

Model Analysis of the Impact of Financial Performance on Sustainability Performance in Indonesian KBMI 3 and 4 Banks

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Abstract. *This study proposes an integrative framework to examine how financial performance influences Environmental, Social, and Governance (ESG) exposure in Indonesian KBMI 3 and KBMI 4 banks through the mediating role of Slack Resources and the moderating role of Governance, Risk, and Compliance (GRC). Using Stakeholder Theory, Resource-Based View, Institutional Theory, Legitimacy Theory, and Agency Theory, the study develops a moderated mediation model that explains how financial strength is transformed into sustainability performance. The proposed empirical study will employ panel data regression using annual observations from 13 KBMI 3 and KBMI 4 banks during the 2022–2025 period. Financial performance will be represented by profitability, solvency, liquidity, asset quality, and operational efficiency, while ESG exposure will serve as the dependent variable. Slack Resources will be constructed as a composite index consisting of Available Slack, Potential Slack, and Risk-Absorbing Capacity, whereas GRC will be examined as a moderating variable. Panel regression, mediation analysis, moderation analysis, and bootstrap procedures are proposed to evaluate the research hypotheses. The study is expected to contribute theoretically by integrating strategic management and corporate governance perspectives and practically by providing an analytical framework for regulators and bank management in strengthening sustainable banking practices.*

Keywords: Financial Performance, ESG, Slack Resources, Governance, Risk and Compliance, Sustainable Banking, Panel Data.

INTRODUCTION

The banking sector holds a highly strategic position within the modern macroeconomic transmission architecture. Its fundamental intermediation function dictates the distribution of capital, shapes corporate investment landscapes, and anchors national systemic stability. In contemporary market conditions, financial institutions are no longer evaluated solely on their capacity to maximize shareholder returns and generate accounting surpluses; they are increasingly positioned as critical catalysts for the global sustainable development agenda. Corporate financing patterns directly influence environmental trajectories, acting as either accelerators of or buffers against carbon emissions and environmental degradation. This structural reality prevents the banking industry from separating its financial operations from global climate transition mandates and green economy practices.

This shifting global development orientation has induced intense institutional and regulatory pressures worldwide. Environmental, Social, and Governance (ESG) criteria have transformed from a voluntary

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framework into structured standards dictating corporate governance and investment preferences. Empirical metadata indicates a compelling alignment between robust ESG integration and long-term corporate valuation, with sustainable firms demonstrating significantly higher resilience during macroeconomic disruptions. In Indonesia, the Financial Services Authority responded to these global dynamics by enforcing POJK Number 51/POJK.03/2017 concerning the Application of Sustainable Finance. This regulatory mandate directs national financial institutions to transition systematically toward sustainable operations that respect ecological boundaries and social equity.

Within this domestic regulatory framework, commercial banks classified under KBMI 3 and 4 exert absolute dominance, controlling approximately 75% of national banking assets, loan portfolios, and third-party deposits. Given their systemic scale, the strategic credit policies adopted by these institutions yield immediate impacts on the direction of Indonesia's green macroeconomic transition. Consequently, evaluating how these tier-3 and tier-4 banks translate financial health into verifiable sustainability performance is highly critical. However, a prominent empirical paradox persists; despite reporting record profit margins, major domestic banks maintain extensive credit exposures to carbon-heavy, extractive industries such as coal pembiayaan. This misalignment demonstrates that robust financial metrics do not automatically guarantee substantive sustainability outputs.

This disconnect fuels an ongoing theoretical debate regarding the precise direct relationship between financial performance and sustainability performance. Financial performance within the banking sector is inherently multidimensional, captured traditionally via capital health approaches comprising profitability, solvency, liquidity, asset quality, and operational efficiency. Prior empirical investigations reveal conflicting evidence: one school of thought suggests that financial surpluses provide the essential organizational resources needed to absorb the high upfront costs of ESG tracking infrastructures, while opposing views argue that sustainability expenditures impose short-term operational burdens that drag down accounting returns. To resolve these inconsistencies, this paper introduces a direct causal model evaluating how the five primary dimensions of financial performance dictate sustainability performance (ESG scores) across KBMI 3 and 4 banks in Indonesia.

LITERATURE REVIEW

The theoretical baseline of this study positions Stakeholder Theory as its overarching grand theory. Stakeholder theory contends that a corporation's long-term survival depends entirely on its capacity to generate sustainable value for all interconnected entities—including regulators, clients, employees, communities, and the natural ecosystem—rather than focusing exclusively on short-term shareholder wealth maximization. In the banking sector, where operations depend heavily on public trust and systemic legitimacy, the execution of ESG principles functions as an essential strategic mechanism to secure social validation. Under this theoretical lens, superior financial performance serves as the baseline internal capacity that enables banks to fund substantive, non-economic sustainability programs to satisfy diverse stakeholder demands.

