

Comparative Digital Bank Performance During the 2023-2024 Regulatory Transition: BCA Digital (Blu) and Hibank Indonesia

Muhammad Laras Widyanto^{*1}, Sofyan Halim¹, Sri Kurniawati², and Ruwaida²

¹Faculty of Economics and Business, Universitas Mercu Buana, Jakarta, Indonesia

² Faculty of Economics and Business, Universitas Persada Indonesia Y.A.I., Jakarta, Indonesia

DOI: <https://doi.org/10.47772/IJRISS.2026.100800923>

Received: 16 August 2026; Accepted: 21 August 2026; Published: 21 September 2026

ABSTRACT

This study examines whether the reported financial performance of BCA Digital (Blu) and Hibank Indonesia changed between 2023 and 2024 and whether the two banks differed in either year. The research follows the comparative structure of the reference journal article and operationalizes a modified Risk Profile, Good Corporate Governance, Earnings, and Capital (RGEC) framework using eight ratios available in the research workbook: capital adequacy, two non-performing-asset ratios, impairment allowance intensity, return on assets, return on equity, operating expenses to operating income, and cost to income. Because the same indicators are observed for each bank and period, paired-sample t tests are applied to four matched comparisons and to an indicator-level difference-in-differences test. Normality of paired differences, 95% confidence intervals, Cohen's dz, and Wilcoxon signed-rank tests are reported to strengthen inference under the small sample of eight indicators. For Blu, the mean difference between 2024 and 2023 was 0.181 percentage points ($t(7)=0.037$, $p=0.972$, $dz=0.013$), indicating no omnibus shift despite improved ROA, ROE, and BOPO and a substantial deterioration in CIR. For Hibank, the mean difference was -3.713 points ($t(7)=-0.723$, $p=0.493$, $dz=-0.256$); asset-quality ratios improved, while ROA, BOPO, and CIR weakened. Cross-bank differences were not statistically significant in 2023 ($t(7)=-0.483$, $p=0.644$) or 2024 ($t(7)=1.522$, $p=0.172$). The difference-in-differences test was also non-significant ($t(7)=1.016$, $p=0.343$). Wilcoxon results led to the same decisions. The findings show statistical stability at the aggregate ratio-panel level but economically meaningful and strategically different movements within profitability, efficiency, credit quality, provisioning, and capital.

Keywords: bank performance; digital banking; RGEC; financial ratios

INTRODUCTION

Digital banking changes the cost architecture, customer-acquisition model, information-processing intensity, and risk transmission mechanism of a bank. A digital bank can scale without a traditional branch network, but the apparent structural advantage does not automatically translate into superior profitability. Technology expenditure, customer incentives, cloud infrastructure, cybersecurity, data governance, and credit-acquisition costs may be front-loaded. Consequently, performance assessment must move beyond a single growth indicator and examine the simultaneous behavior of capital, asset quality, profitability, and operating efficiency.

The Indonesian bank-health framework emphasizes a risk-based and multidimensional assessment. Bank Indonesia's health-assessment regulation and governance circular, followed by the Financial Services Authority's risk-based bank-health regulation and implementing circular, provide the institutional foundation for the RGEC approach (Bank Indonesia, 2011, 2013; Otoritas Jasa Keuangan [OJK], 2016, 2017). RGEC organizes evaluation around Risk Profile, Good Corporate Governance, Earnings, and Capital. The framework is analytically useful because it prevents strong capital or rapid asset growth from masking deterioration in credit quality, profitability, or efficiency. It also prevents a temporary profit increase from being interpreted as sustainable when it is supported by unusually high risk-taking or insufficient provisioning.

Financial-statement analysis converts accounting information into ratios that facilitate temporal and cross-sectional comparison (Harahap, 2018; Sutrisno, 2019). Nevertheless, ratios differ in scale and direction. Higher ROA and ROE are generally favorable, whereas lower non-performing-asset ratios, BOPO, and CIR are generally favorable. CAR is also positively associated with solvency, but an exceptionally high ratio can reflect underutilized capital as well as strength. The CKPN-to-productive-assets ratio is even more context dependent: an increase may indicate a more conservative loss buffer, a deterioration in expected credit risk, or both. These interpretive asymmetries are central to the present study because a conventional *t* test on the numerical ratio panel provides an omnibus test of average numerical change, not a complete welfare ranking of the bank.

The proposal underlying this article identifies BCA Digital, operating under the Blu brand, and Hibank Indonesia as strategically contrasting digital-bank cases. Blu is positioned around a retail digital ecosystem supported by the broader BCA group, while Hibank is associated with the BNI group and a stronger emphasis on micro, small, and medium enterprises and supply-chain banking. These different business orientations create a theoretically relevant comparative setting. A retail ecosystem may prioritize user acquisition, deposits, transaction frequency, and platform engagement; an MSME-oriented ecosystem may face different credit-risk, pricing, and operating-cost patterns. The same regulatory transition can therefore produce heterogeneous financial manifestations even when aggregate statistical tests do not detect a common shift.

The study period is 2023-2024. The proposal frames 2024 as a transition toward strengthened data governance, accountability, and security in digital financial services. The empirical design does not treat the year change as a randomized intervention. Instead, 2023 is used as the baseline and 2024 as the subsequent observation period. This distinction is essential.

A before-after comparison can document whether ratios changed, but it cannot isolate regulation from macroeconomic conditions, competitive strategy, product launches, funding composition, credit growth, group support, or changes in accounting estimates. The term regulatory transition is therefore used as contextual framing rather than as a claim of proven causality.

Prior RGEC studies have evaluated the health and performance of Indonesian banks across different institutions and periods. Research has applied RGEC to Bank Tabungan Negara, Bank Rakyat Indonesia, Bank Danamon, and Bank Mandiri (Dewi & Candradewi, 2018; Dewi, 2018; Pramana & Artini, 2016; Putri & Suryono, 2017; Riadi et al., 2016). Comparative work has also examined Bank DKI, Bank MNC International, Bank Mega, and Standard Chartered Bank Indonesia (Faizal & Sari, 2019; Helsinawati et al., 2018; Rosdiana, 2019; Sari & Faizal, 2019).

Collectively, these studies demonstrate the practical relevance of ratio-based bank-health assessment and show that statistical non-significance can coexist with economically meaningful ratio movement. However, direct evidence comparing Blu and Hibank over the newest two-year period remains limited, particularly when capital, asset quality, provisioning, profitability, and efficiency indicators are examined together.

The research gap has three components. First, the two banks represent different digital ecosystems and have rarely been evaluated in a direct matched-ratio comparison. Second, the 2024 observations provide a recent picture of financial adaptation after a period of intensified digital-bank development. Third, existing comparative studies often stop at significance decisions and provide limited discussion of effect size, confidence intervals, normality, statistical power, and the economic direction of each ratio. A doctoral-level interpretation requires all of these layers because a *p* value alone cannot explain whether a bank improved, deteriorated, or reallocated resources among competing objectives.

Accordingly, this study asks five empirical questions. Did Blu's ratio panel change from 2023 to 2024? Did Hibank's ratio panel change? Did the banks differ in 2023? Did they differ in 2024? Finally, did the change experienced by Blu differ from the change experienced by Hibank? The first four questions reproduce and extend the comparative structure of the reference article, while the fifth introduces an indicator-matched difference-in-differences calculation.

The added comparison does not create a causal design, but it clarifies whether the two banks moved differently over the same period.

The study contributes to the literature in four ways. It provides a recent comparative dataset for two Indonesian digital banks; it applies paired inference consistently because indicators are matched by definition; it integrates statistical and economic interpretation; and it explicitly identifies what the data cannot support. The contribution is therefore not a claim that one digital bank is universally better. Rather, it is a structured explanation of how two banks exhibit different combinations of capital deployment, asset-quality control, profitability, and efficiency during the same transition period.

