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## ANALYSIS OF THE INFLUENCE OF FINANCIAL PERFORMANCE ON TAX EFFECTIVENESS IN BANKING COMPANIES LISTED ON THE IDX IN THE 2020-2023 PERIOD

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#### Abstract:

This study analyzes the effect of financial performance on tax effectiveness in banking companies listed on the Indonesia Stock Exchange (IDX) for the 2020–2023 period. The sample includes 32 banks (128 bank-year observations) using a panel Random Effects Model (REM) approach. The independent variables include Return on Assets (ROA), Capital Adequacy Ratio (CAR), and Cost Efficiency Ratio (BOPO), while tax effectiveness is proxied by the Effective Tax Rate (ETR). The results show that ROA and BOPO have a significant negative effect on ETR, indicating that higher profitability and better operational efficiency are correlated with lower effective tax rates. Conversely, CAR does not show a significant effect. Simultaneously, all three financial performance indicators significantly influence ETR, the main contribution of this study is the integration of profitability and operational efficiency dimensions to explain variations in ETR in the Indonesian banking sector during the pandemic and post-pandemic phases, periods rife with regulatory changes and risk dynamics. Robustness procedures were employed to ensure the reliability of the findings, including the use of clustered standard errors at the entity level, extreme value winsorization, and alternative estimates (fixed effects), as well as replacing the proxy with cash ETR; all of which yielded directional inferences. ETR is defined as pre-tax income tax expense, with precautionary treatment for non-positive pre-tax income observations. Policy implications for fiscal authorities and banking supervisors include the need for regulatory design that balances efficiency incentives with tax base protection. Limitations include potential endogeneity and the lack of governance indicators; further research is recommended to incorporate instruments/lags, governance variables, and risk dimensions to enhance causal understanding.

**Keywords:** Tax Effectiveness, ROA, CAR, BOPO, Banking

## INTRODUCTION

Taxes are a country's primary source of revenue for funding national development. From 2020 to 2022, Indonesia's tax revenues continued to show an upward trend. In 2022, tax revenues were recorded at IDR 2,034.5 trillion, or 115.6% of the State Budget target, and increased again in 2023 to IDR 2,155.4 trillion (Ministry of Finance, 2023). This contribution is inseparable from the role of various industrial sectors, one of which is the banking sector, which not only acts as a financial intermediary but also as a significant taxpayer for the country.

However, tax effectiveness, reflected in the Effective Tax Rate (ETR), remains a critical issue in the banking context. With the growth of the digital economy, changes in tax regulations, and increasing industry competition, banks are required to be more transparent and efficient in managing their financial performance while meeting their tax obligations.



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In terms of financial performance, international research shows that bank profitability and operational efficiency are closely related to the ETR level. Banks with high ROA usually have a larger effective tax burden, while banks with low cost efficiency (high BOPO) actually tend to reduce their tax effectiveness (Bushman et al., 2009; Khurana & Moser, 2013). In the banking context, financial performance is usually measured using Return on Assets (ROA), Capital Adequacy Ratio (CAR), and Operating Costs to Operating Income (BOPO). ROA reflects the bank's ability to generate profits from its assets, CAR indicates capital adequacy in bearing risks, while BOPO reflects the level of operational efficiency.

Previous studies have shown varying results. Rahmawati and Mildawati (2019) found that profitability (ROA) and capital intensity positively influence ETR, while firm size has no significant effect. Agustin et al. (2023) stated that financial performance and institutional ownership influence tax avoidance practices in banking. Rahmadi et al. (2020) also found a relationship between ROA and the debt-to-equity ratio and cash ETR in banking. However, Widati et al. (2024) found that leverage significantly influences ETR, while ROA and firm size did not.

These discrepancies in findings indicate a research gap. Field observations also show that companies with high financial performance do not always achieve optimal tax effectiveness. It indicates a gap between a company's financial capacity and its realized tax obligations. Therefore, improved financial performance does not automatically translate to increased tax effectiveness. In addition to internal factors, external conditions such as changes in tax regulations, fiscal incentives, monetary policy, and industry competition also influence tax effectiveness. It underscores the urgency of research that not only considers internal company factors but also places them within the context of evolving external dynamics.

