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The Role of Bank Size in Moderating the Effect of Corporate Governance on Banking Financial Performance in Indonesia

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ABSTRACT: *This study aims to analyze the effect of corporate governance mechanisms—including board size, board independence, board meeting frequency, and the presence of women on the board—on the financial performance of banks in Indonesia, as measured by Return on Assets (ROA) and Return on Equity (ROE), with bank size serving as a variable that has the potential to strengthen or weaken this relationship. The study employs a quantitative approach using data from 34 conventional banks for the period 2019–2024, utilizing combined data regression analysis with a random effects model selected based on the Chow test, Lagrange Multiplier test, and Hausman test. The results show that board size, board independence, the frequency of board meetings, and the presence of women on the board have a negative impact on a bank's ability to generate profits from its assets, while the frequency of board meetings has no significant effect on return on equity. Bank size was found to reduce return on equity but had no effect on a bank's ability to generate profits from its assets. The interaction of bank size amplified the influence of board size, board independence, and the presence of women on the board on financial performance, while its influence on the frequency of board meetings was not significant. This study concludes that corporate governance practices did not drive an increase in bank profitability during the study period, but bank size was able to strengthen some of these relationships. These findings have implications for bank management to review the effectiveness of the board structure and for regulators to develop governance policies that align with the characteristics and scale of the banking sector.*

KEY WORD*: Bank size; board independence; frequency of board meetings; board size; Return on Assets; Return on Equity; women on the board.*

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I. INTRODUCTION

The Indonesian banking industry faces ongoing challenges in maintaining financial performance amid increasing operational risks, regulatory oversight, and demands for public accountability. Under these conditions, a bank's ability to generate a managed ROA reflects operational efficiency, while its ability to generate ROE reflects the effectiveness of managing shareholder interests. The differing dynamics of these two indicators suggest that financial performance is determined not only by the magnitude of a bank's resources but also by the quality of oversight and strategic decision-making carried out through corporate governance mechanisms (Habtoor, 2022; Kamal et al., 2025).

Good banking governance significantly influences a company's performance and sustainability. Good governance is essential for improving a bank's profitability and enhancing the confidence of investors and shareholders (Habtoor, 2022). The implementation of appropriate governance mechanisms, such as a balanced and independent board structure, can optimize the use of resources and improve a bank's operational efficiency. As financial institutions that manage public funds and are subject to strict regulations designed to protect the interests of stakeholders, banks rely on sound corporate governance as a key factor in maintaining financial stability and sustainable growth (Kamal et al., 2025).

According to a study by Wardhani et al. (2025), a bank's financial performance and corporate governance are closely linked because sound governance mechanisms can enhance operational efficiency and improve a bank's profitability by strengthening oversight and risk management functions. Strong governance is key to building public and investor confidence, as financial institutions are believed to grow sustainably.

Board size is one of the governance mechanisms most frequently associated with banking financial performance. A board with a larger number of members has the potential to enhance oversight capacity and the availability of expertise, which can improve the efficiency of asset utilization and thereby lead to an increase in ROA. However, with regard to ROE, an overly large board can lead to coordination costs and slow decision-making, which ultimately reduces returns to shareholders. Ofori et al. (2025) show that board size actually has a

negative impact on bank profitability, indicating that the benefits of additional oversight do not always outweigh the costs incurred.

Board independence is viewed as a key instrument for mitigating conflicts of interest and strengthening the board's oversight of management. With regard to ROA, a more independent board is expected to promote prudent risk management and more efficient asset allocation. However, regarding ROE, board independence does not always result in higher returns if it is ineffective in influencing strategic decisions. Abiad et al. (2025) found that board independence has a significant effect on financial performance, while other studies suggest that high independence can weaken performance due to limited understanding of internal operations (Habtoor, 2022; Ofori et al., 2025).

The frequency of board meetings reflects the intensity of the board's involvement in overseeing and evaluating management performance. With regard to ROA, meetings that are too frequent may indicate reactive internal issues and increase administrative costs, thereby reducing the efficiency of asset utilization. Meanwhile, with regard to ROE, excessive meeting frequency can reduce net income by increasing operating costs, thereby reducing returns to shareholders. Ofori et al. (2025) found that board meeting frequency has a negative impact on both financial performance indicators, confirming that the quality of oversight is more important than the quantity of meetings.

Women on the board have become an increasingly relevant governance issue in the banking industry. From an ROA perspective, gender diversity has the potential to enhance the quality of strategic discussions and prudence in risk management, which can improve asset efficiency. However, regarding ROE, the impact has not been consistent because the presence of women on boards is often still symbolic and does not yet fully influence strategic policy direction. Research by Abiad et al. (2025) found a positive effect of women on the board on profitability, while research by Sbai et al. (2025) showed a negative effect in certain contexts, indicating the presence of institutional factors that influence the effectiveness of this role.

Bank size plays a crucial role in explaining differences in the impact of governance on financial performance. Larger banks have greater operational complexity and more resources, so governance mechanisms can have a greater impact on ROA efficiency through more formal oversight systems. However, with regard to ROE performance, larger bank size can also reduce returns due to diminishing returns and increased bureaucratic costs. Research by Abiad et al. (2025) and Ofori et al. (2025) shows that bank size moderates the relationship between board characteristics and financial performance, meaning that the impact of governance is not uniform across all banks.

Given these circumstances, the novelty of this study lies in the simultaneous testing of the effects of corporate governance mechanisms on banking financial performance by explicitly distinguishing their impacts on ROA and ROE, and by including bank size as a moderating variable. The objective of this study is to analyze how bank size, board independence, board meeting frequency, and the proportion of women on the board influence banking financial performance in Indonesia, as well as how bank size strengthens or weakens these relationships. The research design employs a quantitative approach using panel data regression analysis; thus, the findings are expected to provide an empirical contribution to the development of the banking governance literature and serve as a basis for management and regulators in designing effective and context-appropriate governance policies.

II. LITERATURE REVIEW

Corporate Governance and Financial Performance

This study draws on agency theory and resource dependence theory as the primary frameworks for explaining the relationship between corporate governance and banking financial performance. Agency theory explains that the separation of ownership and management gives rise to conflicts of interest that have the potential to reduce the efficiency of asset utilization and returns on capital if not effectively monitored (Ofori et al., 2025). Meanwhile, resource dependence theory views the board of directors as a strategic mechanism that provides resources, expertise, and networks capable of improving the quality of decisions and the bank's financial performance (Abiad et al., 2025). Both theories emphasize that the effectiveness of governance is reflected in a bank's ability to generate profits from its assets (ROA) and from shareholders' equity (ROE).

Board Size

Conceptually, board size reflects the board's collective capacity to perform its oversight and strategic decision-making functions. An optimal board size is expected to strike a balance between the availability of expertise and the efficiency of coordination. Within the conceptual framework of this study, board size is positioned as a governance mechanism that influences financial performance through the quality of oversight and the effectiveness of decision-making.

With regard to ROA, an overly large board has the potential to reduce asset utilization efficiency due to slow decision-making processes and increased coordination costs, thereby negatively impacting the bank's

ability to generate profits from its assets. Ofori et al. (2025) and Pratama et al. (2025) found that an increase in board size is negatively correlated with ROA, suggesting that adding board members does not always improve operational efficiency.