Theoretical Foundation of RGEC-Based Performance Assessment

Risk-based supervision treats bank health as the outcome of interacting exposures, controls, earnings capacity, and capital absorption. Under the RGEC logic, Risk Profile captures the level and management of material risk; Good Corporate Governance evaluates decision structures and control quality; Earnings evaluates the bank's capacity to generate sustainable returns; and Capital assesses the ability to absorb unexpected loss (Bank Indonesia, 2011, 2013; OJK, 2016, 2017). The present workbook contains quantitative measures for risk profile, earnings, and capital, but no numerical GCG score. The empirical model is therefore described as a modified RGEC ratio panel rather than a complete RGEC composite assessment.

The risk-profile component is proxied by two non-performing-asset measures and the CKPN ratio. The first non-performing measure relates problematic earning and non-earning assets to the relevant total asset base; the second focuses on non-performing earning assets relative to productive assets. Lower values generally signal better asset quality. CKPN captures the intensity of impairment allowance relative to productive assets. Its interpretation requires caution because an increase can be prudent if it strengthens coverage, but it can also reflect higher expected losses. The ratio should therefore be read together with non-performing assets and profitability rather than classified mechanically.

The earnings component includes ROA, ROE, BOPO, and CIR. ROA indicates the ability of assets to produce profit, while ROE reflects the return generated on shareholders' equity (Harahap, 2018; Sutrisno, 2019). BOPO compares operating expenses with operating income, and CIR measures the resource cost of generating operating revenue. Lower BOPO and CIR generally indicate better efficiency.

However, temporary investment in technology, marketing, compliance, or platform development can raise cost ratios before revenue benefits mature. For digital banks, efficiency ratios must therefore be interpreted with a time horizon and strategic context.

The capital component is represented by CAR. CAR protects depositors and the financial system by providing a buffer against risk-weighted losses. A decline in CAR is not automatically evidence of financial distress, particularly when the starting ratio is very high. It can reflect asset expansion, optimization of excess capital, changes in risk-weighted assets, or distributions. The appropriate interpretation is whether the ratio remains sufficiently strong relative to risk and regulatory requirements. Because the workbook reports only the ratio and not its decomposition, the present article interprets large CAR changes as shifts in capital intensity rather than definitive improvements or deteriorations.

GCG is conceptually indispensable but empirically absent from the workbook. The omission matters because governance can explain why similar numerical outcomes have different risk implications. For example, a rising CKPN ratio accompanied by strengthened underwriting and independent risk oversight differs from a rising CKPN ratio caused by delayed recognition of deteriorating credit.

Future research should merge the quantitative ratio panel with self-assessment GCG ratings, board and committee indicators, risk-culture evidence, and technology-governance disclosures. The present study does not impute a GCG score because doing so would create unsupported data.

Critical Review of Prior Empirical Studies

Previous Indonesian RGEC studies demonstrate that bank soundness is commonly evaluated by combining risk, governance, profitability, and capital indicators rather than by relying on profit alone. Dewi and Candradewi (2018) assessed Bank Tabungan Negara; Dewi (2018) and Putri and Suryono (2017) examined Bank Rakyat Indonesia; Pramana and Artini (2016) evaluated Bank Danamon; and Riadi et al. (2016) studied Bank Mandiri. These studies establish the institutional relevance of RGEC, but most are descriptive and concentrate on one conventional bank over several years. The present study differs by comparing two digital banks with distinct ecosystem strategies.

The single-bank literature is useful for interpreting ratio direction. It generally treats lower non-performing ratios as evidence of stronger risk quality, higher ROA and ROE as stronger earnings, lower BOPO as greater operational efficiency, and adequate CAR as stronger capital resilience (Dewi & Candradewi, 2018; Dewi, 2018; Pramana & Artini, 2016; Putri & Suryono, 2017; Riadi et al., 2016). Yet these directional rules should not be applied mechanically. Digital banks can experience temporarily high cost ratios because technology development and customer acquisition precede revenue maturity. Similarly, a declining CAR can reflect productive balance-sheet expansion when the initial capital buffer is exceptionally high.

Comparative studies are more directly relevant to the present design. Helsinawati et al. (2018) compared Bank DKI across periods; Faizal and Sari (2019) compared Bank MNC International between 2017 and 2018; Rosdiana (2019) examined Bank Mega before and after implementation of an OJK circular; and Sari and Faizal (2019) evaluated Standard Chartered Bank Indonesia using RGEC indicators. These studies show that a bank can display movement in individual ratios without a statistically significant difference in the aggregate test.

A recurring weakness in earlier comparative work is the use of the phrase no difference without sufficient qualification. In a small ratio panel, non-significance may arise because favorable and unfavorable movements cancel, because a few large ratios dominate variance, or because statistical power is low. A rigorous interpretation should report the mean difference, confidence interval, standardized effect, normality of paired differences, and a robust nonparametric test. The present study adopts this expanded inferential approach.

Another limitation in the literature is the treatment of heterogeneous ratios as if they shared a common scale and welfare direction. CAR, BOPO, and CIR can be tens of percentage points, while ROA and non-performing-asset ratios are often below two percent. Consequently, the raw mean is driven by the largest-scale indicators. This study retains the raw-ratio t test to remain consistent with the proposal and reference article, but it explicitly labels the test as an omnibus numerical comparison and supplements it with ratio-by-ratio economic interpretation.

The present article therefore occupies a methodological middle ground. It preserves comparability with established RGEC research while introducing stronger caution about construct validity and causal inference. The novelty lies not only in the Blu-Hibank comparison but also in the separation of statistical stability, economic materiality, and strategic explanation.

Table 1A. Positioning of the Study in Prior RGEC Research

Study	Object period and	Main approach	Relevance to this article
Dewi & Candradewi (2018)	BTN, 2014-2016	RGEC health assessment	Single-bank longitudinal benchmark
Dewi (2018)	BRI, 2013-2017	RGEC health assessment	Evidence on risk, earnings, and capital interaction

Putri & Suryono (2017)	BRI, 2013-2015	RGEC assessment	Supports multidimensional ratio interpretation
Pramana & Artini (2016)	Bank Danamon	RGEC assessment	Conventional-bank comparison point
Riadi et al. (2016)	Bank Mandiri, 2013-2015	RGEC assessment	Shows use of RGEC across a large bank
Helsinawati et al. (2018)	Bank DKI, 2016-2017	Comparative performance	Precedent for paired period comparison
Faizal & Sari (2019)	Bank MNC, 2017-2018	Comparative ratio analysis	Shows ratio movement with limited inferential power
Rosdiana (2019)	Bank Mega, pre/post circular	Before-after RGEC comparison	Relevant regulatory-transition design
Sari & Faizal (2019)	Standard Chartered, 2017-2018	Comparative RGEC ratios	Closest published format to current analysis

The table summarizes references contained in the revised proposal bibliography.

Hypotheses

Table 1. Research Hypotheses

Hypothesis	Alternative statement
H1	There is a statistically significant difference between Blu performance ratios in 2024 and 2023.
H2	There is a statistically significant difference between Hibank performance ratios in 2024 and 2023.
H3a	There is a statistically significant difference between Blu and Hibank performance ratios in 2023.
H3b	There is a statistically significant difference between Blu and Hibank performance ratios in 2024.
H4	The 2023-2024 change in Blu performance ratios differs significantly from the corresponding change in Hibank performance ratios.

All tests are two-tailed at $\alpha = 0.05$. Statistical decisions are stated as rejection or failure to reject the null.

