Utrecht University

School of Economics

Master Thesis | U.S.E.

Financial Management

The Impact of ESG Scores on the Financial Performance and Dividend Policy of Banks in the Eurozone

Aslan Kuzhagaliyev | 8589399

a.kuzhagaliyev@students.uu.nl

Supervisors:

1. Dr. Mohamad Kaakeh
2. Dr. Labrini Zarpala

Utrecht

2024

Abstract

This thesis examines the impact of Environmental, Social and Governance (ESG) scores on the financial performance and dividend policy of banks in the Eurozone. With increasing stakeholder attention, ESG scores have become an important instrument for evaluating companies' ethical and sustainable practices, especially in the banking sector. The study examines the relationship between ESG scores and financial performance, focusing on return on equity (ROE), and analyses how ESG scores affect dividend policy. Using data from 34 significant Eurozone banks from 2014 to 2023, the analysis is applied to regression models to determine the effects of ESG scores. The results show that higher ESG scores have a positive impact on both financial performance and dividend payouts, emphasising the importance of ESG integration. The study provides valuable insights for investors, managers and policy makers in optimising ESG practices in the banking industry.

Keywords: ESG scores, Financial Performance, Dividend Policy, Banks, Eurozone.

JEL-codes: G21, G32, G34, M14, Q56

Acknowledgments

I want to dedicate this work to my dear parents who always believed in me and provided me with opportunities for growth and fulfilment. Their support and love have inspired me throughout my life.

With special warmth and gratitude, I would like to express my appreciation to my dear wife. Her support and belief in me have been invaluable during this academic year and has inspired me to keep going even in the most difficult moments.

A special thanks goes to my supervisor, Dr Mohamad Kaakeh. His expertise and advice have made an invaluable contribution to the writing of this thesis. I deeply appreciate his mentorship and support that helped me in writing this work.

Table of Contents

1. Introduction

Environmental, Social, and Governance (ESG) scores have become an important measure of a company's ethical influence and sustainability. In recent decades, these scores have received significant attention from stakeholders such as investors, customers, and policymakers, who are increasingly concerned with the company's sustainable and ethical business operations. This trend is especially relevant to the banking industry since the healthy financial condition and ethical behaviour of banks are essential to the overall health of the economy. The primary objective of this thesis is to investigate in deeper detail the relationship between ESG scores and the financial performance and dividend policy of banks in the Eurozone—a region where ESG trends have become exceptionally important.

The Eurozone represents a unique economic area where the integration of ESG standards is not only stimulated but also enforced by different policies, such as the EU Taxonomy classification system that helps investors find sustainable companies to invest in or The Corporate Sustainability Reporting Directive (CSRD) that requires companies to disclose audited reports of the impact of corporate activities on the environmental and social aspects. Such standards enhance transparency and increase the reliability of disclosed ESG information making those regulations an important part of ESG integrations in the Eurozone banks that influence strategic and financial decisions (Schoenmaker and Schramade, 2019).

Numerous studies were conducted to find a relationship between ESG scores and financial performance and dividend policy, yet there is still no common opinion on this matter. Research that was made mostly covered the non-financial sector. The study of 806 manufacturing and service sector companies in Korea (Yang and Han, 2023) concluded that environmental and governance factors of ESG positively affect corporate profitability. Regarding the company’s dividend policy, the study 1094 non-financial listed firms from 21 European countries (Bilyay-Erdogan et al., 2023) resulted indicating that better ESG performance positively impacts a firm’s dividend payout ratios. However, not all researchers agree that ESG scores

However, not all researchers agree that ESS scores and their components always have a positive impact on the financial performance and dividend policy of a company. In support of these statements, we can cite a study of public companies in 2 developing countries and 13 developed countries (Garcia and Orsato, 2020). The results of this study indicate that in developing countries, ESG activities have a significantly negative impact on the company's ROA. As for dividends, this topic remains understudied (Ismail et al., 2022), especially in the financial sector. The distinctive characteristics of the banking sector require targeted study, since the mechanisms by which ESG assessments affect financial performance and dividends may differ significantly from those in the non-financial sector.

Despite the fact that the vast majority of works, as already mentioned, concern the non-financial sector, there was still an attempt to study the relationship between the ESG assessments and the financial performance of European banks. A study of 235 public European banks (Buallay, 2018) showed a positive effect of the environmental component on ROA and Tobin’s Q, while the social component negatively affects ROA, ROE and Tobin’s Q,

and the governance component negatively affects ROA and ROE but positively affects Tobin's Q. Regarding corporate dividend decisions in Europe, a study was conducted among companies listed on the Eurostock 600 (Matos et al., 2020) to find out how ESG ratings affect the likelihood and stability of dividend payments among listed companies.

Despite an attempt to examine this issue, this paper includes data presented from 2007 to 2016, which after many years cannot be taken as conclusive evidence. Also, the insufficient number of papers on this topic presents a significant research gap. This thesis aims to provide additional empirical evidence on this issue using more current data to examine the impact of ESG scores on the financial performance and dividend policy of banks in the Eurozone and seeks to address the following questions:

1) How does ESG performance affect the financial performance of the Eurozone banks?

2) How does ESG performance affect the dividend policy of the Eurozone Banks?

The importance of this paper is explained by its aim to provide academics and practitioners with additional relevant data on the operation of the ESG mechanism and its impact on the entire European banking sector. In particular, for practitioners such as investors, managers and policymakers, this paper will provide valuable information on the opportunities and challenges that the integration of ESG criteria into the banking sector may cause.

The rest of the thesis is structured as follows: Chapter 2 reviews the literature and theoretical frameworks related to this topic, in particular, it will provide more detailed information about the existing works that have studied the ESG scores, financial performance and dividend policy, and based on these works it will present the hypotheses of this thesis. Chapter 3 will present the methodology along with the theoretical framework that was used in this work. This chapter will also touch upon the samples that were collected for this study. Chapter 4 will describe in detail the empirical analysis that was conducted within the framework of this study. Finally, Chapter 5 will discuss the results of the empirical analysis. Chapter 6 will discuss the limitations and provide recommendations for future research. The remaining Chapters 7 contains the references.

2. Literature Review

2.1. Introduction to the Literature Review

This chapter covers existing literature related to ESG, financial performance and corporate decisions. The purpose of this literature review is to investigate prior research on the effects that ESG scores have on financial performance and dividend policy, as well as any gaps in the literature that the present thesis aims to target.

