

Comparative Analysis of Profitability, Credit Risk and Operational Efficiency Between State-Owned Banks and National Private Banks on the IDX for the Period 2020-2024

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Abstract

Keywords:

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The financial performance of national commercial banks and State-Owned Enterprises (SOEs) listed on the Indonesia Stock Exchange between 2020 and 2024 will be examined and contrasted in this study. Three main criteria are used to assess financial performance: operational efficiency, credit risk, and profitability. Return on Equity (ROE), Return on Assets (ROA), and Net Interest Margin (NIM) are used to evaluate profitability. Non-performing loans (NPLs) serve as a stand-in for credit risk, and the operating expenses to operating income ratio (BOPO) is used to gauge operational effectiveness. The research uses secondary data from audited annual financial statements and takes a quantitative method with a comparative design. Eight banks make up the sample, including four state-owned and four national private banks, for a total of 40 observations. Descriptive statistics, the Shapiro-Wilk normality test, the independent sample t-test, and the Mann-Whitney U test were used to evaluate the data. The results show that, across all examined metrics, state-owned banks and national private banks do not significantly differ in terms of their financial performance. This finding implies that ownership structure is not the main factor influencing banking performance. The study has consequences for bank management and regulators in formulating strategic choices and regulations meant to preserve banking stability and enhance performance. It also lays the groundwork for further studies that will broaden the study by introducing other variables and methodological techniques.

INTRODUCTION

funds bank operations must be conducted efficiently. One component of the financial system that functions as a financial intermediary—an institution that helps connect fund owners and users is banking. As a result, banking operations need to be conducted effectively (Sari et al., 2023). One of the primary metrics used to evaluate the efficacy and stability of a nation's financial system is banking performance. Theoretically, the bank's success is measured not only by its profitability (the ability to turn a profit), but also by the degree of credit risk it faces and how well it executes its daily operations.

The capability of banks to handle capital and assets in generating profits is reflected in their profitability. The primary indicator about a bank's potential to turn a profit from all of its operational endeavors is profitability. As stated in PBI No.13/1/PBI/2011, the profitability aspect is one of the components of evaluating the bank's health level, making it the most suitable indicator to evaluate a bank's health (Sunaryo et al., 2021). In banking practice, the level of profitability is generally measured using several financial ratios, including Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM). ROA is used to measure a company's ability or potential for profit generation through the utilization of the company's total assets (Purwanti,

2020). While NIM shows the bank's capacity to handle net interest income from intermediation activities, ROE represents the rate of return on capital invested by shareholders. A high degree of profitability indicates the bank's long-term viability and health in addition to being encouraging to investors. It is crucial to examine the elements influencing the banking industry's profitability because prior studies have demonstrated that it has varied greatly throughout the pandemic and recovery period (Fuadah et al., 2025).

One of the fundamental factors that affect profitability is credit risk, which in this research is represented by NPL ratio. Credit risk indicates the quality of the distribution of funds to the debtor. Credit risk originates from the debtor's potential inability to discharge its obligations, which can directly erode the bank's income and capital (Hanifa et al., 2025). OJK regulations set an NPL threshold below 5% to maintain banking health (Kirani et al., 2025). Operational efficiency reflects the bank's capability to control expenses and maximize revenue. Operational performance efficiency is evaluated through the ratio of Operating Expenses to Operating Income (BOPO). The BOPO ratio reflects the ability of bank management to control operational costs to generate revenue (Fuadah et al., 2025). When the BOPO ratio decreases, the greater the efficiency in the bank's operational performance, which will ultimately exert a beneficial effect on increasing net profit (Kirani et al., 2025).