With regard to ROE, a large board size can reduce returns to shareholders through increased managerial costs and decreased strategic agility. Elgadi&Ghardallou (2022) and Ofori et al. (2025) show that a large board size has a negative impact on ROE because net income available to shareholders is reduced due to structural inefficiencies.

Board Independence

Board independence reflects the degree of objectivity in the board's oversight of management. Board independence is expected to curb opportunistic behavior and improve the quality of strategic decision-making. Within the conceptual framework, this variable functions as a monitoring mechanism that directly influences financial performance.

With regard to ROA, a more independent board has the potential to improve asset management efficiency through stricter risk oversight and more prudent asset allocation. Abiad et al. (2025) found a significant effect of board independence on ROA, but Ofori et al. (2025) showed that in certain contexts, high independence actually reduces ROA due to limited understanding of internal operations.

Regarding ROE, board independence is expected to protect shareholders' interests and increase returns on equity. However, Habtoor et al. (2024) found that board independence can have a negative impact on ROE if the independent board is ineffective in influencing strategic policy, thereby failing to drive value creation for shareholders.

Board Meeting Frequency

Board meeting frequency reflects the intensity of the board's involvement in overseeing and evaluating management performance. Within a conceptual framework, meeting frequency is positioned as an indicator of board activity that influences financial performance through the quality of oversight and strategic coordination (Haque et al., 2025).

With regard to ROA, overly frequent board meetings may reflect a reactive response to internal problems and increase administrative costs, thereby reducing the efficiency of asset utilization. Ofori et al. (2025) found that the frequency of board meetings has a negative impact on ROA due to increased operating costs and a reduced focus on long-term strategic decisions.

With regard to ROE, a high frequency of board meetings also has the potential to reduce net income through increased costs, thereby reducing returns to shareholders. The findings of Ofori et al. (2025) indicate that board meeting frequency has a negative impact on ROE, while Kumara &Walakumbura (2023) assert that the quality of meetings is a more significant determinant of performance than their quantity.

Women on the Board

Women on the board represent gender diversity in the board structure, which has the potential to enrich decision-making perspectives and enhance risk management prudence. Within the conceptual framework, this variable is positioned as a governance mechanism that influences financial performance through the quality of strategic discussions and oversight (Mohamad & Rahman, 2023).

In Indonesia, women on the board have become an increasingly relevant governance phenomenon as the issue of gender diversity has shifted from merely a matter of "representation" to an indicator of governance quality that is monitored by stakeholders. In Indonesia's governance system, which tends to be two-tiered (with the Board of Directors serving as

(executives and commissioners as supervisors), the composition of female board members is seen as having the potential to influence the effectiveness of oversight, the quality of strategic discussions, and the prudence of decisions. In practice, the representation of women on boards in Indonesia remains relatively limited. An OECD summary indicates that as of 2024, women accounted for approximately 10% of "boards of directors" in Indonesia, and the absence of mandatory quotas or targets for gender diversity on boards suggests that policy space remains flexible and that variations among banks are still significant, warranting further empirical testing (OECD Corporate Governance Factbook, 2025).

With regard to ROA, the presence of women on the board can improve asset management efficiency through more prudent and risk-oriented decision-making. Abiad et al. (2025) found a positive effect of women on the board on ROA, while Sbai et al. (2025) demonstrated a negative effect in certain contexts due to coordination barriers and cultural factors.

Regarding ROE, gender diversity is expected to increase return on equity through higher-quality strategic decisions. However, Sbai et al. (2025) found that having women on the board can have a negative

impact on ROE in developing countries because women's roles on the board have not yet been fully integrated into core strategic processes.

Bank Size and the Moderating Role

Bank size reflects the scale of operations and organizational complexity that influence the effectiveness of governance. Within a conceptual framework, bank size functions as a moderating variable that strengthens or weakens the impact of governance mechanisms on financial performance.

With regard to ROA, large banks have more adequate oversight systems and resources to improve the efficiency of asset utilization, so the effect of governance can be stronger. Conversely, with regard to ROE, large bank size can reduce returns on equity due to diminishing returns and increased bureaucratic costs (Abiad et al., 2025; Ofori et al., 2025).

Conceptual Framework

Financial performance reflects the effectiveness and efficiency of management in managing financial resources to achieve the company's profitability goals. In the banking context, ROA and ROE are key indicators that assess the extent to which assets and equity generate sustainable net income. Recent research on the banking industry in the Gulf Cooperation Council (GCC) region indicates that board characteristics contribute to improved bank performance by enhancing governance effectiveness (Abiad et al., 2025).

Board size reflects an institution's capacity for oversight and strategic decision-making. According to agency theory, a larger number of board members can enhance the effectiveness of oversight over management. According to Abiad et al. (2025), a proportional board size is expected to strengthen oversight functions, reduce agency risks, and ultimately improve financial performance (ROA and ROE).

Board independence is a key element of corporate governance that ensures objectivity in decision-making and minimizes conflicts of interest between shareholders and management. Boards with a high proportion of independent members tend to be more effective in overseeing management and ensuring transparency, which leads to improved financial performance for banks. Research in the banking industry shows that board independence is significantly and positively correlated with increases in ROA and ROE because it promotes stronger oversight and internal control practices (Abiad et al., 2025).

The frequency of board meetings reflects the board's level of intensity and commitment in carrying out its monitoring and evaluation functions regarding management policies. The more frequently the board holds meetings, the greater the opportunity to discuss strategic issues, monitor risks, and follow up on policies that affect financial performance (Haque et al., 2025). However, the effectiveness of meeting frequency depends heavily on the quality of discussions and follow-up on meeting outcomes, so its impact on ROA and ROE may vary depending on each bank's specific governance context.

Women on the board are a crucial aspect of modern governance that supports organizational sustainability. The presence of women on the board contributes to a broader perspective, enhanced business ethics, and more inclusive decision-making. Empirical studies show that the presence of women on boards has a positive impact on ROA and ROE because it strengthens the legitimacy, reputation, and effectiveness of corporate oversight in the banking sector (Abiad et al., 2025).

Bank size is considered a moderating factor that can strengthen the relationship between corporate governance and financial performance. Abiad et al. (2025) state that large banks generally have more mature resources and managerial systems, enabling them to optimize the application of corporate governance principles to improve financial performance. Bank size is viewed as a moderating variable that influences the direction and strength of the relationship between corporate governance and financial performance (ROA and ROE).

Based on the discussion outlined above, the conceptual framework for this study can be described as follows.

