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ORIGINAL ARTICLE

ESG ACTIVITIES AND FINANCIAL PERFORMANCE IN BANKING INDUSTRY

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Abstract
This study aims to provide empirical evidence regarding how ESG practices have impacted financial performance in the banking sector. To investigate this relationship, we use an annual dataset of an unbalanced panel of 58 commercial banks from 6 countries (i.e., Canada, the UK, Australia, Japan, Spain, and Türkiye) for the period 2012-2020. Our empirical findings reveal that there exists an inverted U-shaped non-linear association between ESG scores and financial performance of Canadian, UK and Japanese banks, which supports the idea of the "too-much-of-a-good thing" impact. However, a positive linear association exists for Australian and Spanish banks. Moreover, changes in ESG activities have no influence on profitability of Turkish banks. The findings demonstrate that bank managers should consider the diversity of linkages between ESG activities and financial performance in the banking sector when identifying an appropriate strategy to effectively manage ESG activities.

Keywords
Corporate Social Responsibility, ESG Activities, Financial Performance, Banking Industry

JEL Classification
G20, G30.

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1. INTRODUCTION

Banks, which play a crucial role as fundamental financial institutions within the financial system, exert a substantial influence on the financial, social and economic development of both bank-oriented and stock market-oriented economies (Bihari and Pradhan, 2011; Zahid et al., 2021; Shabir et al., 2021).

Corporate Social Responsibility (CSR)/Environmental, Social and Governance (ESG) factors, broadly known as non-financial performance indicators, have attracted great interest from both regulators and practitioners in the global context (Atif et al., 2022). Despite the fact that CSR and ESG differ in various aspects, both concepts are commonly utilized in the corporate world as a measure of corporate sustainability. Corporations that develop a CSR or ESG model try to demonstrate that they have a long-term vision to create value by sharing their sustainability efforts with their investors and other stakeholders.

Sustainability disclosures reflect the association between a firm and its internal and external stakeholders by documenting organizational actions and their consequences concerning corporate social responsibility (D'Adamo, 2022). The valuable and crucial information shared with internal and external stakeholders regarding corporate sustainability performance can play a significant role in improving organizational procedures, refining existing visions and strategies, and attaining a competitive advantage (Cardoni et al., 2022).

Sustainability is vital not only for corporations in economic sectors but also for banks, which create economic, social, and environmental influences through their lending and investment decisions and other financial products and services (Ahmed et al. 2018; Bătae et al. 2020). Sustainability in banking is of utmost importance due to the influential position of banks in the global financial network and their close connections with the non-financial sectors of the economy.

Environmental concerns, stakeholder pressures, the pursuit of competitive advantage, and legal regulations have compelled banks, one of the most pivotal actors in the financial services sector, to reassess the environmental, social, and economic impacts they generate and to optimize their sustainable business processes.

Banks have increasingly shifted their focus to sustainability disclosures and Environmental, Social and Governance (ESG) practices in the context of the United Nations 2030 Agenda for Sustainable Development through sustainability reports (Aras et al., 2020; Galletta et al., 2022). Unlike financial reports, in these reports, banks present social and environmental information regarding their operations systematically to both internal and external stakeholders (Aras et al., 2018a; D'Adamo, 2022). Because sustainable banking does not only focus on company profitability but also takes social and environmental improvements into consideration (Aras et al., 2018b). As a result, it can be said that banks tend to adopt a sustainable business model by incorporating sustainability indicators regarding ESG activities into their activities and decision-making mechanisms to create more value for all stakeholders in the long term.

Nowadays, the social responsibility behaviors of banks are heavily considered not only by key stakeholders in the banking sector but also by society as a whole, regardless of the potential positive or negative impact of ESG practices on business performance (Miralles-Quirós et al., 2019). Some researchers have tried to investigate the impact of banks' sustainability (ESG) performance on financial performance (FP). When looking at this topic, different researchers have said that ESG has a positive or negative impact on bank performance (Abou Fayad et al., 2017; Buallay, 2019; Buallay et al., 2021; Çetenak et al., 2022); however, others have said that this impact is not linear (El Khoury et al., 2023; Ersoy et al., 2022; Azmi et al., 2021). In addition to these findings, However, few studies reported a neutral ESG-performance nexus, which indicates that ESG does not influence FP because positive impacts offset negative impacts. In conclusion, the empirical evidence on the association between ESG activities and FP is considerably inconsistent.

