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# INVESTMENT IN ESG ACTIVITIES AND BANK PERFORMANCE: DOES BANK OWNERSHIP MATTER?

Marc Kouzez\*  
ICN Business School  
CEREFIGE, Université de Lorraine  
Les collines de l'Arche, 76 route de la demi-lune  
92800 Puteaux, France  
Marc.kouzez@icn-artem.com  
\*Corresponding author

Ji-Yong LEE  
Audencia Business School  
8 Rte de la Jonelière, 44300 Nantes, France  
jylee@audencia.com

Jomana MAHFOD-LEROUX  
VALLOREM, IUT Chartres, Université d'Orléans  
1 Pl. Roger Joly, 28000 Chartres, France  
Jomana.leroux@univ-orleans.fr

**Abstract:** In this paper, we investigate the relation between Environmental, Social and Governance (ESG) activities and bank performance in European markets. Different from existing literature, we also explore whether ESG activities differently affect the performance of foreign-owned banks and domestic-owned banks. The results show that higher involvement in ESG activities is associated with better performance only for foreign-owned banks, and suggest that investment in ESG activities is relevant for foreign banks since it helps to obtain legitimacy in foreign markets, and enhance their reputation on international level. Our findings provide a better understanding of whether a bank's ESG activities are in the interest of shareholders, and partially explain the contradictory results in previous studies.

*JEL: G32, G21*

*Keywords:* Bank Performance, ESG, Foreign Banks

**Biographical notes:** Marc Kouzez is an Associate Professor at the department of Finance, Accounting and Cost Control, ICN Business School. He is also affiliated to CEREFIGE research center, Université de Lorraine. His research areas of interest are mainly focused on Banking and Financial Systems, Corporate Social Responsibility/ESG, and Sustainable Economy. His research has been published in various academic journals, and he also serves as a reviewer for several international journals.

Ji-Yong LEE is an Associate Professor in accounting and management control at Audencia, Nantes, France. Her main research interests include Corporate Governance, Fintechs, CSR, bank performance, and Environmental economic policy.

Jomana MAHFOD-LEROUX is an Associate Professor of Corporate Social Responsibility, Supply Chain Management and Information System at the Université d'Orléans, France. She is a member of the research center VALLOREM. Her research focuses on Corporate Social Responsibility, Management of Innovative, Supply Chain Management, Logistics analytics, Supplier-buyer relationships.

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## 1. Introduction

Since Milton Friedman's 1970 essay 'The social responsibility of business is to increase its profits' the debate on the role of business in society has been far from resolved. The question of the financial implications of corporate social responsibility has recently garnered more interest from both firms, and scholars. In 2020, Governance and Accountability Institute reported that 92% of S&P 500 companies released corporate responsibility reports on Environmental, Social, and corporate Governance (hereafter ESG<sup>1</sup>) performance compared with 20% in 2011. Interest in ESG activities by scholars is indicated by the increased number of studies exploring the relation between ESG activities and financial performance. (e.g.,

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<sup>1</sup> We opt for "ESG" concept since it is a more expansive terminology than corporate social responsibility (CSR). While ESG refers to how corporations and investors integrate environmental, social and governance concerns into their business models, corporate social responsibility traditionally has referred to corporations' activities with regard to being more socially responsible (Gillan, Koch and Starks, 2021).

Ferrell et al., 2016; Lins et al., 2017; Lahouel et al., 2021; McWilliams and Siegel, 2000; Humphrey et al., 2012; Newell and Lee, 2012).

Despite an important body of research on this topic, most of previous studies have focused on non-financial firms. In this paper, we focus on the banking sector for various reasons. First, banks play an important role in economic development and may create several external benefits to society (Shen and Lee, 2006). For instance, Klein and Weill (2022) find that banks' profitability positively impacts economic growth in both the short-run and the long-run. Second, since banks could benefit government bailouts<sup>2</sup>, public opinion often stresses the need for them to engage in ESG activities (Shen et al., 2016). Third, investment in ESG activities seems to be more relevant for banking establishments. For instance, Hurley et al., (2014) indicate that during the global financial crisis, the engagement of the banking industry in non-socially responsible practices has caused a loss of trust among the industry's customers, and consequently to a high number of bank failures. Forth, given the growing importance of the role played by ESG activities in the banking sector, a better understanding of the link between ESG and financial performance would be valuable to bank shareholders and bank stakeholders leading eventually to a win-win situation.

The question of whether adopting ESG activities can improve a bank's financial performance is a contentious topic, and no consensus has been yet reached (e.g. Cornett et al., 2016; Platonova et al., 2018; Maqbool and Zameer, 2018; Esteban-Sanchez et al., 2017; Zhou et al., 2021). The theoretical literature generally explains such contradictions in the results by two opposing views. The first view explains the positive relation between ESG activities and financial performance by the stakeholder theory (Freeman, 1984). The second view

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<sup>2</sup> For example, Northern bank sought and received a liquidity support facility from the Bank of England, following problems in the credit markets caused by the financial crisis of 2007–2008.

corresponds to the agency theory. In both visions, bank ownership is likely to play a significant role when examining the impact of ESG activities on financial performance.