These three dimensions are interrelated and are important measures in assessing the health and competitiveness of banking. The bank's ability to maintain high profitability, manage credit risk prudently, and operate business efficiently contributes significantly to maintaining sustainability and competitiveness of the banking industry. These three aspects of performance are closely intertwined where optimal profitability can only be achieved if banks are able to minimize credit risk and run operations efficiently. An analysis of performance differences between SOEs and national private banks is important because of fundamental differences in ownership structure and business orientation. State-owned banks, in addition to being profit-oriented, also carry out their mission as agents of government development, while national private banks are more purely focused on maximizing profits for shareholders (Sholika & Zaki, 2024). This difference in orientation has the potential to lead to differences in risk management strategies, operational efficiency, and ultimately profitability.

Previous research has analyzed banking performance from various perspectives. Astuti's study (Astuti et al., 2022) shows that private banks exhibit stronger financial performance than state-owned banks with significant differences in the CAR and NPL ratios for the 2018-2021 period, but there were no significant differences observed statistically in the ROA, BOPO, and NIM ratios between the two bank groups. Meanwhile, Iswardhani et al. (2025) analyzed the comparison of profitability across state-owned and private banks categorized under Book 4 category during the 2018-2023 period through the ratio of ROA, ROE, and NIM. The results show that the COVID-19 pandemic exerted a significant influence on the profitability of all banks in 2020, with average ROA, ROE, and NIM growth for private banks slightly higher than for state-owned banks, although the difference is not too large. However, the standard deviation for SOEs is higher than for private banks, which indicates that there is more variation in the performance of state-owned banks.

Research on banking performance in Indonesia has been conducted, but there are still some research gaps that have not been fully answered. Based on the two studies, it can be concluded that the difference in performance between state-owned banks and private banks is not always reflected in the level of profitability, but is more visible in the aspects of risk, capital, and

performance stability. However, Astuti et al. (2022) research is still limited to the pre- and early pandemic periods, while Iswardhani et al. (2025) research only focuses on profitability aspects and is limited to Book 4 category banks. Therefore, there is still a research gap to examine the assessment of performance across state-owned and private banks more comprehensively by integrating aspects of profitability, credit risk, and operational efficiency in the post-COVID-19 pandemic period.

The novelty in this study lies in several aspects, (1) this study integrates three dimensions of banking performance simultaneously, namely profitability (ROA, ROE, and NIM), credit risk (NPL), and operational efficiency (BOPO), in a comparative analysis among SOEs and national private banking institutions. This approach provides a more comprehensive picture of banking performance and health than previous research which tends to be partial; (2) this study uses the most recent observation period, namely 2020-2024, which has received limited research attention comparatively in earlier research; (3) this study applied a comparative statistical approach adjusted to the characteristics of the data, particularly utilizing the Independent sample t-test and the Mann-Whitney U Test as indicated by the normality test results. This approach ensures that the performance differences analyzed are more accurate and statistically valid.

With this novelty, This study is intended not only to enrich the empirical literature in the banking sector, but also to make a practical contribution for regulators, bank management, and investors in understanding the comparative performance of SOEs and national private banks in the midst of the dynamics of the Indonesian banking industry that continues to develop. Based on this background, this study's problem statement is whether there is a difference in profitability, financial risk and operational efficiency between SOEs and national private banks listed on the IDX in 2020-2024. In accordance with the formulation of the problem above, this study aims to analyze and compare profitability, credit risk, and operational efficiency among SOEs and national private banks registered on the Indonesia Stock Exchange during the period 2020–2024 using a comparative statistical test.

METHODS

The financial record disparities among SOEs and National Private Banks listed on the IDX are examined in this study using a quantitative approach and a comparative design. In order to give a complete view of banking circumstances during the last five years, including the post-Covid-19 pandemic recovery period, the observation period utilized is 2020–2024.

The entire population of banks listed on the IDX constitutes the subject of this research. The sample selection was conducted using the purposive sampling technique, which is the selection of samples based on certain criteria: (1) state-owned banks listed on the IDX covering the years 2020 to 2024; (2) national private banks listed on the IDX for the 2020 to 2024; (3) prepare and present complete audited financial statements for the duration of the research; and (4) have the necessary financial data for the calculation of profitability ratios, credit risk, and operational efficiency. Based on the sample criteria, for the group of state-owned banks, a saturated sampling technique was used by taking the entire population, namely four state-owned banks listed on the Indonesia Stock Exchange (IDX). Meanwhile, for the national private bank group, four banks were selected as comparators so that the sample number was equivalent and the comparison results were valid. Thus, the total unit of analysis in this study is 40 observations obtained from 8 banks over a period of 5 years.