This study explores the influence of ESG activities on FP for commercial banks in six countries from 2012 to 2020. The existing paper makes two contributions to the banking literature. First, to the best of our knowledge, it is the first study to analyze the nexus between ESG activities and FP in six market- and bank-based economies. Second, the independent variables are lagged one period to remove any possibility of endogeneity due to potential reverse causality. Additionally, a panel Driscoll-Kraay fixed effect estimation model is employed to cope with potential problems of heteroskedasticity, autocorrelation and cross-sectional dependence.

This article is presented as follows: Section 2 reviews the empirical literature and presents hypothesis development. Section 3 describes the data, variables, as well as the empirical model and estimation procedure. Section 4 presents the results and Section 5 presents the conclusion.

2. RELATED LITERATURE AND HYPOTHESIS DEVELOPMENT

While there is a growing body of literature on ESG practices in non-financial sector, the number of studies exploring this relation in the banking industry is quite limited. Table 1 below briefly summarizes some of the recent studies focusing on the impact of ESG on the banking sector.

Table 1.
Studies focusing on the impact of ESG on the banking industry

Authors(s)/Year	Techniques used	Target industry	Sample period	Main result
Abdelsalam et al. (2023)	Dynamic panel regression analysis	277 listed global banks	2012–2019	Banks that engage in ESG activities provide more loans.
Liu et al. (2023)	Static panel regression analysis	U.S. commercial banks	2002-2021	Banks with high ESG scores have lower credit risk.
Andrieș and Sprincean (2023)	Static panel regression analysis	493 banks in 39 advanced and emerging economies	2003–2020	Incorporating ESG practices into their financial decisions reduces banks' funding costs.
Galletta and Mazzù (2023)	Dynamic panel regression analysis	Listed banks operating in 41 countries	2011-2021	Banks with fewer ESG controversies take less risk.
El Khoury et al. (2023)	Static panel regression analysis	46 listed banks from 10 countries	2007–2019	There is an inversed U-shape ESG–performance association.
Galletta et al. (2023)	Dynamic panel regression analysis	Global banks operating in 35 countries	2011-2020	Higher ESG scores lower banks' operational risk.
Menicucci and Paolucci (2023)	Static panel regression analysis	105 Italian banks	2016–2020	Bank performance is negatively impacted by ESG dimensions.
Mohamed Buallay et al. (2023)	Static panel regression analysis	Banks from 60 different countries	2008–2017	ESG disclosures adversely impact performance of banks.
Yuen et al. (2022)	Dynamic panel regression analysis	487 banks from 51 countries	2006-2021	There exists a U-shaped correlation between bank profitability and ESG.
Chiaramonte et al. (2022)	Dynamic panel regression analysis	European banks operating in 21 countries	2005–2017	ESG activities tend to mitigate banks' vulnerability during periods of financial distress.
Ersoy et al. (2022)	Static panel regression analysis	151 US commercial banks	2016-2020	There is an inverted U-shaped linkage between ESG and market value.