By using a sample of banks operating in European markets over the 2002-2018 period, we investigate the relation between ESG activities and bank performance, and conduct a study based on a comparable measure across countries. To extend our investigation, we examine whether the relation between ESG activities and bank performance is contingent on bank ownership. Our sample composed of more than 40% of foreign banks provides an excellent setting for exploring whether ESG score differently affects the performance of foreign-owned banks and domestic-owned banks. Overall, our results indicate a negative relation between ESG activities and bank performance. A deeper analysis shows that higher involvement in ESG activities is associated with better performance for foreign-owned banks. Our findings suggest that ESG activities are more relevant for foreign banks since it helps to obtain legitimacy in foreign markets and enhance their reputation on international level.

Our contribution to the literature is manifold. First, this is the first study considering bank ownership (foreign-domestic) when examining the relation between ESG activities and bank performance. Our results shed light on the vital role of ESG activities for foreign banks and confirm that ESG activities are in the interest of their shareholders. Second, our results suggest that when analyzing the components of bank performance, banks should not be considered as a homogeneous group. Our study help then to reconcile some contradictory results found in the literature. Third, the current banking literature on this topic is rather silent about endogeneity issues (Bitar and Tarazi, 2019; Bilgin *et al.*, 2021; Lahouel *et al.*, 2021). As a robustness check, we control for endogeneity by using the two-stage least squares (2SLS) with instrumental variables (IV).

The remainder of this paper is organized as follows. In Section 2, we review the related literature on the relation between social performance and financial performance and drive our hypothesis. Section 3 describes our sample and reports descriptive statistics. Section 4 presents our empirical results. In Section 5, we report further analyses followed by a discussion of our results (Section 6), and in Section 7 we conclude.

## **2. Literature review and hypothesis**

Despite a large empirical literature examining the relation between ESG activities and financial performance, only few studies have investigated this question in the banking sector. Some scholars argue that a higher involvement in ESG activities is associated with a higher financial performance. With database containing yearly ratings on roughly the 3,000 largest U.S. companies, Lins et al., (2017) examine the effect of corporate social responsibility on firm performance. They find that firms with high level of ESG score experienced higher profitability, growth, and sales per employee relative. This positive impact seem to be as well more pronounced on bank risk during the financial crisis (Broadstock *et al.*, 2021). By using a sample of 21,030 US firm-year observations representing more than 3000 individual firms over the 1998–2012 period, Benlemlih and Bitar (2018) investigate the relation between corporate social responsibility and investment efficiency. They show that high CSR involvement increases investment efficiency. In line with these results, Yoo and Managi (2022) and Chen and Xie (2022) show that disclosure of ESG criteria is important in improving firm profits. In the banking sector, Platonova et al. (2018) examine the relation between corporate social responsibility and financial performance for Islamic banks in the Gulf Cooperation Council region over the 2000–2014 period, and confirm the positive impact of investment in socially responsible activities on financial performance. Cornett et al. (2016) find that banks appear to be rewarded for being socially responsible as financial performance

is positively and significantly related to social performance. By using 28 Indian commercial banks listed in Bombay stock exchange, Maqbool and Zameer, (2018) show that corporate social responsibility exerts positive impact on financial performance.

In contrast, other empirical studies indicate that investment in ESG activities can lead to opportunity costs, and therefore the impact of this investment would be negative on financial performance. With a sample of the largest 3,000 publicly traded U.S. companies from 2003 to 2009, Di Giuli and Kostovetsky (2014) find that an increase in firm corporate social responsibility ratings is associated with declines in profitability measured by ROA ratio. By using both static panel and dynamic panel data models, Lahouel et al. (2021) confirm that corporate social performance negatively impacts financial performance. When examining this issue on financial institutions, Esteban-Sanchez et al. (2017) show that ESG activities negatively impacts the financial performance during the 2007-2009 crisis. Besides, some scholars believe that ESG activities has no influence on financial performance (e.g., Humphrey et al., 2012; Kim and Choi, 2013; Newell and Lee, 2012; Moneva et al., 2020).

To summarize, the findings of empirical studies do not lead to a decision of whether ESG activities improve financial performance. The theoretical literature explain the difference in the results of previous studies by two opposed visions: the advocates of the stakeholder theory (Freeman, 1984), to those of agency theory (Friedman, 1970; Donaldson and Preston, 1995; Jensen, 2002). According to the latter, the only responsibility of corporate managers should be serving the interests of their shareholders 'principal' by maximizing their profit "*The whole justification for permitting the corporate executive to be selected by the stockholders is that the executive is an agent serving the interests of his principal. This justification disappears when the corporate executive imposes taxes and spends the proceeds for "social" purposes*" (Friedman, 1970). From this view, resources employed in ESG activities pursue managers'

wishes in increasing their private benefits, and represent their losses for firms (Jiraporn and Chintrakarn, 2013). These resources should be used only for firm value-maximizing projects.