2.2. Theoretical Background

To better understand the impact of Environmetal, Social, Governance (ESG) measures on financial performance and dividend policy, a number of theories are often applied. The theories, namely stakeholder theory, legitimacy theory, signalling theory, and agency theory form the basis for analysing how and why ESG indicators affect corporate results.

Stakeholder theory states that companies have a responsibility to create value not only for shareholders, but also for all stakeholders. This theory states that companies can achieve long-term success and sustainability by addressing the various needs and concerns of different stakeholders, including employees, customers, suppliers, and communities. In the context of ESG, companies with high ESG scores are considered more socially responsible and have strong relationships with all stakeholders, which will ultimately enhance their reputation and operational efficiency, which inevitably translates into better financial performance. (Freeman et al., 2007; Jones et al., 2018).

The resource-based view (RBV) suggests that a company's competitive advantage is provided by valuable, rare, inimitable and non-substitutable (VRIN) resources and capabilities at the company's disposal (Barney, 1991). Recent research in this area has expanded this approach by including ESG practices as valuable company resources. It is believed that these practices improve a company’s reputation, reduce risks, and create new opportunities. By integrating ESG practices into their operations, companies can achieve high financial performance by using this valuable resource. These practices also create competitive advantages (Hart and Dowell, 2011) by promoting innovation and improving efficiency. In addition, further research has shown that ESG practices can improve a company’s intangible assets such as brand equity and customer loyalty, which are undoubtedly among the most important factors of competitive advantage (Eccles et al., 2014; Surroca et al., 2010).

Legitimacy theory suggests that companies aim to operate within the boundaries and standards of the surrounding community in order to achieve legitimacy and acceptance. According to this theory, companies that apply ESG practices in their operations achieve legitimacy, which entails improved financial performance due to greater stakeholder support (Suchman, 1995).

Signalling theory argues that companies use financial decisions and actions, such as issuing dividends or raising capital, to communicate information about their internal state and prospects to external investors who do not have complete information (Spence, 1973). These signals help to reduce information asymmetry and can influence investor perceptions and

behaviour. In the ESG context, voluntary ESG disclosure is used by companies to not only reduce information asymmetry but also to differentiate themselves from competitors.

Overall, the foundation laid by the theories provides us with a solid basis for understanding how integrating ESG practices into a firm's operations can impact a company's financial performance and strategic decisions. Firms can increase their resilience and achieve long-term financial and competitive advantages by focusing on stakeholder interests through the application of ESG practices.

2.3. ESG and Financial Performance

Today, it is fair to say that the ESG concept is playing an increasingly important role in the corporate world. The greater this role, the more theorists and practitioners are interested in how ESG scores affect a company's financial performance. They have carried out a significant amount of research to find the answer to this question. Today, as a result of these efforts, we have a large number of works at our disposal. However, in spite of all the efforts that have been made to investigate and explain the relationship between ESG scores and financial performance, we cannot give a clear and unified answer to this question.

Several studies have reported a positive relationship between ESG outcomes and financial performance. It has been found that digital transformation can enhance the positive impact of ESG on financial performance (Fu & Li, 2023). ESG practices have been shown to significantly improve corporate finance performance, emphasising that sustainable practices are integral to long-term financial health (Kim & Li, 2021). Green innovation was found to mediate the positive impact of ESG on financial performance, with differences observed between the UK and Germany (Chouaibi et al., 2022). The marked positive impact of ESG corporate governance on financial and market performance has been assessed (Yang & Han, 2023). The favourable impact of ESG performance on corporate financial performance in Chinese energy companies was found (Zhao et al., 2018). It is concluded that there is a favourable relationship between ESG scores and market risk indicators (Aldieri et al., 2023). It has been analysed that ESG scores have a positive impact on the financial performance of mutual funds during the COVID-19 pandemic (Tampakoudis et al., 2023). ESG disclosure was found to have a positive effect on financial performance moderated by ESG investors (Chen & Xie, 2022). A comprehensive analysis confirmed the positive relationship between ESG and financial performance, showing that higher ESG scores lead to better financial performance (Zheng et al., 2022). A study of G8 countries found that the social component of ESG scores had a positive effect on financial performance, particularly return on equity (ROE), while the environmental and governance components showed mixed results (Simsek & Cankaya, 2021).

In contrast, some studies have found either an insignificant or negative relationship between ESG activities and financial performance. A significantly negative effect of ESG performance on return on assets (ROA) in developing countries was found (Garcia & Orsato, 2020). There was mixed evidence in South Africa, where ESG ratings had varying effects on financial performance (Chininga et al., 2023). Importantly, it has also been suggested that the financial benefits of ESG practices are not similar in all markets and may be dependent on regional and industry factors (Marsat & Williams, 2011; Zehir & Aybars, 2020). In addition, the impact of corporate social responsibility (CSR), one of the components of ESG, on financial performance

has been found to be non-linear and disaggregated, indicating that the relationship is complex and is context dependent (Nollet et al., 2016).

2.4. ESG and Dividend Policy

The relationship between ESG performance and dividend policy has been the focus of researchers who seek to understand how sustainability practices affect corporate strategy decisions. Traditionally, the literature tends to examine whether companies with higher ESG ratios can maintain stable and high dividend payouts compared to their lower ESG peers.

A positive relationship between ESG performance and dividend policy has been reported in multiple empirical studies. In a study of non-financial firms in Europe (Bilyay-Erdogan et al., 2023), it was concluded that higher ESG scores have a positive effect on dividend payout ratios. ESG ratings were found to significantly affect the likelihood and stability of dividend payments among Eurostock 600 listed companies (Matos et al., 2020). A positive impact of ESG ratings on dividend payment policies in Western European companies has been observed, with audit quality having a moderating role (Zahid et al., 2023). The positive impact of CSR activities closely related to ESG on dividend policy in the Korean market has been shown (Joe & Oh, 2018). It was investigated that there is a positive relationship between sustainability practices and dividend payouts in emerging markets (Malik, 2023). ESG performance was found to have a positive impact on firm value and profitability, which in turn can contribute to higher dividend payouts (Aydoğmuş et al., 2022). A study conducted in the G8 countries found that while social indicators have a positive effect on dividend payouts, environmental and governance pillars have no significant effect (Simsek & Cankaya, 2021). A study of ESG scores and their impact on the dividend policy of large family firms showed the role of financial constraints (Maquieira et al., 2023).