In line with the above explanation, this study attempts to analyze the influence of ROA, CAR, and BOPO on tax effectiveness, as proxied by ETR, in banking companies listed on the Indonesia Stock Exchange (IDX) for the 2022–2023 period. These findings are expected to contribute theoretically to the development of accounting and taxation literature, and practically serve as considerations for banking management in optimizing financial performance while improving tax compliance.

**Agency Theory.** This theory explains the conflict of interests between shareholders (principals) and management (agents), as proposed by Jensen and Meckling (1976). In practice, managers have incentives to maximize both personal and corporate interests, one of which is by reducing the tax burden to appear higher net profits. On the other hand, the government, as the tax authority, demands the optimization of tax revenue for the benefit of the state. This conflict of interest creates room for variation in the Effective Tax Rate (ETR) achieved by companies.

In the banking context, tax management is often associated with managerial strategies to maintain profitability and efficiency. Research by Rahmadi et al. (2020) found that ROA and Debt-to-Equity Ratio (DER) influence cash ETR for banks listed on the Indonesia Stock Exchange (IDX). It indicates a managerial incentive to balance profitability and tax obligations, consistent with the conflict of interest mechanism explained by agency theory.

**Tax Compliance Theory.** Tax Compliance Theory focuses on the extent to which taxpayers, both individuals and businesses, fulfill their tax obligations as stipulated in existing regulations. Tax compliance is influenced by many factors, including the fairness of the tax system, the level of administrative simplicity, sanctions, and the effectiveness of tax oversight (Allingham & Sandmo, 1972). In the corporate context, tax compliance is closely related to financial condition; the healthier an entity's financial condition, the greater its capacity to effectively fulfill its tax obligations.

Several previous studies support this theoretical framework. Agustin et al. (2023) found that financial performance and institutional ownership structure significantly influence the realization of tax avoidance in Indonesian banks, indicating that tax compliance is inseparable from internal company factors. Soelistono and Adi (2022) revealed that Corporate Social Responsibility (CSR) disclosure and leverage influence tax compliance levels, in line with the view that transparency and social responsibility strengthen compliance. Furthermore, Sofyawati and Rohman (2024) stated that corporate governance aspects impact the Effective Tax Rate (ETR), demonstrating the significant role of internal control mechanisms in encouraging tax compliance.

**Profitability Theory (ROA).** Profitability theory explains a company's ability to generate profits from its resources, which is generally measured using financial ratios. ROA is a commonly used indicator because it indicates the effectiveness of a company's use of its assets to generate profits (Hanafi & Halim, 2016). A high ROA reflects good profitability, thus ensuring the company has greater financial capacity to meet its tax obligations.

In the context of taxation, profitability is a crucial factor influencing a company's tax effectiveness. Rahmawati and Mildawati (2019) stated that profitability significantly influences ETR, indicating that companies with high profits can meet their tax obligations without sacrificing liquidity or operational investment. This finding is supported by the findings of Bushman et al. (2009) and Khurana and Moser (2013), who noted that banks with high ROA tend to have higher ETRs because their sufficient profit capacity allows for more effective tax management. Furthermore, Agustin et al. (2023) emphasized that companies with better financial performance are generally more tax compliant. It is in line with profitability theory, which emphasizes that the more profitable a company is, the greater its ability to cover its tax obligations. Thus, ROA not only serves as an indicator of profitability but also serves as an important variable in explaining tax effectiveness from two perspectives: profit-generating capacity and tax compliance level.

**Banking Theory and Capital Adequacy Ratio (CAR).** Banking Theory and Capital Adequacy Ratio (CAR) are defined as the primary indicators used to assess bank health and stability. According to Bank for International Settlements (BIS) standards and Financial Services Authority (OJK) regulations, CAR reflects a bank's ability to provide adequate capital to cover the risk of losses from its productive assets (OJK, 2021). A higher CAR will ensure banks have sufficient capital reserves to face potential risks, thereby strengthening financial stability and increasing the bank's capacity to meet fiscal obligations, including tax obligations.

Banks with adequate capital are considered healthier and have greater operational resilience, enabling them to fulfill their tax obligations efficiently without compromising financial stability. Conversely, a low CAR can increase liquidity risk and reduce a bank's ability to pay taxes optimally.

