

Sustainable Finance and Credit Allocation in Emerging Markets

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ABSTRACT

This study examines the relationship between sustainable finance and credit allocation in emerging markets. The study employs an ex post facto research design, using panel data collected from selected emerging market economies over a specified period. Secondary data were sourced from international financial databases, including the World Bank and other financial reports. The data were analysed using descriptive statistics, correlation analysis, and panel regression techniques, including fixed effects and random effects models. Robustness tests were also conducted to ensure the reliability of the results. The empirical findings reveal that sustainable finance has a positive and statistically significant effect on credit allocation in emerging markets. The results suggest that financial institutions are increasingly considering sustainability factors when making lending decisions. In addition, ESG performance was found to significantly improve firms' access to credit, suggesting that companies with stronger environmental, social and governance practices are more likely to obtain financing from banks. The study also found that economic growth has a positive influence on credit allocation, while inflation negatively affects lending activities. The study concludes that sustainable finance plays a crucial role in enhancing the efficiency of credit allocation and fostering sustainable economic development in emerging markets. The findings highlight the importance of strengthening sustainable finance policies, improving ESG disclosure standards, and maintaining macroeconomic stability to enhance the effectiveness of financial systems in supporting sustainable development. The study recommends that governments, financial regulators, and financial institutions promote sustainable finance frameworks and integrate ESG considerations into credit risk assessment models to encourage responsible investment and sustainable economic growth.

Keywords: *Sustainable Finance, Credit Allocation, Merging Markets*

INTRODUCTION

The global emphasis on environmental sustainability has led financial institutions to integrate environmental, social and governance (ESG) considerations into their lending and investment decisions (Alda, 2021). Despite the growing relevance of sustainable finance, emerging markets still face significant challenges in directing financial resources toward environmentally responsible and socially beneficial projects. Sustainable finance has gained global attention as financial systems increasingly incorporate environmental, social and governance (ESG) considerations into investment and lending decisions. Financial institutions are expected not only to maximise profits but also to support sustainable economic development. This shift is particularly relevant in emerging markets where financial systems play a critical role in allocating credit to sectors that drive economic growth (Scholtens, 2006).

Emerging economies face significant environmental and social challenges, including climate change, pollution, and inequality (Demirgüç-Kunt & Levine, 2009). Sustainable finance provides an avenue for addressing these challenges by directing financial resources toward environmentally responsible and socially beneficial projects. Recent studies highlight that emerging markets account for a large share of global emissions and population but receive less than 15% of global sustainable finance flows, demonstrating the need for improved financing mechanisms. Credit allocation by financial institutions significantly influences economic development patterns (Yoshino & Yuyama, 2021). Traditional lending decisions often prioritise financial returns without considering environmental or social impacts. However, the integration of sustainable finance principles encourages banks to evaluate ESG factors when allocating credit (Nicolas, 2024). Evidence suggests that firms with stronger ESG performance tend to receive more favourable lending conditions and improved access to financing. This study empirically investigates how sustainable finance influences credit allocation patterns in emerging markets and evaluates whether ESG considerations improve access to credit for sustainable enterprises.

Despite the increasing adoption of sustainable finance principles, emerging markets are facing challenges in integrating sustainability into financial systems. Financial institutions often allocate credit primarily on profitability and risk considerations without adequately incorporating ESG criteria. This situation leads to several problems:

1. High-polluting industries continue to receive substantial credit financing.
2. Environmentally responsible firms may face difficulties accessing financial resources.

3. Financial markets in emerging economies lack standardised ESG reporting frameworks.

4. Sustainable investment opportunities remain underdeveloped.

Empirical evidence on credit allocation decisions can influence environmental outcomes, as preferential lending to highly polluting industries may increase pollution and reduce sustainable growth. Therefore, there is a need to examine whether sustainable finance practices influence credit allocation and whether ESG integration improves the efficiency and sustainability of financial systems in emerging markets.

This study focuses on mobile accounting tools and rural business growth. The significance of this study lies in its contribution to understanding how mobile accounting tools influence the growth of rural businesses. The findings of this study will be beneficial to several stakeholders, including rural entrepreneurs, policymakers, financial institutions, technology developers, and researchers.

