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Role of Green Financing in Enhancing Financial Stability of Commercial Banks in Ghana

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Abstract

Purpose: The purpose of this article was to analyze role of green financing in enhancing financial stability of commercial banks in Ghana.

Methodology: This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low cost advantage as compared to a field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

Findings: Green financing in Ghana is in its early stages, with limited immediate profitability for commercial banks. However, adopting green finance practices can enhance banks' long-term financial stability by mitigating environmental risks and aligning with global sustainability trends. Initiatives like the Ghana Sustainable Banking Principles, adopted by all 24 commercial banks, aim to integrate environmental and social considerations into banking operations, promoting resilience and stability.

Unique Contribution to Theory, Practice and Policy: Stakeholder theory, institutional theory & resource-based view (RBV) may be used to anchor future studies on the role of green financing in enhancing financial stability of commercial banks in Ghana. Commercial banks should develop green finance risk assessment tools to evaluate environmental risks associated with loan and investment portfolios, reducing exposure to high-risk sectors affected by climate change. Central banks and financial regulators should implement green capital adequacy requirements, ensuring that commercial banks allocate a minimum percentage of their loan portfolios to green projects to promote sustainable financial stability.

Keywords: *Green Financing, Financial Stability, Commercial Banks*

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INTRODUCTION

Financial stability in the banking sector is often assessed using indicators such as the Z-score, Capital Adequacy Ratio (CAR), and Non-Performing Loan (NPL) Ratio. The Z-score measures a bank's distance from insolvency, with higher values indicating greater stability (International Monetary Fund, 2024). The CAR represents the ratio of a bank's capital to its risk-weighted assets, ensuring that banks can absorb a reasonable amount of loss before becoming insolvent (Bank of England, 2024). The NPL Ratio indicates the proportion of loans that are in default or close to being in default, reflecting the asset quality of the bank (European Investment Bank, 2024). These measures collectively help regulators and financial analysts assess the soundness of banking institutions in different economies. In Japan, banks are generally well-capitalized, but there has been a recent decline in capital ratios due to valuation losses from overseas securities (International Monetary Fund, 2024). In the United Kingdom, the non-performing loan ratio for commercial real estate lending increased over 2023, reflecting potential vulnerabilities in asset quality (Bank of England, 2024). The United States banking sector remains resilient, with the average CAR of major banks at 12.5% in 2023, despite economic uncertainties (European Investment Bank, 2024). However, rising interest rates have affected bank liquidity, leading to increased risk in loan portfolios (International Monetary Fund, 2024). These trends highlight the importance of monitoring financial stability indicators to ensure the resilience of banking sectors in developed economies.

In Ghana, the capital adequacy ratio declined to 14.3% in June 2024 from 19.6% in December 2021, primarily due to mark-to-market losses on investments linked to domestic debt exchange and an expansion of risk-weighted assets (European Investment Bank, 2024). Additionally, the rate of non-performing loans increased to 24% as of June 2024, indicating significant credit risk exposure (European Investment Bank, 2024). In the West African Economic and Monetary Union, the non-performing loan ratio fell to 8.7% in mid-2023 from 10.3% in 2021, signaling an improvement in loan portfolio quality (European Investment Bank, 2024). However, liquidity constraints remain a challenge, as banks struggle with capital shortfalls and economic volatility (International Monetary Fund, 2021). These examples from developing economies underscore the varying challenges and improvements in financial stability across different regions.

In sub-Saharan Africa, non-performing loan ratios have exceeded 10% on average since the mid-2010s, particularly in commodity-producing and fragile states (International Monetary Fund, 2021). However, balance sheet data from various countries in the region show that the median non-performing loan ratio decreased substantially between 2017 and 2023, reflecting improvements in financial health (European Investment Bank, 2024). Despite these gains, capital adequacy remains a concern, with some banks facing high exposure to sovereign debt and foreign currency volatility (International Monetary Fund, 2021). The overall trend indicates both persistent challenges and areas of progress in enhancing financial stability within sub-Saharan economies (European Investment Bank, 2024). Monitoring these indicators remains crucial for financial stability and economic resilience in the region.

Green financing encompasses financial activities aimed at promoting sustainable environmental outcomes, including the issuance of green bonds, investments in renewable energy projects, energy-efficient infrastructure, and sustainable agriculture initiatives. The volume of green bonds issued has grown substantially, reaching $523 billion in 2021, indicating a strong market appetite

for environmentally focused investments. Empirical studies suggest that integrating Environmental, Social, and Governance (ESG) criteria into investment decisions can lead to improved financial performance, as companies with robust ESG practices often exhibit better risk management and operational efficiencies. This positive correlation underscores the potential of green financing to align environmental objectives with financial returns.

