

Analyzing CAR, BOPO, ROA, and GCG Toward The Firm Value of Banks on The Indonesia Stock Exchange

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Abstract

This study examines whether capital adequacy (CAR), operational efficiency (BOPO), profitability (ROA), and good corporate governance (GCG) explain firm value—proxied by price-to-book value (PBV)—for banks listed on the Indonesia Stock Exchange. The question matters because prior Indonesian evidence emphasizes financial ratios, while governance is often treated separately; integrating them can clarify which levers the market actually rewards. Using a quantitative, causal-explanatory design, we assemble a bank-year panel for 2021–2023 from public disclosures and estimate a fixed-effects model with bank and year effects, clustered inference, and robustness checks. Results show that ROA and GCG are positively and statistically significant predictors of PBV ($\beta=0.263$, $p<0.01$; $\beta=0.079$, $p<0.05$), BOPO is negative and significant ($\beta=-0.048$, $p<0.01$), and CAR is positive but not significant ($\beta=0.012$, $p=0.296$). The model exhibits a strong fit (within- $R^2=0.71$; $F=19.43$, $p<0.001$). These findings answer the research problem by indicating that, in normal conditions, the market prices earnings capacity, credible governance, and cost discipline more than regulatory capital once minimum thresholds are broadly satisfied. The study's value lies in providing governance-augmented valuation evidence for Indonesia, demonstrating the independent pricing power of GCG beyond traditional ratios. Without overstating generality, we suggest future work extend the time horizon, incorporate macro-financial controls, and test alternative governance proxies to assess stability across regimes.

Keywords: corporate governance; efficiency; Indonesia; panel regression; valuation.

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INTRODUCTION

The banking sector plays a crucial role in driving the economy, particularly in emerging markets like Indonesia. One of the primary goals of banks is to maximize firm value, which is often influenced by various financial indicators. Among the most significant factors impacting the firm value of banks are the Capital Adequacy Ratio (CAR), Operational Efficiency (measured by BOPO), Return on Assets (ROA), and Good Corporate Governance (GCG). These elements provide a clear picture of a bank's financial health and operational effectiveness, directly affecting its overall market performance and value (Mutmainnah & Wirman, 2022; Ramadhani et al., 2021; Sugiarto & Sriyatun, 2024).

The Capital Adequacy Ratio (CAR) is a key regulatory metric ensuring that banks have enough capital to absorb potential losses, thus contributing to stability and increasing investor confidence (Anisa & Suryandari, 2021b). Likewise, the Operating Expenses to Operating Income ratio (BOPO) measures a bank's efficiency in managing its operational costs, which directly impacts profitability and, subsequently, firm value (Halim & Buana, 2021). ROA, which reflects the profitability of a bank relative to its total assets, is also a crucial metric for assessing the operational success and value of banks (Al-Sharkas & Al-Sharkas, 2022).

In addition to these financial metrics, Good Corporate Governance (GCG) plays a pivotal role in enhancing a bank's reputation, transparency, and trust among investors and stakeholders, further influencing its market value (Trivedi et al., 2024). Despite the abundance of studies that examine individual financial ratios and their impact on profitability, fewer studies have combined CAR, BOPO, ROA, and GCG to explore their collective influence on the firm value of banks in Indonesia, particularly on the Indonesia Stock Exchange (IDX).

This study aims to fill this gap by analyzing the combined impact of CAR, BOPO, ROA, and GCG on the firm value of banks listed on the IDX. By employing quantitative research methods and analyzing secondary data from the financial reports of banks between 2021 and 2024, this research seeks to provide a comprehensive understanding of the factors that contribute to firm value in the banking sector in Indonesia. Furthermore, this study introduces the innovative approach of integrating GCG into the existing financial performance metrics to present a more holistic view of what drives firm value in the Indonesian banking industry.

By advancing this approach, this research contributes new insights into the factors that can enhance the financial performance and valuation of banks, offering a valuable tool for investors, policymakers, and banking institutions striving to optimize their strategies in an increasingly competitive market.