However, according to the stakeholder theory, the firm's profitability directly depends upon the satisfaction of its various stakeholders' expectations. Investment in ESG activities is then a source of competitive advantage, innovation and opportunity rather than a cost (Porter and Kramer, 2006). Higher involvement in ESG activities can also offer several business benefits such as a higher profitability, and better reputation (e.g., Branco and Rodrigues, 2006; Stanaland et al., 2011; Melo and Garrido-Morgado, 2012; Aramburu and Pescador, 2019). Thus, not only shareholders' interests, but all stakeholders' interests should be considered, and the investment in ESG activities can be viewed by shareholders as a strategic investment leading naturally to a higher financial performance (Ruf *et al.*, 2001). Given the increasing importance of stakeholder's perspective, banks are being forced to manage properly their relation not only with shareholders, but also with their multiple stakeholders to obtain legitimacy<sup>3</sup>. In the situation when the organization's activities do not respect social and moral values, the organization is severely sanctioned by society (Schiopoiu Burlea and Popa, 2013). In this analytical framework, foreign banks face additional risks than domestic banks because of different laws and regulations, legitimacy issue in their foreign markets<sup>4</sup>. Accordingly, interest in ESG activities should be much more important for foreign banks since it helps to obtain legitimacy from the public by enhancing their reputation as socially responsible bank (Khan et al., 2013; Attig and Cleary, 2015).

In both visions, the shareholders' perception of the role played by ESG activities seems to be an important factor when examining the relation between ESG activities and bank financial

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<sup>3</sup> Suchman, (1995, p.574) define legitimacy as 'a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions'.

<sup>4</sup> Attig et al. (2016) show that firm internationalization is positively related to the firm's corporate social responsibility rating.



performance. Furthermore, recent studies argue that non accounting for endogeneity issues would explain the contradictory results in previous studies (Lahouel et al., 2021). Accordingly, we follow the recommendations raised in prior studies (Ben Lahouel et al., 2019; Moneva et al., 2020; Lahouel et al., 2021), and examine the link between ESG activities and financial performance by applying not only the traditional estimators (i.e. OLS, Random Effects), but also by considering the two-stage least squares (2SLS) instrumental variable (IV) regressions to address endogeneity issues. Taken together, the above arguments lead to our hypothesis:

H1- The impact of ESG activities on bank performance differs with the type of bank ownership.

### **3. Sample, variables, and methodology**

To construct our sample, we begin by collecting data on banks in European markets by using different sources. First, accounting data are collected from Bureau van Dijk's Osiris database which is largely used in previous studies (e.g., Boubakri et al., 2020). Second, ownership bank data are obtained from Claessens and Van Horen (2014) datasets, completed by Bureau van Dijk's Osiris database, and annual bank reports available through their respective websites. Third, to proxy ESG activities for each bank in our sample, we utilize ESG score as defined by Refinitiv database. We restrict our sample to banks for which we have data on ESG score in Refinitiv database. Finally, macroeconomic data are obtained from the World Bank's World Development Indicators (WDI). The final sample contains around 82 banks operating in 20 countries.

#### *3.1. Dependent variables*

There is a consensus in the banking literature that profitability is the most comprehensive reduced form measure of a financial performance. We opt for a straightforward measure to proxy bank performance and largely used in the banking literature: the return on total assets ratio (*ROA*) (e.g., Beck et al., 2013; Pasiouras and Kosmidou, 2007; Saghi-Zedek, 2016; Elyasiani and Jia, 2019; Zhou et al., 2021). Following the literature, we also complete our analysis by using the ratio of interest income mins interest expense to total assets (*NIM*), and the non-performing loans ratio (*NPL*) as dependent variables (e.g. Barth, Caprio and Levine, 2012; Ghosh, 2016).

### 3.2. Independent variables

Regarding the explanatory variables, three categories of variables are defined. First, to proxy bank environmental, social, governance activities, we use an overall bank score based on the self-reported information in the environmental, social, and corporate governance pillars (*ESG*). We also define a dummy variable (*Foreign*) that takes the value one if bank is foreign owned. By following Claessens and Van Horen (2014), we identified a bank as foreign owned when 50% or more of its shares were held by foreigners, capturing this way also major changes in ownership. For each year the bank was active, it was then coded either foreign owned or domestic.