Several empirical studies support the role of CAR in influencing tax effectiveness. Isnaini (2022) found that capital ratios and profitability significantly impact banks' tax avoidance practices, indicating that capital structure is closely related to the Effective Tax Rate (ETR). Research by Rahmadi et al. (2020) also shows that capital structure (debt-to-equity ratio) and ROA influence cash ETR in banks listed on the IDX, strengthening the argument that capital health and asset management play a crucial role in tax compliance. Furthermore, Agustin et al. (2023) emphasized that banks with strong capital and solid institutional ownership generally exhibit higher tax compliance, as management can fulfill tax obligations without compromising operational stability.

**Operational Efficiency (BOPO).** BOPO is one of the main ratios used to measure the level of operational efficiency in banks by comparing total operating costs to operating income. A low BOPO ratio reflects high efficiency, where the bank is able to generate greater revenue with relatively low costs. This condition increases profitability and can ultimately have a positive impact on tax





effectiveness, as the bank has a greater capacity to cover tax liabilities without sacrificing liquidity or operational investment. Conversely, a high BOPO ratio indicates high operating costs compared to income generated, thus depressing profits and potentially lowering the Effective Tax Rate (ETR).

Several empirical studies support the importance of operational efficiency in influencing tax effectiveness. Widati et al. (2024) found that operational efficiency, in addition to ROA and leverage, is a significant variable contributing to variations in ETR in banking companies. Rahmawati and Mildawati (2019) also showed that good operational cost management correlates with increased profits and higher tax compliance. Soelistiono and Adi (2022) emphasized that operational efficiency can suppress tax avoidance practices because internally efficient banks have greater financial space to meet tax obligations in a timely manner. Furthermore, Isnaini (2022) emphasized that good cost efficiency, when combined with adequate capital, supports a bank's ability to comply with tax regulations.

Thus, BOPO not only serves as an indicator of a bank's operational efficiency but also serves as a crucial variable in explaining tax effectiveness. It is because optimal operational cost management contributes to increased profitability and tax compliance, which is ultimately reflected in the ETR.

**Tax Effectiveness.** ETR is defined as a measure that aims to assess a company's effectiveness in paying taxes by comparing the tax burden borne to pre-tax profit. A high ETR generally reflects a company's compliance with tax obligations, while a low ETR may indicate tax planning practices or even tax avoidance. Thus, ETR is not only an indicator of tax compliance but also reflects a company's financial condition and managerial policies in managing its fiscal burden.

In the banking sector, ETR serves as an important indicator for assessing tax efficiency, as optimal tax payments demonstrate a balance between profitability, operational efficiency, and capital stability. Various studies confirm that various internal company factors influence ETR. Laksmi et al. (2023) found that leverage and corporate social responsibility disclosure play a significant role in tax avoidance practices in banks, thus influencing ETR variations. Research by Rahmawati and Mildawati (2019) also shows that more profitable and well-capitalized companies tend to report higher ETRs, underscoring the importance of profitability and capital structure in tax effectiveness. Furthermore, a study by Widati et al. (2024) highlighted the role of leverage and operational efficiency as significant determinants of corporate tax payment levels.

Thus, ETR can be understood as the result of a combination of various internal company factors, including profitability, operational efficiency, and capital structure, as well as managerial policies in response to tax regulations. A comprehensive understanding of the determinants of ETR is crucial for both academic literature development and managerial practice, as it can help companies improve tax compliance without sacrificing financial performance or operational stability.

**The Effect of Profitability Performance (ROA) on Tax Effectiveness (ETR).** ROA is a key indicator of profitability, illustrating a company's ability to generate net profit from its total assets. A higher ROA reflects a company's increasing effectiveness in managing its assets to generate profits. It not only reflects efficient resource management but also demonstrates a company's greater capacity to meet its fiscal obligations. Theoretically, increased profits through a high ROA will result in an increased tax burden, thus driving a higher ETR.

Previous research supports a positive relationship between profitability and tax effectiveness. Rahmawati and Mildawati (2019) found that profitability significantly influences ETR, while Rahmadi et al. (2020) showed that ROA has a positive relationship with cash ETR in the banking sector listed on the IDX. International research by Bushman et al. (2009) and Khurana and Moser

(2013) also suggests that banks with high ROA typically have a higher effective tax burden because the profits generated support optimal tax compliance. Therefore, the higher the ROA, the greater the company's tax effectiveness. Therefore, the researchers propose the following hypothesis:

H1: Return on Assets (ROA) has a positive effect on tax effectiveness (ETR).