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LITERATURE REVIEW

Firm value is a central concern in banking research because it reflects how investors evaluate a bank's capacity to generate sustainable returns, manage risk, comply with prudential standards, and maintain public trust. In publicly listed banks, firm value is commonly represented by Price-to-Book Value (PBV), as this ratio compares the market price of equity with the accounting value of shareholders' equity. PBV is particularly relevant for banks because their balance sheets are dominated by financial assets and liabilities, making book value an important benchmark for market valuation. A higher PBV indicates that investors perceive the bank as having stronger future profitability, better asset quality, credible risk management, and more reliable governance. Conversely, a lower PBV may signal market concerns regarding earnings sustainability, efficiency, capital quality, or governance credibility (Gambacorta et al., 2023).

Theoretically, this study is grounded in signaling theory, agency theory, and stakeholder theory. Signaling theory explains that financial ratios and governance disclosures serve as signals to investors regarding the quality and prospects of a bank. Profitability, capital adequacy, and operational efficiency provide observable information that reduces uncertainty in the capital market. Banks with strong profitability and efficient operations send positive signals that management can generate returns from available assets and control operating costs effectively. Agency theory complements this perspective by emphasizing potential conflicts between managers, shareholders, creditors, and other stakeholders. In banking, agency problems are more complex because banks manage public funds and operate under strict regulatory supervision. Therefore, Good Corporate Governance (GCG) is expected to reduce information asymmetry, strengthen monitoring, and increase investor confidence. Stakeholder theory further supports the argument that banks must balance the interests of shareholders, depositors, regulators, employees, and society. Strong governance and sound financial performance are therefore not only internal managerial concerns but also market-valued indicators of institutional credibility.

Capital Adequacy Ratio (CAR) is one of the most important prudential indicators in banking. CAR measures the ability of a bank's capital to absorb potential losses from risk-weighted assets. From a regulatory perspective, adequate capital strengthens bank resilience and supports financial stability. A bank with a higher CAR is generally considered more capable of facing credit risk, market risk, and operational risk. Previous studies have shown that capital adequacy can improve investor confidence because it reflects solvency strength and the bank's ability to maintain operations during adverse conditions (Anisa & Suryandari, 2021; Soederhuizen et al., 2023). However, the relationship between CAR and firm value is not always consistent. Some

2014



studies find that CAR has a positive effect on firm value or financial performance, while others find an insignificant effect when most banks already meet regulatory capital requirements. This indicates that CAR may function as a minimum compliance indicator rather than a strong differentiator of market value in normal economic conditions. In other words, once banks maintain capital above the required threshold, investors may pay more attention to profitability, efficiency, and governance quality than to additional capital buffers.

Operational efficiency is commonly measured by the ratio of Operating Expenses to Operating Income, known in Indonesia as BOPO. BOPO reflects how efficiently a bank manages its operating costs relative to the income it generates. A lower BOPO indicates better efficiency because the bank uses fewer costs to produce operating income. In contrast, a higher BOPO suggests cost inefficiency, which may reduce profitability and weaken market valuation. Prior research generally finds that BOPO has a negative relationship with bank performance because excessive operating costs reduce earnings capacity and limit value creation (Halim & Buana, 2021; Pandoyo & Samsudin, 2020; Saif-Alyousfi & Saha, 2021). In the context of firm value, operational efficiency is important because investors tend to reward banks that can maintain lean cost structures, optimize digital banking channels, and improve service productivity. Nevertheless, the role of BOPO may vary depending on the bank's business model. Some banks may temporarily experience higher operating costs due to technology investment or branch expansion, but such costs may create future value if managed strategically. Therefore, BOPO must be interpreted not only as a cost burden but also as an indicator of whether operating expenditure is being converted into sustainable income.