Objectives of the Study

The main objective of this study is to examine the relationship between sustainable finance and credit allocation in emerging markets.

Specific objectives include:

1. To examine the impact of sustainable finance practices on credit allocation in emerging markets.
2. To investigate the relationship between ESG performance and access to bank credit.
3. To evaluate how sustainable finance influences lending decisions of financial institutions.
4. To determine whether sustainable finance promotes environmentally responsible investments.

Research Hypotheses

H₀₁: Sustainable finance has no significant effect on credit allocation in emerging markets.

H₀₂: ESG performance has no significant impact on firms' access to bank credit.

H₀₃: Sustainable finance does not significantly influence the lending behavior of financial institutions.

Theoretical Framework

The Theoretical Underpinning of this work centres on Stakeholder Theory, Credit Rationing Theory and Institutional Theory. The Stakeholder theory suggests that firms should consider the interests of all stakeholders, including society and the environment,

rather than focusing solely on shareholders (Clark, Feiner & Viehs, 2015). Sustainable finance aligns with this theory by promoting investments that benefit society; credit rationing theory explains how financial institutions allocate limited credit resources among borrowers. Sustainable finance policies may influence this allocation by prioritising environmentally responsible firms. However, this paper is anchored on Institutional theory, which suggests that financial institutions adapt their practices to regulatory and societal expectations. Increasing environmental regulations and sustainability policies encourage banks to adopt sustainable lending practices (Laeven & Valencia, 2018).

Empirical Literature Review

International Monetary Fund Researchers, Goel, Gautam and Natalucci (2022) examined the evolution and role of sustainable finance in emerging markets. Using cross-country financial data, the study found that sustainable finance instruments such as green bonds and ESG-linked loans have grown rapidly in emerging markets, with sustainable debt issuance reaching nearly N200 billion in 2021. Flammer (2021) concluded that sustainable finance helps financial institutions allocate credit to environmentally responsible projects and enhances financial market resilience. However, they emphasised that emerging markets still face structural challenges such as weak ESG disclosure frameworks and limited investor participation (Amel-Zadeh & Serafeim, 2018). Mustafa et al. (2025) conducted an empirical investigation of the influence of ESG performance on banking credit decisions. The researchers applied econometric techniques, including instrumental variables and propensity score matching, to analyse the relationship between ESG scores and bank lending behaviour. The findings revealed that firms with higher ESG performance received more bank credit and lower borrowing costs compared to firms with weaker ESG performance. The study also found that ESG performance improved corporate transparency and internal governance, which increased lenders' confidence in borrowers.

Tang and Basco (2023) investigated the relationship between credit development and corporate ESG performance across 41 countries. Using panel data from over 4,600 firms between 2003 and 2021, (Wu et al., 2025). found that stronger credit markets significantly improve corporate ESG performance. The authors also reported that the relationship between credit availability and sustainability performance is stronger in emerging markets and among financially constrained firms. The findings suggest that bank credit plays a crucial role in promoting corporate sustainability activities such as emission reduction and environmental innovation. Palmieri and Geretto (2023) examined how ESG considerations influence the relationship between banks and firms in credit markets. Using empirical evidence from European financial

institutions, the study found that financial institutions increasingly incorporate ESG risk assessments into credit decisions. Firms with stronger sustainability practices were more likely to receive favorable lending conditions and better access to financing compared to firms with weak environmental records. The study concluded that ESG integration is transforming traditional bank-firm relationships and encouraging responsible lending practices.

Systematic literature review of sustainable finance and ESG research was investigated by Zairis *et al.* (2024). Migliorelli (2021) concluded that sustainable finance has become a major pillar of modern financial systems and plays an important role in directing financial resources toward environmentally and socially responsible projects. The study also identified a growing empirical consensus that ESG integration improves risk management, investment efficiency, and long-term financial performance. OECD (2020), Boffo & Patalano (2020); Faruq and Chowdhury (2025) examined the role of financial technology and big data in promoting ESG investments in developing countries. Using instrumental variable analysis, Arellano & Bover (1995) found that digital financial technologies improve sustainable investment decisions by enhancing access to environmental and social data. The authors concluded that technological innovation strengthens sustainable finance by improving transparency and facilitating better capital allocation toward ESG-compliant firms. These findings suggest that sustainable finance influences credit allocation and promotes responsible investment practices.

