

CHAPTER 1 INTRODUCTION

1.1 Background

The perspective on firm value has been radically transformed; environmental and social activities are no longer considered optional costs but are strategic elements that can significantly enhance a company's market valuation and generate long-term value in the global market (Xie et al., 2019). The reason behind this paradigm shift is the fact that the existence of a company cannot be isolated and cannot be viewed outside the context of stability of the environment and the society where the company functions. In the case of the banking industry, sustainability is no longer considered only in terms of the traditional accounting profitability, including net profit. More importantly, sustainability can be understood as the management capacity to link economically prosperous and ecologically protecting as well as social justice principles (Baharudin & Arifin, 2023). Sustainable performance has become a significant issue to the world investors and other stakeholders. The reason behind this is that ESG (Environmental, Social, and Governance) performance is an extremely significant parameter in the strategic decision-making in terms of capital allocation, mitigating systemic risks, as well as the ability of organizations to survive in the global economic uncertainty (Ningwati et al., 2022). The value of the company in terms of Tobin's Q ratio is the most accurate proxy of this business sustainability in the current financial literature. It is believed that the Tobin's Q usage is the best as it is the only ratio that integrates market value with the replacement cost.

Tobin's Q is more forward-looking and thus more sensitive in capturing the market expectation in future growth prospects, management efficiency, and investment opportunities as opposed to traditional profit-based ratios, which are more historical in nature (Siauwijaya et al., 2023; Chung & Pruitt, 1994). A high Tobin's Q gives a very good indicator that the market attaches more premiums on the intangible assets of a

company, including green reputation, good governance and ESG score, which are significant foundations of keeping a business relevant in the contemporary period of transition to green economies. In such a way, the process of building corporate value has ceased to be a financial objective, but its expression of the bank ability to establish the principles of sustainability as part of its business strategy (Xie et al., 2019).

The present environmental situation in the world is approaching a critical point, where the rate of global warming is taking a faster pace than it has ever taken before. According to historical data of the average global temperature changes on the surface, the tendency is increasing exponentially the higher temperature jumps, and the last decades have had the most significant ones (National Oceanic and Atmospheric Administration [NOAA], 2024). The data demonstrates that the presence of positive anomalies, represented by consistent temperature increases, has now exceeded the threshold of 1.1°C above the historical average, especially in the period from 2020 to 2024, even in 2024 the temperature increase already at 1.46°C, as shown in **Figure 1.1**.

