the models for which the variables *ESG* overall, *ENV, SOC, GOV, LEV*, and *TAIL* have explanatory power for *ROE* and *ROA*.

The regression table allows us to explain the individual influence of each variable. Table 3 contains the results in greater detail.

The global *ESG* variable is positively and significantly associated with financial performance for the first two models, which means that the practice of ESG, between the period of the subprime crisis and COVID-19, seems to be important and has a positive impact on the financial performance of banks. The same is true for the other variables related to CSR (*ESG*) are positively and significantly associated at a significant and important threshold in both models, and especially the variable governance, which explains that a bank that works better internally is able to improve its financial performance. To this end, the implementation of ESG strengthens the bank's strategy and ensures its long-term sustainability. As long as a company's social and environmental strategy has a positive impact on its financial performance, ESG is considered to contribute to sustainable development and overall performance. As a result, the banking sector can introduce and intensify internal CSR whose objective is to improve working conditions and employee standards, and consequently retain the most qualified staff and develop a loyal customer base in order to achieve higher operational performance and benefit more from CSR (Famiyeh, 2017). CSR helps to reconcile the conflicting interests of the various stakeholders, especially during times of crisis. This makes it possible to improve group satisfaction and enhance bank performance. Consequently, the results obtained confirm the hypothesis *H1* that global *ESG* has a positive impact on banks' financial performance as measured by *ROE* and *ROA*. Financially, debt (*LEV*) is negatively associated with financial performance at a significant level of 1% for all models. This means that the debt charge is likely to reduce banks' financial performance. As a result, following the 2008 subprime crisis, banks need to think about making changes by integrating CSR into their practices. The results also show that *SIZE* is always positively correlated with financial performance and significant at a threshold of 1%. This means that *SIZE* has an explanatory power on financial performance measured by *ROE* and *ROA* during the post-subprime crisis period, and the pre-crisis period of COVID-19. Consequently, large banks that integrate CSR into their practices are more likely to achieve strong financial performance during crisis periods.

For greater robustness, we have evaluated the subprime effect of each *ESG* variable on financial performance measured by *ROA* and *ROE* indicators. The results of the study are presented in Table 4.

Table 4. Robustness of regression results

Variable	*5th ROA model*	*6th ROE model*	*7th ROA model*	*8th ROE model*	*9th ROA model*	*10th ROE model*
ENV	0.11891*** (6.85)	0.06850*** (3.17)		0.0813*** (3.11)	-	-
SOC	-	-	0.1069*** (5.01)	-	-	-
GOV	-	-	-		0.000997 (0.05)	0.04226* (1.89)
LEV	-0.028*** (-5.65)	-0.5945** (-2.14)	-0.020*** (-6.88)	-0.059*** (-2.81)	-0.665*** (-6.04)	-0.1047** (-2.28)
TAIL	1.385*** (5.17)	1.793*** (5.41)	1.084*** (4.08)	1.744*** (5.36)	0.46141** (1.86)	1.106*** (3.70)
_cons	-0.016*** (-2.46)	-0.923*** (-3.97)	-0.50407 (1.35)	-0.018*** (-3.75)	-0.12889 (-0.24)	-0.200*** (-2.99)
Number of obs.	694	679	694	679	694	679
F-stat	30.18	11.95	22.47	11.81	13.61	9.70
Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
R-squared	0.1160	0.0504	0.0890	0.0499	0.0558	0.0413
Adj. R-squared	0.1121	0.0462	0.0850	0.0457	0.0517	0.0371
Root MSE	10.714	13.175	10.876	13.179	11.072	13.238

*Note: t-statistic in parentheses. *, **, *** significant at the 10%, 5%, and 1% levels, respectively.*

The results of the study show that the environmental and social variables explain the variability of banks' financial performance at a significance level of 1%. While the governance variable does not explain the performance variable measured by *ROA*, the *ROE* variable is explained at a 10% threshold by the governance variable. At this point, according to the results obtained in this table and the results obtained in the previous Table 4, we can conclude that banks must consider investing in environmental and social criteria for the governance variable to have positive and highly significant effects on the bank's financial performance. Indeed, one of the major elements of good governance is transparency, which consists of providing reliable, relevant, and timely information to users, so that they can monitor the behaviour of management and take the necessary decisions. Investing in the three CSR criteria enables banks to maintain their financial performance, especially during periods of crisis.

In conclusion, based on the results obtained, it should be noted that our general hypothesis is verified and that ESG is a sustainable performance lever for banks during periods of crisis. The 2008 subprime crisis and the COVID-19 crisis should, therefore, be a real test for the banking world and for ESG. The damage is not just financial or health-related, but also political, economic, and social.

6. CONCLUSION

The COVID-19 health crisis and the 2008 subprime crisis revealed the failure of banks in certain countries, particularly in Europe, which suffered the same consequences as a result of these crises. For this reason, our study focused on the banking sector. By investing in CSR, banks can overcome the undesirable effects of these crises. This practice introduces ESG criteria that are designed to encourage investment in order to guarantee reliable returns and strengthen value creation for banks.

This work aims to assess the contribution of ESG to the financial performance of banks during the subprime and COVID-19 crises. Three parts have been put forward to address this issue. The first part presents the contribution of ESG to ensuring certain returns and sustainable global growth. The second part presents the study sample, which consists of 52 banks from different countries, as well as the variables selected and the statistical methods used. Finally, the third part analyses the empirical results obtained concerning the relationship between the dependent variables, ROE and ROA, and the independent variables, which are the overall ESG score, the environmental, social, and governance separate scores, leverage, and the size of the bank.

Empirically, the regression results show that the variables: global ESG, environmental, social, governance pillars, and size are positively correlated with banks' financial performance. Debt, on the other hand, is negatively correlated with financial performance and is highly significant. In fact, all the results of our study, as well as their theoretical and managerial contributions, have been apprehended and interpreted bearing in mind various theoretical and empirical limitations. In conclusion, ESG has been developing in recent decades and is becoming the focus of interest for researchers in management and finance. ESG has a significant positive effect on the sustainability performance of banks. However, investment in ESG measures may be costly in the short term, but guarantees positive effects in the long term.

The main limitation of this work lies in the lack of theoretical foundations in the literature concerning the contribution of global ESG to financial performance, especially during periods of crisis. In the context of banks engaged in ESG activities, it will be relevant to analyse the moderating effect of bank governance on financial performance.

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