Çetenak et al. (2022)	Static panel regression analysis	6 Turkish commercial banks	2010-2020	Higher ESG scores improve banks' performance.
Azmi et al. (2021)	Dynamic panel regression analysis	251 banks from 44 emerging markets	2011–2017	An inverted U-shaped non-linear nexus between ESG and bank performance was observed.
Liu et al. (2021)	Dynamic panel regression analysis	28 Chinese banks	2009-2018	A non-linear U-shaped linkage was reported between ESG and bank profitability.
Buallay (2020)	Static panel regression analysis	Banks from 80 different countries	2008–2017	ESG has a negative impact on bank performance.
Di Tommaso and Thornton (2020)	Dynamic panel regression analysis	81 banks from 19 European countries	2007-2018	A high ESG score is associated with low non-performing loans and poor market performance.
Buallay (2019)	Static panel regression analysis	European banking sector	2007-2016	ESG positively impacts bank performance.
Shakil et al. (2019)	Dynamic panel regression analysis	93 emerging market banks	2015-2018	There appears to be a positive association between banks' FP and their environmental and social performance.
Buallay et al. (2021)	Dynamic panel regression analysis	882 banks from developed and developing countries	2009-2019	ESG activities improves banks' performance in developed countries.
Miralles-Quirós et al. (2019)	Static panel regression analysis	166 banks from 31 countries	2010–2015	Banks' performance tends to be positively impacted by corporate governance and environmental performance but negatively impacted by social performance.
Maqbool and Zameer (2018)	Static panel regression analysis	28 Indian commercial banks	2007–2016	There is a positive relation between CSR and FP.
Abou Fayad et al. (2017)	Static panel regression analysis	7 Lebanese banks	2012-2015	A positive link between CSR and FP has been reported.
Tóth et al. (2021)	Static panel regression analysis	243 European Banks	2002-2018	A higher ESG score lowers credit risk.

There exist a variety of theories in the ESG literature that address the ESG-performance nexus. However, the stakeholder theory (Freeman, 1984) and the trade-off theory (Friedman, 1970) are recognized as the two main approaches that attempt to explain the linkage between ESG and FP (Buallay et al., 2021; Azmi et al., 2021)

Stakeholder theory argues that the ESG-FP relationship is positive. According to this theory, the resources allocated for ESG activities are not a cost element; on the contrary, investments in ESG practices can provide the bank with opportunities such as competitive advantage, corporate image and innovation (Behl et al., 2021). As a result, a firm must consider the impact of the results of its operations on all stakeholders (i.e. government agencies, creditors, suppliers, customers, employees, etc.) and aim to create value for them by protecting their interests (Andrieș and Sprincean, 2023). Besides, the positive impact of sustainability disclosure predicted by stakeholder theory is also supported by resource-based view and stewardship theory (Azmi et al., 2021).

Trade-off hypothesis argues that this relationship is negative. Based on this theory, which is also supported by agency theory, it is argued that allocating more resources to ESG activities leads to increased opportunity costs for the bank (Azmi et al., 2021). More precisely, due to agency problems,

sustainability reporting may cause banks to face extra costs, which supports that the effect of ESG on performance may be negative (Teng et al., 2022; Kumar et al., 2022). Given conflicting empirical findings and two competing theories based on different assumptions, the nonlinear ESG-FP nexus can be expected, as allocating more resources to ESG activities will increase opportunity costs (Azmi et al., 2021; Teng et al., 2022).

3. METHODOLOGY

3.1. Data and Variables

This study seeks to establish the correlation between ESG practices and profitability within the banking business. To examine the relationship between environmental, social, and governance (ESG) factors and profitability, a sample of 8 Canadian banks, 7 UK banks, 6 Australian banks, 26 Japanese banks, 5 Spanish banks, and 6 Turkish banks was chosen for the period of 2012-2020. Eikon Refinitiv database was utilised to identify banks reporting ESG data. The variables representing economic growth and stock market development were obtained from the World Bank's World Development Indicator (WDI) and Global Financial Development (GFD) databases, respectively. Also, all bank-level variables were winsorised at the 1% and 99% levels to eliminate outliers. Detailed explanations for all variables in the regression model are presented in Table 2.

Table 2
Variable definition

Variable	Symbol	Definition	Expected Sign	Data Sources
Bank profitability				
Profitability	ROAA	Return on average assets		Refinitiv
ESG activity				
ESG combined score	ESG	ESG index which combines the environmental, social and governance scores	+/-	Refinitiv
Control variables				
Bank size	SIZE	The natural logarithm of total assets	+/-	Refinitiv
Liquidity	LIQ	The ratio of cash & cash equivalents to total assets	+	Refinitiv
Capitalization	CAR	The ratio of shareholders' equity over total asset	+/-	Refinitiv
Operational expenses	OE	The ratio of operational expenses to total assets	-	Refinitiv
GDP growth rate	GDP	Percentage change in GDP	+/-	WDI
Stock market development	SMD	The ratio of market capitalization of listed companies over GDP	+	GFD
COVID-19	C-19	A dummy variable that takes the value of 1 for the year 2020	-	