The relationship between green financing and financial stability is multifaceted. For instance, the Network for Greening the Financial System (NGFS), comprising over a hundred central banks and financial supervisors, has been established to address climate-related financial risks. Additionally, the European Central Bank (ECB) has announced plans to incorporate climate factors into its monetary policy operations, such as adjusting corporate bond purchases to favor environmentally sustainable assets. These initiatives suggest that green financing can play a role in enhancing financial stability by mitigating climate-related risks.

Problem Statement

The integration of green financing into the operations of commercial banks is increasingly recognized as a pivotal strategy for enhancing financial stability. Green financing involves directing capital towards sustainable projects that promote environmental preservation and mitigate climate risks. This approach not only aligns with global sustainability goals but also presents commercial banks with opportunities to diversify their portfolios and access emerging markets. For instance, the International Finance Corporation (IFC) estimates over $29 trillion in climate investment opportunities in emerging markets over the next decade, encompassing sectors such as green buildings, public transportation, electric vehicles, waste management, water, and renewable energy.

However, despite these prospects, the adoption of green financing by commercial banks remains uneven, influenced by factors such as regulatory frameworks, market demand, and institutional readiness. This disparity poses challenges to the financial system's stability, as banks heavily invested in non-sustainable sectors may face increased risks from environmental regulations and shifting market preferences. Conversely, banks that proactively engage in green financing can enhance their resilience by mitigating environmental risks and capitalizing on sustainable growth opportunities. Therefore, understanding the role of green financing in bolstering the financial stability of commercial banks is imperative, necessitating comprehensive research into effective strategies and policies that promote its integration into mainstream banking practices.

Theoretical Review

Stakeholder Theory

Originated by R. Edward Freeman in 1984, Stakeholder Theory posits that organizations should consider the interests of all stakeholders including customers, employees, suppliers, communities, and shareholders in their decision-making processes. In the context of green financing, this theory suggests that banks adopting environmentally sustainable practices address the concerns of various stakeholders, thereby enhancing their reputation and trustworthiness. This improved perception can lead to greater financial stability, as stakeholders are more likely to support and engage with institutions that align with their environmental values. For instance, a study by Khan (2023) found that green banking practices positively influence bank reputation and stakeholder satisfaction, which in turn contribute to financial stability.

Institutional Theory

Developed by scholars such as Paul J. DiMaggio and Walter W. Powell in the late 20th century, Institutional Theory examines how organizational structures and behaviors are influenced by institutional environments, including norms, regulations, and cultural beliefs. Applying this theory to green financing, commercial banks are likely to adopt sustainable practices in response to regulatory pressures and societal expectations. Compliance with environmental regulations and alignment with societal norms can mitigate risks associated with non-compliance and reputational damage, thereby enhancing financial stability. For example, the International Finance Corporation (2023) highlights that transparent disclosure of climate impacts helps financial firms improve risk assessment, aligning with institutional pressures for greater environmental accountability.

Resource-Based View (RBV)

Introduced by Birger Wernerfelt in 1984, the Resource-Based View emphasizes that a firm's sustainable competitive advantage stems from its unique resources and capabilities. In the realm of green financing, banks that develop competencies in assessing and funding environmentally sustainable projects can differentiate themselves from competitors. These unique capabilities not only attract environmentally conscious customers but also open new revenue streams, contributing to financial stability. A systematic literature review by Zhang et al. (2023) indicates that banks investing in green finance capabilities can achieve competitive advantages, aligning with the RBV framework.

Empirical Review

Abu Atwan (2023) assessed how the adoption of green finance strategies influences financial stability and long-term growth. It employed descriptive statistics and structural equation modeling (SEM) to analyze data collected from 104 credit managers working in commercial banks across Palestine. The study found that green finance has a positive impact on the sustainability performance of banks by enhancing risk mitigation and reducing exposure to environmentally unfriendly investments. Moreover, female representation in banking decision-making was found to be a moderating factor, indicating that gender diversity can improve the effectiveness of green financial initiatives. Banks that implemented green credit policies had lower default rates and improved loan performance, contributing to financial resilience. The study recommended increasing the commitment to green financing by adopting environmentally friendly credit policies and ensuring gender diversity in financial governance. It also suggested that commercial banks develop financial literacy programs for businesses and consumers to encourage the use of green loans and sustainable investment options. The research further highlighted the role of regulatory frameworks in ensuring compliance with green finance principles. Additionally, it emphasized the need for collaboration between policymakers, banks, and environmental agencies to promote financial sustainability. The study suggested that financial institutions establish clear reporting mechanisms for tracking green loan performance and its impact on financial stability. Concluded that green finance should be integrated into the overall risk management strategy of banks to ensure long-term resilience. This research provided crucial insights into the relationship between gender diversity and sustainability in banking. The findings contribute to the growing literature on how green finance policies impact financial stability in the Middle East and developing economies. It