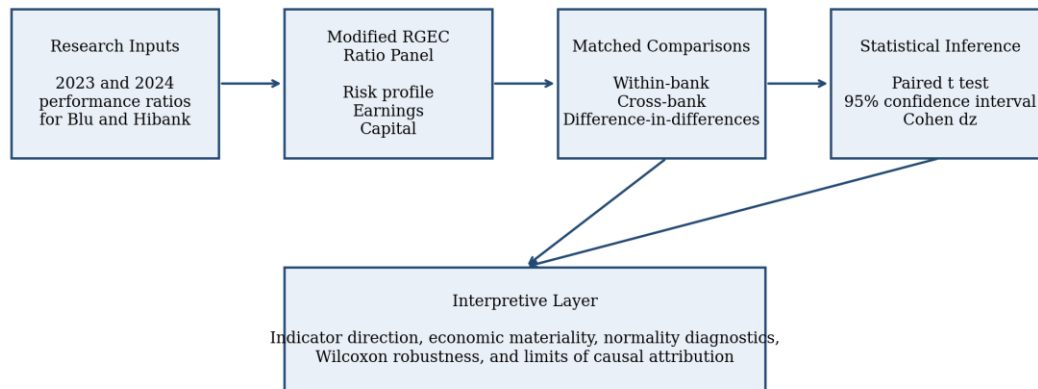


Figure 1. Analytical framework of the study

Figure 1 shows the separation between the statistical layer and the interpretive layer. The statistical layer evaluates matched numerical differences. The interpretive layer then considers whether the numerical direction is favorable, unfavorable, ambiguous, or strategically explicable. This separation prevents the common error of equating a non-significant mean difference with complete performance stability.

MATERIALS AND METHODS

This research uses a quantitative comparative design (Sugiyono, 2018). The unit of observation is an indicator, not an individual customer, branch, loan, or monthly period. Eight financial-performance ratios are observed for each bank in 2023 and 2024. Because the same ratio definitions appear in both periods and banks, comparisons are matched by indicator. The design therefore uses paired-sample procedures rather than treating the eight values as unrelated groups.

The data were obtained from the research workbook titled Bank Performance BCA Digital (Blu) & Hibank (Group BNI) 2024-2023. The workbook reports December 2023 as the baseline and December 2024 as the subsequent period. The data were checked for completeness, numeric consistency, and one-to-one indicator matching. All 32 bank-year ratio observations were complete; no values were imputed, winsorized, or deleted.

The methodological choice to use eight heterogeneous ratios follows the structure of the reference article and the proposal's planned paired t test. Nevertheless, the heterogeneity has consequences. CAR, BOPO, and CIR are numerically much larger than asset-quality and profitability ratios, so they contribute more to the arithmetic mean and variance. The resulting t tests are best understood as omnibus tests of the raw ratio panel. They are not tests of a regulator-approved composite health score and do not assign welfare weights to RGEC dimensions. To address this limitation, the analysis reports indicator-level movements and a nonparametric robustness test in addition to the t statistics.

Variable Operationalization

Table 2. Modified RGEC Operationalization

RGEC dimension	Indicator	Analytical meaning	Expected direction
Capital	CAR	Capital adequacy relative to risk-weighted exposure	Higher generally stronger, subject to capital-efficiency context

Risk Profile	NPA-total	Non-performing earning and non-earning assets relative to total relevant assets	Lower is generally better
Risk Profile	NPA-productive	Non-performing earning assets relative to productive assets	Lower is generally better
Risk Profile	CKPN	Allowance for impairment losses relative to productive assets	Context dependent; read with asset quality and earnings
Earnings	ROA	Profit relative to total assets	Higher is generally better
Earnings	ROE	Profit relative to shareholders' equity	Higher is generally better
Earnings	BOPO	Operating expenses relative to operating income	Lower is generally better
Earnings	CIR	Operating cost relative to income	Lower is generally better
GCG	Not observed	No numerical governance score in the workbook	Not statistically tested

The operationalization follows the available workbook. It does not claim to reproduce a complete regulatory RGEC composite rating.

Statistical Model

For each comparison, let $D_i = X_i - Y_i$, where i identifies one of the eight matched ratios. The paired-sample t statistic is calculated as $t = \text{mean}(D) / [\text{SD}(D) / \sqrt{n}]$, with $n = 8$ and degrees of freedom equal to 7. The null hypothesis is that the population mean of the paired differences equals zero. A two-sided p value below 0.05 leads to rejection of the null hypothesis.

A 95% confidence interval is reported for each mean difference. The interval is particularly important in a small sample because it shows the range of mean differences compatible with the observed variability. A wide interval crossing zero means that the data are consistent with both negative and positive average changes. The absence of significance should therefore be interpreted as insufficient evidence of a non-zero average difference, not proof that the true difference is exactly zero.

Cohen's d_z is computed as $\text{mean}(D) / \text{SD}(D)$. In a paired design, d_z standardizes the mean change by the standard deviation of the change scores. Conventional benchmarks describe absolute values around 0.20 as small, 0.50 as moderate, and 0.80 as large, but these thresholds are only interpretive guides. In the present study, even a moderate standardized effect can remain statistically non-significant because n equals eight.

The Shapiro-Wilk test is applied to the paired differences, because normality of the differences—not normality of each raw group—is the assumption relevant to the paired t test. When Shapiro-Wilk p is below 0.05, the distribution is treated as inconsistent with normality. The Wilcoxon signed-rank test is then reported as a robustness check. The t test remains in the principal analysis because it is explicitly required by the proposal and because reporting both procedures provides a more transparent assessment than replacing the specified test without explanation.

Five comparisons are estimated: Blu 2024 versus Blu 2023; Hibank 2024 versus Hibank 2023; Blu versus Hibank in 2023; Blu versus Hibank in 2024; and the difference-in-differences comparison. The last test uses $D_i = (\text{Blu}_{2024,i} - \text{Blu}_{2023,i}) - (\text{Hibank}_{2024,i} - \text{Hibank}_{2023,i})$. This calculation asks whether the average numerical change across the same indicators differs between banks. It is an indicator-matched change comparison and should not be confused with a panel-data causal difference-in-differences estimator.

Data-Quality, Validity, and Inferential Boundaries

Internal consistency was evaluated through four checks: indicator labels were reconciled across bank sections; period labels were standardized to December 2023 and December 2024; percentages were treated as percentage-point observations; and each paired test used the same indicator order. The dataset has complete pairing and no missing values. These features support computational validity.

Construct validity is more limited. The eight ratios represent different constructs and do not include a quantitative GCG score. The study therefore cannot issue an official overall soundness rating. Statistical significance is assessed at the ratio-panel level, while substantive conclusions are drawn dimension by dimension. This distinction is necessary because a lower BOPO is favorable, whereas a lower ROA is unfavorable, and a higher CKPN ratio is ambiguous without additional information.

External validity is also narrow. The sample contains two banks and two annual observations. Results should not be generalized automatically to all Indonesian digital banks or to future periods. Furthermore, annual endpoints can conceal within-year volatility. Quarterly or monthly data would provide more observations, improve power, and help distinguish temporary transition costs from persistent structural performance.

The small n creates low power. With eight pairs, a two-sided paired t test at $\alpha 0.05$ requires an effect size of approximately $d_z = 1.16$ to achieve 80% power. Therefore, non-significant results are unsurprising unless the change is exceptionally large relative to cross-indicator variability. This is not a reason to ignore the tests; it is a reason to place greater weight on confidence intervals, effect sizes, indicator-level evidence, and replication with more periods.

Analytical Alternatives and Rationale for the Chosen Specification

Several alternative statistical strategies were considered. An independent-samples t test would be inappropriate for the principal comparisons because each Blu ratio has a direct counterpart in Hibank and each 2024 ratio has a direct 2023 counterpart. Ignoring this matching would discard information and inflate unexplained variability. The paired test is therefore the logically consistent procedure for the workbook structure.

A multivariate test could in principle evaluate the vector of ratios jointly, but the sample has only two banks and two periods. Multivariate covariance estimation would be unstable and would create an appearance of sophistication without sufficient information. Similarly, regression models cannot be meaningfully estimated from four bank-year observations. The selected design favors transparency and reproducibility over unnecessary model complexity.

A standardized composite index could reduce scale dominance by converting each ratio to a common metric and reversing unfavorable indicators. However, a four-observation standardization would be extremely sensitive to each value, and the appropriate treatment of CAR and CKPN is context dependent. Because the proposal did not specify weights and the workbook does not contain an official composite score, the article does not create one. This protects the analysis from arbitrary weighting.