**The Effect of the Capital Adequacy Ratio (CAR) on Tax Effectiveness (ETR).** CAR is an important indicator that reflects a bank's ability to cover the risk of loss through its capital adequacy. An increased CAR strengthens the bank's capital position and financial stability. It enables the bank to operate more securely while also having a greater capacity to meet its fiscal obligations, including tax payments. In other words, banks with a high CAR are able to fulfill their tax obligations optimally, thus increasing their Effective Tax Rate (ETR).

Empirical research supports the role of CAR in tax effectiveness. Isnaini (2022) stated that the capital adequacy ratio impacts tax avoidance practices, which indirectly impacts the ETR level. It aligns with the view that capital adequacy is not only a prerequisite for bank health but also a crucial factor in tax compliance. Agustin et al. (2023) also emphasized that banks with strong capital are generally more compliant in meeting tax obligations because they do not face high liquidity pressures. Therefore, the higher the CAR, the greater the company's tax effectiveness. Referring to this explanation, the researchers propose the following hypothesis:

H2: The Capital Adequacy Ratio (CAR) has a positive effect on tax effectiveness.

**The Effect of Operating Costs to Operating Income (BOPO) on Tax Effectiveness (ETR).** The Operating Cost to Operating Income (BOPO) ratio is an indicator used to assess a bank's operational efficiency. A low BOPO reflects high efficiency, where operating expenses are relatively small compared to revenue. This condition allows the bank to generate higher profits, thus strengthening the company's capacity to meet tax obligations. Conversely, a high BOPO indicates low operational efficiency, as funds spent exceed revenue, thus depressing profits and impacting the Effective Tax Rate (ETR).

Several studies support the relationship between operational efficiency and tax effectiveness. Bushman et al. (2009) and Khurana and Moser (2013) found that companies with low efficiency tend to have a lower effective tax burden. Widati et al. (2024) also emphasized that cost efficiency is a significant factor influencing variations in ETR, particularly in the banking sector. It indicates that operational efficiency, reflected in the BOPO, plays a strategic role in determining tax compliance and the effectiveness of corporate tax payments. Therefore, the lower the BOPO, the higher the company's tax effectiveness. Based on this explanation, the researchers propose the following hypothesis:

H3: Operating Costs to Operating Income (BOPO) negatively impacts tax effectiveness.

**The Effect of Return on Assets (ROA), Capital Adequacy Ratio (CAR), and BOPO on Tax Effectiveness (ETR).** The purpose of the simultaneous test is to identify whether the independent variables studied – in this case, ROA, CAR, and BOPO – simultaneously have a significant effect on the dependent variable, namely tax effectiveness (ETR). Theoretically, each variable has been explained as having a mechanism that influences the effective tax rate: ROA through profit-generating ability, CAR through capital strength, which reduces liquidity pressure and the risk of tax avoidance, and BOPO through the level of operational efficiency, which affects profit margins. When these three mechanisms interact in a bank's operational practices, their combined effect can be stronger or even neutralize each other than their individual effects.

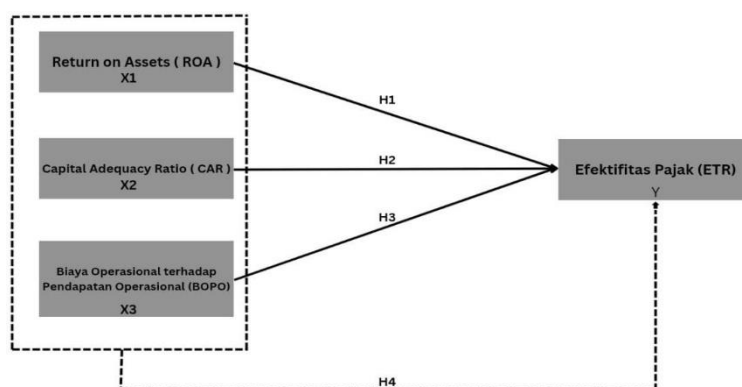
Within an empirical framework, several studies have shown that a combination of financial performance and operational efficiency simultaneously determines the pattern of corporate tax burdens and tax compliance. For example, research by Riyadi and Yulianto (2014) found that