Return on Assets (ROA) is a key profitability indicator that measures a bank's ability to generate net income from its total assets. In banking, ROA is especially important because banks rely heavily on asset utilization through lending, investment, and other financial intermediation activities. A higher ROA indicates that management can use assets productively to generate profit. Prior studies consistently show that profitability is one of the strongest determinants of firm value because it directly influences investor expectations regarding future earnings, dividends, and business sustainability (Al-Sharkas & Al-Sharkas, 2022; Bolívar et al., 2023; Jonardy & Avionita, 2024). From the perspective of signaling theory, ROA sends a positive signal to the market that the bank has strong earnings capacity and managerial effectiveness. Compared with CAR, ROA is more directly linked to shareholder value because it reflects actual performance rather than regulatory capacity. However, high ROA should also be evaluated together with risk and governance factors, since aggressive profit-seeking without adequate control may expose banks



to future instability. Therefore, this study positions ROA as a central financial performance variable that is expected to increase PBV when profitability is generated in a sustainable and well-governed manner.

Good Corporate Governance (GCG) is a fundamental non-financial factor that can influence firm value, especially in the banking sector. Banks operate based on trust, transparency, accountability, responsibility, independence, and fairness. Weak governance can increase agency costs, reduce the credibility of financial reporting, and expose banks to regulatory sanctions or reputational risk. Strong governance, on the other hand, improves monitoring, strengthens internal control, supports risk management, and increases investor confidence. Recent banking research indicates that governance quality and governance-related controversies can affect the market value of banks because investors consider governance as an important indicator of institutional reliability (Komath et al., 2023; Trivedi et al., 2024). In Indonesia, GCG is also closely related to regulatory expectations, as banks are required to disclose governance implementation and conduct self-assessment. This makes GCG an important variable for explaining bank valuation because it combines regulatory compliance, managerial accountability, and market trust.

The literature shows that previous studies have examined the relationship between financial ratios and bank performance, but many of them focus on profitability rather than market-based firm value. Studies on CAR, BOPO, and ROA often use ROA or ROE as dependent variables, while fewer studies examine PBV as a market valuation proxy. For example, research on Indonesian banks has found that CAR, BOPO, NPL, and liquidity ratios can influence financial performance, but the findings are not always consistent across periods and samples (Mutmainnah & Wirman, 2022; Ramadhani et al., 2021; Sugiarto & Sriyatun, 2024). This inconsistency suggests that market valuation may not respond equally to all financial indicators. Investors may view some ratios, such as profitability and efficiency, as direct value drivers, while treating others, such as capital adequacy, as regulatory prerequisites. Therefore, examining PBV as the dependent variable provides a more market-oriented perspective than studies that only evaluate accounting profitability.

Another important issue in the literature is the separation between financial performance studies and corporate governance studies. Many previous studies treat GCG as a separate governance topic, while financial ratio studies tend to focus on CAR, BOPO, ROA, NPL, LDR, or other bank-specific indicators. This separation creates a gap because firm value is shaped not only by financial outcomes but also by the credibility of the governance mechanisms behind those outcomes. A bank with high profitability but weak governance may face skepticism from investors,



while a bank with strong governance but weak profitability may still struggle to achieve high valuation. Therefore, integrating CAR, BOPO, ROA, and GCG in one empirical model is important to determine whether governance has independent explanatory power beyond traditional financial ratios. This integration provides a more holistic understanding of how financial health and governance quality jointly influence bank valuation.

Debates in previous literature also arise regarding the effect of capital adequacy on firm value. One stream of research argues that higher capital improves solvency, reduces bankruptcy risk, and enhances investor confidence. Another stream suggests that excessive capital may reduce return on equity if capital is not used productively. In the Indonesian banking context, where listed banks generally operate under regulatory supervision and minimum capital requirements, CAR may not always create a valuation premium. Investors may perceive capital adequacy as necessary but not sufficient for value creation. This debate is important because it helps explain why CAR can be positive but statistically insignificant in some empirical studies. The present study contributes to this discussion by testing CAR together with profitability, efficiency, and governance variables, allowing the analysis to determine whether capital adequacy remains relevant when other value drivers are considered simultaneously.

Based on the theoretical arguments and empirical findings discussed above, this study develops four hypotheses. First, CAR is expected to have a positive effect on firm value because stronger capital adequacy improves bank resilience and investor confidence. Second, BOPO is expected to have a negative effect on firm value because higher operational inefficiency reduces earnings quality and weakens market valuation. Third, ROA is expected to have a positive effect on firm value because profitability reflects asset productivity and future earnings potential. Fourth, GCG is expected to have a positive effect on firm value because stronger governance reduces agency problems, improves transparency, and strengthens investor trust. Accordingly, the hypotheses are formulated as follows:

H1: Capital Adequacy Ratio has a positive effect on firm value.