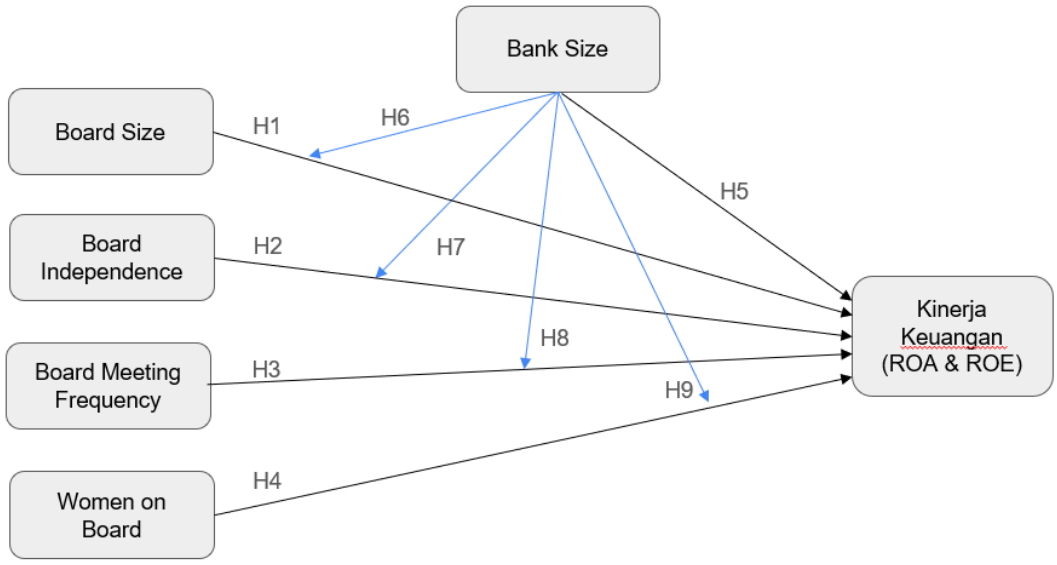

Figure 1: Conceptual Framework Diagram

Hypothesis Development

The Effect of Board Size on Financial Performance

Based on the findings of a study by Abiad et al. (2025) on the banking sector in Gulf Cooperation Council (GCC) member countries, it was found that board size has a positive impact on ROA. This study shows that an increase in the number of board members is significantly correlated with an increase in bank profitability, as measured by ROA. This finding is consistent with resource dependence theory, which states that larger boards of directors are more likely to include experts from various countries and internationally, which can enhance strategic discussions, improve operational efficiency, and, ultimately, boost the financial performance of banks in the GCC region.

A study by Abiad et al. (2025) on the banking sector in Gulf Cooperation Council (GCC) member states also found that the size of the board of directors has a positive impact on ROE. It also showed that there is a significant correlation between the number of board members and returns on equity to shareholders. This is based on resource dependence theory, which states that larger boards can identify market opportunities, manage risk, and allocate resources more effectively. Consequently, larger boards can increase profitability for equity holders by identifying market opportunities and improving the quality of decisions.

Another study shows the opposite result: board size has a significant negative impact on ROA. The study explains that, although adding board members is intended to enhance oversight, this expansion can actually lead to inefficient decision-making and may result in conflicts of interest among a larger number of members. Therefore, companies must consider the ideal board size to ensure that corporate governance functions effectively without compromising operational agility or profitability (Pratama et al., 2025).

A study by Elgadi&Ghardallou (2022) found that board size has a significant negative effect on ROE. This suggests that increased operating costs—particularly executive compensation—contribute to a decline in ROE. These costs have a negative impact on a bank's net income. With lower net income, banks can retain fewer funds as retained earnings. Retained earnings are an important component of shareholders' equity. If net income is consistently low or negative due to board mismanagement, the growth of retained earnings will be hampered, and consequently, the growth of shareholders' equity will decline over time. In larger boards, slow, inefficient, and uncreative decision-making processes can lead to poor business strategies or poor operational performance.

H1 : There is a relationship between board size and the financial performance of banks in Indonesia.

The effect of board independence on financial performance

Based on previous research in the banking sector, it has been shown that board independence increases ROA under strict oversight (Abiad et al., 2025). These results indicate that a bank's ability to generate profits from all its assets is positively correlated with the number of independent board members. The presence of independent directors substantially enhances the transparency and accountability of bank management, fosters constructive discussions, and improves the quality of decision-making.

Previous research in the banking sector has shown that board independence can increase ROE through effective oversight (Abiad et al., 2025). These findings indicate that the more independent directors there are on the board, the more likely a bank is to generate returns for its shareholders, as measured by ROE. This is because the presence of independent directors enhances management oversight, increases accountability and transparency, and improves the level of transparency. Therefore, independent directors ensure that the bank's strategic and operational decisions—including risk management and capital allocation—align with the best interests of shareholders, thereby increasing profitability per unit of equity.

Another study found the opposite: that too much board independence has a negative impact on ROA. This finding supports resource dependence theory, which posits that—contrary to agency theory—executive directors or "insiders" on the board can improve performance by retaining the bank's resources and leveraging their in-depth knowledge of the company's operations. In other words, having many independent non-executive directors may not be ideal for improving return on assets because they may have less understanding of internal operations than executive directors (Abdel-Azim & Soliman, 2020).

Another study found the opposite: that excessive board independence has a significant negative impact on ROE. This finding suggests that in the Saudi banking sector, increasing board independence may hinder a bank's ability to generate greater returns for shareholders relative to their equity. Because its relationship to equity is so critical, ROE is a key profitability metric that measures how effectively a company uses equity investments to generate profits. Consequently, the negative impact of BI suggests that this governance mechanism has not yet fostered value creation for equity holders. This points to a problem with concentrated ownership structures, in which dominant shareholders can undermine the role of independent directors and prevent them from optimizing returns on equity investments (Habtoor et al., 2024).

H2 : There is a relationship between board independence and the financial performance of banks in Indonesia.

The effect of board meeting frequency on financial performance

Based on the findings of Ranawaka et al. (2025), frequent board meetings can make decision-making, oversight, and resource allocation more efficient; thus, board meeting frequency has a significant positive effect on ROA. These results indicate that the more frequently board meetings are held, the higher the bank's efficiency in generating profits from its assets. This positive relationship can be interpreted to mean that regular board meetings enable rapid decision-making, effective resource allocation, and better managerial oversight, which collectively contribute to improved bank financial performance. Thus, a higher frequency of board meetings directly supports an increase in net income generated from the bank's total assets (Ranawaka et al., 2025).

Frequent board meetings can make decision-making, oversight, and resource allocation more efficient; thus, board meeting frequency has a significant positive effect on ROE (Ranawaka et al., 2025). These results indicate that regular board meetings enable stricter oversight, better strategic decision-making regarding capital utilization, and efficient resource allocation, which in turn enhance the effectiveness of managing funds invested by bank shareholders. Thus, an optimal frequency of board meetings directly contributes to the creation of greater value for equity holders, reflecting the bank's ability to generate profits from every rupiah of invested capital (Ranawaka et al., 2025).

According to research by Ofori et al. (2025), board meeting frequency has a negative impact on ROA; a high frequency of meetings may not reflect proactive and effective governance, but may instead be a reaction to underlying management issues or even increase administrative costs. Excessive meetings that lack a focus on strategic issues can lead to inefficiencies and a diversion of resources, which ultimately reduce the profitability of the bank's assets. Therefore, this relationship implies that optimizing meeting frequency is crucial for balancing oversight and operational efficiency in order to increase the profit generated from the bank's total assets (Ofori et al., 2025).

According to a study by Ofori et al. (2025), the frequency of board meetings has a negative impact on ROE; very frequent meetings may not reflect improved oversight or better decision-making, but may instead indicate underlying management challenges or even increase operational and administrative costs, which ultimately erode profitability. The connection to equity is that a decline in ROE means the bank is less efficient at generating returns for shareholders from each unit of equity invested. Therefore, excessive meeting frequency without a clear purpose or optimal efficiency can reduce the value returned to shareholders, underscoring the importance of balancing oversight with operational efficiency to maximize equity returns (Ofori et al., 2025).