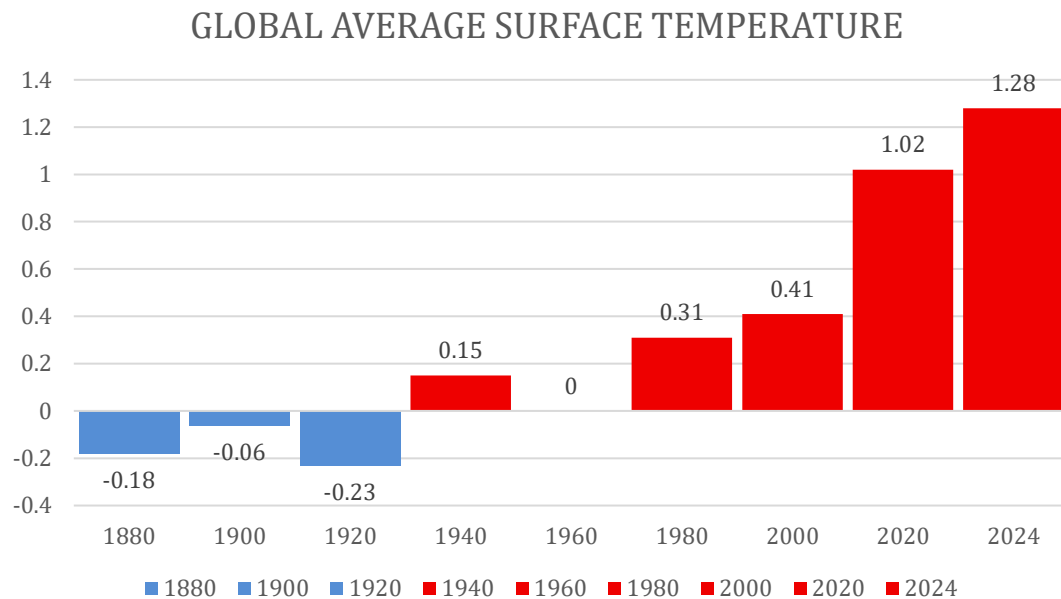


Figure 1. 1 Global Average Surface Temperature

Source: National Oceanic and Atmospheric Administration (NOAA)

This widening gap from the pre-industrial baseline (1850-1900) underscores a departure from natural climate variability, shifting into a human-induced climate crisis. The fact of such drastic temperature rises is not just a simple weather pattern, but a factual observation of a climate crisis that is compelling all sectors of industry to reconsider the effects of their activities on the environment. This situation requires transparency and strategic mitigation factors to keep the economy resilient facing the physical risks and transition of global climate change.

The threat of a global climate crisis is a strong signal of the urgency of sustainability in Indonesia because it is expected to cause a serious economic impact on the national economy. According to the news of CNN Indonesia (2021) the issue of global warming has led to observable climate deviations in other parts of Indonesia, including 4 degrees Celsius of rising temperatures in Sumatra and Kalimantan with a 12 % reduction in precipitation intensity. If not immediately mitigated through strategic measures, a series of hydrometeorological disasters, extreme heat waves, and crop failures have the potential to reduce the national gross domestic product (GDP) per capita by up to 31% by the end of this century (Baharudin & Arifin, 2023).

As the main financial intermediary, the banking sector has a central and strategic position in the economic ecosystem to mobilize capital flows towards low-carbon activities, while also acting as an agent to prevent the distribution of funds to sectors that pose a high risk of damaging environmental sustainability (Suhardjo & Suparman, 2024). Responding to these conditions the Indonesian government, through the Financial Services Authority (OJK), has taken proactive steps by establishing a strong sustainable finance legal framework to guide the financial services sector. Through OJK Regulation No. 51/POJK.03/2017, all Financial Services Institutions (LJK), issuers, and public companies are required to prepare a Sustainable Finance Action Plan (RAKB) and publish Sustainability Reports on a regular basis. (Setiawan et al., 2021). This is further supported by the introduction of the Phase II Sustainable

Finance Roadmap (2021-2025) by the regulator, which aims at creating a comprehensive green ecosystem, such as product development, managing climate risks through Climate Risk Stress Testing (CRST) in order to standardize reporting in accordance with international practices to help the country achieve its national Net Zero Emission (NZE) goal of 2060 (OJK, 2021; OJK, 2024). Evidence of the implementation of this regulation is the fact that the national banks are increasing the number of sustainable financing and that it has reached IDR 2,075 trillion in December 2024 (Financial Services Authority, 2024).

Despite the adoption of regulations on sustainable finance, real practice in the Indonesian banking industry still demonstrates a high disparity between the financing of the fossil fuel sector and the renewable energy. According to The PRAKARSA report (2022), data in **Figure 1.2** and **Figure 1.3** that ranks 10 major banks in Indonesia between 2016-2022, the fossil fuel sector still dominates the banking credit collection.