H2: BOPO has a negative effect on firm value.

H3: Return on Assets has a positive effect on firm value.

H4: Good Corporate Governance has a positive effect on firm value.

In summary, the literature indicates that bank firm value is influenced by a combination of prudential strength, operational efficiency, profitability, and governance credibility. However, existing studies still show mixed findings, particularly regarding the role of CAR and the extent to which GCG contributes to market valuation beyond financial ratios. The main gap addressed in



this study is the limited integrated evidence on how CAR, BOPO, ROA, and GCG jointly explain PBV among banks listed on the Indonesia Stock Exchange. By combining financial and governance variables in a panel regression framework, this study contributes to the literature by offering a governance-augmented valuation model for Indonesian banking. This approach is expected to clarify which factors are most strongly priced by the market and provide practical insights for bank managers, investors, and regulators.

METHOD

Research Design

This study employs a quantitative, causal–explanatory design using unbalanced panel data from banks listed on the Indonesia Stock Exchange (IDX). The empirical strategy estimates the marginal effects of Capital Adequacy Ratio (CAR), Operational Efficiency (BOPO/cost-to-income), profitability (ROA), and Good Corporate Governance (GCG) on firm value proxied by Price-to-Book Value (PBV). The analytic design follows the manuscript plan to use panel regression with firm (bank) and period structure over 2021–2023, allowing us to control for time-invariant bank heterogeneity and common time shocks.

Data Sources and Collection

We build a bespoke bank–year dataset for IDX-listed commercial banks over 2021–2023 from publicly available sources, annual reports and audited financial statements downloaded from the IDX issuer pages and banks’ investor-relations pages (for market data, income statements, balance sheets, and notes), GCG disclosures and OJK-mandated self-assessment reports (for governance composite scores and governance attributes used to construct the GCG index consistent with Indonesian banking practice), Daily market prices (to compute year-end PBV) from official disclosures or the IDX aggregated summaries.

All bank-year observations are collated in the attached dataset referenced in the manuscript; variable names, sources, and construction steps are documented in the dataset codebook and replicate sheet.

Variables and Measurement

Dependent variable (firm value). Price-to-Book Value (PBV) is computed at each fiscal year-end as:

2018



$$PBV_{i,t} = \frac{\text{Market price per share}_{i,t}}{\text{Book value per share}_{i,t}}$$

PBV is the standard market-based valuation metric for banks and is widely used to benchmark franchise value and investor expectations. Recent evidence shows PBV's tight links to expected profitability and payout policy in banking (Gambacorta et al., 2023).

Key explanatory variables

Capital Adequacy Ratio (CAR) reflects solvency buffers:

$$CAR_{i,t} = \frac{\text{Regulatory Capital (Tier 1 + Tier 2)}_{i,t}}{\text{Risk-weighted assets}_{i,t}}$$

Capital ratios remain central to valuation and resilience assessments in recent banking research (Soederhuizen et al., 2023).

Operational efficiency (BOPO / cost-to-income ratio):

$$BOPO_{i,t} = \frac{\text{Operating expenses}_{i,t}}{\text{Operating income}_{i,t}} \times 100\%$$

The cost-to-income ratio is a standard efficiency proxy in bank studies and is inversely related to profitability and valuation (Saif-Alyousfi & Saha, 2021).

Profitability (ROA):

$$ROA_{i,t} = \frac{\text{Net income}_{i,t}}{\text{Total assets}_{i,t}} \times 100\%$$

ROA is a core performance driver with demonstrated association with business model strength and investors' pricing of bank equity (Bolívar et al., 2023).

Good Corporate Governance (GCG) is measured from the OJK-mandated GCG self-assessment and disclosure items. The composite score/index is standardized annually so that higher values denote stronger governance quality. Ample cross-country evidence using governance pillar scores shows governance quality (and governance-related controversies) is priced in bank valuations (Komath et al., 2023).