H3 : There is a relationship between the frequency of board meetings and the financial performance of banks in Indonesia.

The effect of women on the board on financial performance

Research by Abiad et al. (2025) shows a significant positive effect on ROA: the higher the level of gender diversity on the board of directors, the better a bank's ability to generate profits from its assets. The presence of women on the board brings new perspectives and enhances problem-solving abilities, which in turn leads to better decision-making regarding asset allocation and management. This increased efficiency in asset utilization directly contributes to higher net income relative to the bank's total assets. Thus, gender diversity on the board of directors has been shown to be a key factor in maximizing the productivity and profitability of a bank's asset base (Abiad et al., 2025).

Research by Abiad et al. (2025) shows a significant positive effect on ROE: increasing gender diversity on the board of directors substantially enhances a bank's ability to generate profits for shareholders from invested equity capital. The presence of women on the board of directors brings a broader perspective, fosters more constructive discussions, and improves the quality of strategic decision-making, which directly influences the use and return on equity. This can reduce agency conflicts and ensure more efficient and responsible management of resources—including shareholder equity—thereby increasing the profits attributable to equity holders. Thus, gender diversity on the board of directors plays a crucial role in optimizing value for shareholders by improving profitability relative to paid-in equity (Abiad et al., 2025).

Another study shows that the proportion of women on the board has a significant negative effect on ROA, indicating that the more women on the board, the lower the bank's ability to generate profits from its total assets. These results are consistent with social categorization theory, which suggests that gender diversity can hinder the board's operational efficiency due to potential coordination issues or longer discussion times, which ultimately affect return on assets. Furthermore, this negative effect was found to be more pronounced in environments with high levels of individualism and power distance, underscoring the crucial role of cultural and institutional contexts in moderating the relationship between board diversity and return on assets (Sbai et al., 2025).

Another study shows that the proportion of women on the board has a significant negative effect on ROE; these results indicate that increased gender diversity on the board, in the context of this study, tends to reduce a bank's ability to generate returns on the equity invested by shareholders. This negative effect can be explained by social categorization theory, which posits that gender diversity can sometimes hinder the board's operational efficiency—for example, by causing coordination problems or prolonging discussions—which in turn impacts overall profitability and equity returns. Overall, these findings highlight that in the context of the emerging economies studied, the presence of women on boards of directors, rather than increasing returns, is actually associated with a decrease in the returns received by shareholders on their invested capital (Sbai et al., 2025).

H4 : There is a relationship between the number of women on the board and the financial performance of banks in Indonesia.

The effect of bank size on financial performance

A study by Abiad et al. (2025) found that bank size has a positive effect on ROA. This suggests that larger banks tend to have higher returns on assets. This finding is consistent with the argument that large banks can benefit from economies of scale, which allow them to manage their operations and assets more efficiently and effectively. With larger business volumes and broader potential for service diversification, giant banks can optimize the use of each unit of assets they hold to generate higher revenue, thereby increasing overall asset profitability. These advantages may stem from their capacity to invest in advanced technology, attract top talent, or negotiate better terms with suppliers and partners—all of which contribute to increased efficiency and higher returns on total assets under management.

A study by Abiad et al. (2025) found that bank size has a positive effect on ROE. This indicates that banks with a larger operational scale tend to generate higher returns on the equity capital invested by shareholders. The relationship with equity is crucial, as large banks often benefit from economies of scale, broader access to financial markets, and better diversification of products and services—all of which contribute to increased overall profitability. These advantages allow them to generate greater net income relative to total shareholder equity, which in turn increases value for owners. Thus, a bank's larger size not only reflects market dominance but also a stronger capacity to optimize the use of equity capital in generating profits, making these banks more attractive to investors seeking solid returns.

Other research findings, however, indicate the opposite: bank size has a significant negative impact on ROA, with larger banks tending to have lower asset profitability. This inverse relationship is most likely due to the emergence of diminishing returns to scale among large banks, where increased operational complexity and higher fixed costs can erode efficiency. As a result, rather than capitalizing on economies of scale, giant banks may actually struggle to optimize the use of their assets to generate proportional profits. This phenomenon also reflects the challenges faced by large banks in adapting to rapid market and regulatory changes, which in turn

limit their ability to achieve optimal returns on average total assets. Therefore, for the European banks studied, excessive size can be a barrier to efficient asset management and overall profitability (Laporšek et al., 2025).

Other research findings, however, indicate the opposite: bank size has a significant negative effect on ROE, with larger banks tending to generate lower average returns on equity. This inverse relationship is most likely due to diminishing returns to scale, whereby large banks face greater operational complexity, increased fixed costs, and potential inefficiencies. This phenomenon hinders banks' ability to optimize the use of their average equity in generating profits for shareholders, as the benefits of economies of scale may be offset by bureaucracy and difficulties in adapting to market and regulatory changes. Thus, while size may offer certain advantages, for European banks in the post-crisis period, excessive size can actually reduce efficiency in generating profits relative to invested equity capital (Laporšek et al., 2025).

H5 : There is a relationship between bank size and the financial performance of banks in Indonesia.

Bank size moderates the effect of board size on financial performance.

Based on the findings of Abiad et al. (2025), bank size exerts a positive and significant moderating effect on the impact of board size on ROA, indicating that the benefits of a larger board are substantially amplified in larger banks. Large banks, with greater financial capacity and reputation, are able to attract a more diverse and expert board, which in turn can improve management efficiency and the quality of strategic decisions. These improvements in efficiency and decision quality directly contribute to better asset management, leading to an increase in ROA, which reflects how effectively a bank uses its assets to generate profits.

Based on the findings of Abiad et al. (2025), bank size exerts a positive and significant moderating effect on the impact of board size on ROE; this indicates that the benefits of a larger board are significantly amplified in larger banks, contributing to an increase in ROE. Large banks, with complex operations and access to extensive professional networks, can leverage a larger board to bring in more diverse expertise and perspectives, resulting in better strategic decision-making and effective governance, which ultimately increases returns for shareholders. Improvements in operational efficiency and management quality, as reflected in higher ROA, are also often directly proportional to increases in ROE, as strong asset performance directly supports overall profitability and returns to investors.

Based on the findings of Kamal et al. (2025), bank size exerts a negative and significant moderating effect on the impact of board size on ROA. Although board size may directly have a positive and significant relationship with return on assets, the role of bank size as a moderator substantially alters this dynamic. This suggests that in large banks, an increase in board size may actually lead to inefficiencies or coordination challenges that ultimately reduce the bank's ability to generate returns on assets effectively, thereby negating the positive impact typically observed in smaller entities. The shift from a significant positive effect to an insignificant negative one implies that, in the context of larger banks, the potential benefits of a larger board of directors (such as diverse expertise or better oversight) may not be realized or may be offset by resulting operational losses, adversely affecting ROA.

Based on the findings of Kamal et al. (2025), bank size exerts a negative and significant moderating effect on the impact of board size on ROE. Although the general moderation hypothesis for ROE was not supported, the interaction between board size and bank size still altered the nature of the relationship, transforming it from previously insignificant to statistically significant. This shift suggests that for banks of a certain size, a larger board of directors may actually worsen ROE, indicating a possible increase in agency costs, coordination problems, or inefficient decision-making that ultimately erodes returns for equity holders. This implies that bank size influences how board size translates into value for shareholders through ROE.