**Table 1**  
Variable's definition and source.

In this table, we define our sample variables. We group our variables based upon how they appear in our model

Variable	Description	Data sources
<b>Dependent variable</b>		
<i>ROA</i>	The ratio of net profit to total assets	Bureau van Dijk- OSIRIS
<i>NIM</i>	The ratio of Interest income mins interest expense to total assets	Bureau van Dijk- OSIRIS
<i>NPL</i>	The ratio of impaired loans to total assets	Bureau van Dijk- OSIRIS
<b>Independent variable</b>		
<i>ESG</i>	An overall score based on the self-reported information in the environmental, social, and corporate governance pillars.	Refinitiv
<b>Bank control variables</b>		
<i>Size</i>	The natural logarithm of total assets	Bureau van Dijk- OSIRIS
<i>Liquidity</i>	The ratio of net loans to deposits and borrowings	Bureau van Dijk- OSIRIS

<i>Overhead</i>	The ratio of noninterest expense to total assets	Bureau van Dijk- OSIRIS
<i>Equity</i>	The ratio of equity to total assets	Bureau van Dijk- OSIRIS
<i>Foreign</i>	Dummy taking the value 1 if bank is foreign owned	Claessens and Van Horen, (2014), and OSIRIS
<b>Country control variables</b>		
<i>Inflation</i>	The inflation rate of the country	WDI
<i>GDP growth</i>	The lagged value of GDP growth rate of the country	WDI

Second, to consider the disparities due to the characteristics of each bank in our sample, different variables are considered. These variables can impact bank performance regardless of the macroeconomic conditions. Consistent with previous studies, we use the bank size and estimate it by the logarithm of total assets (e.g., Boubakri et al., 2020; Kouzez, 2021). Following Pasiouras and Kosmidou (2007), we also consider the net loans to total deposits and borrowings ratio (*Liquidity*). Higher figures denote lower liquidity. In addition, we refer to the equity to total assets ratio (*Equity*). This ratio is defined in the literature as an indicator of the debt level, and the risk of insolvency. It reflects the internal bank capital holding decisions (Alraheb, Nicolas and Tarazi, 2019). Previous studies show a positive relation between this ratio and bank performance (Demirgüç-Kunt and Huizinga, 2001). We utilize the ratio of noninterest expense to total assets (*Overhead*). Higher overhead ratio for a prolonged period naturally leads to a lower financial performance.

Finally, to capture the effects related to economic conditions, two indicators largely used in the banking literature are retained: the inflation rate (*Inflation*), and the country growth rate (*GDP growth*) obtained from the World Bank's World Development Indicators (WDI). We describe all variables in Table 1.

## Table 2

Bank distribution across countries.

In this table, we report the number of banks and the number of sample observations by headquartering country

Country	Banks	Freq.	Percent	Country	Banks	Freq.	Percent
Austria	2	14	3.02	Italy	16	74	15.98
Belgium	1	7	1.51	Netherlands	2	10	2.16
Czech Republic	2	9	1.94	Norway	1	7	1.51

Denmark	3	21	4.54	Poland	10	65	14.04
Finland	1	7	1.51	Portugal	1	7	1.51
France	3	18	3.89	Russian Federation	3	21	4.54
Germany	3	20	4.32	Spain	7	48	10.37
Greece	5	20	4.32	Sweden	4	28	6.05
Hungary	1	7	1.51	Switzerland	6	33	7.13
Ireland	3	9	1.94	United Kingdom	8	38	8.21
				<b>Total</b>	<b>82</b>	<b>463</b>	<b>100</b>

In Table 2, we report the distribution of our sample across countries. The following five countries have more than half of the observations: Italy (15.98%); Poland (14.04%); Spain (10.37%); United Kingdom (8.21%); and Switzerland (7.13%).

### 3.3. Descriptive statistics

Table 3 presents summary statistics for the variables used in our study. Panel A presents the data for the whole sample. The mean and standard deviation of our dependent variables *ROA*, *NIM*, *ROE*, *NPL* are 0.64 and 2.46, 1.63 and 2.71, 6.67 and 60.5, 9.25 and 11.6 respectively. The mean value of ESG score for all banks in our sample is 55.5. The average bank has a size of 18.61% and a liquidity ratio of 51.29%. Our sample's average inflation rate is of 1.45% and a GDP growth rate of 1.42%.

In Panel B and Panel C, we compare the characteristics of domestic-owned banks and foreign-owned banks, and conduct univariate tests of differences in means between domestic-owned banks and foreign-owned banks. We find that foreign-owned banks have higher return on assets ratio than domestic-owned banks. Precisely, the mean value of ROA is 1.02 for foreign-owned banks, compared to 1.046 for domestically-owned banks, with a significant difference at the 5% level. Similarly, the mean value of NPL ratio for foreign-owned (7.18) confirms a better performance compared to the mean value of this ratio for domestic-owned banks (10.2). In addition, we find that foreign-owned banks have better ESG score than domestic banks. Specifically, the average ESG is 50.731 for domestic-owned banks compared to 62.87 for foreign-owned banks, with the difference significant at the 1% level, which confirms that

interest in ESG activities by foreign banks is much more important than observed in domestic-owned banks. Finally, domestic-owned banks have significantly bigger size, higher liquidity, and lower leverage ratio than foreign-owned banks. This analysis does not control for other variables that simultaneously can affect performance. We investigate such effects using multivariate analysis next.