profitability, capitalization, and operational efficiency simultaneously had a significant impact on the effective tax rate in banking companies. Similar results were also demonstrated by Sari (2020), who stated that ROA, CAR, and BOPO variables jointly influenced tax effectiveness, although some of them were not always significant. Furthermore, research by Pramudya (2025) emphasized that simultaneous tests provide a broader picture of the relationship between financial performance and tax effectiveness, as the interaction between variables can explain a greater variation in tax burden than partial tests.

Therefore, it is important to conduct a simultaneous test (usually using the F/ANOVA test) to assess the overall strength and significance of the regression model. The procedure is simple: the null hypothesis states that the coefficients of all independent variables are equal to zero (no simultaneous influence), while the alternative hypothesis states that at least one variable contributes and, together, influences the ETR.

H4: Simultaneously, Return on Assets (ROA), Capital Adequacy Ratio (CAR), and BOPO significantly influence tax effectiveness (ETR).

**Research Model.** This section explains the impact of financial performance on tax effectiveness for banking companies listed on the IDX. Financial performance is proxied by ROA, CAR, and BOPO. ROA and CAR are predicted to positively influence ETR, as high profitability and capital adequacy increase a bank's ability to meet tax obligations. Conversely, BOPO is predicted to negatively impact ETR, as low operational efficiency depresses profits, thereby reducing tax payment capacity. In addition to partial analysis, this study also simultaneously examines the effect of ROA, CAR, and BOPO on ETR to determine the extent to which overall financial performance influences banking companies' tax effectiveness.



**Figure 1. Conceptual Framework**

## METHODS

**Type of Research and Description of the Research Population (Object).** Quantitative research is an approach applied using an associative method. It aims to examine the influence of independent variables, namely ROA, CAR, and BOPO, on the dependent variable, namely tax effectiveness, as measured by the ETR. This approach was chosen because it can illustrate the causal relationship between bank financial performance and the level of tax payment effectiveness.

The research subjects were banking companies listed on the Indonesia Stock Exchange (IDX) between 2020 and 2023. The population included all banks that consistently provide complete annual financial reports, accessible to anyone. To obtain a representative sample, this study employed a purposive sampling technique with the following criteria:





2. Analytical efficiency – secondary data allows for longitudinal and comparative research between companies in the 2020–2023 period, allowing for tracking of changes in financial performance and tax effectiveness over time.
3. Practicality and economy – compared to primary methods such as interviews or questionnaires, which are time-consuming and expensive, secondary data is more accessible and readily available to the public.

This approach also aligns with research by Rahmawati and Mildawati (2019) and Agustin et al. (2023), which used published financial reports as the basis for analyzing the relationship between profitability, capital structure, operational efficiency, and tax effectiveness.

**Variables and Operational Definitions.** In this study, the variables analyzed are divided into two categories: independent and dependent variables. The independent variables analyzed include key indicators of company performance and financial health, namely ROA, CAR, and BOPO.

ROA serves as a measure to evaluate a company's effectiveness in generating net profit from its total assets, making it a key indicator of profitability. A higher ROA indicates a company's ability to optimally manage assets to generate profit, which in turn impacts its ability to cover tax obligations.

Several previous studies support this. Rahmawati and Mildawati (2019) and Rahmadi et al. (2020) demonstrated that companies with higher profitability typically record a higher Effective Tax Rate (ETR), confirming that ROA plays a crucial role in determining tax payment effectiveness.

According to Kasmir (2012:201), the ROA calculation can be formulated as follows:

$$\text{ROA} = \frac{\text{Net profit}}{\text{Total Assets}} \times 100\%$$

Where:

1. Net Profit is the company's profit after deducting taxes and operating expenses.
2. Total Assets are all assets owned by the company during a specific period.

CAR reflects a bank's ability to withstand the risk of loss and serves as a benchmark for the company's financial stability. Banks with a high CAR generally have a strong capital structure, enabling them to bear various operational and financial risks without disrupting business continuity. This adequate capitalization also positively impacts a bank's ability to meet its tax obligations, as banks with sufficient capital are able to pay taxes optimally without sacrificing liquidity or operational investment.