H6 : Bank size moderates the relationship between board size and financial performance s in the Indonesian banking sector.

Bank size moderates the effect of board independence on financial performance

Based on the findings of Abiad et al. (2025), bank size exerts a positive and significant moderating effect on the impact of board independence on ROA. This interaction suggests that the benefits of having a more independent board are amplified in large banks, substantially increasing their ROA. Large banks tend to have higher market visibility and more complex structures, making board independence a positive signal to stakeholders, which fosters greater trust and managerial accountability in asset management. The presence of independent directors fosters objectivity in decision-making, enhances oversight, and promotes transparent governance, which in turn leads to more efficient asset allocation and improved overall bank profitability.

Based on the findings of Abiad et al. (2025), bank size exerts a positive and significant moderating effect on the impact of board independence on ROE. This interaction indicates that the benefits of having a more independent board are substantially amplified in large banks, which directly increases their ROE. Large banks, with more dispersed ownership structures and high operational complexity, benefit more from the objectivity and oversight provided by independent directors, which leads to more rational and effective decision-making in

managing investments and risks in the best interests of shareholders. The increased accountability and transparency brought about by these independent directors build investor confidence, protect equity value from potential management misconduct, and ultimately drive higher returns on equity investments.

Other research findings reveal that bank size exerts a significant negative moderating effect on the impact of board independence on ROA. This means that as bank size increases, the expected positive impact of board independence on a bank's ability to generate profits from its assets actually diminishes or even turns negative. Thus, although board independence is considered important for good corporate governance, this study shows that in large banks, firm size alters this relationship such that it is significantly and negatively associated with the return on the bank's assets (Obaje& Abdullahi, 2021).

H7 : Bank size moderates the effect of board independence on the financial performance of banks in Indonesia.

Bank size moderates the effect of board meeting frequency on financial performance.

Based on the findings of Ofori et al. (2025), bank size exerts a significant negative moderating effect on the impact of board meeting frequency on ROA. This means that in larger banks, an increase in the frequency of board meetings tends to worsen ROA performance, likely due to increased administrative costs or inefficiencies arising from too many meetings. The relationship with return on assets is that, although board meetings are expected to enhance oversight, in larger banks, excessive meeting frequency can divert resources or signal internal problems, which ultimately reduces the bank's ability to generate profits from its assets.

Based on the findings of Ofori et al. (2025), bank size has a significant negative moderating effect on the impact of board meeting frequency on ROE. This suggests that in larger banks, an increase in the frequency of board meetings may actually be negatively correlated with return on equity, likely due to higher administrative costs or operational inefficiencies caused by overly frequent meetings. Thus, although board meetings are intended to enhance oversight, in larger institutions, excessive meeting frequency can erode the profitability that shareholders derive from their equity.

H8 : Bank size moderates the effect of board meeting frequency on the financial performance of banks in Indonesia.

Bank size moderates the effect of women on the board on financial performance

Based on the findings of Abiad et al. (2025), bank size has a positive and significant moderating effect on the impact of women on the board on ROA. These results indicate that the benefits of gender diversity on the board are substantially amplified in large banks, directly increasing their ROA. Large banks, which operate in more complex environments with diverse international client and employee bases, highly value and benefit from the new perspectives and innovative ideas brought by female directors, thereby enabling more adaptive and comprehensive strategic decision-making. This increase in objectivity and creativity in asset management helps large banks serve diverse customer needs more effectively, manage risk, and identify market opportunities, ultimately leading to more efficient asset utilization and improved overall profitability.

Based on the findings of Abiad et al. (2025), bank size has a positive and significant moderating effect on the impact of women on the board on ROE. These results indicate that in large banks, gender diversity on the board significantly increases ROE. The presence of professional women on the boards of large banks fosters constructive discussions and more comprehensive decision-making, enabling banks to manage capital more effectively and generate profits for shareholders. Thus, gender diversity on the boards of large banks strengthens their ability to formulate more adaptive strategies, identify diverse market opportunities, and manage risk more effectively—all of which directly enhance profitability and returns on investment for equity owners.

Based on the findings of Obaje& Abdullahi (2021), bank size has a significant negative moderating effect on the impact of women on the board on ROA. These results indicate that for larger banks, the presence of gender diversity on the board of directors is actually associated with a decline in ROA. Thus, although gender diversity is generally expected to bring diverse perspectives, in the context of large banks, this study found that firm size modifies this relationship, resulting in a significant negative correlation with the return on the bank's assets.

Based on the findings of Kamal et al. (2025), bank size exerts a significant negative moderating effect on the impact of women on the board on ROE. This implies that the effect of gender diversity on the efficiency of a bank's use of shareholders' equity may vary depending on the bank's size; specifically, for banks of a certain size, the benefits of gender diversity on ROE may not materialize or may even be hindered. This variation is believed to be caused by a significant level of multicollinearity between gender diversity on the board of directors and bank size, as well as substantial differences in the sizes of the banks in the study sample.

H9 : Bank size moderates the effect of women on the board on the financial performance of banks in Indonesia.

III. RESEARCH METHODOLOGY

Variables and Measurement

The variables used in this study were measured to determine the relationship between the independent variables and the dependent variable, as well as the moderating variable that affects the relationship between the independent variables and the dependent variable. The independent variables in this study are *board size, board independence, board meeting frequency*, *and the number of women on the board*, while the dependent variable is financial performance, measured by ROA and ROE. The moderating variable is *bank size*. The measurement of the variables is described in the following table:

Table 1: Variables and Measurements

Variable Type	Variable Name	Symbol	Formula	Reference
A. Dependent Variables	*Return on Assets*	ROA	Net Income / Total Assets	Ofori et al. (2025)
	Return on Equity	ROE	Net income / Total equity	Ofori et al. (2025)
B. Independent Variables	*Board Size*	BS	Total number of board members	Ofori et al. (2025) Abiad et al. (2025)
	Board Independence	BI	Number of independent directors / Total number of board members	Ofori et al. (2025) Abiad et al. (2025)
	Board Meeting Frequency	BMF	Total number of board meetings per year	Ofori et al. (2025) Abiad et al. (2025)
	Women on the Board	WB	Number of female directors / Total board members	Abiad et al. (2025)
C. Moderating Variables	*Bank Size*	FS	Log of total assets	Ofori et al. (2025)
D. Control Variables	*Firm Growth*	FG	Current-year total assets – previous-year total assets / Total assets from the previous year	Ofori et al. (2025)

Sampling Method

The sampling method used in this study employed purposive sampling, meaning that the population data used as the research sample had been pre-selected and met specific criteria. The criteria in question are outlined as follows:

1. Banks registered with the Indonesian Financial Services Authority (OJK) that have complete financial statements for the 2019–2024 period.
2. Only conventional banks were included.
3. Banks with women on their boards of directors.
4. Banks with complete data related to the variables used in this study.