The best extension is a longer panel. Quarterly observations over at least three years would allow fixed-effects regression, interrupted time-series analysis, or a genuine difference-in-differences design with additional digital banks. The current paired analysis should therefore be viewed as a disciplined first-stage diagnostic that identifies which dimensions require deeper investigation

RESULTS AND DISCUSSION

Descriptive Performance of BCA Digital (Blu)

Table 3. BCA Digital (Blu) Performance Ratios

Indicator	2023	2024	Change (pp)	Change (%)	Interpretive direction
CAR	71.48	48.73	-22.75	-31.83%	Favorable if higher; interpret contextually
NPA-total	0.60	0.59	-0.01	-1.67%	Favorable decrease
NPA-productive	0.40	0.45	+0.05	+12.50%	Unfavorable increase
CKPN	1.09	1.38	+0.29	+26.61%	Ambiguous: provisioning buffer and/or risk cost
ROA	0.18	0.94	+0.76	+422.22%	Favorable increase
ROE	1.16	2.69	+1.53	+131.90%	Favorable increase
BOPO	97.66	90.97	-6.69	-6.85%	Favorable decrease
CIR	52.96	81.23	+28.27	+53.38%	Unfavorable increase

pp = percentage points. Percentage change is relative to the 2023 value and can appear very large when the baseline is small, as with ROA.

Blu's 2024 profile is characterized by simultaneous profitability improvement and efficiency divergence. ROA rose from 0.18% to 0.94%, an increase of 0.76 percentage points. Although the absolute 2024 ROA remained modest, the movement indicates a meaningful improvement in the ability of assets to generate profit. ROE increased from 1.16% to 2.69%, reinforcing the conclusion that shareholder returns improved during the period. These movements are consistent with a bank moving from early-stage platform investment toward greater revenue monetization, although the data do not identify the specific operating drivers.

BOPO declined from 97.66% to 90.97%. Because lower BOPO is generally favorable, the 6.69-point reduction suggests better alignment between operating expenses and operating income. However, CIR moved in the opposite direction, rising sharply from 52.96% to 81.23%. The divergence indicates that the two cost measures may capture different definitions, scopes, or timing effects. It may also reflect classification differences between operating income and the income base used in CIR. The result warns against treating efficiency as a single unambiguous construct.

Asset quality remained broadly stable but not uniformly better. The broad non-performing-asset ratio declined marginally from 0.60% to 0.59%, while non-performing earning assets relative to productive assets increased from 0.40% to 0.45%. The CKPN ratio rose from 1.09% to 1.38%. Taken together, the data can be interpreted as a small deterioration in one narrow asset-quality measure accompanied by higher provisioning intensity. The provisioning increase may have strengthened protection against expected losses, but it may also have absorbed earnings and signaled greater credit-risk expectations.

CAR declined from 71.48% to 48.73%, a reduction of 22.75 percentage points. The scale of the decline is economically material, but the ending ratio remains very high in absolute terms. The change is more plausibly described as lower capital intensity than as capital weakness. It may reflect asset expansion, growth in risk-

weighted assets, or more efficient use of an initially abundant capital base. Without the underlying balance-sheet decomposition, the analysis should not label the change as either unequivocally favorable or unfavorable.

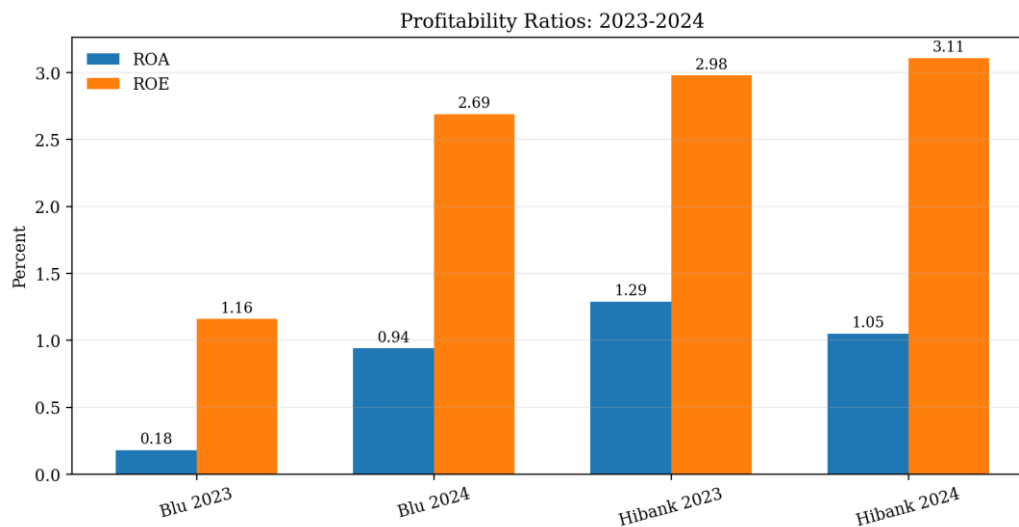


Figure 2. Profitability ratios of Blu and Hibank in 2023 and 2024

Descriptive Performance of Hibank Indonesia

Table 4. Hibank Indonesia Performance Ratios

Indicator	2023	2024	Change (pp)	Change (%)	Interpretive direction
CAR	86.21	47.01	-39.20	-45.47%	Capital intensity declined
NPA-total	0.77	0.60	-0.17	-22.08%	Favorable decrease
NPA-productive	0.48	0.43	-0.05	-10.42%	Favorable decrease
CKPN	1.06	1.08	+0.02	+1.89%	Ambiguous: provisioning buffer and/or risk cost
ROA	1.29	1.05	-0.24	-18.60%	Unfavorable decrease
ROE	2.98	3.11	+0.13	+4.36%	Favorable increase
BOPO	81.20	85.95	+4.75	+5.85%	Unfavorable increase
CIR	64.17	69.23	+5.06	+7.89%	Unfavorable increase

The direction column is an analytical interpretation rather than an official supervisory rating.

Hibank's asset-quality indicators improved more consistently than Blu's. The broad non-performing-asset ratio declined from 0.77% to 0.60%, while non-performing earning assets relative to productive assets declined from 0.48% to 0.43%. The CKPN ratio increased slightly from 1.06% to 1.08%. This combination is compatible with improving observed asset quality while maintaining a broadly stable provisioning buffer. Among the reported dimensions, credit quality is the clearest area of Hibank improvement.

Profitability was mixed. ROA declined from 1.29% to 1.05%, indicating a lower return generated by the asset base. ROE increased slightly from 2.98% to 3.11%, suggesting that equity profitability was maintained or marginally improved despite the ROA decline. The divergence could arise from changes in leverage, equity, asset composition, or one-off effects. The workbook does not provide sufficient decomposition to identify the mechanism.

Operating efficiency weakened. BOPO rose from 81.20% to 85.95%, and CIR rose from 64.17% to 69.23%. Both movements are unfavorable under the conventional lower-is-better interpretation. The increases may reflect transformation costs, product-development expenditure, customer acquisition, risk-management investment, or slower revenue realization. Because Hibank was undergoing digital repositioning, temporary transition expenditure is a plausible strategic explanation, but it remains an inference rather than a tested mechanism.

CAR declined from 86.21% to 47.01%, a reduction of 39.20 percentage points. As with Blu, the ending value remains high in absolute terms, so the decline should be interpreted as a major reduction in capital intensity. Hibank's decrease was larger than Blu's, which suggests more rapid deployment of capital relative to risk-weighted exposure or a larger expansion of the risk-weighted asset base. The shift can be strategically efficient if risk-adjusted returns improve, but the simultaneous ROA and efficiency deterioration indicates that the benefits may not yet have fully materialized in 2024.