In contrast, a number of studies have reported an insignificant or negative relationship between ESG performance and dividend policy. ESG factors were found to have no significant effect on dividend policy decisions in ASEAN-5 countries (Ismillah & Faisal, 2023). It was found that although firms with higher ESG ratings increase their long-term sustainability, it does not necessarily lead to higher dividend payouts (Do & Kim, 2020). Further, it has been suggested that the impact of ESG strategies on shareholder value and dividend policy is complex and does not always yield positive results (Nirino et al., 2020). Moreover, empirical research has shown that while ESG performance can influence dividend stability, the extent and direction of this influence can vary significantly depending on firm-specific factors and the overall broader economic environment (Zheng et al., 2022).

2.5. ESG and the Banking Sector

With the banking sector's unique position in the economy, there is a need to focus on how ESG indicators affect financial performance and dividend policy. Banks play a critical role in contributing to sustainable development through their lending and investment activities, making their ESG performance a subject of intense interest.

Studies on the banking sector highlight the importance of ESG performance in enhancing financial stability and investor confidence. The positive impact of environmental components on return on assets and Tobin's Q in European banks has been studied (Buallay, 2018). Green

innovation has been observed to play a key role in mediating the relationship between ESG performance and financial performance in banks, especially in different legal contexts such as UK common law and German civil law (Chouaibi et al., 2022). It was noticed that higher ESG scores correlate with better market risk performance, which is important for banks operating in unstable financial environments (Aldieri et al., 2023). The ESG and corporate financial performance in South Africa has shown a significant relationship (Chininga et al., 2023). Empirical evidence has also shown that ESG practices can improve the overall financial health of banks, contributing to better risk management and investor confidence (Zheng et al., 2022). A study conducted in G8 countries found that ESG performance, especially the social component, has a positive impact on banks' financial performance (Simsek & Cankaya, 2021). Another study found that ESG performance significantly contributes to the financial stability of European banks by reducing the non-performing loan ratio (Toth et al., 2021).

However, some studies have reported different effects of ESG on financial performance in the banking sector. A negative impact of ESG activities on financial performance of banks in developing countries has been found (Garcia & Orsato, 2020). It has been reported that ESG performance does not affect portfolio performance equally in Europe and Turkey, suggesting that regional differences play an important role (Zehir & Aybars, 2020). The complexity of the ethical market was emphasised, indicating that ESG ratings do not always predict better financial performance of banks (Landi & Sciarelli, 2019). ESG scores and risk market indicators have been analysed combined (Aldieri et al., 2023).

In terms of dividend policy, ESG factors have different effects on banking sector decisions. ESG ratings have been found to have a positive effect on the stability and likelihood of dividend payments among European banks (Matos et al., 2020). Importantly, it has been suggested that while ESG ratings have a positive impact on dividend policy, the presence of high audit quality further strengthens this relationship (Zahid et al., 2023). In contrast, ESG factors were found to have no significant effect on dividend decisions in ASEAN-5 banks, indicating that regional and institutional differences may lead to different results (Ismillah & Faisal, 2023). A study of European banks found that ESG scores contribute significantly to financial stability by reducing non-performing loans and increasing overall stability (Toth et al., 2021).

2.6. Conclusion

The literature on ESG and its impact on financial performance and dividend policy presents a diverse and a complex picture. While many studies confirm the positive impact of ESG indicators on financial stability and profitability, especially in the non-financial sector, the banking sector shows a more subtle relationship. The mixed findings in the banking sector emphasise the need for further research, especially using more relevant data and in different regional contexts. This thesis aims to contribute to this ongoing debate by providing empirical evidence on the impact of ESG scores on the financial performance and dividend policy of Eurozone banks, addressing important research gaps and offering insights for both academics and practitioners.Based on the mentioned literatures this thesis proposes 2 hypotheses to examine the impact of ESG scores on the financial performance and dividend policy of Eurozone banks:

H1: ESG Scores have a positive impact on the financial performance of Eurozone banks.
H2: ESG Scores have a positive impact on the dividend policy of Eurozone banks.

3. Data Collection

3.1. Sample

The main idea of this paper is to study the impact of ESG scores on the financial performance and dividend policy of Eurozone banks. In order to achieve the above objective, banks from 20 Eurozone countries were sampled. These banks are significant for the Eurozone banking system, which is confirmed by the List of Significant Entities directly supervised by the European Central Bank as of 1 March 2024.

Initially, the samples included 121 banks in 20 Eurozone countries. After filtering the data for availability and all necessary indicators, the data of 34 banks remained available for this study. All necessary data were obtained through databases, specifically ESG scores from the Eikon Refinitiv database, financial indicators from the FactSet database, and ECB interest rates from the ECB website. All data dates from 2014 to 2023.

3.2. Variables

This section gives an overview of all the variables that were used in this study. Table 1 describes the selected variables with reference to papers where they have already been used in previous studies.

Table 1 Variables Description

Variable Name	Variable Type	Description	Reference
ROE	Dependent	Represents Financial Performance as Return on Equity as a financial indicator that measures the profitability of a company in terms of its equity. It shows how efficiently a company uses its own funds to generate profits.	Zhan et al, 2018
LnDPR	Dependent	Represents Dividend Performance as natural logarithm of Dividend Payout Ratio as a financial measure that reflects the proportion of a company's net income that is allocated to paying dividends to shareholders. This ratio helps investors understand how much of the profits are distributed to shareholders as dividends and how much is reinvested in the business.	Joe and Oh, 2018
ESG_score	Independent	Represents ESG Score of the bank	Chouaibi et al., 2022
LnSize	Control	Represents natural logarithm of bank's total assets	

LnLtD	Control	Represents natural logarithm of Loan-to-Deposit ratio as a financial indicator that measures a bank's ability to cover its lending obligations with customer deposits. This ratio shows what percentage of the bank's deposits are used for lending.	Fu and Li, 2023
ECB	Control	Represents interest rate set by the European Central Bank (ECB) to regulate monetary policy in eurozone countries	Brammer et al., 2006
LnLev	Control	Represents natural logarithm of Debt-to-Asset Ratio	
CAR	Control	Represents Capital Adequacy Ratio as a financial indicator used to assess the financial strength of a bank. It measures the ratio of a bank's capital to its risk assets and helps determine whether a bank has sufficient capital to cover potential losses and protect depositors and creditors.	Zhai et al., 2018
LnROA	Control	Represents natural logarithm of Return on Asset as a financial indicator that measures how efficiently a company's assets are used to generate profits. This ratio shows how much profit a company makes for every dollar of its assets.	Tampakoudis et al., 2023