Table 2: Sampling Criteria

No.	Description	Number
1	Number of companies in the banking subsector listed on the IDX for the 2020–2024 period	105
2	Number of Islamic banking companies.	(14)
3	The number of foreign banks with branches in Indonesia	(7)
4	Number of banks with no female board members at all during the 2020–2024 period	(48)
5	Number of banks with no board meeting minutes	(2)
6	Number of banks included in the sample	34
7	Number of data observations: 34 banks × 6 years (2019–2024)	204

The following are the steps for testing the regression model in this study:

Model Fit Test

The panel data regression analysis in this study considers three estimation approaches: *the common-effects model* (CEM), *the fixed-effects model* (FEM), and *the random-effects model* (REM). The selection of the

best model was conducted through a series of specification tests, including the Chow test to distinguish between the CEM and FEM, the Hausman test to choose between the FEM and REM, and the Lagrange Multiplier (LM) test to assess the suitability of using the CEM or REM. These three tests were conducted sequentially to determine the most appropriate model before the main regression estimation was performed.

Chow Test

The Chow test is used to determine whether the appropriate model is *the common-effects model* or *the fixed-effects model*. The test criterion is that if the chi-square probability value is less than 0.05, then the *fixed-effects* model is more appropriate. The test results (Table 3.3) show a probability value of 0.0000 for all models; therefore, *the fixed-effects model* was selected, and the analysis continued with the *Hausman* test.

Table 3 Results of *the Chow Test*

Model	Variable	Chi-Square	Probability	Decision
1	ROA	281.165949	0.0000	H0 is rejected
2	ROE	277.009669	0.0000	H0 is rejected

Hausman Test

The *Hausman* test is used to determine the best model between the fixed-effects and *random-effects models*. The test is conducted by comparing the chi-square probability value with a significance level of 0.05. If the probability is greater than 0.05, then the appropriate model is *the random-effects model*. The test results in Table 3.4 show a probability value of 0.0000 for all models; therefore, the null hypothesis is accepted, and *the random-effects model* is selected as the appropriate model.

Table 4: *Hausman Test*

Model	Variables	Chi-Square	Probability	Decision
1	ROA	14.127291	0.1179	H0 accepted
2	ROE	15.862450	0.0668	H0 accepted

Data Analysis Methods

***Coefficient of Determination* Test (R^2)**

The coefficient of determination test was conducted to assess the regression model's ability to explain variation in the dependent variable. The R^2 value indicates the proportion of variation in the dependent variable that can be explained by the independent variables, control variables, and moderator variables. Because the model involves many independent variables, the Adjusted R^2 was used to provide a more accurate estimate of the model's fit.

Table 5: *Goodness-of-Fit* Test Results

Model	Variable	R^2	Adjusted R^2
1	ROA	0.430761	0.404353
2	ROE	0.469871	0.445277

Based on the results of the goodness-of-fit test, the Adjusted R^2 value in the Random Effects Model indicates that the research model has adequate explanatory power, whereby 0.404353 or 40.44% of the variation in ROA and 0.445277 or 44.53% of the variation in ROE can be explained by corporate governance variables, moderated by bank size. These proportions indicate that board structure and governance characteristics make a significant contribution to banking financial performance, although most of the variation in ROA and ROE is still influenced by factors outside the model, such as efficiency, credit risk, and macroeconomic conditions. Thus, the Adjusted R^2 value in this category confirms that the regression model used is valid and relevant for explaining the relationship between corporate governance and bank profitability during the study period.

F-Test (Simultaneous)

The F-test is used to assess the simultaneous effect of all independent, control, and moderator variables on the dependent variable. The test criterion is that if Prob. $F < 0.05$, then the independent variables collectively have a significant effect and the model is considered valid.

Table 6 Results of the F-Test

Model	Variable	Probability	Decision
1	ROA	0.0000	H0 is rejected
2	ROE	0.0000	H0 is rejected

Based on the results of the F-test, it can be seen that the probability of the F-statistic for both ROA and ROE is 0.000, meaning the F-test is significant. In other words, all variables were found to have a significant simultaneous effect.

RESULTS AND DISCUSSION

This section presents the results of the data analysis and a discussion of the research findings. The analysis focused on testing the effects of the independent variables—*board size, board independence, board meeting frequency*, and *women on the board*—on the dependent variable of financial performance, measured by ROA and ROE, with *bank size* as the moderating variable. The analysis included descriptive statistics, panel regression tests, and moderation tests to evaluate the relationships among the study variables.

Research Model

This study uses a panel regression model to examine the effects of *board size* (BS)*, board independence* (BI)*, board meeting frequency* (BMF), and the proportion of *women on the board* (WB) on financial performance, as measured by ROA and ROE, with *bank size* (FS) as a moderating variable. The research model is formulated as follows:

Financial Performance

$$\boldsymbol{ROA_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 BMF_{it} + \beta_4 WB_{it} + \beta_5 FS_{it} + \beta_6 (BS_{it}\, x\, FS_{it}) + \beta_7 (BI_{it}\, x\, FS_{it}) + \beta_8 (BMF_{it}\, x\, FS_{it}) + \beta_9 (WB_{it}\, x\, FS_{it}) + e\, \mu_t}$$

$$\boldsymbol{ROE_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 BMF_{it} + \beta_4 WB_{it} + \beta_5 FS_{it} + \beta_6 (BS_{it}\, x\, FS_{it}) + \beta_7 (BI_{it}\, x\, FS_{it}) + \beta_8 (BMF_{it}\, x\, FS_{it}) + \beta_9 (WB_{it}\, x\, FS_{it}) + e\, \mu_t}$$

Where:

β_0 = *Constant*
ROA_{it} = Financial performance measured by ROA
ROE_{it} = Financial performance measured by ROE
BS_{it} = *Board Size*
BI_{it} = *Board Independence*
BMF_{it} = *Board Meeting Frequency*
WB_{it} = *Women on the Board*
FS_{it} = *Bank size*
$\beta_1 - \beta_9$ = Regression Coefficient
$e\, \mu_t$ = *Error term*

Descriptive Statistical Analysis

Descriptive statistical analysis aims to provide an overview of the characteristics of the research data through the minimum, maximum, mean, and standard deviation. The maximum and minimum values show the range of the data, while the mean reflects the central tendency. The standard deviation indicates the degree of variation among observations, thereby reflecting the homogeneity of the data. This study analyzes the following variables: dependent variables—ROA and ROE; independent variables—*board size* (BS)*, board independence* (BI)*, board meeting frequency* (BMF), and *women on the board* (WB); and moderator—bank size. The results of the descriptive statistics are presented in Table 7.

Table 7 Descriptive Statistical Analysis

Variables	N	Mean	Min.	Max.	Std. Dev.
Financial Performance (ROA)	204	0.009498	-0.172389	0.037847	0.018808
Financial Performance (ROE)	204	0.067557	-0.451523	0.209358	0.081537
Board Size	204	6.990196	3.000000	17.00000	2.796885
Board Independence	204	0.953482	0.555556	1.000000	0.093156

Board Meeting Frequency	204	38.81373	2.000000	281.0000	38.91768
Women on board	204	0.295309	0.076923	0.750000	0.149626
Bank size	204	13.80856	12.12092	15.38511	0.729551

Based on the descriptive statistics in Table 7, the following conclusions can be drawn:

Return on Assets (ROA) had its lowest value of –0.1724 in 2020 at Seabank. The average ROA was 0.009498 with a standard deviation of 0.018808. Bank BCA had the highest ROA of 0.0378 in 2024.