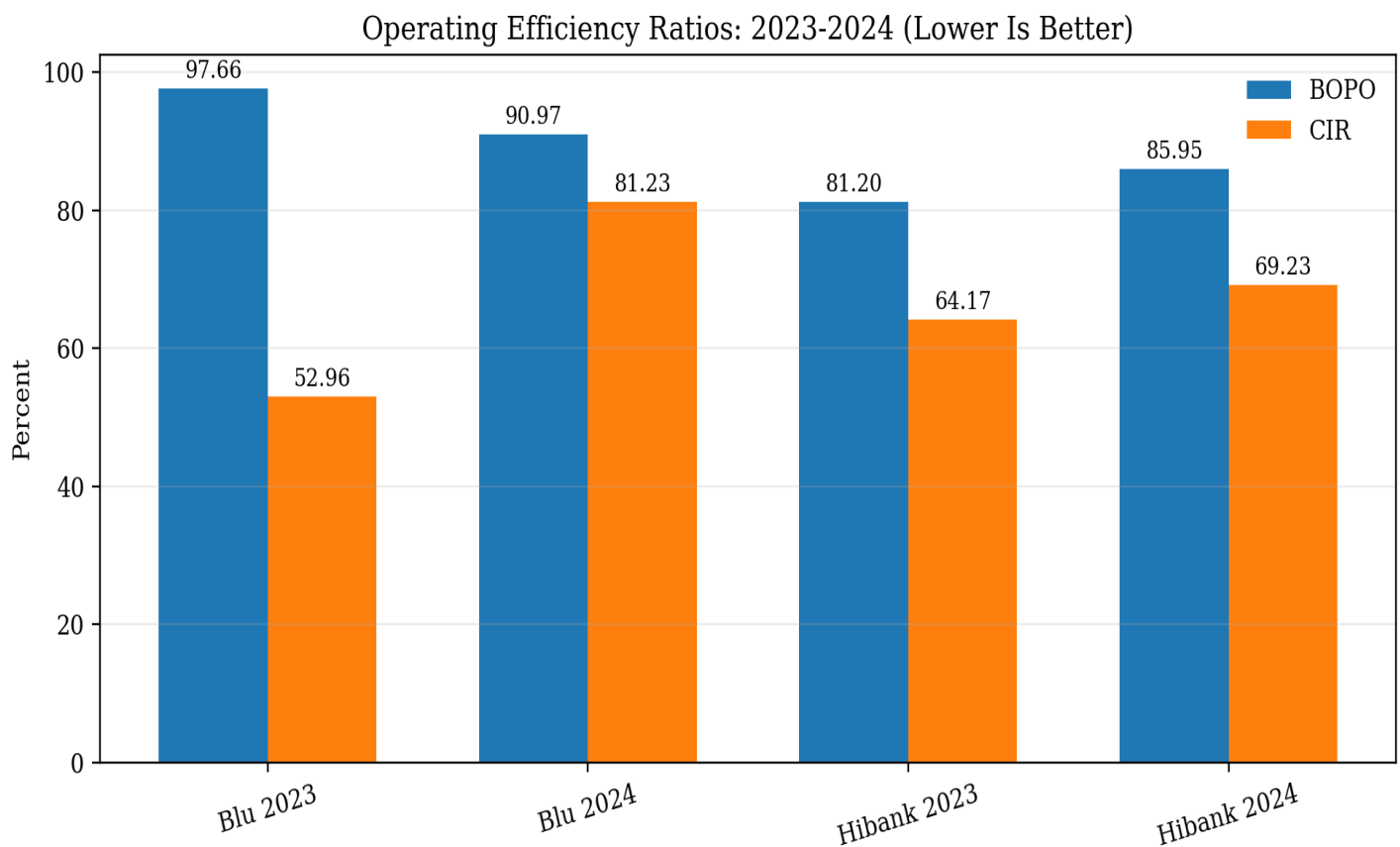


Figure 3. BOPO and CIR of Blu and Hibank in 2023 and 2024

Descriptive Statistics and Assumption Diagnostics

Table 5. Descriptive Statistics of the Raw Ratio Panels

Group	N	Mean	SD	Median	Min	Max	95% CI of mean
Blu 2023	8	28.1913	39.8152	1.1250	0.18	97.66	[-5.0951, 61.4776]

Blu 2024	8	28.3725	39.3138	2.0350	0.45	90.97	[-4.4947, 61.2397]
Hibank 2023	8	29.7700	39.7597	2.1350	0.48	86.21	[-3.4700, 63.0100]
Hibank 2024	8	26.0575	35.7984	2.0950	0.43	85.95	[-3.8707, 55.9857]

The raw mean has limited substantive meaning because the ratios have different scales and desirable directions. It is reported to support the specified paired t tests.

Table 6. Shapiro-Wilk Tests of Paired Differences

Comparison	W	p value	Assessment at 0.05
Blu: 2024 minus 2023	0.8284	0.0572	Normality not rejected
Hibank: 2024 minus 2023	0.5475	0.0000	Normality rejected
Blu minus Hibank: 2023	0.8678	0.1436	Normality not rejected
Blu minus Hibank: 2024	0.6902	0.0017	Normality rejected
Difference-in-differences: Blu change minus Hibank change	0.8476	0.0901	Normality not rejected

The paired t test assumes approximate normality of the difference scores. Wilcoxon results are reported when this assumption is doubtful.

The difference scores for Blu's intertemporal comparison were borderline but did not reject normality at the 5% level ($W = 0.8284$, $p = 0.0572$). The 2023 cross-bank difference and the difference-in-differences scores also did not reject normality. In contrast, Hibank's intertemporal differences and the 2024 cross-bank differences were clearly non-normal. These outcomes reflect the dominance of large CAR and efficiency movements relative to much smaller asset-quality ratios.

The normality results reinforce the need to avoid a binary parametric-versus-nonparametric choice. The paired t test estimates the mean change requested in the proposal, while Wilcoxon evaluates the central tendency of ranked absolute differences. Agreement between the two methods provides stronger evidence about the decision. Disagreement would require closer examination of outliers and the substantive meaning of the dominant indicators.

Paired-Sample t-Test Results

Table 7A. Primary Paired-Sample t-Test Results

Comparison	Mean diff.	t	df	p	Decision
Blu: 2024 minus 2023	0.1812	0.0367	7	0.9717	Fail to reject H0
Hibank: 2024 minus 2023	-3.7125	-0.7235	7	0.4929	Fail to reject H0
Blu minus Hibank: 2023	-1.5787	-0.4830	7	0.6438	Fail to reject H0

Blu minus Hibank: 2024	2.3150	1.5220	7	0.1718	Fail to reject H0
Difference-in-differences: Blu change minus Hibank change	3.8937	1.0163	7	0.3433	Fail to reject H0

Table 7B. Dispersion, Confidence Intervals, and Effect Sizes

Comparison	SD diff.	95% CI	Cohen dz
Blu: 2024 minus 2023	13.9604	[-11.4900, 11.8525]	0.013
Hibank: 2024 minus 2023	14.5143	[-15.8467, 8.4217]	-0.256
Blu minus Hibank: 2023	9.2444	[-9.3072, 6.1497]	-0.171
Blu minus Hibank: 2024	4.3022	[-1.2818, 5.9118]	0.538
Difference-in-differences: Blu change minus Hibank change	10.8362	[-5.1655, 12.9530]	0.359

All tests are two-tailed. Mean differences are expressed in raw percentage points across the eight matched indicators.

Blu: 2024 versus 2023

The paired t test produced $t(7) = 0.0367$ and $p = 0.9717$. The mean numerical difference was only 0.1813 percentage points, with a 95% confidence interval from -11.4900 to 11.8525. The interval is wide and centered near zero. H1 is therefore not supported at the 5% level. Cohen's dz of 0.013 indicates a negligible average standardized shift in the raw ratio panel.

The statistical result does not mean that Blu's performance was unchanged. Five indicators increased numerically and three decreased. More importantly, the directionally meaningful evidence is mixed: ROA, ROE, and BOPO improved; the broad non-performing-asset ratio improved slightly; the narrower non-performing-asset ratio and CIR worsened; CKPN increased; and CAR declined from a very high base. Large positive and negative movements offset each other in the mean. The t test therefore captures balance among movements, not the absence of movement.

From a strategic perspective, Blu appears to have improved profit generation and one measure of operating efficiency while absorbing a substantial increase in CIR. This pattern may indicate that revenue and expense classifications are evolving as the platform scales. It may also indicate that investments associated with customer growth or digital infrastructure affected CIR more strongly than BOPO. A deeper cost decomposition is required before a definitive efficiency conclusion can be reached.