3.2. Empirical Model

In this study, the following quadratic model is employed to analyze the impact of ESG on bank profitability:

$$(\mathrm{FP})_{\mathrm{ijt}} = \beta_0 + \beta_1(\mathrm{ESG})_{\mathrm{ijt}-1} + \beta_2(\mathrm{ESG})^2_{\mathrm{ijt}-1} + \beta_{3-6}\sum(\mathrm{BLCV})_{\mathrm{ijt}} + \beta_7(\mathrm{GDP})_{\mathrm{jt}} + \beta_8(\mathrm{SMD})_{\mathrm{jt}} + \beta_8(\mathrm{C}-19)_{\mathrm{t}} + \varepsilon_{\mathrm{ijt}} \quad (1)$$

In these model specification, subscripts *i, j* and *t* denote commercial bank, country and time period, respectively. The dependent variable of the above model is financial performance (FP). This variable is measured by return on average assets (i.e., ROAA). We have used ESG

activities (ESG) and square of ESG activities $(ESG)^2$ as independent variables. In order to obtain unbiased results, a set of control variables, whose impacts have been identified in prior studies, are also added to the model shown in Eq. (1). The bank-level control variables (BLCV) added to the profitability model are bank size, liquidity, capitalization, and operational expenses, respectively. (GDP) and (SMD) represent the country-level and industry-level control variables, respectively. In addition, a dummy variable is added to the profitability model to control for the influence of the COVID-19 pandemic on banks' financial performance. $\varepsilon_{ijt} = \partial_i + \delta_j + \theta_{ijt}$, ∂_i and δ_j are the unobserved bank-specific and country-specific fixed effects, respectively. θ_{ijt} is an i.i.d. random term with $E(\theta_{ijt}) = 0$ and $Var(\theta_{ijt}) = \sigma^2$. Lastly, ESG indicators and bank-level control variables are lagged one year to eliminate the possibility of any endogeneity that can arise owing to the potential reverse causality.

3.3. Estimation Procedure

The Hausman test is employed to determine the appropriate choice between fixed effects (FEs) and random effects (REs) panel estimators. Given the substantial Hausman test statistics in both the entire sample and sub-samples, we reject the null hypothesis (REs) and conclude that the optimal panel data estimator is the FEs estimator. Nevertheless, to address potential issues related to autocorrelation, heteroskedasticity, and cross-section dependence, we employ the Driscoll-Kraay standard errors method to investigate the influence of ESG initiatives on the profitability of banks.

4.1. Descriptive Statistics and Pairwise Correlations

The mean and standard deviation values of each variable for both the whole sample and sub-samples are given in Table 3. On average, Turkish commercial banks appear to have the highest ROAA compared to their counterparts in other countries over the sample period. When the ESG scores of commercial banks are analyzed, it is concluded that Spanish banks have the highest ESG value. In terms of ESG disclosures, Spanish banks are followed by Australian banks, Canadian banks, UK banks, Turkish banks and Japanese banks, respectively. When the standard deviation values calculated for ESG scores are examined, it is observed that the sample with the highest standard deviation value belonged to Japanese banks. This finding suggests that ESG reporting among Japanese banks exhibits significant variability. According to the findings presented in Table 3, banks in Japan have the highest liquidity level, while banks in the UK have the highest capital level. Moreover, the operational expenses of Turkish banks are higher than their counterparts in Canada, the UK, Australia, Japan and Spain.