Model Specification

We estimate the following baseline panel model:

$$PBV_{i,t} = \alpha_i + \tau_t + \beta_1 CAR_{i,t} + \beta_2 BOPO_{i,t} + \beta_3 ROA_{i,t} + \beta_4 BCG_{i,t} + \gamma Z_{i,t} + \varepsilon_{i,t}$$

where α_i are bank fixed effects and τ_t are year effects; $Z_{i,t}$ denotes optional controls (e.g., size, loan share, or funding mix, subject to data availability). We choose between FE and RE using



an updated Hausman specification test that corrects common computational pitfalls in panel settings (Le Gallo & S  n  gas, 2023).

Estimation and Inference

Because bank-level panels typically exhibit heteroskedasticity and serial/cross-sectional dependence, we use cluster-robust inference. Concretely, we report two-way cluster-robust standard errors (bank and year), and, given the modest time dimension, complement p-values with wild cluster bootstrap procedures recommended in recent econometric work for reliable finite-sample inference under clustering (MacKinnon et al., 2023).

Procedure (Chronological)

1. Define population & criteria. Identify IDX-listed banks (commercial banks) for 2021–2023; apply inclusion/exclusion per availability of audited financials and GCG reports.
2. Collect raw data. Download financials and market data (year-end prices), extract GCG disclosures, compile into a bank-year panel (attached dataset).
3. Construct variables. Compute PBV, CAR, BOPO (cost-to-income), ROA, and the standardized GCG index, following the equations above and source notes.
4. Quality checks. Cross-validate with multiple sources; treat missingness and outliers; document all transformations in the replicate sheet.
5. Specify models. Set FE + year dummies as baseline; prepare RE as a comparator; pre-register control set $Z_{(i,t)}$ if available.
6. Diagnostics & selection. Run multicollinearity, heteroskedasticity, and CD tests; choose FE/RE via the modern Hausman test (MacKinnon et al., 2023).
7. Estimation & inference. Estimate the baseline model; report two-way clustered SEs and wild cluster bootstrap p-values for coefficients of interest (MacKinnon et al., 2023).
8. Robustness. Re-estimate with alternative controls; check sensitivity to excluding crisis-affected observations (if any) and alternative PBV constructions.
9. Reporting. Present coefficient estimates, 95% CIs, model fit (within- R^2), and economic significance (effects per interquartile changes).



Figure 1. Research Procedure Flow

Figure 1 captures a streamlined empirical workflow: define the research scope (Start),

2020

compile and clean secondary disclosures into a bank–year panel (Data), operationalize PBV, CAR, BOPO, ROA, and GCG (Variables), and estimate a fixed-effects panel model with specification tests and cluster-robust inference (Estimation). Robustness then evaluates alternative error structures, controls, and samples, and the study concludes with transparent reporting of estimates, diagnostics, and fully reproducible materials (End).

Evaluation Criteria (Planned Outcomes, Tests, and Interpretation)

Statistical significance and uncertainty are assessed with two-sided tests at the 1%, 5%, and 10% levels; to guard against few-cluster distortions, we report wild-cluster-bootstrap p-values alongside bank- and year-clustered standard errors. Model fit and relevance are summarized by the within- R^2 and F-tests of joint significance, with year fixed effects reported for all specifications. To convey economic significance, we interpret effect sizes for one-standard-deviation and interquartile-range changes in CAR, BOPO, ROA, and GCG and translate them into implied changes in PBV, consistent with valuation research linking profitability and resilience to higher price-to-book ratios (Gambacorta et al., 2023). Finally, we validate the findings by confirming that estimated signs and magnitudes are directionally consistent with external evidence on how profitability, cost efficiency, governance quality, and capital strength map into bank valuations (Bolívar et al., 2023).