Return on Equity (ROE) had its lowest value of –0.4515 in 2020 at Bank Seabank Indonesia. The average ROE was 0.0675, with a standard deviation of 0.0815. Bank Mega Tbk had the highest ROE of 0.2094 in 2021.

Board size was highest—at 17—in 2020 at Bank Mandiri. The average *board size* was 6.9901, with a standard deviation of 2.7968. Bank Ganesha Tbk had the lowest *board size*—at 3—in 2019.

Board Independence has a standard deviation of 0.0931 and a mean of 0.9534. HSBC Bank had the lowest *board independence* score of 0.5556 in 2022, while BTPN Bank had the highest *board independence* score of 1.0000 in 2019.

Board Meeting Frequency has a mean of 38.81 and a standard deviation of 38.91. Bank BPD Maluku Utara had the lowest *board meeting frequency*, at 2 in 2019 and 2021, while Bank BTN had the highest *board meeting frequency*, at 281 in 2019.

The *"women on board"* score was lowest—at 0.0769 in 2019—at Bank Mandiri, while Bank Maspion had the highest *"women on board"* score of 0.7500 in 2019. The average *"women on board"* score was 0.2953, with a standard deviation of 0.1496.

Bank size had the lowest value of 12.1209 in 2019 at Bank Jago, while Bank Mandiri had the highest bank size value of 15.3851 in 2024. The average value for bank size was 13.80 with a standard deviation of 0.729.

Individual Test (T-Test)

Partial testing, or the t-test, and probability are used to test whether partial regression coefficients have an effect on the dependent variable. Based on the results of the t-test using the random-effects model in Table 8, the following is observed:

The constant in the ROA model is 0.071964 (probability = 0.0047) and in the ROE model is 0.377763 (probability = 0.0004), both of which are significant. This means that when all independent variables are held constant at zero, both ROA and ROE are at a positive baseline. In other words, the bank's financial performance is inherently at a positive level, so corporate governance merely serves as a factor that enhances or diminishes that financial performance.

Board size has a significant negative effect on ROA (coefficient = –0.011229; p-value = 0.0016) and ROE (coefficient = –0.050931; p-value = 0.0005). This indicates that the larger *the board size*, the lower the bank's financial performance, whether measured by assets (ROA) or equity (ROE). The consistent negative effect suggests that an overly large board can lead to bureaucracy, ineffective coordination, and inefficiency in decision-making, thereby undermining the bank's ability to generate profits. These findings contradict the results of the study by Ofori et al. (2025), which stated that *board size* has no effect on ROA and ROE, as well as the study by Abiad et al. (2025), which stated that *board size* has a significant positive effect on ROA and ROE. These findings are consistent with those of Pratam et al. (2025), which showed that *board size* has a significant negative effect on ROA, and with those of Elgadi&Ghardallou (2022), which showed that *board size* has a significant negative effect on ROE.

Board independence has a significant negative effect on ROA (coefficient = –0.108170; p-value = 0.0000) and ROE (coefficient = –0.537331; p-value = 0.0000). This indicates that as the level of *board independence* increases, a bank's financial performance actually declines. This decline is more pronounced for ROE, indicating that board independence has not yet been able to provide added value to shareholders. In the context of the Indonesian banking industry, *board independence* may be limited by a lack of internal information, resulting in suboptimal oversight and strategic decision-making. These findings contradict the results of studies by Ofori et al. (2025) and Abiad et al. (2025), which state that *board independence* has a significant positive effect on ROA and ROE. This implies that *board independence* brings diverse expertise, enables more objective oversight of management, and protects shareholder interests, thereby enhancing the bank's profitability and overall performance. This finding is also consistent with the literature indicating that board independence reduces conflicts of interest between managers and owners, which ultimately has a positive impact on ROA and ROE. These findings are also in line with the research findings of Abdel-Azim & Soliman (2020), which showed that *board independence* has a significant negative effect on ROA, and with the research findings of Habtoor et al. (2024), which showed that *board independence* has a significant negative effect on ROE.

The frequency of board meetings has a significant negative effect on ROA (coefficient = –0.000271; probability = 0.0372), but no significant effect on ROE (coefficient = –0.000469; probability = 0.3835). This

means that overly frequent board meetings can reduce a bank's operational efficiency, thereby decreasing profit relative to assets (ROA), but do not have a direct impact on returns to shareholders (ROE). The lack of significance regarding ROE indicates that decisions made during meetings focus more on operational aspects than on long-term equity-related strategies. This finding aligns with the research by Ofori et al. (2025), which found that *board meeting frequency* has a significant negative effect on ROA. This means that the more frequently board meetings are held, the more ROA actually declines. This suggests that a high meeting frequency may increase administrative costs and other meeting-related expenses or reflect managerial challenges that negatively impact profitability. Thus, while board meetings are important for oversight, an optimal meeting frequency is necessary to maintain the bank's efficiency and financial performance. Meanwhile, by Kumara &Walakumbura (2023)the finding that *board meeting frequency* has no effect on ROE is consistent with the research . This indicates that, although board meetings are an important governance mechanism, the number of meetings itself is not statistically a key determinant of increases in ROE associated with shareholders' equity, suggesting that the quality of discussions or decisions may be more influential than the quantity of meetings.

The presence of women on the board has a significant negative effect on ROA (coefficient = –0.070793; p-value = 0.0000) and on ROE (coefficient = –0.207202; p-value = 0.0017). This indicates that the inclusion of women on boards has not yet contributed positively to bank profitability, whether in terms of assets or equity. This negative effect often arises when women's representation remains low (not yet reaching *a critical mass* of ≥30%), making it insufficient to influence policy direction and create more effective board dynamics. This finding contradicts the results of a study by Abiad et al. (2025), which stated that *having women on the board* has a significant positive effect on ROA and ROE. The presence *of women on the board* contributes significantly to increasing ROA and ROE by promoting better risk management, creative problem-solving, and inclusive and responsible decision-making. These findings align with the research by Sbai et al. (2025), which reported a significant negative effect on ROA and ROE; this suggests that differences in social identity can hinder board operations because having more women on the board may lead to conflicts or a lack of coordination.

Bank size does not have a significant effect on ROA (coefficient = –0.002499; probability = 0.1616), but it has a significant negative effect on ROE (coefficient = –0.015591; probability = 0.0364). This means that bank size does not sufficiently influence a bank's ability to generate profits from its assets (ROA), but larger banks tend to have lower returns on equity (ROE). This may be due to the burden of a large organizational structure, high operating costs, and complex managerial risks, which reduce efficiency at the equity level. This finding contradicts the research by Abiad et al. (2025), which states that *bank size* has a positive and significant effect on ROA and ROE in the banking sector of *Gulf Cooperation Council* (GCC) countries. The larger *the bank size*, the higher the ROA and ROE achieved. Larger banks are better able to utilize their resources and capacity to improve profitability and return on equity; thus, *bank size* is a critical factor in determining the financial performance of banks in GCC countries. This finding is consistent with the study by Laporsek et al. (2025), which states that *bank size* has a significant negative effect on ROA and ROE. This study shows that larger banks tend to experience a decline in efficiency in the utilization of assets and capital, resulting in lower returns—possibly due to greater operational complexity and difficulties in adapting to regulatory changes and market conditions.