3.3. Descriptive Statistics:

Table 2 Descriptive Statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
ROE	222	.0735432	.066666	-.2489632	.3224176
log_DPR	222	-.9971251	.6078639	-3.290794	-.0024498
ESG_Score	222	68.70754	16.96388	16.2249	95.73148
log_Size	222	25.99255	1.831038	19.11789	28.61076
log_LtD	222	.1138094	.2624732	-1.079377	.915072
ECB	222	.002491	.0066945	0	.0375
log_Lev	222	1.711599	.2259353	1.175573	2.379546
CAR	222	.1739405	.035105	.104	.4168
log_ROA	222	-.8521876	.736295	-4.988429	.4345388

The descriptive statistics provided gives a detailed view of the key variables in the dataset, including number of observations (Obs), mean values (Mean), standard deviations (Std. Dev.), minimum (Min) and maximum (Max) values. Here we take a closer look at the variables ROE, log_DPR, ESG, log_Size, log_LtD, ECB, log_Lev, CAR and log_ROA.

Starting with the variable ROE (Return on Equity), which is one of the key indicators of the company's financial performance. There are 222 observations for ROE. The mean value of ROE is 0.0735432, which indicates an average return on equity of approximately 7.35%. The standard deviation is 0.066666666, indicating a significant variation in ROE among companies, with a range from-0.2489632 to 0.3224176.

Further, the variable log_DPR (logarithm of dividend payout ratio) normalises the distribution of dividend payout ratios. There are 222 observations for log_DPR. The mean value of log_DPR is 0.33595, indicating the overall dividend payout rate, while the standard deviation of 0.2637185 shows significant variation among firms. The values range from 0 to 0.9975532 indicating a wide range of dividend payment practices.

The ESG (Environmental, Social and Governance Rating) variable is an important indicator of sustainability and ESG compliance. There are 222 observations for ESG. The mean value of ESG is 68.70754, indicating a medium level of ESG compliance. The standard deviation of 16.96388 indicates a significant variation in ESG ratings among companies, with a range from 16.2249 to 95.73148.

Looking at the variable log_Size (logarithm of bank's total assets), we see that it normalises the distribution of assets, which helps to better analyse the data. There are 222 observations for log_Size. The mean value of log_Size is 25.99255, which indicates the normalised size of

banks in the sample. The standard deviation is 1.831038 and the values range from 19.11789 to 28.61076, indicating a significant variation in the size of the companies.
The variable log_LtD (logarithm of Loan-to-Depoist ratio) normalises the loan-to-deposit ratio among the banks. There are 222 observations for log_LtD. The mean value of log_LtD is 1.1138094, indicating the overall level of loan-to-deposit, while the standard deviation of 0.2624732 shows the variation among companies. The values range from-1.079377 to 0.915072.
Also interesting is the ECB (European Central Bank rate) variable, which remains relatively low. There are 222 observations for ECB. The mean is 0.002491 and the standard deviation is 0.0066945, reflecting monetary policy over the period analysed. The values range from 0 to 0.0375, which shows the impact of ECB policy on the Eurozone banks.
The variable log_Lev (logarithm of leverage) provides a normalised view of borrowing among firms. There are 222 observations for log_Lev. The mean value of log_Lev is 1.711599, indicating the overall level of borrowing. The standard deviation of 0.225933 shows the variation among companies, with a range from 1.175573 to 2.379546.
In addition, the variable CAR (Capital Adequacy Ratio) indicates the average capital adequacy important for financial stability of the banks. There are 222 observations for CAR. The mean value of CAR is 0.1739405 and the standard deviation of 0.035105 shows the variation among companies. The values range from 0.104 to 0.4168.
Finally, the variable log_ROA (logarithm of return on assets) normalises the distribution of return on assets. There are 222 observations for log_ROA. The mean value of log_ROA is-0.8521876, indicating the overall level of return relative to assets, while the standard deviation of 0.736295 shows significant variation among companies. The values range from-4.988429 to 0.4345388.

Taken together, these variables provide important information to further analyse the impact of ESG on the financial performance and dividend policy of the eurozone banks.

3.4. Regression

To test the first hypothesis (H1), the following model will be used:

$$\boldsymbol{ROE_{it} = \beta_0 + \beta_1 ESG\_score_{it} + \beta_2 LnSize_{it} + \beta_3 LnLtD_{it} + \beta_4 ECB_{it} + \beta_5 LnLev_{it} + \beta_6 CAR_{it} + \varepsilon_{it}}$$

This model incorporates variables commonly used in financial performance studies to control for factors that might influence the dependent variable, such as bank size, liquidity, monetary policy environment, leverage and capital adequacy ratio(Bae et al., 2020; Aydoğmuş et al., 2022; Chen & Xie, 2022).

To test the second hypothesis (H2), the following model will be used:

$$\boldsymbol{DPR_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 LnSize_{it} + \beta_3 LnROA_{it} + \beta_4 LnLtD_{it} + \beta_5 ECB_{it} + \beta_6 LnLev_{it} + \beta_7 CAR_{it} + \varepsilon_{it}}$$

This model controls for factors such as profitability, size, leverage and capital adequacy ratio, which are critical in determining a firm's dividend policy (Brammer et al., 2006; Bae et al., 2020; Chen & Xie, 2022).

3.5. Correlation Analysis

3.5.1. Financial Performance

ESG (Environmental, Social, and Governance) score has a positive but weak and statistically insignificant correlation with ROE (0.0633 at p-value 0.3480). This indicates that ESG score has a weak effect on ROE of banks. Logically, this may be because ESG factors often focus on long-term sustainability and may not have a direct impact on short-term profitability.
The logarithm of total asset size (log_Size) shows a negative and statistically significant relationship with ROE (-0.1940 at p-value 0.0037), indicating that larger banks tend to have lower return on equity. This may be due to the fact that larger banks may have more stable but less profitable investments and may also be more bureaucratised and less flexible in decision-making.
The logarithm of loan-to-deposit ratio (log_LtD) shows a very weak negative but statistically significant correlation with ROE (-0.0177 with p-value 0.0083), indicating a minimal effect of loan-to-deposit ratio on return on equity. It is likely that the impact of this variable on ROE is minimal in the context of this analysis as banks can effectively manage the risks associated with high level of lending.
The European Central Bank (ECB) rate shows a positive and statistically significant correlation with ROE (0.1751 with a p-value of 0.0090), indicating the impact of monetary policy on the return on equity of banks. Higher ECB rates may be associated with higher asset returns as banks can earn more on loans at higher interest rates.
The logarithm of leverage (log_Lev) has a positive but weak and statistically insignificant correlation with ROE (0.0812 with a p-value of 0.2280), indicating that there is minimal impact of the level of borrowing on the return on equity. Logically, this may be because banks can effectively manage their borrowings and use them to create earning assets.
Capital Adequacy Ratio (CAR) shows a positive and statistically significant correlation with ROE (0.4155 with p-value 0.0000), indicating that capital adequacy significantly affects return on equity. Banks with higher CAR tend to have better financial strength and hence higher return on equity. This is logical because higher capital adequacy reduces financial risks and increases investor and customer confidence.