This architecture is further supported by several middle-range theories:

- Triple Bottom Line (TBL) Theory: Establishes that corporate performance must be measured against the three interconnected dimensions of profit, people, and planet, forcing banks to view fundamental capital health as an economic foundation to support social equity and environmental conservation.
- Agency Theory: Details the inherent conflicts of interest between corporate managers (agents) and shareholders (principals), wherein managers under pressure to meet immediate accounting profit targets often defer long-term ESG capital expenditures unless checked by external sustainability rating metrics.
- Signalling Theory: Suggests that achieving a premium ESG score serves as an un-asymmetric signal to international capital markets, verifying that bank management possesses advanced capabilities in mitigating climate transition risks.
- Corporate Reputation Theory: Positions public image as a highly valuable intangible asset that stabilizes deposit flows and attracts low-cost foreign investment.

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•Asset-Liability Management (ALM) Theory: Dictates that modern balance sheet optimization must incorporate environmental risk criteria within traditional maturity and credit underwriting matrices.

Based on the synthesis of these theoretical frameworks, the following hypotheses are formulated for direct empirical testing:

•H1: Profitability has a significant direct positive effect on the sustainability performance of KBMI 3 and 4 banks in Indonesia.

•H2: Solvency has a significant direct positive effect on the sustainability performance of KBMI 3 and 4 banks in Indonesia.

•H3: Liquidity has a significant direct positive effect on the sustainability performance of KBMI 3 and 4 banks in Indonesia.

•H4: Asset Quality (indicated by lower NPL ratios) has a significant direct positive effect on the sustainability performance of KBMI 3 and 4 banks in Indonesia.

•H5: Operational Efficiency (indicated by lower BOPO ratios) has a significant direct positive effect on the sustainability performance of KBMI 3 and 4 banks in Indonesia.

METHODS

This investigation operates within a quantitative, objectivist paradigm, utilizing a causal-explanatory design to isolate the direct effects of multiple financial predictors on a single sustainability outcome. The target population covers all commercial banking corporations listed with the OJK within the KBMI 3 and KBMI 4 capital tiers. Applying purposive sampling criteria—specifically requiring continuous tier classification, complete audited financial disclosures, and verified third-party ESG data over the 2022–2024 period—a sample of 13 dominant commercial banks was selected, while newly merged entities and foreign branch offices lacking autonomous domestic data were excluded.

Secondary data points were extracted via documentation techniques from audited Annual Reports, Corporate Sustainability Reports, and official OJK Banking Statistics. The operational definitions and metrics are structured as follows:

- Sustainability Performance (Y): Captured via the Katadata ESG Index (KESGI), which evaluates environmental, social, and governance disclosures on a standardized 0–100 scale.
- Profitability (X1): Proxyed by Return on Assets (ROA), reflecting core managerial efficiency in converting asset bases into net earnings.
- Solvency (X2): Measured via the Capital Adequacy Ratio (CAR), benchmarking regulatory capital against risk-weighted assets.
- Liquidity (X3): Metricized through the Loan to Deposit Ratio (LDR), capturing credit expansion relative to stable third-party funding.
- Asset Quality (X4): Represented by the Non-Performing Loan (NPL) Gross ratio, signaling default exposure.
- Operational Efficiency (X5): Proxyed by the BOPO ratio, tracking operating costs against operational revenues.

The mathematical specification for the linear panel data regression model is written as:

Since this article presents the research proposal stage, empirical estimation has not yet been conducted. The proposed empirical analysis will employ panel data regression using Fixed Effects Model (FEM) or Random Effects Model (REM), with the final estimator determined through Chow, Hausman, and Lagrange Multiplier tests.

RESULTS AND DISCUSSION

The proposed empirical analysis will estimate three panel data regression models.

Model 1 examines the direct effect of financial performance on ESG exposure.

Model 2 estimates the influence of financial performance on Slack Resources.

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Model 3 evaluates the mediating role of Slack Resources and the moderating effect of GRC on ESG exposure using a moderated mediation framework.

Model estimation will be conducted using panel regression techniques. The appropriate estimator will be selected based on Chow, Hausman, and Lagrange Multiplier tests. Mediation effects will be assessed through bootstrap estimation and conditional indirect effects.