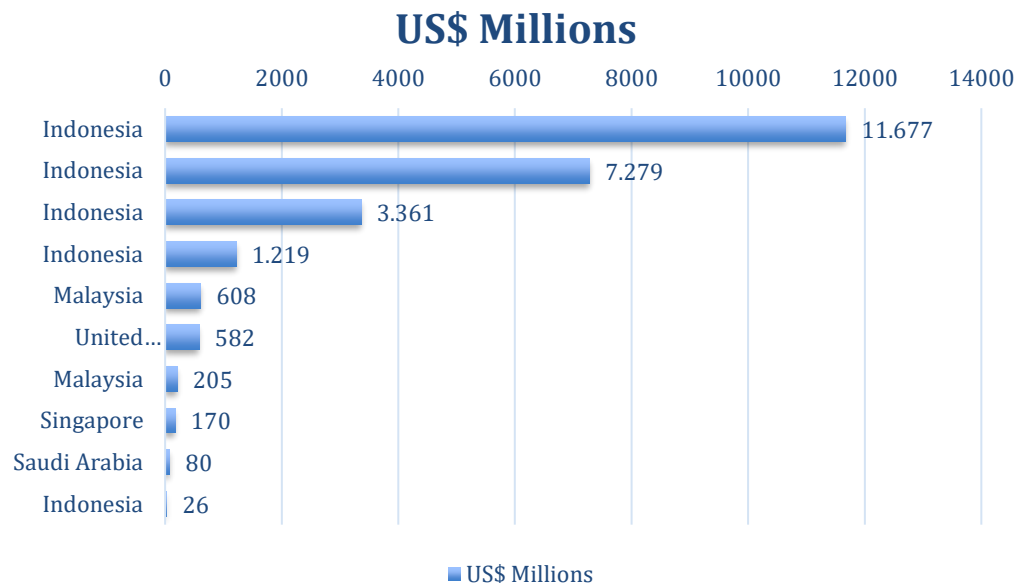


Figure 1. 2 Ranking of 10 banks in Indonesia related to fossil energy and renewable energy in Dollar

Source: THE PRAKARSA, 2022

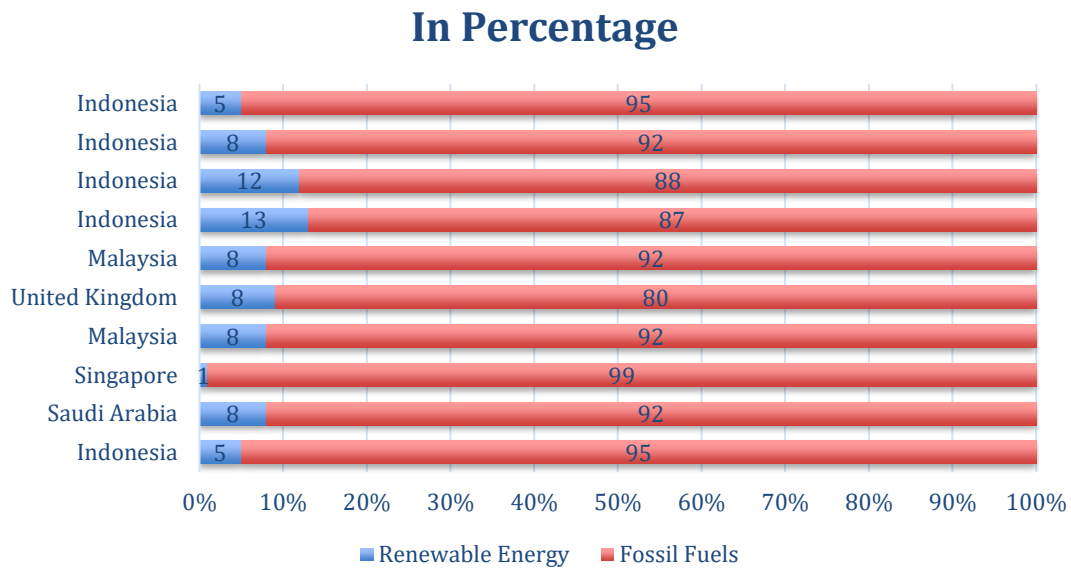


Figure 1. 3 Ranking of 10 banks in Indonesia related to fossil energy and renewable energy in percentage

Source: THE PRAKARSA, 2022

As the graph indicates, even the large banks in Indonesia, such as those being members of the Indonesian Sustainable Finance Initiative (IKBI), continue to provide much more financing to the fossil fuel-based companies in the energy sector compared to the renewable energy industry. This industry of fossil fuel funding can be manifested in structural barriers and a perception of greater risk about green energy projects in the minds of national banks. This fact highlights the importance of a detailed study of the role of green credit in the market value and sustainability of the banking sector. Although its portion is not yet significant, this tool is central to the banks in responding to the risk of moving to the low-carbon economy.