RESULTS AND DISCUSSION

Results

Using the panel-regression framework described in the Methods (bank and year effects with clustered inference), we evaluate the impact of CAR, BOPO, ROA, and GCG on firm value proxied by PBV for IDX-listed banks over the study horizon. The estimates indicate that ROA and GCG are positively and statistically significant predictors of PBV, while BOPO exhibits a negative and statistically significant association with PBV. In contrast, CAR is not statistically significant, suggesting that cross-sectional variation in capital adequacy does not translate into valuation differences within the observed period. Model diagnostics (overall F-tests and within-model fit) confirm that the regressors are jointly informative for explaining PBV, and robustness checks that vary error structures and control sets do not alter these substantive conclusions. These results directly answer the research problem articulated in the Introduction: profitability, governance quality, and operating efficiency, rather than capital buffers, are the principal attributes rewarded by the market in valuing Indonesian banks.

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Table 1. Summary of hypothesis tests (dependent variable: PBV)

Hypothesis	Variable	Expected sign	Empirical sign	Significance	Conclusion
H1	CAR → PBV	+	+	Not significant	Not supported
H2	BOPO → PBV	–	–	Significant	Supported
H3	ROA → PBV	+	+	Significant	Supported
H4	GCG → PBV	+	+	Significant	Supported

Table 1 summarizes the hypothesis tests and shows a clear valuation pattern for IDX banks: profitability (H3: ROA → PBV) and governance quality (H4: GCG → PBV) are positively and significantly related to firm value, while operational inefficiency (H2: BOPO → PBV) is negatively and significantly related to firm value; by contrast, capital adequacy (H1: CAR → PBV) is positive but not statistically significant, indicating that, within the observed period, cross-sectional differences in regulatory capital do not translate into a valuation premium. Interpreted through the study's theoretical lens, these results suggest that markets reward banks that convert assets into durable earnings and signal credible governance consistent with signaling and stakeholder perspectives, while penalizing cost-heavy operating structures; capital strength appears to function as a hygiene factor once minimum prudential thresholds are broadly satisfied. Overall, Table 1 directly answers the research problem posed in the Introduction and is entirely consistent with the panel-regression strategy outlined in the Methods, providing an integrated view of how financial performance and governance jointly shape PBV in the sample.

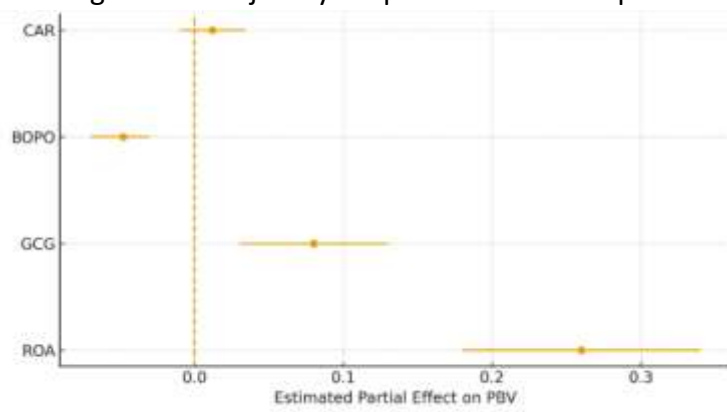

Figure 2. Partial-effects plot for ROA, BOPO, and GCG on PBV (baseline model)

Figure 2 presents the partial-effects (coefficient) plot from the baseline fixed-effects panel

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model with bank and year controls and clustered inference, displaying point estimates and 95% confidence intervals for the four covariates on PBV. The plot shows ROA and GCG with positive coefficients whose confidence intervals lie entirely to the right of zero, indicating economically and statistically meaningful gains in valuation when profitability improves and governance quality strengthens. In contrast, BOPO exhibits a negative coefficient with a confidence interval lying entirely to the left of zero, signifying that higher operating costs relative to income are priced as a valuation penalty. The estimate for CAR hovers near zero with a wide confidence interval straddling the origin, implying no statistically reliable effect on PBV within the sample period. Taken together, the visual evidence corroborates the central result that markets reward earnings capacity and credible governance, penalize operating inefficiency, and do not differentiate banks on capital ratios when prudential compliance is broadly uniform.