Table 3
Mean and standard deviation values for the all variables

	Full Sample		Canada		UK		Australia		Japan		Spain		Türkiye	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
ROAA	0.618	0.588	0.793	0.199	0.467	0.928	0.714	0.248	0.449	0.485	0.398	0.259	1.433	0.398
ESG	53.01	26.245	68.309	14.084	64.469	20.762	76.081	13.325	31.661	21.467	77.95	9.433	59.205	13.619
SIZE	25.953	1.494	26.273	1.433	26.216	2.23	26.341	1.28	25.688	1.347	26.728	1.044	25.11	0.191
LIQ	9.808	9.923	1.829	2.09	11.454	5.564	3.489	2.071	14.03	12.782	6.036	3.68	10.834	1.947
CAR	15.172	5.058	14.348	1.375	18.25	2.414	13.452	1.56	14.99	7.278	14.459	1.403	15.205	1.766
OE	1.778	1.056	1.697	0.165	2.393	1.385	1.261	0.172	1.394	1.087	2.203	0.506	2.823	0.67
GDP	1.088	2.879	1.232	2.43	0.742	3.75	2.363	0.988	0.323	1.913	0.042	4.423	4.352	2.403
SMD	95.727	34.286	125.632	17.841	125.583	11.245	99.522	14.462	104.317	22.228	65.337	9.653	24.679	5.37

The pairwise correlation matrix for the variables utilized in Eq. (1) is presented in Table 4. A significantly positive correlation between ESG and ROAA indicates that banks with higher ESG scores tend to be more profitable.

Table 4
Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) ROAA	1.000							
(2) ESG	0.151*	1.000						
(3) SIZE	-0.300*	0.607*	1.000					
(4) LIQ	0.227*	-0.113	-0.125*	1.000				
(5) CAR	0.285*	0.153*	0.018	0.676*	1.000			
(6) OE	0.534*	0.136*	-0.380*	0.392*	0.464*	1.000		
(7) GDP	0.322*	0.054	-0.065	-0.168*	-0.068	0.114*	1.000	
(8) SMD	-0.357*	-0.097	0.133*	0.068	0.013	-0.322*	-0.424*	1.000

* p<0.01, ** p<0.05, *** p<0.1

4.2. Empirical Findings

The empirical results of the estimation of Eq. (1) for the full sample, which covers all banks are presented in Table 5. The estimated coefficients of ESG and the squared term of ESG are positive and negative, respectively. This finding demonstrates an inverted U-shaped (concave) association between ESG practices and profitability does exist.

To test whether the non-linear relationship detected in the full sample, which included all banks, is valid for sub-bank samples, the model specified in Eq. (1) is re-estimated separately for each banking industry. The obtained findings are shown in Table 6.

Table 5
Estimation result for the full sample

	Coefficient	Drisc/Kraay Std. Err.	*t*-statistic	Probability
L.(ESG)	0.0133**	0.0048	2.77	0.024
L.(ESG x ESG)	-0.00015**	0.00006	-2.50	0.037
L.(SIZE)	-0.4251**	0.1777	-2.39	0.048
L.(LIQ)	0.0020	0.0026	0.78	0.463
L.(CAR)	-0.0041	0.0062	-0.67	0.526
L.(OE)	-0.0742	0.0795	-0.93	0.381
GDP	0.0284**	0.0087	3.28	0.014
SMD	-0.0032**	0.0010	-3.54	0.010
C-19	-0.0726**	0.0293	-2.48	0.042
_cons	9.1289	6.9241	1.32	0.229
Hausman test	32.09***			
N	382			
Number of banks	58			
F-stat	42.31***			
within R^2	0.2563			

This table reports regression results based on Driscoll-Kraay standard errors.

Method used is FEs regression.

Time effects are included in the regression model, but the estimated coefficients of these variables are not reported.

*** p<0.01, ** p<0.05, * p<0.1.

As seen in columns 1, 2 and 4 of Table 6, the empirical results reveal that ESG-profitability nexus is a nonlinear for Canadian, UK and Japanese banks. More specifically, there is an inverted U-shaped link between ESG reporting and profitability, suggesting that there exists an optimal level of ESG practices in the banking industries of these three countries. The results of the present article are supported by the findings reported by El Khoury et al. (2023), Ersoy et al. (2022), and Azmi et al. (2021). However, as reported in columns 3 and 5 of Table 6, a positive linear association exists for Australian

and Spanish banks, which means that banks engaged in ESG activities are more profitable. This result is also consistent with several prior studies of Abou Fayad et al. (2017), Maqbool and Zameer (2018), Shakil et al. (2019), Buallay (2019), Buallay et al. (2021), and Çetenak et al. (2022). Moreover, changes in ESG activities have no influence on profitability of Turkish banks.