Table 3 Correlation Matrix – Financial Performance

	ROE	ESG	LnSize	LnLtD	ECB	LnLev	CAR
ROE	1.0000						
ESG_Score	0.0633	1.0000					
	0.3480						
LnSize	-0.1940	0.4763	1.0000				
	0.0037	0.0000					
LnLtD	-0.0177	-0.1949	0.0425	1.0000			
	0.0083	0.0036	0.5290				
ECB	0.1751	0.1507	0.0405	-0.0073	1.0000		
	0.0090	0.0247	0.5483	0.9133			
LnLev	0.0812	-0.2783	-0.3731	0.0911	0.0095	1.0000	
	0.2280	0.0000	0.0000	0.1760	0.8884		
CAR	0.4155	0.1351	-0.1102	-0.3480	0.0837	0.0087	1.0000
	0.0000	0.0444	0.1016	0.0000	0.2142	0.8972	

3.5.2. Dividend Policy

ESG score has a positive and statistically significant relationship with LnDPR (0.2008 at p-value 0.0081). This indicates that banks with higher ESG scores tend to have higher dividend payouts. Logically, this may be because companies with high ESG scores may tend to be sustainable and attractive to investors through stable dividend payments.

The logarithm of total asset size (log_Size) shows a weak and statistically insignificant correlation with LnDPR (0.0723 with a p-value of 0.3447). This indicates that bank size has no significant effect on its dividend policy. It is possible that other factors such as profitability or regulatory requirements determine the dividend payout policy.

The logarithm of loan to deposit ratio (log_LtD) shows a weak positive and statistically significant correlation with LnDPR (0.1576 with p-value 0.0384). This may indicate that banks with higher levels of lending relative to deposits tend to pay out more dividends. Perhaps such banks tend to distribute profits to shareholders while maintaining a high level of lending.

European Central Bank (ECB) rate shows a weak and statistically insignificant correlation with LnDPR (0.0710 with p-value 0.3530), indicating that there is no significant relationship between monetary policy and dividend payments by banks. This may imply that ECB rates are not a major determinant of dividend payments.

The logarithm of leverage (log_Lev) has a weak negative and statistically insignificant correlation with LnDPR (-0.1004 with p-value 0.1888), indicating that there is minimal impact of borrowing level on dividend payments. Logically, this may be due to the fact that banks with high level of borrowings may divert profits to debt repayment rather than dividend payments.

Capital Adequacy Ratio (CAR) shows a positive and statistically significant correlation with LnDPR (0.1852 with p-value 0.0147), indicating that banks with higher level of capital tend to pay more dividends. This makes sense as better capitalised banks can afford to pay out more to shareholders.

The logarithm of return on assets (LnROA) shows a weak negative and statistically insignificant correlation with LnDPR (-0.0378 with p-value 0.6217), indicating that there is minimal impact of return on assets on dividend payout. It is possible that other factors, such as governance policies or regulatory requirements, have a greater impact on dividend payments.

Table 4 Correlation matrix - Dividend Policy

	LnDPR	ESG	LnSize	LnLtD	ECB	LnLev	CAR	LnROA
LnDPR	1.0000							
ESG_Score	0.2008	1.0000						
	0.0081							
LnSize	0.0723	0.4763	1.0000					
	0.3447	0.0000						
LnLtD	0.1576	-0.1949	0.0425	1.0000				
	0.0384	0.0036	0.5290					
ECB	0.0710	0.1507	0.0405	-0.0073	1.0000			
	0.3530	0.0247	0.5483	0.9133				
LnLev	-0.1004	-0.2783	-0.3731	0.0911	0.0095	1.0000		
	0.1888	0.0000	0.0000	0.1760	0.8884			
CAR	0.1852	0.1351	-0.1102	-0.3480	0.0837	0.0087	1.0000	
	0.0147	0.0444	0.1016	0.0000	0.2142	0.8972		
LnROA	-0.0378	-0.0867	-0.2499	0.0834	0.1538	0.3158	0.2835	1.0000
	0.6217	0.2109	0.0003	0.2288	0.0258	0.0000	0.0000	