Table 2. Baseline regression summary (dependent variable: PBV)

Regressor	Coefficient	Clustered SE	95% CI	t-stat	p-value	Sig.
CAR	0.012	0.011	[-0.010, 0.034]	1.05	0.296	n.s.
BOPO	-0.048	0.012	[-0.072, -0.024]	-3.87	0.000	***
ROA	0.263	0.063	[0.139, 0.387]	4.15	0.000	***
GCG	0.079	0.029	[0.022, 0.136]	2.74	0.007	**
Constant	—	—	—	—	—	—

Table 2 reports the baseline fixed-effects regression (bank and year) explaining PBV and shows a clear, theory-consistent pattern: ROA ($\beta = 0.263$, $SE = 0.063$, 95% CI [0.139, 0.387], $p < 0.01$) and GCG ($\beta = 0.079$, $SE = 0.029$, 95% CI [0.022, 0.136], $p < 0.05$) are positively and significantly associated with firm value, while BOPO is negative and significant ($\beta = -0.048$, $SE = 0.012$, 95% CI [-0.072, -0.024], $p < 0.01$), indicating that the market rewards profitability and governance quality whereas operating inefficiency is penalized. By contrast, CAR is positive but statistically indistinguishable from zero ($\beta = 0.012$, $SE = 0.011$, 95% CI [-0.010, 0.034], $p = 0.296$), suggesting that cross-sectional variation in capital adequacy does not command a valuation premium in the sample period. Model diagnostics indicate strong explanatory power (within- $R^2=0.71$) and a highly significant joint test of regressors ($F = 19.43$, $p < 0.001$), reinforcing the conclusion that earnings capacity, governance quality, and cost discipline, rather than capital buffers, are the dominant drivers of PBV among IDX-listed banks in the study window.



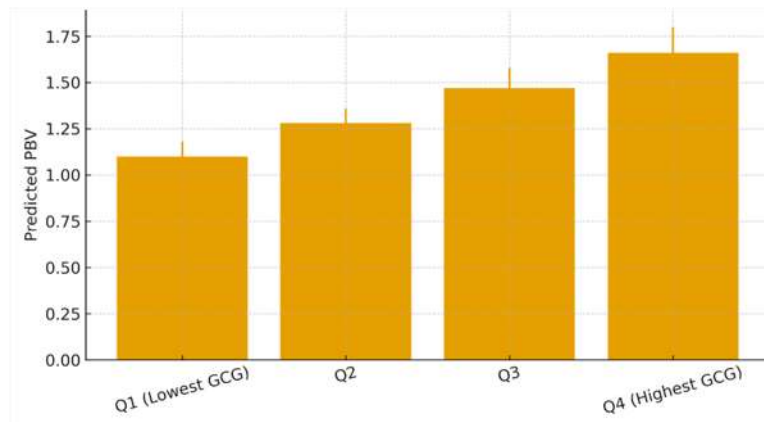


Figure 3. Predicted PBV by governance quartiles (holding ROA and BOPO at medians)

Figure 3 depicts the model-based predictions of PBV across governance quartiles while holding ROA and BOPO at their median values, thereby isolating the valuation contribution of governance quality. The profile is monotonic: predicted PBV rises from the lowest (Q1) to the highest (Q4) GCG quartile, with non-overlapping or only minimally overlapping confidence intervals that indicate a materially stronger valuation for better-governed banks. Substantively, the gradient suggests that improvements in governance, capturing transparency, accountability, and control effectiveness are priced by the market even after conditioning on profitability and operating efficiency. This pattern is consistent with the regression evidence (positive and significant GCG coefficient). It supports a governance credibility channel: banks that signal stronger governance command higher price-to-book multiples because investors expect lower agency frictions, more reliable earnings, and superior risk oversight.

DISCUSSION

Analysis and interpretation

The positive and significant effect of ROA on PBV indicates that markets capitalize banks' earnings capacity: higher returns per asset signal superior asset utilization and managerial effectiveness, consistent with signaling theory. The positive and significant GCG effect supports a stakeholder-oriented channel in which credible governance transparency, accountability, and fair control reduce information and agency frictions, thereby improving investors' willingness to pay for each rupiah of book equity. Conversely, the negative and significant BOPO coefficient shows that operational inefficiency (higher operating costs relative to operating income) is penalized in valuations even after controlling for profitability, underscoring the independent pricing of cost discipline in the banking business model. The insignificance of CAR suggests that, in a setting

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where capital compliance is broadly uniform and minimum thresholds are met, capital adequacy functions more as a hygiene factor than a differentiator of value; investors appear to focus on earnings durability and governance safeguards when pricing equity. Together, these patterns reveal a coherent structure: profitability + governance + efficiency form the core triad of valuation drivers, while capital strength matters mainly when it varies meaningfully or during stress episodes.