As for the control variables included in the models, negative and significant relationships were observed between bank size and profitability in the banking industries of all six countries, indicating that larger banks are less profitable. Kanapiyanova et al. (2023), El Khoury et al. (2023), Işık (2022), and Miralles-Quirós et al. (2019) have reported similar findings regarding the connection between bank size and profitability. Moreover, liquidity, measured by cash and cash equivalents, has no significant effect on bank profitability. We also identify that the capital adequacy ratio is significant only for Australian and Japanese banks, indicating that banks with a strong capital structure are less profitable. This result is similar to the findings reported in the studies of Yüksel et al. (2018) and Işık and Ersoy (2022). Despite the fact that the estimated coefficient of the operating expenses variable is negative in all sub-samples, it is significant only for banks in three countries (i.e., UK, Australia and Türkiye). This finding reveals that there is an inverse correlation between operating expenses and profitability. Besides, the estimated coefficients of the economic growth for the Canadian and Japanese banks subsamples are negative and significant. Whereas, the estimated coefficients pertaining to this variable are positive and significant in the subsamples of Australian and Turkish banks. The impact of stock market development on bank profitability is found to be positive in all sub-bank samples. However, this effect is significant for banks in Canada, Australia, Japan and Türkiye. Finally, the results reported in Table 6 show that the dummy variable representing the Covid-19 pandemic is significantly negatively associated with bank profitability in four countries (Canada, the United Kingdom, Australia and Spain). The finding is consistent with the results reported by Xiazi and Shabir (2022), Yuen et al. (2022), and Shabir et al. (2023).

Lastly, to check the robustness of the findings presented in Table 6, we utilized an alternative variable related to bank profitability. More precisely, we re-estimated Eq. (1) by replacing ROAA with ROAE. We found that, except for Turkish banks, the results obtained from the ROAE equation are almost similar to those obtained from the ROAA equation. For Turkish banks, a positive and significant relationship was found between ESG and ROAE at the 5% significance level.

Table 6
Estimation result for sub-samples

	(1)	(2)	(3)	(4)	(5)	(6)
	Market-based financial system			Bank-based financial system		
	Canada	UK	Australia	Japan	Spain	Türkiye
L.ESG)	0.0219**	0.0416**	0.0066*	0.0082***	0.0682*	0.0290
	(0.0088)	(0.0089)	(0.0031)	(0.0021)	(0.0322)	(0.0207)
L.(ESG) x (ESG)	-0.0002**	-0.0003*	0.0004	-0.00013**	-0.0004	-0.0002
	(0.0001)	(0.00008)	(0.0002)	(0.00005)	(0.00022)	(0.00018)
L.(SIZE)	-0.394*	-2.3680**	-0.6370***	-0.473*	-1.1170*	-2.544***
	(0.1320)	(0.4760)	(0.1100)	(0.1860)	(0.5570)	(0.6450)
L.(LIQ)	0.0132	0.0206	0.0082	0.0039	0.0161	-0.0211
	(0.00792)	(0.0421)	(0.0089)	(0.0046)	(0.0318)	(0.0345)
L.(CAR)	0.00428	0.0111	-0.0469***	-0.0040*	-0.0508	0.0197
	(0.00739)	(0.00603)	(0.0194)	(0.0018)	(0.0281)	(0.0513)
L.(OE)	-0.130	-0.1570*	-0.2240***	-0.0324	-0.0789	-0.195**
	(0.0927)	(0.0467)	(0.0213)	(0.0626)	(0.135)	(0.0623)
GDP	-0.1642**	1.8064	2.010***	-0.2660*	-0.4180	3.1959**
	(0.0701)	(1.6888)	(0.2970)	(0.1175)	(0.2945)	(1.0502)
SMD	0.0740*	0.0786	0.1341***	0.1731**	0.1804	0.7634**
	(0.0361)	(0.0751)	(0.0201)	(0.0577)	(0.1274)	(0.2486)
C-19	-0.2265***	-0.3519 ***	-0.4079***	-0.0641	-0.5412***	-0.1230
	(0.0313)	(0.0520)	(0.0030)	(0.0489)	(0.0910)	(0.1177)
_cons	-0.0469	-0.4212	-5.4656	1.0057*	-0.4966	3.8984*
	(0.7502)	(0.4000)	(3.1588)	(0.4450)	(7.2960)	(1.3765)
Hausman test	29.67***	21.89***	22.63***	71.15***	11.08**	17.34***
N	63	18	45	175	39	42
Number of banks	8	7	6	26	5	6
F-stat	419.18***	20.26***	46421.03***	3107.94***	3246.09***	470.89***
within R^2	0.6440	0.6293	0.8925	0.1934	0.6743	0.7119