Secondary data sourced from companies' yearly financial statements are employed in this research that have been audited and made publicly available via the official website of the IDX. Financial performance measurement uses several specific financial ratios. The profitability aspect is calculated using the ROA, ROE and NIM ratios, while the credit risk aspect is measured using NPL and to measure operational efficiency using the Operating Cost to Revenue (BOPO) ratio.

The data analysis technique used includes three stages. First, descriptive statistics to present the features of the data via the average value, standard deviation, minimum value and maximum value of each financial ratio in both groups of banks. Second, the normality test uses Shapiro Wilk to determine the distribution of data and determine the appropriate statistical techniques for the comparative test. Third, comparative analysis uses an independent sample t-test if the data is normally distributed or a Mann-Whitney U test if the data is not normally distributed. The entire process of data processing and analysis is carried out using IBM SPSS software.

RESULTS

Descriptive Statistical Test

The features related to financial performance statistics of national commercial banks and state-owned banks for the years 2020–2024 are displayed in table 1 based on the findings of descriptive statistical analysis.

**Table 1. Descriptive Statistics on State-Owned Banks and National Private Banks
Financial Performance from 2020 to 2024**

Categories	Banks	N	Mean	Min	Max	Std. Dev.
ROA	State-Owned Banks	20	.016	.004	.031	.009
	Private Banks	20	.025	.004	.190	.040
ROE	State-Owned Banks	20	.129	.029	.209	.047
	Private Banks	20	.097	.021	.209	.059
NIM	State-Owned Banks	20	.045	.024	.071	.014
	Private Banks	20	.049	.033	.072	.013
NPL	State-Owned Banks	20	.028	.011	.042	.008
	Private Banks	20	.025	.017	.036	.006
BOPO	State-Owned Banks	20	.677	.461	.899	.118
	Private Banks	20	.656	.370	.873	.162

Source: data processed, 2026

According to the test results in Table 1, private banks have an mean return on assets (ROA) of 0.025 with a SD of 0.040, while state-owned banks have an average ROA of 0.016 with a SD of 0.009. Private banks have an mean ROE of 0.097 with a SD of 0.059. SOEs recorded an mean ROE of 0.129 with a SD of 0.047. Unlike commercial banks, which have an mean NIM of 0.049 with a SD of 0.013, SOEs have an mean NIM of 0.045 with a SD of 0.014.

The average non-performing loan (NPL) ratio for state-owned banks is 0.028 with a SD of 0.008, but the average NPL ratio for private banks is slightly lower at 0.025 with a SD of 0.006. SOEs have an mean BOPO of 0.677 with a SD of 0.118, while private banks have a lower mean BOPO of 0.656 with a SD of 0.162. A lower BOPO figure indicates a higher level of operational efficiency.

Normality Test

To ascertain whether or not the data from SOEs and private banks were distributed

normally, the Shapiro-Wilk method was employed to conduct the normality test. The decision-making criterion is that if the significance value (Sig.) > 0.05 , then the data is declared to be normally distributed, on the other hand, if the significance value (Sig.) is < 0.05 , then the data is not normally distributed. The outcomes of the normality test are reported in Table 2.