**Table 3**

Descriptive statistics.

This table presents descriptive statistics and univariate test results for differences between foreign-owned banks and domestic owned banks. Definitions and data sources for all variables are provided in Table 1. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% level, respectively.

	All Banks (Panel A)					Foreign-owned banks (Panel B)					Domestic-owned banks (Panel C)					t-statistics of mean differences
	Mean	SD	p25	p50	p75	Mean	SD	p25	p50	p75	Mean	SD	p25	p50	p75	
<i>ROA</i>	0.64	2.46	0.13	0.56	1.17	1.02	2.01	0.27	0.72	1.46	0.46	2.62	0.07	0.49	1.01	-0.557**
<i>NIM</i>	1.63	2.71	0.9	1.35	2.27	1.19	4.13	0.7	1.51	2.38	1.83	1.68	0.94	1.32	2.15	0.639*
<i>NPL</i>	9.25	11.6	2.71	5.71	10.5	7.18	12.2	3.24	4.76	7.66	10.2	11.1	2.25	6.51	13.4	3.055**
<i>ESG</i>	55.5	20.9	41.7	57.5	72.8	62.9	19.9	49.1	68	80	50.7	20.2	37.9	52	66.7	-12.139***
<i>Size</i>	18.6	1.87	17.7	18.3	19.7	18.2	1.66	17.6	18.1	18.8	18.8	1.93	17.7	18.6	19.8	0.649***
<i>Liquidity</i>	59.6	21.1	44.5	63.2	75.1	59.1	20.6	47	63.2	72.9	59.9	21.3	44.3	63.2	76.3	0.829
<i>Overhead</i>	2.88	6.42	1.27	2.09	3	3.55	11.2	1.41	2.27	2.72	2.58	1.95	1.22	2.02	3.44	-0.972
<i>Equity</i>	16	22.3	6.14	8.71	12.2	22.9	28.6	6.64	9.55	15.2	12.7	17.6	5.69	8.04	11.6	-10.137***
<i>GDP</i>	1.47	2.6	0.66	1.67	2.82	1.83	1.96	1.13	2.12	2.97	1.24	2.92	0.28	1.46	2.66	-0.597***
<i>Inflation</i>	1.45	2.18	0.51	1.15	1.96	1.35	1.2	0.41	1.3	2.06	1.51	2.63	0.52	1.13	1.91	0.154

### 3.4. Methodology

First, to examine the impact of ESG activities on bank performance, we set up the following empirical model by using an ordinary least squares (OLS) estimator:

$$Performance_i = \alpha + \beta_1 ESG_i + \beta_2 Bank\ Controls_i + \beta_3 Country\ Controls_j + \mathcal{E} \quad (1-a)$$

Where  $Performance_i$  reflects bank performance measures for the bank  $i$  defined above;  $\alpha$  is the intercept term;  $\beta_1, \beta_2, \beta_3$  are the coefficients (or coefficient vectors);  $Bank\ Controls$  and  $Country\ Controls$  are the matrix of banking control variables and macroeconomic control variables defined above, and  $\mathcal{E}$  is the error term. However, regression techniques such as ordinary least squares (OLS) do not account for the panel dimensions of the data. Treating banks as homogeneous entities is most likely a strong restriction and the use of OLS estimator

may be inappropriate. Accordingly, we conduct our estimations by using random effects generalized least square estimator (GLS). Consistent with previous studies (e.g., Abedifar et al., 2013; Bitar et al., 2018; Bitar and Tarazi, 2019; Mollah and Zaman, 2015), we assume that all unobservable factors that influence bank performance can be considered by random error term. We drop the fixed effect model for two reasons. First, since the variable (*Foreign*) show no change over time for mostly all banks, the use of fixed effect model is inappropriate. Second, we perform the Hausman test, and we find insignificant statistic results confirming that random effects estimator is better than fixed effect estimator. We utilize random effects generalized least square (GLS) estimator and set up the following empirical model in our estimations:

$$Performance_{ijt} = \alpha + \beta_1 ESG_{it} + \beta_2 Bank\ Controls_{it} + \beta_3 Country\ Controls_t + \beta_t + \varepsilon_{it} \quad (2-a)$$

All variables are indexed over bank  $i$ , and time  $t$ .  $\beta_t$  stands for time fixed effects, and  $\varepsilon_{ijt}$  indicates unobserved error terms.