Green credit is one of the key tools that banks apply in achieving sustainable finance initiatives. Green credit refers to the financing of customers or projects that are green in business operations in terms of environmental conservation, energy efficiency, using renewable energy, waste management, and reducing greenhouse gas emissions (Sutrisno et al., 2024). Green credit, in terms of sustainable finance policies in

Indonesia, is a solid example of the role played by the banking sector as a financial intermediary under the direction of capital placement in risky sectors to the environment into economic activities that are more environmentally friendly and sustainable. Increasing the share of green credit portfolios is predicted to increase the value of banking companies through several key mechanisms. First, green credit distribution can enhance the image and reputation of the banks among people as socially and environmentally responsible institutions. Such a good image can lead to heightened investor confidence, and this is more so with institutional investors, who use the Environmental, Social, and Governance (ESG) principles when making investments. Second, the policies of green credit provoke more stringent procedures of environmental screening during the selection of debtors, which should allow banks to reduce their vulnerability to credit risks associated with possible environmental penalties, climate regulations, and physical hazards in case of disasters (Siauwijaya et al., 2023), in the long term, the mechanism is likely to enhance the quality of assets and make the banking business more sustainable.

Nonetheless, the effects of the green credit on the banking performance and sustainability however still portray mixed results and thus there is still a possibility of conducting further research. A study by Sutrisno et al. (2024) established that green credit positively impacted the bank profitability indicators in Indonesia, including Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM). Nonetheless, the paper also demonstrates that green credit can also fail to have a substantial impact on bank stability in terms of the Z-score. These results suggest that, despite green credit as a method of enhancing profit performance, this tool does not always have a direct beneficial impact on enhancing the financial stability of banks to address systemic risks.

Studies by Fata and Arifin (2024) also reported the negative correlation between the extent of green credits issuance and the Return on Assets (ROA). These

findings show that green financing increase can be a strain on the operating profits of the banks in the short run. The reason behind this burden is primarily because of the large initial investment cost that must be incurred by the banks, such as developing green technology infrastructure, the establishment of environmental risk management systems and training human resources with special competencies in carrying out audits and assessing the environmental impact of the projects. The condition demonstrates that there is a trade-off between the long-term sustainability objectives and the short-term financial performance, so the efficiency of green credit in generating a company value remains a problem that must be explored more, in the light of a market value and sustainability of a banking business.

Transparency of information through energy disclosure is the second independent variable that plays a strategic role in determining the market value and sustainability of the banking business. Energy disclosure is a non-financial reporting tool that regulates the disclosure of banks on the data on energy consumption, operational efficiency, the use of renewable energy, and reduction of greenhouse gas emissions subsequent to both internal operations and supportive operations (Amalia et al., 2022). With the rising level of awareness among people about the issues of climate change, the energy disclosure practice has emerged as a significant component in the creation of banking accountability and transparency (Amalia et al., 2022). Energy disclosure is also closely related to Legitimacy theory and Signaling theory. According to the Legitimacy theory, the banks as institutions that are present on the territory of the social system have to make sure that their operations are not contrary to the norms and values of the society that is becoming more and more socially responsible regarding the environment. The disclosure of energy information by the banks aims to acquire a social license to operate and mitigate any potential regulatory risk and reputational risks as negative (Amalia et al., 2022). In the meantime, energy disclosure according to the Signaling Theory, can be considered as a believable signal that is transmitted to investors on the quality of governance and the capacity of the bank

management to deal with long-term operating risks.