Hibank: 2024 versus 2023

For Hibank, $t(7) = -0.7235$ with $p = 0.4929$. The mean difference was -3.7125 points, and the 95% confidence interval ranged from -15.8467 to 8.4217. H2 is not supported. Cohen's dz of -0.256 indicates a small negative average shift, but the confidence interval includes both meaningful deterioration and improvement.

The non-normal difference distribution is important. CAR declined by 39.20 points, while the remaining changes were much smaller. This single large capital movement influences the mean and variance strongly. The paired *t* result should therefore be interpreted with the Wilcoxon robustness test and the indicator-level pattern. That pattern shows better asset quality, slightly higher ROE, lower ROA, and weaker operating efficiency.

Hibank's 2024 profile is consistent with a bank that deployed capital and maintained credit quality while incurring transformation or operating costs. Whether this represents successful investment depends on subsequent revenue growth and risk-adjusted return. A one-year endpoint cannot determine whether the higher BOPO and CIR are temporary transition effects or evidence of a persistent efficiency challenge.

Cross-Bank Comparison in 2023

The 2023 comparison yielded $t(7) = -0.4830$, $p = 0.6438$, with a mean difference of -1.5788 points and a 95% confidence interval from -9.3072 to 6.1497. H3a is not supported. The effect size was small ($d_z = -0.171$). The two banks therefore did not exhibit a statistically distinguishable average raw ratio panel in the baseline year.

The absence of an omnibus difference conceals contrasting strengths. Blu reported lower non-performing-asset ratios and a lower CIR, while Hibank reported higher ROA and ROE and a lower BOPO. Hibank also had a higher CAR. The baseline comparison is therefore better described as multidimensional differentiation than equivalence. Each bank had advantages in different components of the modified RGEC panel.

Cross-Bank Comparison in 2024

The 2024 comparison produced $t(7) = 1.5220$ and $p = 0.1718$. The mean difference was 2.3150 points, with a 95% confidence interval from -1.2818 to 5.9118. H3b is not supported. The standardized effect, $d_z = 0.538$, was moderate, but the small sample produced insufficient precision to reject the null hypothesis.

A moderate effect size with a non-significant *p* value is not contradictory. Statistical significance depends on effect magnitude, sample size, and dispersion. With only eight indicators, the estimated power for d_z around 0.54 is approximately 26%. The result therefore suggests a potentially meaningful cross-bank difference that requires more periods or more granular observations for confirmation.

Indicator-level evidence in 2024 leans toward stronger operating efficiency and profitability at Hibank: Hibank had lower BOPO and CIR and slightly higher ROA and ROE. Blu had marginally higher CAR and a slightly lower broad non-performing-asset ratio, while the narrower non-performing-asset measure was slightly higher. Blu's CKPN ratio was materially higher. These differences again demonstrate why a single average cannot establish a universal ranking.

Indicator-Matched Difference-in-Differences

The difference-in-differences calculation yielded $t(7) = 1.0163$, $p = 0.3433$, with a mean differential change of 3.8938 points and a 95% confidence interval from -5.1655 to 12.9530. H4 is not supported. Cohen's d_z was 0.359, indicating a small-to-moderate differential movement that remains imprecisely estimated.

The substantive comparison is balanced. Relative to Hibank, Blu experienced a smaller CAR decline, stronger ROA and ROE improvement, and a favorable BOPO movement. Hibank, however, achieved stronger improvement in both non-performing-asset ratios and a much smaller deterioration in CIR. CKPN increased more at Blu, but the welfare meaning is ambiguous. The differential-change evidence therefore identifies distinct strategic pathways rather than a clear winner.

The analysis should not be described as proof that 2024 regulation caused no difference. A causal claim would require more pre- and post-periods, a credible comparison group, and controls for macroeconomic and bank-specific confounders. The present result means only that the average indicator-matched numerical change did not differ significantly between the two banks in the available two-year data.

Nonparametric Robustness

Table 8. Wilcoxon Signed-Rank Robustness Tests

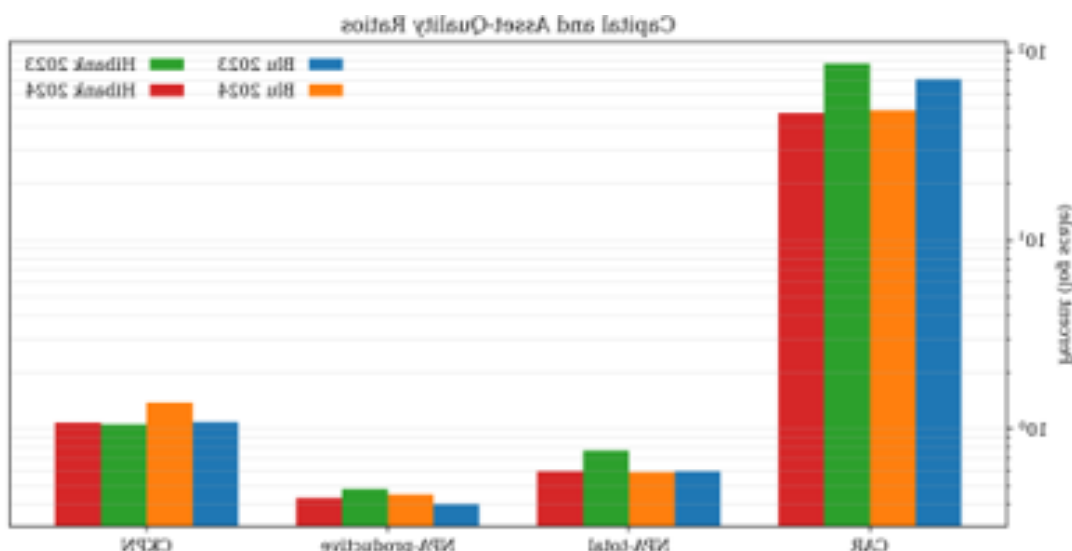
Comparison	Pos. ranks	Neg. ranks	T	W	p sided) (2-	Decision
Blu: 2024 minus 2023	5	3	0	14.0	0.6406	Fail to reject H0
Hibank: 2024 minus 2023	4	4	0	17.0	0.9453	Fail to reject H0
Blu minus Hibank: 2023	2	6	0	9.0	0.2500	Fail to reject H0
Blu minus Hibank: 2024	5	3	0	9.0	0.2500	Fail to reject H0
Difference-in-differences: Blu change minus Hibank change	7	1	0	6.0	0.1094	Fail to reject H0

T = ties. The Wilcoxon test is based on the ranks of absolute paired differences and is less sensitive to non-normality than the paired t test.

All Wilcoxon p values exceeded 0.05. The conclusions are therefore robust to replacing the mean-based parametric test with a rank-based procedure. For Blu's intertemporal comparison, $W = 14.0$ and $p = 0.6406$. For Hibank, $W = 17.0$ and $p = 0.9453$. The 2023 and 2024 cross-bank tests both produced $W = 9.0$ and $p = 0.2500$. The difference-in-differences robustness test produced $W = 6.0$ and $p = 0.1094$.

The robustness results reduce concern that the non-significant t tests are solely artifacts of non-normal difference distributions. Nevertheless, Wilcoxon also has low power with eight pairs. Agreement between two low-powered tests should be interpreted as consistent evidence of no detected shift, not decisive evidence of equality. Replication with quarterly data is necessary for stronger inference.

Figure 4. Capital and asset-quality ratios (logarithmic scale)



Hypothesis Decisions

Table 9. Summary of Hypothesis Decisions

Hypothesis	Tested proposition	Result	Evidence
H1	Blu 2024 differs from Blu 2023	Not supported	$t(7)=0.037$, $p=0.972$
H2	Hibank 2024 differs from Hibank 2023	Not supported	$t(7)=-0.723$, $p=0.493$
H3a	Blu differs from Hibank in 2023	Not supported	$t(7)=-0.483$, $p=0.644$
H3b	Blu differs from Hibank in 2024	Not supported	$t(7)=1.522$, $p=0.172$
H4	Blu and Hibank experienced different 2023-2024 changes	Not supported	$t(7)=1.016$, $p=0.343$

Not supported means the null hypothesis was not rejected at $\alpha = 0.05$. It does not prove exact equality.