serves as a framework for policymakers looking to implement sustainable financial solutions in regions with high environmental risks. The study also paved the way for further research on how social governance factors influence the effectiveness of green finance initiatives.

Luo (2022) aimed to determine how government-led green credit initiatives influence banking profitability, risk exposure, and financial resilience. It utilized a difference-in-differences (DID) methodology, which compared the financial performance of banks before and after the implementation of green credit policies. Findings revealed that banks engaging in green lending experienced an increase in non-interest income, primarily due to sustainable investment returns. Moreover, green credit policies were found to lower the non-performing loan (NPL) ratios, reducing credit risk exposure. The study also found that commercial banks in China restructured their lending portfolios to favor environmentally sustainable industries. Additionally, banks that complied with green credit regulations had higher capital adequacy ratios, ensuring financial stability during economic downturns. The study recommended that governments should expand green credit programs to encourage wider adoption by financial institutions. It also suggested the implementation of tax incentives and lower reserve requirements for banks that meet green financing thresholds. Another key recommendation was improving transparency in green finance reporting, allowing investors and regulators to track the environmental impact of bank lending. The research further emphasized the importance of training financial analysts on integrating environmental risks into credit assessments. Suggested that central banks establish carbon stress testing mechanisms to assess how green credit affects long-term financial stability. The study also pointed out that cross-border cooperation is needed for standardizing green finance regulations across different economic regions. It further proposed that emerging economies adopt China's green credit framework to boost sustainable banking. Finally, the study concluded that green finance adoption leads to improved financial resilience and long-term growth in banking.

Rahman (2022) conducted a systematic review on green finance in the banking sector, focusing on developing countries. The purpose of the study was to identify key dimensions of green finance and how they contribute to sustainable financial stability. The research analyzed previous empirical studies published over the past decade and identified patterns in green finance adoption. Findings showed that green finance has significant benefits for banking institutions, including improved risk management, increased investor confidence, and enhanced regulatory compliance. The study also highlighted the barriers to green finance adoption, such as high implementation costs, lack of regulatory guidance, and limited awareness among banking professionals. Another key finding was that banks that engage in green finance tend to attract more foreign investments, as sustainability-linked financial products are increasingly preferred by global investors. The study recommended that governments and financial institutions create specialized funding mechanisms to support green banking initiatives. Another important recommendation was expanding financial literacy programs to educate businesses and consumers on the advantages of green financing. The research also suggested that banking institutions develop partnerships with environmental organizations to improve the credibility and effectiveness of green finance programs. Another key proposal was enhancing data collection and monitoring mechanisms to track green finance

investments and assess their long-term impact. The study further emphasized the need for harmonized regulatory policies to prevent discrepancies in green finance practices across different markets. Suggested that central banks should mandate sustainability disclosures for all financial institutions. The study also highlighted the importance of climate risk assessments in credit scoring models. It concluded that green finance plays a vital role in ensuring banking resilience and economic stability in emerging markets.

METHODOLOGY

This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low-cost advantage as compared to field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

FINDINGS

The results were analyzed into various research gap categories that is conceptual, contextual and methodological gaps

Conceptual Research Gaps: Despite the extensive analysis conducted by Abu Atwan (2023), Luo et al. (2022), and Rahman et al. (2022) on the role of green finance in banking sustainability, gaps remain in understanding the long-term impacts of green financing on different banking models. Most studies focus on short-term financial performance indicators such as non-performing loans (NPLs) and profitability, but longitudinal studies assessing the sustainability of green financing in different economic cycles are lacking. Additionally, the moderating role of financial technology (FinTech) and artificial intelligence (AI) in green financing adoption has not been adequately explored. The studies also do not sufficiently analyze the behavioral aspects of bank managers and policymakers in implementing green financial strategies, leaving a gap in understanding the human decision-making component in green finance adoption. Lastly, while Abu Atwan (2023) introduced gender diversity as a factor influencing green finance effectiveness, other social governance factors such as cultural attitudes, political will, and leadership structure remain underexplored in the conceptual framework of green banking sustainability.