Corporate governance, especially the board of director structure and size has a significant impact on the quality of energy disclosure. The study by Amalia et al. (2022) indicates that the level of energy disclosure has a positive correlation with the size of the board since larger boards tend to have more diverse expertise, effective oversight capability, and can facilitate transparency of non-financial information. The condition will allow banks to create more holistic and believable sustainability reports in the minds of the stakeholders. The implementation of Energy Accounting Systems (EAS) is the primary operational basis in the energy disclosure practices. EAS promotes systematized and sustainable measurement, monitoring, and assessment of energy consumption among the banks enabling them to find potential long-term energy cost saving (Banani & Sunarko, 2022). The energy efficiency that comes out not only helps to drive down the operational costs but also acts as a social legitimacy tool to show the bank that it is sincerely interested in environmental sustainability. Besides, the transparency of energy information involving EAS contributes to decreasing information asymmetry between the management and investors, which have been among the causes of uncertainty in the capital market (Banani & Sunarko, 2022).

From a capital market perspective, those banks that regularly report on their energy performance in a transparent manner, are said to have a more mature and believable risk management mechanism. Positive evaluation by investors is likely to be made towards banks that can effectively act on environmental and operational risks because this is a sign of business resilience amidst regulatory changes and pressure to move to a low-carbon economy. The positive reaction of investors to this is observed as a rise in market values of companies in terms of the Tobin's Q ratio, so that energy disclosure is considered to be one of the significant factors of long-term sustainability of the banking business (Siauwijaya et al., 2023; Suhardjo & Suparman, 2024).

The primary difference and novelty of the research is the introduction of Core

Capital Banking Groups (KBMI) as a moderating variable that tests the relationship between sustainability initiatives and banking firm value. Core capital structure does not only help to portray the level of capital strength and credit expansion capacity of a bank but also displays the institutional capability of a bank in internalizing the costs and risks that come about due to adoption of sustainable finance policies. In this regard, core capital will play a major role in deciding whether green initiatives will be emerged as source of value creation or a burden in operations. Banks that implement green credit and energy disclosure must bear various green transaction costs. These expenses comprise the costs of green financing certification, independent environmental audit, and environmental risk management system development, development of sustainability report, which demands high technical and accountability standards (Baharudin & Arifin, 2023). Moreover, the banks are mandated also to sustainably invest in human resource development, enhancing information technology infrastructure, and enhancing internal governance, in accordance with the principles of ESG. These expenses are fixed to a large extent hence the effect will be more pronounced for banks with low core capital.

There is a wide disparity between the large and small capital banks in terms of their efficiency in the Indonesian banking ecosystem. The level of operational efficiency is much higher in banks, which belong to the group of KBMI IV namely banks which have a minimum core capital of Rp70 trillion (BRI, Bank Mandiri, BCA and BNI) than in other groups of banks. Statistics indicate that the average Operating Expenses/Operating Income (BOPO) ratio of KBMI IV banks is approximately 64%, whilst those banks in KBMI I sector record a much higher BOPO ratio of an average of 83% (Tempo, 2025). This difference is an indicator of economies of scale and better managerial capabilities on large-capital banks. These benefits in terms of operation efficiency and core capital strength gives KBMI IV banks a bigger cost buffer to accommodate the cost of ESG initiatives without necessarily compromising the short-term profitability considerably. To put it in another way, large-capital banks can afford

the financial freedom to consider green investment as a long-term plan whereas small-capital banks are more likely to be faced with the dilemma of sustainability compliance and financial performance requirements. This situation means that the reaction of the market to green activities may be possibly different among the KBMI groups in a systematic way.

This argument is supported by the empirical evidence of Baharudin and Arifin (2023), who found that the positive effect of the green initiatives on the company value, as well as the use of Tobin's Q, Stock Return and Earnings per Share (EPS), only appeared significantly in the KBMI IV bank group. On the other hand, a strong relationship between green initiatives and company value has not been found to be significant in banks with smaller core capital. These findings show that core capital is a contingent variable that defines the success of sustainability strategies in the generation of market value. Hence, the application of KBMI as a moderating variable in this study is relevant and strategic to justify the inconsistency of past research results on the topic of green credit and energy disclosure. This approach is expected to provide a more comprehensive understanding of the heterogeneity of the impact of sustainable finance policies in the Indonesian banking sector, as well as to clarify that the success of ESG initiatives is not only determined by normative commitments, but also by the capital capacity and structural efficiency of the banks themselves.