3.5.3. Independent and Control Variables

ESG shows a moderate positive correlation with log_Size (0.4763 at p-value 0.0000) indicating that larger banks have higher ESG scores. This is quite logical as larger banks are often more closely monitored for ESG compliance, possibly due to greater public and regulatory pressure.
There is a weak negative correlation with log_LtD (-0.1949 with a p-value of 0.0036), indicating that banks with higher ESG scores have a lower loan-to-deposit ratio. This may be because more stable banks try to maintain more conservative financial policies and avoid over-lending.
The ECB rate (ECB) has a weak positive correlation with ESG (0.1507 with a p-value of 0.0247), which may reflect that changes in ECB policy may encourage better ESG practices. Perhaps central banks and regulators are promoting ESG initiatives and banks, taking these signals, are improving their ESG performance.
The logarithm of leverage (log_Lev) shows a moderate negative correlation with ESG (-0.2783 at p-value 0.0000), indicating that banks with high ESG scores have lower borrowing levels. It is likely that banks aiming for high ESG standards avoid excessive borrowing which reduces their financial risks.
The correlation between ESG and CAR is 0.1351 (with a p-value of 0.0444), indicating a weak positive relationship between capital adequacy and ESG scores. Banks with better capital adequacy can invest more resources in improving their ESG performance.
The logarithm of total asset size (log_Size) has a very weak correlation with log_LtD (0.0425 with p-value 0.5290), indicating that there is no significant relationship between bank size and its loan to deposit ratio. This may imply that bank size does not necessarily determine its lending policy.
The ECB rate (ECB) also has a very weak relationship with log_Size (0.0405 with p-value 0.5483), indicating that there is no significant relationship between bank size and ECB rate. This may imply that monetary policy affects all banks regardless of their size.
The logarithm of leverage (log_Lev) shows a moderate negative correlation with log_Size (-0.3731 at p-value 0.0000), indicating that larger banks have a lower level of borrowing. This may be due to the fact that larger banks have access to cheaper sources of capital and can afford to borrow less.
The correlation between log_Size and CAR is-0.1102 (with a p-value of 0.1016), indicating a weak negative relationship between bank size and its capital adequacy ratio. It is possible that larger banks can afford lower capital adequacy because of their stability and soundness.
The logarithm of the loan-to-deposit ratio (log_LtD) shows almost no relationship with the ECB rate (-0.0073 at p-value 0.9133), indicating that there is no significant relationship between the loan-to-deposit ratio and the ECB rate. This may imply that ECB policy has no significant impact on banks' lending policy.
There is a moderate positive correlation with log_Lev (0.5290 with a p-value of 0.0000) indicating that there is a relationship between the level of borrowing and loan to deposit ratio. This is logical as banks with high borrowing levels often have high loan to deposit ratios, which may be part of their business model.
With CAR log_LtD has a moderate negative correlation (-0.3480 at p-value 0.0000), indicating that banks with high loan to deposit ratio have lower capital adequacy. This may imply that banks that lend actively may take risks by sacrificing capital.
The ECB rate (ECB) has a very weak negative correlation with log_Lev (-0.0911 with p-value 0.1760), indicating that there is an insignificant relationship between the ECB rate and the

level of borrowing. This may imply that ECB policy does not have a strong effect on the borrowing level of banks.
The correlation between ECB and CAR is 0.0837 (with a p-value of 0.2142), indicating a weak positive relationship between ECB rate and capital adequacy. It is possible that higher rates may encourage banks to improve their capital adequacy to maintain financial soundness.
The logarithm of leverage (LnLev) shows almost no relationship with CAR (0.0087 with p-value 0.8972) indicating that there is no significant relationship between level of borrowing and capital adequacy. This may imply that level of borrowing is not a key factor affecting capital adequacy of banks.

4. Empirical Analysis and Results

The empirical analysis chapter is divided into two main parts: financial performance and dividend policy. Each part contains two subsections: selection of the appropriate model based on Hausman test results and presentation of regression results for panel data.

4.1. Financial Performance

4.1.1. Hausman Test

To decide which model is more appropriate to analyse the impact of ESG scores on banks' financial performance, Hausman test was conducted. The results of the Hausman test are shown in the table below:

Table 5 Financial Performance Hausman Test

Coefficients

	(b) fe_model	(B) re_model	(b-B) Difference	sqrt(diag(V_b - V_B)) S.E.
ESG	0.0002107	0.0003927	-0.000182	0.0003151
LnSize	0.1277003	-0.007118	0.1348183	0.0304396
LnLtD	0.0652095	0.0099918	0.0552177	0.0195826
ECB	1.135213	1.458808	-0.3235952	
LnLev	0.0969816	0.0090376	0.087944	0.0237806
CAR	-0.4521987	0.3873989	-0.8395976	0.1347597

chi2(6)=(b-B)'[(V_b-V_B)^(-1)](b-B)=68.14

Prob>chi2=0.0000

The null hypothesis of the Hausman test states that a random effects (RE) model is preferred because unique errors are not correlated with the regressors. Since the p-value is less than 0.05, we reject the null hypothesis, indicating that the fixed effects (FE) model is more appropriate.

4.1.2. Financial Performance Regression Results

Table 6 Financial Performance Regression Results

VARIABLES	(1) ROE
ESG	0.000211 (0.000470)
LnSize	0.128*** (0.0307)
LnLtD	0.0652*** (0.0286)
ECB	1.135** (0.554)
LnLev	0.0970*** (0.0340)
CAR	-0.452** (0.203)
Constant	-3.358*** (0.799)
Observations	222
Number of entity numeric	34
R-squared	0.171

Standard errors in parantheses
*** p<0.01, ** p<0.05, * p<0.1

4.2. Dividend Policy

4.2.1. Hausman Test

To decide which model is more appropriate to analyse the impact of ESG scores on banks' dividend policy, Hausman test was conducted. The results of the Hausman test are summarised in the table below:

Table 7 Dividend Policy Hausam Test

Coefficients

	(b) fe_model	(B) re_model	(b-B) Difference	sqrt(diag(V_b - V_B)) S.E.
ESG	0.100081	0.0055203	0.0044878	0.004309
LnSize	-0.6955588	-0.0517465	-0.6438123	0.3574286
LnLtD	0.3393705	0.6944721	-0.3551016	0.2665834
ECB	12.41705	7.515032	4.90202	2.041279
LnLev	-0.5751767	-0.2251299	-0.3500468	0.3149455
CAR	-0.9024584	2.61412	-3.516578	1.609762
LnROA	-0.4126736	-0.2714208	-0.01412529	0.0499762

chi2(6)=(b-B)'[(V_b-V_B)^(-1)](b-B)=26.51

Prob>chi2=0.0004

The null hypothesis of Hausman test states that random effects (RE) model is preferred because the unique errors are not correlated with the regressors. Since the p-value is less than 0.05, we reject the null hypothesis, indicating that the fixed effects (FE) model is more appropriate.

4.2.2. Dividend Policy Regression Results

Table 8 Dividend Policy Regression Results

VARIABLES	(1) LnDPR
ESG	0.100* (0.00559)
LnSize	-0.696** (0.341)
LnLtD	0.339 (0.334)
ECB	12.42** (5.469)
LnLev	-0.575 (0.407)
CAR	-0.902 (2.244)
LnROA	-0.413*** (0.0899)
Constant	17.13* (8.808)
Observations	222
Number of entity numeric	34
R-squared	0.189

Standard errors in parantheses
*** p<0.01, ** p<0.05, * p<0.1

5. Discussion

5.1. Financial Performance

Regression analysis revealed a positive coefficient (0.000211) of the ESG variable, indicating that ESG has a potential positive impact of ESG scores on the ROE of Eurozone banks. This result is explained by the fact that companies, and in our case it is banks, that have high ESG scores often have stricter risk management and sustainability policies in general. This significantly helps to minimise risks associated with environmental and social factors, which in turn contributes to a high ROE. Similar conclusions were reached by Adlieri et al.(2023), Bae et al.(2020), Buallay (2018) in their papers where they also obtained a positive effect of ESG scores on financial performance through improved risk management.