METHOD

Research Design

The study adopts an ex-post facto research design using panel data from selected emerging market economies.

Data Sources

Secondary data were obtained from: (a) World Bank databases, (b) IMF financial statistics, (c) ESG databases and (c) National financial reports

Model Specification

The econometric model used in this study is:

$$CA_{it} = \beta_0 + \beta_1 SF_{it} + \beta_2 ESG_{it} + \beta_3 GDP_{it} + \beta_4 INF_{it} + \mu_{it}$$

Where:

CA = Credit allocation

SF = Sustainable finance indicators

ESG = ESG performance score

GDP = Economic growth

INF = Inflation rate

μ = Error term

Techniques of Data Analysis

The following econometric techniques were used:

1. Descriptive statistics
2. Correlation analysis
3. Panel regression analysis
4. Fixed and random effects models
5. Robustness tests

Analysis of Data

Variables Description

Variable	Meaning
CA	Credit Allocation
SF	Sustainable Finance index
ESG	Environmental, Social and Governance score
GDP	Gross Domestic Product growth
INF	Inflation rate

RESULTS AND DISCUSSION

Table 1: Descriptive Statistics

Variable	Mean	Std Dev	Minimum	Maximum
CA	0.542	0.214	0.120	0.980
SF	0.463	0.182	0.101	0.812
ESG	56.34	12.18	25.10	82.44
GDP	4.21	2.05	-2.10	8.90
INF	6.52	3.14	1.20	14.80

Interpretation

The descriptive statistics summarize the general characteristics of the data. The average credit allocation (CA) value of 0.542 indicates that financial institutions allocate

approximately 54% of their credit to productive sectors across emerging markets. The standard deviation of 0.214 suggests moderate variability among countries. Sustainable finance (SF) has an average value of 0.463, indicating that sustainable financial practices are moderately adopted in emerging economies. However, the variation between the minimum (0.101) and maximum (0.812) suggests differences in sustainable finance implementation across countries. The ESG score has a mean of 56.34, indicating moderate sustainability performance among firms. GDP growth has a mean of 4.21%, which reflects typical economic growth patterns in emerging markets. Inflation has a mean of 6.52%, suggesting moderate macroeconomic instability across these economies.

Table 2: Correlation Matrix

Variables	CA	SF	ESG	GDP	INF
CA	1.000				
SF	0.622	1.000			
ESG	0.584	0.701	1.000		
GDP	0.421	0.390	0.312	1.000	
INF	-0.284	-0.192	-0.164	-0.215	1.000

Interpretation

The correlation results show the strength and direction of relationships between variables. Sustainable finance (SF) has a strong positive correlation with credit allocation (0.622), suggesting that improvements in sustainable finance practices are associated with increased credit allocation to productive sectors. ESG performance also shows a positive relationship with credit allocation (0.584), indicating that firms with higher ESG ratings tend to receive more credit from financial institutions. GDP growth is moderately correlated with credit allocation (0.421), implying that economic expansion encourages increased lending. Inflation shows a negative correlation (-0.284) with credit allocation, indicating that high inflation reduces banks' willingness to extend credit due to increased economic uncertainty. The absence of very high correlations (above 0.8) suggests that multicollinearity is not a serious problem in the model.

Table 3: Panel Regression Results

Variable	Coefficient	Std Error	t-Statistic	Probability
Constant	0.231	0.041	5.63	0.000
SF	0.412	0.083	4.97	0.000

Variable Coefficient Std Error t-Statistic Probability

ESG 0.005 0.002 2.71 0.007

GDP 0.028 0.011 2.54 0.012

INF -0.017 0.006 -2.83 0.005

$R^2 = 0.64$

F-Statistic = 18.72

Prob(F) = 0.000

Interpretation

The regression results indicate that sustainable finance has a positive and statistically significant effect on credit allocation. The coefficient of 0.412 suggests that a one-unit increase in sustainable finance leads to approximately a 41% increase in credit allocation. ESG performance also positively influences credit allocation. The coefficient of 0.005 indicates that firms with stronger ESG performance have greater access to credit. GDP growth positively affects credit allocation, suggesting that economic expansion improves lending activity. Inflation has a negative and significant effect, indicating that macroeconomic instability reduces the ability of financial institutions to allocate credit efficiently. The R^2 value of 0.64 indicates that 64% of variations in credit allocation are explained by the independent variables included in the model.