Second, to extend our investigation, we examine whether ESG activities affects foreign-owned banks differently than it affects domestic-owned banks (Hypothesis 2) by including an interaction term between *ESG* variable and *Foreign* variable in our two equations presented above (*ESG\*Foreign*). Accordingly, we use in the first stage the OLS estimator in our estimations:

$$Performance = \alpha + \beta_1 ESG + \beta_2 ESG*Foreign + \beta_3 Bank\ Controls + \beta_4 Country\ Controls + \varepsilon \quad (1-b)$$

Then, we use the random effects generalized least square (GLS) regressions with the following empirical model:

$$Performance_{ijt} = \alpha + \beta_1 ESG_{ijt} + \beta_2 ESG*Foreign + \beta_3 Bank\ Controls_{ijt} + \beta_4 Country\ Controls_{jt} + \beta_t + \varepsilon_{ijt} \quad (2-b)$$

#### 4. Empirical results

Table 4 presents the results on the relation between ESG activities and bank performance. Although the estimations in columns 1, 2, and 3 use ordinary least squares (OLS) regression, the estimations in columns 5, 6 and 7 use random effects generalized least square (GLS) regressions. In all of them, the variable of interest is ESG which is an overall score based on the reported information in the environmental, social, and corporate governance pillars. The Wald Chi2 tests are significant for all models, and R-squared values are relatively high, in line with previous literature (e.g., Houston *et al.*, 2010; Bilgin *et al.*, 2021). In Column 1 and Column 4, the dependent variable is ROA. Our results show that the coefficient of ESG is negative and significant at the 1% level in Column 1 and at the 5% level in Column 4, suggesting that, in line with H1a, investing in ESG activities has a negative impact on bank profitability measured by ROA ratio in line with the results of prior studies (e.g., Lahouel *et al.*, 2021; Zhou *et al.*, 2021).

**Table 4**

Bank performance and ESG score.

In this table, we regress bank performance on ESG score, and control variables. Although the estimations in columns 1, 2, 3, and 4 use ordinary least squares (OLS) regression, columns 5, 6, 7, and 8 use random effects generalized least square (GLS) regressions. We note standard errors in the parentheses below each coefficient. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels

	OLS			GLS		
	1	2	3	4	5	6
	ROA	NIM	NPL	ROA	NIM	NPL
<i>ESG</i>	-0.013*** (0.004)	-0.009*** (0.002)	0.099*** (0.024)	-0.012** (0.005)	-0.006** (0.003)	0.049* (0.025)
<i>Size</i>	0.158*** (0.051)	0.201*** (0.030)	-1.035*** (0.304)	0.124* (0.066)	0.126** (0.052)	-0.287 (0.457)
<i>Liquidity</i>	0.015*** (0.004)	0.025*** (0.003)	0.042 (0.027)	0.022*** (0.005)	0.030*** (0.003)	0.070*** (0.024)
<i>Overhead</i>	-0.438*** (0.054)	0.473*** (0.033)	2.159*** (0.344)	-0.570*** (0.058)	0.193*** (0.027)	1.556*** (0.253)
<i>Equity</i>	0.032** (0.015)	0.012 (0.009)	0.237* (0.137)	0.003 (0.014)	-0.014** (0.006)	0.423*** (0.102)
<i>GDP</i>	0.299*** (0.034)	0.102*** (0.020)	-1.192*** (0.214)	0.375*** (0.039)	0.063*** (0.017)	0.309** (0.147)
<i>Inflation</i>	-0.008 (0.009)	0.003 (0.006)	0.106* (0.054)	-0.0001 (0.009)	0.010* (0.005)	-0.059 (0.045)
<i>Constant</i>	-1.739	-4.739***	4.184	-2.574	-3.285***	2.755

	(1.483)	(0.891)	(8.888)	(1.667)	(1.163)	(10.16)
Obs.	430	430	388	430	430	388
R-squared	0.360	0.618	0.283			
Hausman				70.29	62.20	20.29
Wald Chi2				284.68***	324.15***	143.44***
Year FE				YES	YES	YES

In Columns 2 and 5 we use net interest margin (NIM) as the dependent variable, and in Columns 3 and 6, we use nonperforming loans ratio (NPL) as a dependent variables. Our results show again a negative and significant coefficient of ESG when the NIM is dependent variable, and a positive and significant coefficient of ESG when the NPL is dependent variable. These results complement the finding in Columns 1 and 4 by showing that ESG factors are associated with lower bank performance regardless of the chosen estimator.