Table 2. Shapiro-Wilk Normality Test

Categories		Shapiro-Wilk			Distribution
		Statistics	N	Sig	
ROA	State-Owned Banks	.928	20	.141	Not Normally Distributed
	Private Banks	.457	20	.000	
ROE	State-Owned Banks	.122	20	.510	Normally Distributed
	Private Banks	.159	20	.144	
NIM	State-Owned Banks	.871	20	.012	Not Normally Distributed
	Private Banks	.896	20	.035	
NPL	State-Owned Banks	.949	20	.352	Not Normally Distributed
	Private Banks	.904	20	.048	
BOPO	State-Owned Banks	.948	20	.336	Normally Distributed
	Private Banks	.931	20	.163	

Source: data processed, 2026

Referring to the results shown in Table 2, the ROE data exhibits a normal distribution in both groups of banks, with the significance value of state-owned banks being $p = .510$ and that of private banks being $p = .144$. The data of state-owned banks are normally distributed for ROA, with a significance value of $p = .141$, whereas the data of private banks is not normally distributed, with a significance value of $p = .000$. With a significance value of $p = .012$ for state-owned banks and $p = .035$ for private banks, the NIM variable was not normally distributed in either group. State-owned bank data on non-performing loans (NPLs) has a normal distribution ($p = .352$), whereas private bank data does not ($p = .048$). With a significance value of $p = 0.336$ for state-owned banks and $p = 0.163$ for private banks, the BOPO variable shows a normal distribution in both groups. Referring to the findings of the normality test, a comparative analysis was conducted using an independent samples t-test for the ROE and BOPO variables, which were normally distributed as indicated by the normality test results, and a Mann-Whitney U test for the ROA, NIM, and NPL variables, which did not meet the normality assumption.

Comparative Analysis

According to the results of the normality test, the independent sample t-test was used for data that was normally distributed, and the Mann-Whitney U test was used for data that was not normally distributed in comparative research. The decision criterion for the comparison analysis among SOEs and private national banks was set at a significance level of $\alpha = 0.05$. If the significance value (Sig.) > 0.05 , there were no discernible variations across state-owned and national private banks. Nevertheless, if the significance value (Sig.) < 0.05 , then significant differences were found among the two bank groups. The outcomes of the comparative test are presented in Table 3.

Table 3. Differential Test of the Financial Performance of State-Owned Banks and National Sasta Banks for the 2020-2024 Period.

	Indicator	Statistical Test	Statistical Value	Sig. (2-tailed)	Remarks
PROFITABILITY	ROA	<i>Mann-Whitney U test</i>	$z = -.135$	.892	No Significant Difference
	ROE	<i>Independent t-test</i>	$t = 1.867$	.070	No Significant Difference
	NIM	<i>Mann-Whitney U test</i>	$z = -1.084$	.279	No Significant Difference
CREDIT RISK	NPL	<i>Mann-Whitney U test</i>	$z = -1.477$	.140	No Significant Difference
OPERATIONAL EFFICIENCY	BOPO	<i>Independent t-test</i>	$t = .467$	.643	No Significant Difference

Source: data processed, 2026

As shown in the comparative test outcomes in Table 3, the Mann-Whitney U test on ROA shows a z value of -.135 with a significance level of $p = 0.892$, indicating that there is no significant difference among the ROA of SOEs and private banks. The results of the independent sample t-test with a significance level of $p = 0.070$ and an ROE t value of 1.867 indicate that the ROE of the two groups of banks does not differ significantly from each other. The results of the Mann-Whitney U test for NIM testing show that there is no significant difference in NIM among SOEs and private banks, with a z value of -1.084 and a significance level of $p = 0.279$, respectively.

There is no discernible difference in the amount of NPLs among state-owned banks and national commercial banks, according to the findings of the Mann-Whitney U test for NPLs, which had a value of $z = -1.477$ with a significance level of $p = 0.140$ in the area of credit risk. In contrast, the independent sample t-test findings for operational efficiency as determined by BOPO revealed a value of $t = 0.467$ with a significance of $p = 0.643$, indicating that there is no discernible difference in operational efficiency among national private and state-owned banking institutions.

The results of the test that have been carried out show that all performance indicators do not show a significant difference between SOE Banks and Private Banks ($\text{Sig.} > 0.05$). This showing no statistically significant difference between SOEs and private banks in all aspects of financial performance analyzed, including profitability (ROA, ROE, NIM), credit risk (NPL), and operational efficiency (BOPO).