In addition to the independent and moderating variables, this study incorporates Bank Size, Capital Adequacy Ratio (CAR), and External Assurance as control variables because banking Firm Value may also be influenced by bank-specific characteristics outside Green Credit and Energy Disclosure. Bank Size is controlled because differences in total assets reflect differences in operational capacity, market visibility, economies of scale, and business resilience, which may independently influence investor valuation. CAR is included to control the financial strength and risk-bearing capacity of each bank, as banks with higher capital adequacy are generally

considered more capable of absorbing potential losses and maintaining financial stability, thereby potentially increasing investor confidence and Firm Value. Meanwhile, External Assurance is controlled because independent verification can improve the credibility and reliability of sustainability information, reduce information asymmetry, and minimize the risk of greenwashing. Therefore, the inclusion of these three control variables is intended to isolate the net effects of Green Credit and Energy Disclosure on Firm Value, reduce omitted-variable bias, and provide a more accurate estimation of the relationships examined in this study (Amalia et al., 2022; Baharudin & Arifin, 2023; Siauwijaya et al., 2023).

Based on conflicting results from previous studies (mixed results) regarding the impact of green credit, as well as the dynamics of accelerated energy reporting during a crucial regulatory period (2020-2024), researchers see an urgent need to conduct in-depth testing on how Green Credit and Energy Disclosure interact with bank capital categories in influencing Firm Value to achieve Business Sustainability. The phenomenon of post-pandemic economic fluctuations intersecting with the acceleration of the national green economy agenda makes it the right moment to evaluate whether sustainability strategies truly provide added value for banking in Indonesia. Therefore, the researchers formulated the research title: **“THE EFFECT OF GREEN CREDIT AND ENERGY DISCLOSURE ON FIRM VALUE IN INDONESIAN BANKS LISTED ON THE INDONESIAN STOCK EXCHANGE AND MODERATED BY KBMI FOR THE PERIOD 2020-2024”**.

1.2 Problem Formulation

Based on the background described above, the problem formulation in this study is as follows:

1. Does Green Credit affect Firm Value (Tobin's Q) in banks listed on the Indonesia Stock Exchange?

2. Does Energy Disclosure affect Firm Value (Tobin's Q) in banks listed on the Indonesia Stock Exchange?
3. Does the KBMI category moderate the effect of Green Credit on Firm Value in banks listed on the Indonesia Stock Exchange?
4. Does the KBMI category moderate the effect of Energy Disclosure on Firm Value in banks listed on the Indonesia Stock Exchange?

1.3 Research Objectives

In accordance with the problem formulation that has been established, the objectives to be achieved through this research are:

1. To determine and analyze the effect of Green Credit distribution on Firm Value in banking.
2. To determine and analyze the effect of the level of Energy Disclosure transparency on Firm Value in banking.
3. To examine and analyze the role of KBMI categories in the relationship between Green Credit distribution and Firm Value in banks listed on the Indonesia Stock Exchange.
4. To examine and analyze the role of KBMI categories in the relationship between the level of Energy Disclosure transparency and Firm Value in banks listed on the Indonesia Stock Exchange.

1.4 Benefits of Research

This research is expected to contribute and benefit various parties, including:

1.4.1 Theoretical Benefits

This research is expected to enrich the literature in the field of financial management and banking, particularly regarding the debate on the impact of the green economy on company value. In addition, this research contributes to the development

of signaling theory, legitimacy theory, and the resource-based view in explaining the phenomenon of business sustainability in emerging markets.

1.4.2 Practical Benefits

1. For Banks

Providing strategic input on the importance of integrating ESG aspects into credit portfolios and energy efficiency as a means of increasing investor confidence and company market value.

2. For Investors

Serves as a consideration in evaluating banking performance not only from a financial perspective, but also from the maturity of environmental governance and the sustainability risks of banks.

3. For Regulators (OJK)

Provides information on the effectiveness of KBMI grouping policies in promoting green economic transition and the integration of sustainability reporting in the Indonesian banking sector.