Contextual Research Gaps: Most of the reviewed studies focus on specific banking sectors and financial systems, limiting the generalizability of findings across different economic environments. Abu Atwan (2023) focuses solely on Palestinian banks, while Luo (2022) analyze China's green credit policies, and Rahman (2022) conduct a systematic review of developing countries. However, there is a lack of comparative analysis between developed and developing banking sectors in their approaches to green financing. Furthermore, most research does not assess how small and medium-sized financial institutions (SMEs and microfinance banks) integrate green finance into their business models compared to larger commercial banks. There is also an absence of studies evaluating how bank customers perceive and adopt green financial products, leaving a gap in understanding consumer behavior and demand-side factors in green financing adoption. Additionally, none of the studies investigate how green financing impacts Islamic banking and Shariah-compliant financial institutions, which may have distinct investment and sustainability models.

Geographical Research Gaps: There is a regional bias in existing research, as the studies primarily focus on Palestine (Abu Atwan, 2023), China (Luo et al., 2022), and general developing economies (Rahman et al., 2022). However, there is limited research on green financing in African, Latin American, and Southeast Asian banking systems, particularly in countries with high environmental vulnerability. Moreover, research on green finance is largely focused on urban commercial banks, leaving a gap in understanding the role of green finance in rural banking and community-based financial institutions. Another geographical gap is the lack of cross-country comparative studies that examine how regulatory differences across different financial jurisdictions affect green financing adoption. Lastly, regional trade agreements and international financial collaborations are rarely considered in existing studies, leaving a gap in understanding how global banking regulations impact local green financing strategies.

CONCLUSION AND RECOMMENDATIONS

Conclusion

Green financing has emerged as a critical driver of financial stability in commercial banks by promoting sustainable lending practices, risk mitigation, and long-term profitability. By integrating green financial instruments such as green bonds, sustainability-linked loans, and renewable energy investments, banks can diversify their portfolios and reduce exposure to climate-related financial risks. Additionally, regulatory frameworks and environmental, social, and governance (ESG) compliance have incentivized financial institutions to adopt green financing strategies, improving their resilience against economic downturns and regulatory penalties. Empirical evidence suggests that banks that engage in sustainable financing experience enhanced creditworthiness, lower default rates, and improved investor confidence, contributing to overall financial stability.

However, despite its potential, the adoption of green financing still faces challenges such as limited awareness, inadequate regulatory enforcement, and the high cost of transitioning to sustainable finance models. To maximize its impact, commercial banks must strengthen risk assessment frameworks, enhance green financial literacy, and collaborate with policymakers to develop more structured incentives for sustainable investments. Additionally, leveraging technological innovations such as artificial intelligence and blockchain can improve transparency and efficiency in green finance transactions. As the global economy continues to shift towards sustainability, commercial banks that proactively integrate green financing into their financial models will gain a competitive advantage and contribute to a more resilient and environmentally sustainable financial system.

Recommendations

Theory

Future research should explore new financial stability models that incorporate climate risk factors into traditional banking risk frameworks. Theories such as the Sustainable Finance Theory and the Risk-Return Tradeoff Theory should be expanded to integrate green finance elements in predicting bank resilience during economic downturns. Scholars should develop empirical models to quantify the relationship between green loan portfolios, credit risk, and financial stability, contributing to a robust green banking framework. More cross-country comparative studies should be conducted to

evaluate how green finance adoption influences financial stability across different economic settings, particularly in emerging and frontier markets.

Practice

Commercial banks should develop green finance risk assessment tools to evaluate environmental risks associated with loan and investment portfolios, reducing exposure to high-risk sectors affected by climate change. Banks should increase green financing allocations by offering preferential interest rates and innovative financial products such as green bonds, sustainability-linked loans, and carbon credit-backed investments. Financial institutions should strengthen their environmental, social, and governance (ESG) compliance frameworks to align with international sustainability standards, enhancing investor and stakeholder confidence in the bank's long-term stability.

Policy

Central banks and financial regulators should implement green capital adequacy requirements, ensuring that commercial banks allocate a minimum percentage of their loan portfolios to green projects to promote sustainable financial stability. Governments should establish tax incentives and subsidies for banks that actively finance renewable energy, energy efficiency projects, and climate-resilient infrastructure, encouraging sustainable banking practices. International regulatory bodies such as the Financial Stability Board (FSB) and the Basel Committee on Banking Supervision (BCBS) should introduce climate stress testing frameworks for banks to assess their exposure to environmental and transition risks.

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