DISCUSSION

This study's findings show that financial performance does not differ significantly between SOEs and national private banks registered on the IDX for the 2020-2024 period in all aspects tested, including profitability (ROA, ROE, NIM), credit risk (NPL), and operational efficiency (BOPO). These findings provide important implications for understanding the dynamics of competition and banking performance in Indonesia, especially in the context of a period that includes the COVID-19 pandemic and the economic restoration phase post-pandemic.

Profitability

In terms of profitability, the findings obtained from the comparative analysis indicated that there was no significant difference in ROA ($p = .892$), ROE ($p = .070$), and NIM ($p = .279$) between SOEs and national private banks. These outcomes support accordance with the research of (Supit et al. (2019) which analyzed the comparison of the financial performance of publicly listed SOEs and national private banks on the IDX, showing that no differences were observed in financial performance as compared the two bank groups in the ROA, ROE, NIM and CAR indicators. Similar results were also found by Astuti et al. (2022) research which found that no significant differences were found in the ROA and NIM ratios as compared the two groups of banks in the 2018-2021 period.

The consistency of the results of this research compared with earlier studies indicates that in the long run, both state-owned banks and national private banks have relatively equal capabilities in generating profits and managing their productive assets. Nonetheless, the descriptive statistical data show interesting variations in the average value of each ratio. Private banks demonstrate a higher average ROA (.025) than SOEs (.016), but SOEs show a higher average ROE (.129) than private banks (.097). This phenomenon can be explained through differences in capital structure and equity management strategies among the two groups of banks. SOEs tend to have a smaller equity base relative to their assets, resulting in higher ROE even though their ROA is lower. ROE is considered a significant indicator by shareholders and potential investors, state-owned banks are more trusted by investors so that shares are more in demand by potential investors compared to national private commercial banks, so that the additional equity will cause an increase in capital so that it will have an impact on the achievement of net profit (Purwanti, 2020). Meanwhile, private banks are showing better efficiency in utilizing total assets for profit generation, reflected in higher ROAs.

The 2020-2024 research period, which covers the COVID-19 pandemic, provides a special context in the interpretation of the results of this study. Kusumawardani (2022) in his research on the profitability of SOEs during the COVID-19 pandemic found that there was a relationship between the ratio of NIM, ROA, ROE and BOPO leading up to and during the COVID-19 pandemic in state-owned banks. The COVID-19 pandemic has had a substantial impact on Indonesia's banking industry through slowing economic growth, declining credit quality, and increasing credit restructuring needs. However, the fact that there was no significant difference between the performance of state-owned banks and private banks in this study indicates that the two groups of banks have relatively similar resilience in the face of economic shocks due to the pandemic. This is likely due to the government's stimulus policies that apply to the entire banking sector as well as the strict supervision of the Financial Services Authority during the crisis period.

Credit Risk

Concerning credit risk, as indicated by NPLs, which is a key indicator to assess credit quality and the capability of the bank to regulate credit risk, because high NPLs are an indicator of bank failure in managing their business (Dwihandayani, 2017). The results showed that there was no significant difference ($p = .140$) among SOEs and national private banks. SOEs recorded an average NPL of .028, slightly higher than private banks which had an average NPL of .025. Although there is a difference in the average score, the difference is not statistically significant.

This finding is different from the outcomes of a study performed by Astuti et al. (2022) which revealed the presence of a significant difference in the NPL ratio between SOEs and private banks for the 2018-2021 period, where private banks showed better performance with lower NPLs. However, The outcomes of this research are in agreement with the findings of Wanma & Anggarini (2019) who found that there is no significant difference in NPLs between SOEs and private banks listed on the IDX. This difference in findings can be explained through the difference in the observation period and the sample used, where this study covers a longer period until 2024 which is the post-pandemic economic recovery phase, as well as different sample sizes.