Table 4: Fixed Effects Regression Results

Variable Coefficient t-Statistic Probability

SF 0.395 4.22 0.000

ESG 0.004 2.18 0.031

GDP 0.021 2.03 0.044

INF -0.015 -2.41 0.017

$R^2 = 0.61$

Interpretation

The fixed effects model controls for country-specific characteristics that do not change over time. The results confirm that sustainable finance remains positive and statistically significant, indicating that sustainable financial policies consistently increase credit allocation within emerging markets. The significance of ESG also indicates that sustainability performance plays a role in banks' lending decisions. Inflation continues to negatively affect credit allocation.

Table 5: Random Effects Regression Results

Variable	Coefficient	t-Statistic	Probability
SF	0.408	4.56	0.000
ESG	0.005	2.49	0.014
GDP	0.026	2.32	0.022
INF	-0.016	-2.58	0.011

R² = 0.63

Interpretation

The random effects model assumes that individual country effects are random and not correlated with the independent variables. The results are consistent with the fixed effects model. Sustainable finance remains highly significant, indicating its strong influence on credit allocation. ESG performance also remains significant, confirming that sustainability considerations influence lending decisions.

Table 6: Hausman Test

Test Statistic	Value
Chi-Square	9.82
Probability	0.043

Interpretation

Since the p-value (0.043) is less than 0.05, the fixed effects model is preferred over the random effects model. This suggests that country-specific characteristics significantly influence the relationship between sustainable finance and credit allocation.

Table 7: Robustness Check (Alternative Model)

Variable	Coefficient	t-Statistic	Probability
SF	0.381	3.94	0.000
ESG	0.004	2.11	0.036
GDP	0.019	2.02	0.045
INF	-0.014	-2.36	0.019

Interpretation

The robustness test confirms the stability of the regression results. Sustainable finance remains positive and statistically significant, indicating that the relationship between sustainable finance and credit allocation is robust across different model specifications. This strengthens the validity and reliability of the empirical findings.

Discussion of Findings

Sustainable Finance and Credit Allocation: The empirical results of this study show that sustainable finance has a positive and statistically significant effect on credit allocation in emerging markets. This implies that an increase in sustainable finance initiatives leads to improved distribution of financial resources to productive and environmentally responsible sectors of the economy. This finding suggests that financial institutions are increasingly incorporating sustainability considerations into their lending practices. Banks and other financial institutions appear to prioritize lending to firms that demonstrate environmental responsibility and sustainable business practices. As a result, credit is gradually shifting away from environmentally harmful industries toward sectors that support sustainable economic development. This result is consistent with the findings of Goel et al., (2022) who reported that sustainable finance initiatives significantly influence financial sector development and promote the allocation of credit toward environmentally sustainable investments in emerging markets. Sachs et al. (2019) highlighted that the growth of green bonds, climate finance, and sustainable investment funds has contributed to improved financial resource allocation (Azhgaliyeva, Kapoor & Liu, 2020). Furthermore, Zairis, Liargovas and Apostolopoulos (2024) concluded that sustainable finance has become a critical component of modern financial systems and significantly influences capital allocation decisions across financial institutions (Ibarra, 2025). Therefore, the finding of this study supports the growing body of empirical evidence that sustainable finance plays an important role in improving credit allocation patterns in financial markets.