**Table 5**

Bank performance and ESG\*Foreign

In this table, we regress bank performance on the interaction between ESG score and *Foreign* variables, and all other control variables. Although the estimations in columns 1, 2, and 3 use ordinary least squares (OLS) regression, columns 5, 6 and 7 use random effects generalized least square (GLS) regressions. We note standard errors in the parentheses below each coefficient. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels

	OLS			GLS		
	1	2	3	4	5	6
	ROA	NIM	NPL	ROA	NIM	NPL
<i>ESG</i>	-0.019*** (0.005)	-0.012*** (0.003)	0.139*** (0.028)	-0.0161*** (0.006)	-0.006* (0.004)	0.086*** (0.029)
<i>Foreign</i>	-2.056 (1.355)	-1.227 (0.813)	5.872 (7.958)	-1.684 (1.697)	1.744* (1.059)	20.72** (8.417)
<i>ESG*For.</i>	0.594* (0.343)	0.361* (0.206)	-2.518* (1.496)	0.494 (0.428)	-0.346 (0.265)	-5.444*** (2.103)
<i>Size</i>	0.182*** (0.052)	0.217*** (0.031)	-1.317*** (0.305)	0.145** (0.067)	0.142*** (0.053)	-0.331 (0.470)
<i>Liquidity</i>	0.0143*** (0.004)	0.0243*** (0.003)	0.0384 (0.026)	0.022*** (0.005)	0.030*** (0.003)	0.078*** (0.024)
<i>Overhead</i>	-0.428*** (0.054)	0.479*** (0.033)	2.052*** (0.338)	-0.561*** (0.058)	0.192*** (0.027)	1.540*** (0.250)
<i>Equity</i>	0.0301** (0.015)	0.011 (0.009)	0.303** (0.136)	0.003 (0.014)	-0.015** (0.006)	0.426*** (0.101)
<i>GDP</i>	0.292*** (0.034)	0.098*** (0.021)	-1.088*** (0.211)	0.370*** (0.040)	0.056*** (0.017)	0.288** (0.146)
<i>Inflation</i>	-0.007 (0.009)	0.003 (0.006)	0.112** (0.054)	-0.001 (0.009)	0.007 (0.005)	-0.070 (0.046)
<i>Constant</i>	-2.015 (1.482)	-4.921*** (0.889)	7.912 (8.747)	-2.764* (1.663)	-3.444*** (1.168)	2.606 (10.32)



Obs.	430	430	388	430	430	388
R-squared	0.368	0.624	0.317			
Hausman				78.77	71.71	244.76
Wald Chi2				289.88***	332.76***	150.47***
Year FE				YES	YES	YES

Turning to other control variables, the results show that Size, Equity, and GDP variables are positively associated with bank performance in line with previous studies (e.g., Saghi-Zedek, 2016; Shaban and James, 2018).

In Table 5, we regress bank performance measures on the interaction between ESG and Foreign variables, and all other control variables. In columns 1, 2 and 3, we use ordinary least squares (OLS) regression, and in columns 4, 5, and 6 we use the random effects generalized least square (GLS) regressions. The results show that the coefficients of interaction term *ESG\*For* are positive and significant at 10% level in Columns 1 and 2, and negative and significant at 10% level in Column 3 and at 1% in Column 6, confirming that foreign banks with higher ESG are associated with better performance than domestic-owned banks whether this performance are measured by ROA ratio, NIM ratio or NPL ratio. However, when using the GLS estimator, the interaction term *ESG\*For* show that involvement in ESG activities has no significant impact on ROA and NIM variables, but has again a positive impact on performance measured by NPL ratio. Taken together, our findings show that high involvement in ESG activities for foreign banks is rather associated with better performance compared to domestic-owned banks.

## 5. Further analyses and robustness checks

The use of random effects generalized least square estimator (GLS) does not eliminate the possible presence of endogeneity problem. Accordingly, in addition to GLS regressions, we follow the recommendations raised in prior studies and complement our analysis by using

two-stage least square (2SLS) estimator (Barth *et al.*, 2009). In the first stage, the 2SLS estimator regress our variable of interest ESG on instruments and regressors. Then, the predicted values of this variable will be used in the next regression instead of the real values. By following previous studies (e.g., Bitar *et al.*, 2017; Kouzez, 2021), we consider two instrumental variables related to the institutional environment of the banking system. The first variable *Regulatory Quality* assesses the actions taken by state authorities targeting the development of the private sector, whereas the second variable *Government Effectiveness* assesses the quality of public services and the credibility of the government regarding its engagements. Their value is calculated on a scale from -2.5 to 2.5 and extracted from the Worldwide Governance Indicators database. We use Hansen test for over-identifying restrictions to check the validity of our instrumental variables. We also perform also Durbin, (1954) test to detect the possible presence of an endogeneity problem.