The relatively similar NPL levels among state-owned banks and private banks demonstrate that both bank groups have adopted relatively equal credit risk management. (Yani & Santosa, (2020) explained that higher NPLs indicate that banks have non-performing loans that have an impact on declining revenues, so NPL control is important in maintaining bank performance. This shows improvements in the practices of creditworthiness assessment and credit monitoring in state-owned banks, which have historically been associated with higher NPL rates than private banks. The credit restructuring policy that was widely implemented during the pandemic through POJK No. 11/POJK.03/2020 also contributed to the stabilization of NPL levels in both bank groups (OJK, 2020). State-owned banks have an obligation to run government programs that sometimes involve loans with higher risks but with broader socio-economic impacts, so that NPL levels that are only slightly higher than private banks can be considered a good enough achievement. With the NPL levels of the two bank groups being well below the 5% maximum limit established by Bank Indonesia, it can be concluded that the credit quality of the two groups of banks is in the healthy and well-controlled category.

Operational Efficiency

For operational efficiency measured through BOPO, the results showed that no significant difference was found ($p = .643$) among SOEs and national private banks. SOEs have an average BOPO of .677, slightly higher than private banks which recorded an average of .656. Smaller the BOPO ratio, the more effective the company undertakes control of operational costs, so that the possibility of the company in a problematic condition is smaller (Junaidi, 2018). A lower BOPO value indicates better operational efficiency, but the differences are not significant enough to conclude that private banks are more operationally efficient. This finding contrasts with the research of Astuti et al. (2022) which found that there was no significant difference in the BOPO ratio between state-owned banks and private banks for the 2018-2021 period. The consistency of the research results in the BOPO ratio indicates that both state-owned and private banks have made efforts to optimize operational costs with a relatively equal success rate.

The relatively equal operational efficiency between the two groups of banks can be explained through several factors. First, the digital transformation carried out by both groups of banks has helped reduce operational costs through process automation and reduced reliance on physical branch offices. Second, the fierce competition in the banking industry encourages all banks to

continuously improve their operational efficiency to remain competitive. Third, the regulation and supervision of the Financial Services Authority that apply equally to all banks encourages the standardization of efficient operational practices.

CONCLUSION

Conclusion

Through the integration of three primary dimensions—profitability, credit risk, and operational efficiency, this research intends to analyze the financial performance of SOEs and national commercial banks listed on the IDX between 2020 and 2024. According to the findings of comparison tests and descriptive statistical analysis, state-owned banks and national commercial banks do not significantly differ in any of the performance metrics examined, including ROA, ROE, NIM, NPL, and BOPO.

These findings show that SOEs and national private banks have relatively equivalent levels of financial performance. This condition indicates that differences in ownership structure and business orientation do not automatically result in significant differences in financial performance. The similarity in performance is allegedly influenced by the implementation of uniform banking regulations, credit restructuring policies, and strict supervision from the Financial Services Authority that applies to all banks during and after the pandemic. Academically, This study aids in the process of developing the literature in the banking sector by presenting the latest empirical evidence that bank ownership is not the only determinant of financial performance. By combining aspects of profitability, credit risk, and operational efficiency in one comparative analysis framework, this study enriches understanding of the dynamics of banking performance in Indonesia.

Given the research's limitations, the findings of this study should be carefully understood and not broadly generalized. The use of ratio-based financial indicators that do not accurately reflect non-financial factors, the relatively small sample size and the fact that this research is limited to banks listed on the IDX, and the comparative analytical approach that does not look at the causal relationship between variables are some of its limitations.

According to the findings of the research that has been done. To make the research findings more representative, it is advised that the sample size be increased in the following study by incorporating non-BUKU 4 institutions, Islamic banks, or regional development banks. A more complete picture of the elements influencing banking performance is also anticipated with the inclusion of additional variables including corporate governance, digital innovation, and macroeconomic considerations.

Future research may also use further analysis methods, such as panel data regression or dynamic approaches, to test the causal connection between profitability, credit risk, and operational efficiency. From a practical perspective, the results of this study can be considered for regulators and bank management in formulating policies and strategies oriented towards improving banking performance and stability in a sustainable manner.

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