ESG Performance and Access to Credit: The findings of this study also reveal that ESG performance has a positive and significant relationship with credit allocation. Firms with higher ESG scores were found to have better access to bank credit compared to firms with weaker sustainability performance. This result suggests that financial institutions increasingly consider ESG factors when evaluating loan applications. Firms with strong ESG performance are often perceived as more transparent, responsible, and financially stable, which reduces perceived credit risk for lenders. This finding supports the empirical evidence presented by Mustafa et al. (2025) who found that firms with strong ESG performance receive more favorable lending conditions and lower borrowing costs. Their study also revealed that ESG performance improves corporate transparency and reduces information asymmetry between borrowers and lenders. Similarly, Palmieri and Geretto (2023) found that financial institutions increasingly integrate ESG risk assessment into their credit evaluation processes. Their research demonstrated that firms with strong environmental and governance performance are

more likely to receive favorable loan conditions. Additionally, Tang and Basco (2023) reported that access to credit encourages firms to improve their ESG performance, creating a mutually reinforcing relationship between sustainable finance and corporate sustainability practices. Thus, the findings of this study are consistent with Beck, Levine & Loayza (2000) suggesting that ESG performance plays an important role in determining firms' access to financial resources.

Economic Growth and Credit Allocation: The empirical results further indicate that economic growth has a positive and significant effect on credit allocation. This implies that when economies experience higher levels of economic growth, financial institutions increase their lending activities. Economic growth often leads to increased business opportunities, higher investment demand, and improved financial market stability. Consequently, financial institutions become more willing to provide credit to firms and households. This finding is consistent with the work of Tang and Basco (2023) who reported that credit market development is strongly associated with economic growth and sustainable corporate activities. Tang & Zhang (2020) demonstrated that economic expansion encourages banks to finance environmentally responsible projects and investments. Similarly, Goel et al. (2022) found that economic growth strengthens financial systems and promotes the development of sustainable finance markets in emerging economies. Therefore, the result confirms the widely accepted view in financial economics that economic growth stimulates financial intermediation and credit expansion.

Inflation and Credit Allocation: The findings of the study also reveal that inflation has a negative and statistically significant effect on credit allocation. This indicates that higher inflation rates reduce the willingness of financial institutions to extend credit. High inflation creates economic uncertainty by increasing interest rates and reducing the real value of financial assets. As a result, banks become more cautious in their lending activities due to the increased risk of loan default. This finding is consistent with macroeconomic theory, which suggests that price instability negatively affects financial intermediation and reduces the availability of credit in the economy (Dorfleitner, Utz & Zhang, 2015). Therefore, the finding confirms that macroeconomic stability is essential for improving credit allocation and promoting sustainable finance in emerging markets.

Robustness of the Results: The robustness tests conducted in this study confirm that the positive relationship between sustainable finance and credit allocation remains stable across different econometric models. The results obtained from the fixed effects

and random effects models are consistent, indicating that the findings are reliable. The Hausman test indicated that the fixed effects model is more appropriate, suggesting that country-specific characteristics significantly influence the relationship between sustainable finance and credit allocation.

CONCLUSION

This study examined the relationship between sustainable finance and credit allocation in emerging markets with the aim of determining whether sustainability-oriented financial practices influence lending decisions and the distribution of credit within financial systems. The study specifically investigated the effects of sustainable finance practices, ESG performance, economic growth, and inflation on credit allocation across selected emerging market economies.

The empirical analysis revealed that sustainable finance has a positive and statistically significant impact on credit allocation. This finding indicates that financial institutions are increasingly integrating sustainability considerations into their lending decisions. Sustainable finance initiatives such as green lending, ESG-based investment screening, and environmentally responsible financial policies encourage financial institutions to allocate credit toward firms and sectors that promote sustainable development (Zheng, Wu, Feng & Chang, 2025). Consequently, sustainable finance contributes to the efficient allocation of financial resources and encourages environmentally responsible investments.

The study also found that ESG performance significantly improves firms' access to credit. Firms with stronger environmental, social and governance practices were observed to receive greater financial support from banks and other financial institutions. This suggests that ESG performance serves as an important signal of corporate transparency, good governance, and reduced risk, which enhances lenders' confidence in borrowers. As a result, firms with better ESG ratings tend to benefit from improved credit access and favorable lending conditions (Berg, Kölbel & Rigobon, 2022).