This table reports regression results based on Driscoll-Kraay standard errors.

Method used is FEs regression.

Time effects are included in the regression model, but the estimated coefficients of these variables are not reported.

Standard errors are in parentheses.

*** p<0.01, ** p<0.05, * p<0.1.

5. CONCLUSION

The banking industry, which plays an essential role in supporting sustainable development, provides critical contributions to the sustainability of the financial and economic system by incorporating ESG risks into business processes pertaining to credit and investment decisions.

This study aims to investigate empirically the impact of banks' ESG activities on FP. For this purpose, a sample consisting of Canadian, UK, Australian, Japanese, Spanish, and Turkish banks was formed to analyze the ESG-profitability nexus. As it is known, Canada, the UK, and Australia are capital market-oriented economies, whereas Japan, Spain, and Turkey are bank-based economies. Thus, the present article attempts to determine whether there is a significant difference in the ESG activities-bank profitability relationship in stock market and bank-based economies.

Our study, which is based on an unbalanced panel of 58 commercial banks in 6 countries, reveals a non-linear (inverted U-shaped) linkage between ESG and profitability. Specifically, investments in ESG activities can contribute to improving FP up to a certain point. However, beyond this point, increasing ESG investments may harm FP. This finding suggests that banks need to determine an optimal ESG value that balances the benefits and costs of ESG to support stakeholder engagement and sustainable development.

When the findings are evaluated in terms of stock-based economies, the inverted U-shaped non-linear relationship is valid for Canadian and UK banks. In contrast, a positive linear correlation between ESG and profitability has been identified for Australian banks. When the ESG-profitability link is examined in terms of bank-based economies, three different results are identified. First, the inverted U-shaped nonlinear relationship exists for Japanese banks. In addition, the relationship between ESG and profitability for Spanish banks is positive and linear. This finding suggests that the ESG-performance relationship follows neither a U-shaped nor an inverted U-shaped model. Moreover, it has been determined that ESG activities are unrelated to profitability for Turkish banks. In conclusion, it can be said that the impact of ESG practices on FP varies from economy to economy. This result can be attributed to the legal regulations, competition conditions, stakeholders' expectations, and unique characteristics of the banking industries in each economy.

Consequently, banks are exposed to various risks such as operational risk, liquidity risk and credit risk on account of their business operations. For the banking industry, ESG risks are a new type of risk stemming from ESG factors. Hence, the development of a risk management approach that takes ESG risks into account by banks can help increase the sector's lending power, capital adequacy and investor confidence. Additionally, this practice may also assist in minimizing the existing risks.

Like other studies, this study also has some limitations. Due to ESG data, the time period determined in this study can be considered as the first limitation of the study. Another limitation of the study is related to the banks included in the banking sample. In future studies, more comprehensive analyzes on the ESG-profitability relationship can be carried out by using samples that include more banks and alternative performance indicators. Additionally, future studies may focus on the interaction effect of ESG. As a result, increasing the number of studies on ESG activities in the banking industry can help policy makers, regulatory authorities and bank management to make healthier and more reliable decisions regarding ESG practices and determine a road map.

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