Integrated Discussion

The central empirical conclusion is statistical stability combined with economic reconfiguration. None of the five omnibus comparisons was significant, but every bank-year transition contained material ratio movement. This pattern resembles earlier comparative RGEC research in which average differences were not statistically significant even though individual indicators changed (Faizal & Sari, 2019; Helsinawati et al., 2018; Rosdiana, 2019; Sari & Faizal, 2019). The present study strengthens that literature by quantifying effect sizes, confidence intervals, and nonparametric robustness and by avoiding the phrase no difference as a synonym for no change.

Blu's transition is best summarized as improved profitability with unresolved cost-structure tension. ROA and ROE rose, and BOPO declined. These are strategically favorable signs. Yet CIR rose by 28.27 points, more than offsetting the numerical reduction in CAR in the raw mean. The apparent contradiction may reflect metric construction. BOPO and CIR often use related but not identical expense and income definitions, and digital-bank accounting can be affected by customer incentives, technology amortization, group-service arrangements, and the classification of fee income. Management should therefore reconcile the two ratios through a cost bridge rather than selecting the more favorable measure.

Hibank's transition is best summarized as improved asset quality with higher operating-cost pressure. Both non-performing-asset ratios declined, and CKPN was stable. This suggests that credit-risk outcomes did not deteriorate during the period. However, BOPO and CIR increased, and ROA declined. The bank may have incurred the cost of transformation before receiving the full revenue benefit. The slight ROE improvement, despite lower ROA, suggests changes in the relationship among assets, equity, and profit. A DuPont-style decomposition would be valuable in future research.

Both banks reduced CAR substantially from extremely high 2023 levels. A superficial analysis could label the reduction as deterioration, but such an interpretation ignores capital optimization. Digital banks in early development can hold very high capital relative to risk-weighted assets. As lending and other risk-weighted exposures grow, CAR naturally declines. The managerial question is whether the capital released into growth produces sufficient risk-adjusted return. Blu's improved ROA and ROE provide some support for this mechanism; Hibank's 2024 ROA and efficiency ratios suggest that the return realization may require more time.

The cross-bank comparison also changed in character. In 2023, Hibank had stronger profitability and BOPO, while Blu had better asset-quality ratios and CIR. In 2024, Hibank retained a modest profitability and efficiency advantage in most reported indicators, while Blu showed stronger year-on-year profitability improvement. The 2024 moderate effect size suggests that the banks may be differentiating, but the evidence is too imprecise for a definitive statistical ranking.

The findings support a portfolio view of bank performance. Capital, risk, earnings, and efficiency should not be optimized independently. Lower capital intensity can raise ROE but reduce buffers; higher provisioning can protect against expected loss but reduce current profit; customer acquisition can increase cost ratios before improving scale; and rapid credit growth can improve income while creating future asset-quality risk. The modified RGEC panel is valuable precisely because it reveals these trade-offs.

The study also has implications for how digital-bank performance should be communicated. Investors and regulators should be cautious when management emphasizes a single improving ratio. A credible performance narrative should explain the relationship between CAR, credit quality, CKPN, ROA, ROE, BOPO, and CIR. Where measures conflict, the bank should provide reconciliations and discuss timing effects. This is particularly important for digital banks because technology and customer-acquisition expenditure can create temporary accounting asymmetry between costs and future benefits.

From a statistical perspective, the study illustrates the difference between substantive and inferential conclusions. The substantive conclusion is that Blu and Hibank followed different paths. The inferential conclusion is that the available eight-indicator panel does not estimate those differences precisely enough to reject zero average difference at the 5% level. Both conclusions are true. Doctoral-level analysis should preserve this distinction rather than treating the *p* value as the sole measure of evidence.

The small sample also explains why effect sizes matter. The 2024 cross-bank *dz* of 0.538 is not trivial, yet it is non-significant because eight pairs provide limited power. Conversely, Blu's *dz* of 0.013 is both statistically non-significant and substantively negligible at the raw-panel mean level. Hibank's *dz* of -0.256 and the difference-in-differences *dz* of 0.359 indicate small-to-moderate effects that remain uncertain. This hierarchy of evidence is more informative than five identical statements that *p* exceeds 0.05.

The results are consistent with the broader RGEC literature, which emphasizes multidimensional assessment rather than reliance on a single profitability measure (Dewi & Candradewi, 2018; Dewi, 2018; Pramana & Artini, 2016; Putri & Suryono, 2017; Riadi et al., 2016). They also extend comparative bank studies (Faizal & Sari, 2019; Helsinawati et al., 2018; Rosdiana, 2019; Sari & Faizal, 2019) by showing that digital-bank strategy can produce offsetting movements. Future studies should use quarterly observations, a larger bank sample, and standardized or regulator-weighted scores. They should also add GCG, liquidity, net interest margin, loan-to-deposit measures, customer growth, transaction intensity, and cybersecurity investment.

Managerial and Policy Implications

Table 10. Managerial, Regulatory, and Research Implications

Stakeholder	Recommended action
Blu management	Reconcile BOPO and CIR; identify whether the CIR increase is driven by technology, acquisition, group-service charges, or income classification. Preserve profitability momentum while controlling cost scalability.
Hibank management	Convert asset-quality improvement and deployed capital into stronger ROA. Establish milestones for the payback period of transformation expenditure and monitor whether higher BOPO and CIR are temporary.

Both banks	Disclose a bridge from capital deployment to risk-weighted asset growth, revenue, expected credit loss, and shareholder return. Pair ratio disclosure with strategic explanation.
Regulators	Evaluate digital-bank efficiency with attention to lifecycle stage and accounting classification, while maintaining strict oversight of capital, asset quality, governance, data security, and operational resilience.
Researchers	Use longer panels and multiple digital banks; incorporate GCG and standardized composite scoring; distinguish economic significance, statistical significance, and causal identification.

Recommendations are derived from the observed ratio patterns and are not supervisory directives.

Ratio-by-Ratio Comparative Synthesis

Table 11. Ratio-by-Ratio Comparative Synthesis

Ratio	Comparative conclusion	Priority analytical follow-up
CAR	Both banks reduced capital intensity substantially. Blu ended slightly higher in 2024, but neither ending value suggests a weak buffer from the ratio alone.	Investigate risk-weighted asset growth and capital productivity.
NPA-total	Blu was slightly better in both years, but Hibank achieved the larger year-on-year improvement.	Preserve low problem assets while expanding credit.
NPA-prod.	Blu was better in 2023; Hibank became slightly better in 2024.	Review underwriting migration and portfolio mix.
CKPN	Blu increased provisioning intensity more strongly. The meaning is ambiguous without coverage and expected-loss detail.	Disclose coverage ratio and stage migration.
ROA	Hibank remained slightly higher in 2024, but Blu recorded the stronger improvement.	Track whether Blu momentum persists and whether Hibank recovers asset productivity.
ROE	Hibank remained higher, while Blu showed the larger increase.	Decompose return into margin, turnover, and leverage.
BOPO	Blu improved, Hibank weakened; Hibank nevertheless retained the lower 2024 ratio.	Separate transformation cost from recurring operating cost.
CIR	Both banks worsened, especially Blu. Hibank had the lower 2024 CIR.	Reconcile income and cost definitions and evaluate digital scale economics.

The synthesis integrates level comparisons, intertemporal change, and conventional ratio direction.

The ratio-by-ratio synthesis demonstrates why a bank ranking is not justified. Hibank's 2024 level performance was stronger on ROA, ROE, BOPO, CIR, and the narrow non-performing-asset ratio. Blu was marginally stronger on CAR and the broad non-performing-asset ratio and maintained a higher CKPN intensity. Yet Blu's

improvement trajectory was stronger for ROA, ROE, and BOPO. Level and momentum therefore point in different directions.