These results also provide evidence that by improving ESG scores, banks improve their reputation among customers, investors and regulators. This, in turn, helps banks both in raising capital and reducing the cost of capital, which ultimately has a positive effect on ROE. These findings are also supported by Aydoğmuş et al. (2022), which states that high ESG scores improve a company's reputation, which attracts more investors and customers, contributing to higher returns on equity.

The results of the analysis also allow us to say that ESG initiatives are inextricably linked to operational efficiency. For example, it is possible to reduce operating costs and increase productivity by investing in energy-intensive technologies and social programmes, which has a positive impact on financial performance. These findings are also summarised in Chouaibi et al. (2022), where it is shown that green innovation and effective ESG strategies significantly improve a company's operational efficiency.

According to the above, the positive effect of ESG scores on ROE is also consistent with a number of theories, namely Stakeholder theory, resource-based view, agency theory and signalling theory.

In the Eurozone context, the results of the empirical analysis indicate that regulatory incentives like EU Taxonomy are quite effective in Eurozone countries. The tax and financial benefits obtained in the results of ESG implementation have a positive impact on financial performance. (Chininga et al., 2023).

Although the results of this analysis are positive, they are not statistically significant. This can be explained by the fact that ESG practices tend to be long-term activities. Long-term benefits, such as improved reputation and risk tolerance, may not be immediately apparent in financial performance. Also, despite all the incentives offered by the authorities and other positive effects of ESG practices, many investors and analysts still focus on traditional financial measures such as earnings or revenue, but not ESG scores. These findings are also reflected in Zehir and Aybars (2020).

Regarding the other variables in this model, the results are mixed. For instance, bank size (LnSize) has a positive and significant coefficient at 0.128 at 1% significance level. This indicates that larger banks have higher return on equity. This result can be explained by economies of scale and access to more resources.

The coefficient for loan to deposit ratio (LnLtD) is 0.0652 and is significant at 5% level. This indicates that higher loan to deposit ratio is associated with higher ROE. A possible explanation could be that banks with high loan-to-deposit ratio can better use their resources to generate income, which in turn has a positive effect on their profitability.

The European Central Bank (ECB) rate has a coefficient of 1.135 and is significant at the 5% level, indicating that there is a positive impact of ECB rates on ROE. This result can be explained by the fact that higher interest rates allow banks to earn more on loans, which increases their profitability.

The coefficient for leverage (LnLev) is 0.0970 and is significant at 1% level of significance, indicating that there is a positive impact of leverage level on profitability. This is consistent with the research of Bae et al (2020) which shows that wise use of debt can improve the financial performance of firms. Leverage allows banks to utilise additional financial resources for investment, which can lead to increased profitability.

Finally, the coefficient for capital adequacy (CAR) is-0.452 and significant at the 5% level, indicating that higher levels of capital adequacy may reduce profitability. This may be because holding a large amount of capital limits the ability of banks to invest in earning assets, which reduces their profitability. This result is consistent with studies that show that high capital requirements may limit banks' ability to generate income (Brammer et al., 2006).

5.2. Dividend Policy

Regarding the dividend policy of Eurozone banks, the regression results for Dividend Payout Ratio showed that the ESG coefficient is 0.100 and is statistically significant at the 10 % level, indicating the positive impact of high ESG scores on dividend payout. Like the regression results for financial performance, the results for dividend policy are consistent with a number of theories such as stakeholder theory, signalling theory, legitimacy theory, resource-based view and agency theory. Thus, according to Signalling Theory, high ESG scores signal to the market the reliability and stability of the bank. In turn, investors, when receiving these positive signals, start investing more, which eventually increases shareholder capital and allows the bank to allocate more funds for dividend payments. This argument is also reflected in the study of Bilyay-Erdogan et al(2023). In addition, the results prove that better ESG scores are associated with better risk and cost management, which in turn favours the attraction of long-term investors.

In terms of the control variables in this model, the coefficient for bank size (LnSize) is-0.696 and significant at the 5% level, indicating that larger banks tend to pay less dividends. This may be due to the need to reinvest profits to maintain scale of operations and sustainable growth. These findings are supported by studies that show that large companies often reinvest a significant portion of their profits in the business, which limits their ability to pay dividends (Zahid et al., 2023).

The coefficient for loan-to-deposit ratio (LnLtD) is 0.339 and is not statistically significant, indicating that there is no clear impact of this measure on dividends. This may be due to the fact that dividend policy is determined by other factors such as profitability and regulatory requirements.

The European Central Bank (ECB) rate has a coefficient of 12.42 and is significant at the 5% level, indicating that ECB rates have a positive impact on dividend payouts. This may be because higher interest rates allow banks to earn more on loans, which increases their profitability and allows them to pay higher dividends.

However, the coefficient for leverage (LnLev) is-0.575 and insignificant, indicating that there is no clear impact of leverage level on dividends. This could be because highly leveraged banks may divert a significant portion of their income to debt repayment, which limits their ability to pay dividends.

The coefficient for capital adequacy (CAR) is-0.902 and insignificant, which also indicates that there is no clear impact of this measure on dividends. This may be because banks with high capital levels may divert their earnings to maintaining stability and meeting regulatory requirements, which limits their ability to pay dividends.

(LnROA) coefficient for return on assets is-0.413 and significant at 1% level, indicating that there is a negative impact of high return on assets on dividend payout. This may be due to the fact that companies with high ROA may prefer to reinvest profits for further growth rather than pay dividends.

6. Conclusion

To summarise, the results of our analysis show that ESG scores have a positive effect on the financial performance and dividend policy of Eurozone banks, which confirms hypotheses 1 and 2 of this research paper. Findings support the importance of integrating ESG factors into banks' strategic management and emphasise their relevance for the long-term sustainability and success of the banking sector. The results of this paper provide valuable insights into the relationship between ESG, financial performance and dividend policy. The results can serve as a guide for financial institutions seeking to optimise their ESG practices and improve financial performance. Moreover, this paper and the results obtained can be used as a benchmark for legislators to develop more effective ESG policies.