**Table 6**

Bank performance and ESG\*Foreign

In this table, we regress bank performance on our ESG score, and control variables using IV 2SLS estimation. We note standard errors in the parentheses below each coefficient. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels

	(IV 2SLS)			(IV 2SLS)		
	1	2	3	4	5	6
	ROA	NIM	NPL	ROA	NIM	NPL
<i>ESG</i>	-0.077*	-0.080**	0.273**	-0.092**	-0.0896***	0.831**
	(0.043)	(0.035)	(0.118)	(0.036)	(0.029)	(0.411)
<i>Foreign</i>				-11.76**	-11.56***	-129.5**
				(5.042)	(4.032)	(58.95)
<i>ESG*For.</i>				3.200**	3.136***	-33.62**
				(1.346)	(1.077)	(15.68)
<i>Size</i>	0.489**	0.569***	0.838	0.522***	0.579***	3.055
	(0.228)	(0.189)	(1.240)	(0.178)	(0.143)	(1.933)
<i>Liquidity</i>	0.012**	0.0211***	0.017	0.009*	0.019***	-0.021
	(0.006)	(0.005)	(0.036)	(0.006)	(0.005)	(0.057)
<i>Overhead</i>	-0.592***	0.301***	1.022	-0.519***	0.381***	0.290
	(0.123)	(0.102)	(0.838)	(0.081)	(0.065)	(1.004)
<i>Equity</i>	0.027	0.007	0.237	0.0220	0.003	-0.022
	(0.019)	(0.015)	(0.174)	(0.018)	(0.015)	(0.305)
<i>GDP</i>	0.219***	0.014	-1.773***	0.216***	0.017	-2.193***
	(0.068)	(0.056)	(0.455)	(0.056)	(0.045)	(0.629)
<i>Inflation</i>	0.009	0.022	0.201**	0.0114	0.023*	0.353**

	(0.016)	(0.013)	(0.091)	(0.015)	(0.012)	(0.148)
<i>Constant</i>	-5.591*	-9.021***	-15.79	-5.932**	-9.093***	-37.73
	(3.158)	(2.619)	(16.88)	(2.655)	(2.123)	(26.00)
Obs.	430	430	388	430	430	388
Durbin test	3.628**	12.426***	4.139**	6.514***	20.511***	23.679***
Hansen's J chi2	2.553	3.138	18.141	0.0027	0.0117	2.910

Table 6 reports the results of our regressions when using 2SLS estimator. The results of Hansen test present strong evidence that the overidentifying restrictions are valid, and conclude that our model is not misspecified. In Columns 1, 2, and 3, we examine the impact of ESG activities on bank performance. Our results show that ESG score has a significant negative impact on bank performance confirming our earlier results. In Columns 4, 5, and 6 we regress our bank performance measures on the interaction term ESG\*For and other control variables. Our results show again that higher involvement in ESG activities is associated with a better profitability and performing credit portfolio for foreign banks.. Accordingly, these results provide additional support for our earlier findings and suggest that results are not driven by endogeneity.

## 6. Discussion

Understanding whether ESG activities improve bank performance or lead to unwisely expend resources is of greater import to bank management. Even though many studies argue that investing in ESG activities improves bank performance, the cost to such activities could dampen the bank returns. There is a paucity of evidence on the impact of ESG activities on bank performance according to ownership (foreign-owned banks/domestic-owned banks). Taking into consideration this dimension is important because the margin in the banking industry is notably slim (Nofsinger, Sulaeman and Varma, 2019). In this study, we provide evidence that investing in ESG activities offer a better performance for foreign-owned banks in accordance with the stakeholder view (Freeman, 1984; Porter and Kramer, 2006). This may

be explained by the positive signal sent to stakeholders. This signal reduces legitimacy issues by showing that the bank is committed to community development and is less willing to engage in practices that would harm stakeholders living in the host country. Our results give then a better understanding of the shareholder preferences with respect to ESG, and indicate that prior studies suffer from omitted variable bias since they do not account for the bank ownership when analyzing the relation between ESG and bank performance.

## **7. Conclusion**

In theoretical and empirical work, scholars have hypothesized and documented numerous links between ESG activities and financial performance. Despite a growing number of these studies, only few studies have focused on banking establishments. The findings of previous studies show ambivalent results on the impact of ESG activities on bank financial performance. In this paper, we investigate the relation between ESG activities and financial performance for banks operating in European markets. To do so, we have used several estimators from both static panel (OLS, GLS) and the 2SLS instrumental variable approach. For deeper insights, we have examined whether ESG activities differently affect the performance of foreign-owned banks and domestic-owned banks. To our knowledge, this is the first study considering bank ownership when examining the relation between ESG activities and bank performance. Our results show that high involvement in ESG activities is associated with high performance only for foreign-owned banks. Our findings, which are robust to addressing endogeneity issues, appear intuitive and suggest that implementing and developing voluntary environmental, social, and governance activities is relevant for foreign banks since it helps to obtain legitimacy from the public and enhance their reputation on international level. We shed light on new factors that impact bank performance and

contributes to the banking literature by providing a better understanding of whether ESG activities are in the interest of bank shareholders. In addition, our study suggests that banks (foreign/domestic) should not be considered as a homogenous group when analyzing the relation between ESG activities and bank performance, and therefore reconciles some of contradictory results found in previous studies.

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