Furthermore, the results showed that economic growth positively influences credit allocation. During periods of economic expansion, financial institutions tend to increase their lending activities in response to higher investment opportunities and improved financial stability. Economic growth, therefore, plays an important role in supporting financial intermediation and credit market development in emerging economies.

In contrast, the study found that inflation has a negative effect on credit allocation. High inflation rates increase economic uncertainty and raise the cost of borrowing, thereby discouraging both lenders and borrowers from engaging in credit

transactions. This result highlights the importance of macroeconomic stability for the effective functioning of financial systems and the promotion of sustainable finance.

Overall, the study's findings demonstrate that sustainable finance is becoming an important determinant of credit allocation in emerging markets. The integration of ESG considerations into financial decision-making not only improves financial market efficiency but also supports sustainable economic development by directing financial resources toward environmentally and socially responsible investments.

The study therefore concludes that strengthening sustainable finance frameworks, improving ESG disclosure standards, and promoting macroeconomic stability are essential for enhancing credit allocation efficiency and fostering sustainable financial development in emerging market economies.

RECOMMENDATIONS

Based on the empirical findings of this study on Sustainable Finance and Credit Allocation in Emerging Markets, several policy and practical recommendations are proposed to enhance the effectiveness of sustainable finance practices and improve credit allocation within financial systems.

- i. Strengthening Sustainable Finance Regulatory Frameworks:*** Governments and financial regulators in emerging markets should develop and strengthen regulatory frameworks that promote sustainable finance. Regulatory authorities should establish policies that encourage financial institutions to integrate environmental, social and governance (ESG) factors into their lending and investment decisions. This can be achieved through the introduction of sustainable finance guidelines, green banking policies, and mandatory sustainability reporting requirements for financial institutions and corporations.
- ii. Promotion of Green Lending and Sustainable Investment:*** Financial institutions should expand the adoption of green lending practices by allocating greater financial resources to environmentally sustainable projects. Banks and other financial institutions should develop specialised financial products such as green loans, sustainability-linked loans, and climate finance instruments that support renewable energy projects, environmentally friendly infrastructure, and sustainable agricultural activities. Encouraging green investments will help redirect financial resources toward sectors that contribute to environmental sustainability and long-term economic development.
- iii. Improvement of ESG Disclosure and Reporting Standards:*** One of the key challenges facing sustainable finance in emerging markets is the lack of

standardised ESG disclosure practices (Menicucci, 2023). Governments and financial regulatory agencies should develop comprehensive ESG reporting frameworks that require firms to disclose environmental, social and governance information. Improved transparency and standardised ESG reporting will enable financial institutions to assess sustainability risks more effectively and make better credit allocation decisions.

- iv. Capacity Building for Financial Institutions:*** Financial institutions should invest in capacity building and training programs that enhance their ability to evaluate sustainability risks and integrate ESG factors into credit risk assessment models. Banks should develop internal expertise in sustainable finance, environmental risk management, and climate risk assessment (Krueger, Sautner & Starks, 2020). This will enable financial institutions to better identify sustainable investment opportunities and manage environmental and social risks associated with lending activities.
- v. Encouraging Public–Private Partnerships for Sustainable Projects:*** Governments should promote collaboration between the public and private sectors to finance large-scale sustainable development projects. Public–private partnerships can help mobilise financial resources for projects such as renewable energy infrastructure, climate adaptation initiatives, and sustainable transportation systems. Such partnerships can significantly increase the availability of sustainable finance and improve credit allocation to environmentally beneficial sectors.
- vi. Maintaining Macroeconomic Stability:*** Macroeconomic stability is essential for effective credit allocation and sustainable financial development. Governments and central banks should implement sound monetary and fiscal policies aimed at controlling inflation and maintaining stable economic growth. Stable macroeconomic conditions will encourage financial institutions to expand lending activities and improve access to credit for firms and households.
- vii. Strengthening Financial Technology for Sustainable Finance:*** Emerging markets should leverage financial technology (FinTech) to improve sustainable finance practices. Digital financial platforms can enhance access to sustainability-related information, improve credit risk assessment, and facilitate the monitoring of ESG performance.

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