For boards and senior management, the relevant question is not which bank wins the average test but whether each bank's strategy converts capital and technology expenditure into sustainable risk-adjusted earnings. Blu's challenge is cost-income scalability. Hibank's challenge is monetizing capital deployment and digital transformation without sacrificing its favorable asset-quality movement.

For regulators, the findings support proportional but rigorous supervision. Young digital banks may display unusual capital and cost ratios during growth, but lifecycle explanations should not weaken expectations for governance, operational resilience, credit discipline, and transparent disclosure. A strong ending CAR cannot substitute for sustainable earnings, and improving credit quality cannot substitute for an economically viable operating model.

For scholars, the study shows that raw-ratio tests and standardized performance models answer different questions. The raw test asks whether the numerical ratio vector changed on average. A standardized model would ask whether directionally adjusted performance improved. Both can be informative, but the latter requires defensible weights and more observations.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- This article compared the 2023 and 2024 performance of BCA Digital (Blu) and Hibank Indonesia using eight matched financial ratios organized within a modified RGEC framework. The empirical analysis included four principal paired comparisons and an indicator-level difference-in-differences test. No paired t test was statistically significant at alpha 0.05, and all Wilcoxon robustness tests reached the same decision.
- For Blu, the aggregate raw ratio panel was statistically unchanged, but profitability improved and BOPO declined while CIR rose sharply. Asset quality was broadly stable, provisioning intensity increased, and capital intensity declined from a high base. For Hibank, asset quality improved, ROE increased slightly, ROA declined, and both operating-efficiency ratios worsened. Hibank's CAR also declined substantially from an exceptionally high level.
- The banks did not differ significantly in 2023 or 2024, although the 2024 cross-bank effect size was moderate. Hibank reported somewhat stronger 2024 profitability and operating efficiency in level terms, whereas Blu recorded stronger year-on-year improvement in profitability and BOPO. The difference-in-differences result was not significant, confirming that the available data do not establish a statistically reliable divergence in average numerical change.
- The principal scholarly conclusion is that non-significance does not imply immobility. The average raw ratio panel can remain stable because favorable and unfavorable movements offset each other. A valid interpretation must therefore combine t tests with indicator direction, effect size, confidence intervals, normality diagnostics, and business-model context. This integrated approach is especially important for digital banks, where temporary investment costs and rapid balance-sheet expansion can alter capital and efficiency ratios before strategic benefits mature.

Recommendations

- Blu should prioritize a detailed reconciliation of BOPO and CIR and evaluate the marginal acquisition cost of deposits and active users. Future profitability improvement should be assessed against the sustainability of customer incentives and technology expenditure.
- Hibank should preserve its asset-quality improvement while establishing explicit return targets for capital deployment and digital-transformation expenditure. The persistence of higher BOPO and CIR should be monitored quarterly.
- Both banks should disclose a more integrated digital-bank scorecard combining financial ratios, customer activity, platform reliability, cybersecurity incidents, data-governance maturity, and GCG indicators.

Ethical Considerations

Ethical approval was not applicable because this study used secondary, aggregate institutional financial data and did not involve human participants, animals, interventions, or personally identifiable information.

Conflict of Interest

The authors declare that they have no conflicts of interest related to this study.

Data Availability

The dataset analyzed in this study consists of aggregate bank-level financial ratios for December 2023 and December 2024. The working dataset supporting the reported results is available from the corresponding author upon reasonable request. No customer-level or confidential personal data were used.

REFERENCES

1. Bank Indonesia. (2011). Peraturan Bank Indonesia Nomor 13/1/PBI/2011 tentang Penilaian Tingkat Kesehatan Bank Umum. https://www.bi.go.id/id/publikasi/peraturan/Pages/pbi_130111.aspx
2. Bank Indonesia. (2013). Surat Edaran Bank Indonesia Nomor 15/15/DPNP tentang Pelaksanaan Good Corporate Governance bagi Bank Umum. https://www.bi.go.id/id/publikasi/peraturan/Pages/SE_15_15DPNP.aspx
3. Dewi, I. A. S. K., & Candradewi, M. R. (2018). Penilaian tingkat kesehatan bank metode RGEC pada PT Bank Tabungan Negara (Persero), Tbk. periode 2014-2016. *E-Jurnal Manajemen*, 7(3), 1595-1622. <https://doi.org/10.24843/EJMUNUD.2018.v7.i03.p17>
4. Dewi, M. (2018). Analisis tingkat kesehatan bank dengan menggunakan pendekatan RGEC (Risk Profile, Good Corporate Governance, Earnings, Capital): Studi pada PT Bank Rakyat Indonesia, Tbk periode 2013-2017. *Niaga*, 7(3), 125-143. <https://doi.org/10.24114/niaga.v7i3.11602>
5. Faizal, H., & Sari, A. (2019). Analysis comparative between 2017 and 2018 for performance bank of PT. Bank MNC International Tbk. *East African Scholars Journal of Economics, Business and Management*, 2(11), 646-649. <https://doi.org/10.36349/easjebm.2019.v02i11.002>
6. Harahap, S. S. (2018). Analisis kritis atas laporan keuangan. PT RajaGrafindo Persada.
7. Helsinawati, Widyanto, M. L., & Viciwati. (2018). Comparative analysis of Bank DKI financial performance for period year 2016 and year 2017. *Scholars Bulletin*, 4(6), 508-517. <https://doi.org/10.36348/sb.2018.v04i06.005>
8. Otoritas Jasa Keuangan. (2016). Peraturan Otoritas Jasa Keuangan Nomor 4/POJK.03/2016 tentang Penilaian Tingkat Kesehatan Bank Umum. <https://www.ojk.go.id/id/kanal/perbankan/regulasi/peraturan-ojk/Pages/pojk-tentang-penilaian-tingkat-kesehatan-bank-umum.aspx>
9. Otoritas Jasa Keuangan. (2017). Surat Edaran Otoritas Jasa Keuangan Nomor 14/SEOJK.03/2017 tentang Penilaian Tingkat Kesehatan Bank Umum. <https://www.ojk.go.id/id/regulasi/Pages/SEOJK-tentang-Penilaian-Tingkat-Kesehatan-Bank-Umum.aspx>
10. Pramana, K. M., & Artini, L. G. S. (2016). Analisis tingkat kesehatan bank (pendekatan RGEC) pada PT. Bank Danamon Indonesia Tbk. *E-Jurnal Manajemen*, 5(6), 3849-3878.
11. Putri, R. L., & Suryono, B. (2017). Analisis tingkat kesehatan bank (pendekatan RGEC) pada Bank Rakyat Indonesia 2013-2015. *Jurnal Ilmu dan Riset Akuntansi*, 6(8).
12. Riadi, K. S., Atmadja, A. T., & Wahyuni, M. A. (2016). Penilaian tingkat kesehatan bank dengan menggunakan metode RGEC (Risk Profile, Good Corporate Governance, Earnings, dan Capital) pada PT. Bank Mandiri (Persero), Tbk periode 2013-2015. *JIMAT (Jurnal Ilmiah Mahasiswa Akuntansi) Undiksha*, 6(3), 1-12. <https://doi.org/10.23887/jimat.v6i3.8799>
13. Rosdiana, R. (2019). Comparative analysis before and after implementation of Circular Letter Financial Services Authority Number 14/SEOJK.03/2017 concerning assessment of the soundness level bank at PT. Bank Mega Tbk. *Saudi Journal of Business and Management Studies*, 4(7), 596-601. <https://doi.org/10.36348/sjbms.2019.v04i07.007>

14. Sari, A., & Faizal, H. (2019). Comparative analysis performance ratio of Standard Chartered Bank Indonesia between 2017 and 2018 based on RGEC method. *East African Scholars Journal of Economics, Business and Management*, 2(11), 650-653. <https://doi.org/10.36349/easjebm.2019.v02i11.003>
15. Sugiyono. (2018). *Metode penelitian bisnis: Pendekatan kuantitatif, kualitatif, kombinasi, dan R&D* (3rd ed.). Alfabeta.
16. Sutrisno. (2019). *Manajemen keuangan: Teori, konsep dan aplikasi*. Ekonisia.