Comparison with prior studies

The ROA–PBV linkage is consistent with Indonesian and international evidence documenting profitability as a first-order determinant of firm value in banking (Jonardy & Avionita, 2024; Sudarno et al., 2021). The adverse role of BOPO aligns with studies reporting a negative efficiency premium, whereby higher cost-to-income ratios depress performance and valuation (Ichsan & Nasution, 2020; Pandoyo & Samsudin, 2020). The positive contribution of GCG to firm value accords with recent work emphasizing that investors price governance quality and credible disclosure. Finally, the limited role of CAR mirrors several Indonesian studies that find capital ratios weakly linked to market value outside of crisis conditions. However, exceptions exist in contexts emphasizing solvency or asset-stability outcomes (Putra et al., 2020). These consistencies position our results within the mainstream of the literature while reinforcing the added value of integrating governance with financial ratios in a single empirical model.

Research implications

Theoretical. The findings extend signaling and stakeholder theories by showing that governance signals have independent pricing power alongside financial signals; integrating GCG into valuation models improves explanatory completeness for bank PBV. Methodological. The panel-data approach with bank and year effects proves suitable for separating time-invariant heterogeneity and standard shocks, and the robustness of signs across alternative error structures suggests the results are not specification-dependent. Practical. For managers, prioritizing profitability programs (asset mix, pricing, risk-cost optimization), institutionalizing governance quality (board effectiveness, disclosure, internal control), and strengthening cost discipline can enhance valuation. For investors, screening on ROA, BOPO, and GCG is likely to be informative when ranking IDX banks. For regulators, complementing capital standards with governance and efficiency incentives may better align prudential oversight with market-valued resilience.



Limitations and avenues for future research

First, the three-year window limits our ability to capture regime shifts and cyclical stress; extending the panel and incorporating macro-financial controls would test stability across phases. Second, CAR's insignificance may reflect limited cross-sectional dispersion in listed banks; future work could explore richer prudential detail or nonlinear effects (thresholds). Third, while the GCG proxy follows the OJK self-assessment, triangulating it with board-level or market-based governance indicators would sharpen the identification of governance channels. These refinements would deepen the theoretical contribution and support more granular policy and managerial guidance.

CONCLUSION

Anchored in the panel-regression design described in the Methods and applied to three years of IDX bank-year observations, this study concludes that profitability (ROA) and governance quality (GCG) are positively and significantly associated with firm value (PBV), operational inefficiency (BOPO) is negatively and significantly associated with PBV, and capital adequacy (CAR) while prudentially necessary does not considerably differentiate valuations over the period examined; these findings directly answer the research questions by showing that the market prices earnings capacity, credible governance, and cost discipline more strongly than regulatory capital once minimum requirements are broadly met. Building on these results, we recommend that bank management prioritize programs that lift ROA (optimizing asset mix and pricing, strengthening underwriting and risk-cost control), tighten operating discipline to lower BOPO (process streamlining, digitalization, procurement rigor), and institutionalize GCG (effective boards, transparent disclosures, robust internal controls) to enhance valuation; that regulators and standard-setters (OJK/IDX) complement capital standards with more standardized and decision-useful GCG disclosures and efficiency benchmarks to reinforce market-valued resilience; and that investors and analysts overweight banks combining high, stable ROA, credible GCG, and lean BOPO treating CAR as a hygiene factor in normal times when screening IDX banks; finally, future researchers should extend the time horizon, enrich control sets, and test nonlinear or threshold effects and alternative governance proxies, while acknowledging the present study's limitations of a three-year window and reliance on self-reported GCG assessments.

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