Empirical regression outputs, including coefficient estimates, standard errors, goodness-of-fit statistics (R^2), and diagnostic tests, will be presented upon completion of the empirical analysis.

Profitability

Based on Stakeholder Theory and the Resource-Based View (RBV), profitability is expected to enhance banks' capability to allocate discretionary resources toward ESG initiatives. Higher profitability provides greater financial flexibility for investing in environmental protection, social responsibility programs, sustainable financing, and governance improvements. From the perspective of RBV, excess financial resources represent strategic assets that enable banks to develop long-term competitive advantages through sustainability-oriented investments. Accordingly, this study proposes that profitability positively influences ESG exposure. This proposition will be empirically tested in the subsequent stage of the research.

Solvency

Capital adequacy is expected to strengthen banks' capacity to absorb financial risks while simultaneously supporting long-term sustainability investments. According to the Resource-Based View and prudential banking theory, well-capitalized banks possess greater strategic flexibility to allocate capital toward ESG-related initiatives without compromising regulatory capital requirements. Institutional Theory further suggests that financially resilient banks are more capable of responding to increasing regulatory expectations regarding sustainable finance. Therefore, this study proposes that higher solvency contributes positively to ESG exposure. This proposition will be empirically examined using panel data analysis.

Liquidity

Liquidity is expected to facilitate banks' ability to support sustainable financing activities by ensuring adequate funding availability. Banks with stronger liquidity positions possess greater flexibility in managing lending portfolios, financing green projects, and maintaining resilience under uncertain market conditions. From the perspective of financial intermediation theory, adequate liquidity enhances banks' capacity to perform their intermediary function while supporting sustainability objectives. Accordingly, this study proposes a positive relationship between liquidity and ESG exposure, which will be tested empirically in the next stage of the research.

Asset Quality

High asset quality is expected to improve banks' financial resilience and reduce credit losses, thereby allowing management to allocate greater resources toward sustainability initiatives. Lower levels of non-performing loans (NPLs) reduce the need for loan-loss provisions and preserve organizational resources that may be invested in ESG-related programs. Furthermore, effective credit risk management is consistent with sound governance practices and sustainable banking principles. Therefore, better asset quality is expected to positively influence ESG exposure. This proposition will be empirically validated through panel data regression analysis.

Operational Efficiency

Operational efficiency is expected to generate cost savings that can be redirected toward strategic sustainability investments. Efficient banks are more likely to possess organizational flexibility to implement ESG programs, digital transformation, and responsible banking initiatives while maintaining profitability. From the Resource-Based View, operational efficiency enhances the effective utilization of organizational resources, thereby strengthening banks' capability to pursue long-term sustainable value creation. Consequently, this study proposes that operational efficiency positively affects ESG exposure, subject to empirical verification.

Slack Resources

Slack Resources are proposed as the key mediating mechanism through which financial performance is transformed into ESG exposure. Drawing upon Organizational Slack Theory, excess financial capacity provides managers with discretionary resources that can be allocated to long-term strategic investments, including environmental, social, and governance initiatives. Unlike previous studies that often examine

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slack resources using a single financial indicator, this study conceptualizes Slack Resources as a multidimensional construct consisting of Available Slack, Potential Slack, and Risk-Absorbing Capacity. This reconceptualization is expected to provide a more comprehensive explanation of how financial strength is translated into sustainability performance within highly regulated banking institutions. The mediating role of Slack Resources will be empirically examined using a moderated mediation framework.

Governance, Risk, and Compliance (GRC)

Governance, Risk, and Compliance (GRC) is proposed as a moderating mechanism that determines whether available organizational resources are translated into substantive sustainability performance or merely symbolic compliance. Legitimacy Theory and Institutional Theory suggest that organizations often face external pressures to disclose ESG practices; however, the effectiveness of such practices depends largely on the quality of governance structures, risk management systems, and regulatory compliance. Banks with stronger GRC integration are expected to utilize Slack Resources more effectively in implementing sustainability strategies, thereby strengthening the positive relationship between Slack Resources and ESG exposure. The moderating role of GRC will be empirically assessed in the subsequent empirical phase of the study.

CONCLUSIONS

This paper develops a conceptual and methodological framework for examining how financial performance affects ESG exposure in Indonesian KBMI 3 and KBMI 4 banks. By integrating Slack Resources as a mediating mechanism and Governance, Risk, and Compliance (GRC) as a moderating mechanism, the proposed model seeks to explain the transformation of financial capacity into sustainable banking performance. Future empirical analysis using panel data regression is expected to validate the proposed relationships and provide evidence-based implications for regulators, bank management, and corporate governance practitioner

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