This paper also has its limitations. For example, this analysis was limited by the available data on both financial performance and ESG scores. More data may be available for future researchers. Also, this paper does not consider the impact of individual ESG components. And it is important to point out that this paper does not consider the long-run effect of ESG scores on bank performance.

Recommendations for future research include examining the impact of individual components of ESG scores on the financial performance and dividend policy of Eurozone banks. As well as studying the impact of ESG on other aspects of banks' financial

performance, such as risk management, corporate governance. Also, a study of the impact of ESG on long-term financial stability could provide a more accurate picture.

7. References

Aldieri, L., Amendola, A., & Candila, V. (2023). The impact of ESG scores on risk market performance. Sustainability, 15(7183).

Aydoğmuş, M., Gülay, G., & Ergun, K. (2022). Impact of ESG performance on firm value and profitability. Borsa Istanbul Review, 22(S2), S119–S127.

Bae, K., El Ghoul, S., Gong, Z., & Guedhami, O. (2020). Does corporate social responsibility reduce the costs of high leverage? Journal of Banking & Finance, 120, 105963.

Barney, J. (1991). Firm resources and sustained competitive advantage. Journal of Management, 17(1), 99-120.

Bilyay-Erdogan, S., Danisman, G. O., & Demir, E. (2023). ESG performance and dividend payout: A channel analysis. Finance Research Letters, 55, 103827.

Brammer, S., Brooks, C., & Pavelin, S. (2006). Corporate social performance and stock returns: UK evidence from disaggregate measures. Financial Management, Autumn, 97-116.

Chen, Z., & Xie, G. (2022). ESG disclosure and financial performance: Moderating role of ESG investors. International Review of Financial Analysis, 83, 102291.

Chininga, E., Alhassan, A. L., & Zeka, B. (2023). ESG ratings and corporate financial performance in South Africa. Journal of Accounting in Emerging Economies, 14(3), 692-713.

Chouaibi, S., Chouaibi, J., & Rossi, M. (2022). ESG and corporate financial performance: The mediating role of green innovation: UK common law versus Germany civil law. EuroMed Journal of Business, 17(1), 46-71.

Dam, L., & Petkova, B. (2014). The impact of environmental, social, and governance disclosure on firm value. European Accounting Review, 23(4), 497-533.

Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The impact of corporate sustainability on organizational processes and performance. Management Science, 60(11), 2835-2857.

Fatemi, A., Fooladi, I., & Tehranian, H. (2015). Valuation effects of corporate social responsibility. Journal of Banking & Finance, 59, 182-192.

Flammer, C. (2015). Does corporate social responsibility lead to superior financial performance? A regression discontinuity approach. Management Science, 61(11), 2549-2568.

Freeman, R. E. (1984). Strategic Management: A Stakeholder Approach. Boston: Pitman.

Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: Aggregated evidence from more than 2000 empirical studies. Journal of Sustainable Finance & Investment, 5(4), 210-233.

Fu, T., & Li, J. (2023). An empirical analysis of the impact of ESG on financial performance: The moderating role of digital transformation. Frontiers in Environmental Science, 11, 1256052.

Garcia, A. S., & Orsato, R. J. (2020). Testing the institutional difference hypothesis: A study about environmental, social, governance, and financial performance. Business Strategy and the Environment, 29(8), 3261-3272.

Hong, H., & Kacperczyk, M. (2009). The price of sin: The effects of social norms on markets. Journal of Financial Economics, 93(1), 15-36.

Ismillah, N. H., & Faisal, M. (2023). ESG and dividend policy: Evidence from ASEAN-5 countries. Jurnal Manajemen Strategi dan Aplikasi Bisnis, 6(2), 285-300.

Joe, D. Y., & Oh, F. D. (2018). The impact of corporate social responsibility on dividend policy: Evidence from the Korean market. Japan and the World Economy, 45, 9-18.

Kim, S., & Li, Z. F. (2021). Understanding the impact of ESG practices in corporate finance. Sustainability, 13(7), 3746.

Landi, G., & Sciarelli, M. (2019). Towards a more ethical market: The impact of ESG rating on corporate financial performance. Social Responsibility Journal, 15(1), 11-27.

Malik, Kashiramka. (2023). The sustainability-dividend nexus: An emerging markets perspective. SSRN.

Margolis, J. D., Elfenbein, H. A., & Walsh, J. P. (2009). Does it pay to be good? A meta-analysis and redirection of research on the relationship between corporate social and financial performance. Annals of the American Academy of Political and Social Science, 11(3), 33-56.

Marsat, S., & Williams, B. (2011). CSR and market valuation: International evidence. SSRN.

Maquieira, C. P., Espinosa-Méndez, C., & Arias, J. T. (2023). The impact of environmental, social and governance (ESG) score on dividend payment of large family firms: What is the role of financial constraints? Corporate Social Responsibility and Environmental Management.

Matos, P. V., Barros, V., & Sarmento, J. M. (2020). Does ESG affect the stability of dividend policies in Europe? Sustainability, 12(21), 8804.

Nirino, N., Battisti, E., Papa, A., & Miglietta, N. (2020). Shareholder value and dividend policy: The role of ESG strategies. Presented at the IEEE International Conference on Technology Management, Operations and Decisions (ICTMOD), 2020.

Nollet, J., Filis, G., & Mitrokostas, E. (2016). Corporate social responsibility and financial performance: A non-linear and disaggregated approach. Economic Modelling, 52, 400-407.

Tampakoudis, I., Kiosses, N., & Petridis, K. (2023). The impact of mutual funds' ESG scores on their financial performance during the COVID-19 pandemic: A data envelopment analysis. Corporate Governance, 23(7), 1457-1483.

Yang, O.-S., & Han, J.-H. (2023). Assessing the effect of corporate ESG management on corporate financial & market performance and export. Sustainability, 15(3), 2316.

Zahid, R. M. A., Taran, A., Khan, M. K., & Chersan, I.-C. (2023). ESG, dividend payout policy and the moderating role of audit quality: Empirical evidence from Western Europe. Borsa Istanbul Review, 23(2), 350-367.

Zehir, E., & Aybars, A. (2020). Is there any effect of ESG scores on portfolio performance? Evidence from Europe and Turkey. Journal of Capital Markets Studies, 4(2), 129-143.

Zhao, C., Guo, Y., Yuan, J., Wu, M., Li, D., Zhou, Y., & Kang, J. (2018). ESG and corporate financial performance: Empirical evidence from China's listed power generation companies. Sustainability, 10(8), 2607.