The moderating interaction between *bank size* and *board size* has a significant positive effect on ROA (coefficient = 0.000815; probability = 0.0022) and ROE (coefficient = 0.003766; probability = 0.0006). This means that *bank size* amplifies the effect of board size on financial performance. Although *board size* itself has a negative impact, larger banks are able to mitigate this negative effect because they have more mature governance systems, human resources, and organizational structures, thereby making board size more effective. These findings are consistent with the research by Abiad et al. (2025), which found that *bank size* acts as a positive and significant moderator variable in the relationship between *board size* and ROA and ROE. This suggests that in larger banks, an increase *in board size* has a beneficial effect on the bank's financial performance. Larger banks face greater complexity and therefore require a more comprehensive and diversified board to address emerging issues and optimize decision-making.

The moderating interaction between *bank size* and *board independence* has a significant positive effect on ROA (coefficient = 0.005603; p-value = 0.0000) and ROE (coefficient = 0.029766; p-value = 0.0000). Thus, *bank size* amplifies the effect *of board independence* on financial performance. Larger banks tend to have stronger oversight mechanisms, more adequate access to information, and more structured *governance* practices, enabling *board independence* to perform its oversight function more effectively and positively impact performance. These findings are consistent with the research by Ofori et al. (2025) and Abiad et al. (2025), which found that *bank size* acts as a positive moderator in the relationship between *board independence* and ROA and ROE. Larger banks require a higher degree of board independence because they face more complex

agency issues (conflicts of interest between management and owners). *Board independence* in large banks provides more effective objective oversight, thereby increasing ROA and ROE.

The moderating effect of *bank size* on the relationship between *board meeting frequency* and ROA (coefficient = 0.000167; probability = 0.0804) or ROE (coefficient = 0.000224; probability = 0.5726) is not significant. This implies that bank size does not moderate the effect of meeting frequency on financial performance. In both large and small banks, more frequent board meetings have not proven effective in improving financial performance and thus do not provide strategic benefits for increasing either ROA or ROE. This finding differs from the study by Ofori et al. (2025), which found that *bank size* moderates the relationship between *board meeting frequency* and ROA and ROE, with a significant negative effect. Frequent board meetings in larger banks may incur high administrative costs and lead to inefficiencies at the management level, thereby harming financial performance. Excessively high meeting frequency can serve as an indicator of managerial issues or the need to address complex operational problems, which indirectly have a negative impact on the bank's profitability.

The moderating effect of *bank size* on the impact of *women on the board* has a significant positive effect on ROA (coefficient = 0.005585; probability = 0.0000) and ROE (coefficient = 0.020211; probability = 0.0000). This indicates that *bank size* amplifies the effect of *women on the board* on financial performance. In large banks, stronger support structures, organizational culture, and resources enable women on the board to contribute more effectively to the decision-making process, thereby generating a positive impact on financial performance. This aligns with the findings of Abiad et al. (2025), who found that bank size amplifies the positive impact *of women on the board* on a bank's financial performance. In other words, in larger banks, the presence *of women on the board* has a greater and more significant impact on improving financial performance (ROA and ROE). This is because large banks operate in more competitive markets and have the capacity to accommodate and leverage *women on the board* in decision-making.

Table 8 presents the results of the panel regression t-test to examine the effect of each independent variable on the dependent variable.

Table 8: Regression Analysis Results

Variables	**Model 1 (ROA)**			**Model 2 (ROE)**		
Independent	**Coefficient**	**Probability**	**Conclusion**	**Coefficient**	**Probability**	**Conclusion**
Constant	0.071964	0.0047	-	0.377763	0.0004	-
BS	-0.011229	0.0016	Significantly negative	-0.050931	0.0005	Significantly negative
BI	-0.108170	0.0000	Significantly negative	-0.537331	0.0000	Significantly negative
BMF	-0.000271	0.0372	Significantly negative	-0.000469	0.3835	Not significant
WB	-0.070793	0.0000	Significantly negative	-0.207202	0.0017	Significantly negative
FS	-0.002499	0.1616	Not significant	-0.015591	0.0364	Significantly negative
M_BS_FS	0.000815	0.0022	Moderation strengthens	0.003766	0.0006	Moderation strengthens
M_BI_FS	0.005603	0.0000	Moderation strengthens	0.029766	0.0000	Moderation strengthens
M_BMF_FS	0.000167	0.0804	Not significant	0.000224	0.5726	Not significant
M_WB_FS	0.005585	0.0000	Moderation strengthens	0.020211	0.0000	Moderation strengthens

IV. CONCLUSION

Based on the research results*, board size, board independence, and the proportion of women on the board* have a significant negative effect on financial performance as measured by ROA and ROE. *Board meeting frequency* has a significant negative effect on ROA but no significant effect on ROE. *Bank size* has no significant effect on ROA but has a significant negative effect on ROE. *Bank size* moderates most of the effects of corporate governance on financial performance, except for meeting frequency, which is not significantly moderated.

V. IMPLICATIONS

The results of this study have important implications for managerial practices and investment decision-making. From a management perspective, banks need to improve the effectiveness of their governance to enhance financial performance. An overly large board of directors creates inefficiencies and slows down decision-making. Therefore, banks need to adjust the number of board members and clarify the division of authority so that strategic processes become faster and more efficient, which will ultimately drive increased profitability. To improve ROA and ROE, banks must strengthen the capabilities of independent directors through specialized training, better access to information, and measurable performance evaluations so that the oversight function truly adds value. To optimize their contribution to profitability, banks need to ensure that female directors are placed in core functions such as risk, finance, or corporate strategy, accompanied by competency development and mentoring programs. Overall, improvements in ROA and ROE can be achieved if

banks emphasize the quality, effectiveness, and capabilities of the board in the decision-making process, rather than merely meeting structural composition requirements in accordance with regulations.

Investors should choose banks with a lean and efficient board structure, as an overly large board tends to slow down decision-making and increase managerial costs. Investors can review the Annual Report to ensure that the number of directors is proportional to the scale of the business and that each position has a clear function. In addition, investors need to assess the quality of independent directors, not just their number. The focus of the assessment should be on their professional background, banking experience, and their roles on the audit and risk committees, as incompetent independent directors can lead to weak oversight and reduced profitability. Investors should also ensure that the presence of women on the board is not merely to meet diversity quotas, but that they are actually placed in strategic positions and possess relevant technical expertise in finance, risk, or auditing. By evaluating the board's structure substantively rather than merely formally, investors can select banks with more effective governance and higher potential ROA and ROE.

VI. LIMITATIONS AND RECOMMENDATIONS

This study has limitations because it measured only seven variables: *board size, board independence, board meetings, women on the board*, *bank size*, ROA, and ROE. Therefore, future research is advised to include other corporate governance variables that may influence financial performance, such as audit committee independence. Based on the study by Twairesh& Sa (2025), audit committee independence has a significant positive effect on financial performance as measured by ROA and ROE.

Another limitation of this study relates to the time period analyzed, which spans only 6 years (2019–2024). Therefore, future research is recommended to include the period from before 2019 through 2024.

A final limitation of this study is that the companies included were limited to the banking industry in Indonesia. Therefore, future research is recommended to examine non-banking industrial sectors, such as manufacturing, mining, and other business sectors in Indonesia.

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