It is in line with Isnaini's (2022) findings that a healthy capital ratio and a high level of profitability significantly influence tax compliance in the banking sector. Therefore, CAR not only reflects financial health but is also a key variable in evaluating the effectiveness of tax payments. Banks with adequate capital structures tend to be more consistent in meeting their tax obligations.

CAR analysis provides an overview of a company's internal ability to balance operational growth and fiscal obligations sustainably. According to Kasmir (2012), the CAR calculation can be formulated as follows:

$$\text{CAR} = \frac{\text{Bank Capital}}{\text{Risk – Weighted Assets}} \times 100\%$$

Where:

1. Bank capital includes core capital (Tier 1) and supplementary capital (Tier 2) in accordance with banking regulations.
2. Risk-Weighted Assets are the bank's total assets multiplied by the risk weight of each asset type.





BOPO is a ratio that measures a bank's efficiency in controlling operating expenses compared to the operating income generated. This ratio reflects how effectively bank management optimizes revenue while controlling operating costs. The BOPO ratio can be calculated using the following formula:

$$\text{BOPO} = \frac{\text{Operating Expenses}}{\text{Operating Income}} \times 100\%$$

Where:

1. Operating Expenses include all costs incurred by the bank to carry out operational activities, including employee salaries, administrative costs, and other operational expenses.
2. Operating Income is all income earned from the bank's operational activities, including interest and non-interest income.

A lower BOPO indicates more efficient management performance in cost control, resulting in higher profits. It positively impacts tax effectiveness, as higher profits increase the company's tax base. Conversely, a high BOPO indicates operational inefficiency, which can reduce profits and reduce the effectiveness of tax compliance.

Research by Mauludi et al. (2025) found that BOPO negatively affects ETR, meaning the more efficient a bank is in managing operational costs, the more effective its tax payments will be. Therefore, BOPO is a crucial indicator for evaluating operational efficiency and its impact on bank tax compliance and effectiveness.

The ETR is a ratio designed to evaluate a company's effectiveness in meeting its tax obligations. This ratio reflects how much of a company's profits are paid as taxes, thus providing an overview of tax compliance and the efficiency of its tax management. The ETR can be calculated using the following formula:

$$\text{ETR} = \frac{\text{Tax Burden}}{\text{Profit before tax}} \times 100\%$$

Where:

1. Tax Expense is all income taxes paid by a company during a given period.
2. Profit Before Tax is the company's profit before deducting income tax expense.

A high ETR value indicates that the company is increasingly optimal in paying taxes in accordance with its profits. Conversely, a low ETR value may indicate ineffective tax management or tax avoidance practices. In this study, ETR is designated as the dependent variable because a company's tax effectiveness level does not stand alone but is influenced by several internal company factors, such as profitability (ROA), leverage/capital (CAR), and operational efficiency (BOPO).

According to Izzati (2024), these factors significantly influence the ETR, making this ratio an appropriate tool for measuring corporate tax compliance and effectiveness. Thus, the ETR reflects not only the fulfillment of tax obligations but also the company's management's ability to maximize profits while still meeting fiscal obligations.

**Data Analysis Techniques.** This study applies panel data regression to analyze the effect of ROA, CAR, and BOPO on ETR for the 2023–2024 period. Panel data regression was chosen because it allows for the combined analysis of cross-sectional and time series data, allowing the effects of differences between companies and changes between periods to be calculated simultaneously.

Prior to regression, the data were tested using the following classical assumption tests:

- 1) Normality test, to ensure the residual distribution follows a normal distribution.



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Equation: Untitled

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	6.067829	(31,93)	0.0000
Cross-section Chi-square	141.583432	31	0.0000

Source: EViews 60 output (processed data), 2025

The Chow test was conducted to compare the CEM and FEM models. Based on the test results (Table 3), the cross-section F probability value was  $0.0000 < 0.05$ . Thus,  $H_1$  was accepted, indicating that the FEM model was more appropriate than the CEM.

**Table 4.** Hausman Test Results

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.162864	3	0.3672

Source: EViews 60 output (processed data), 2025

Next, a Hausman test was performed to select between FEM and REM. The test results showed a Chi-Square probability value of  $0.3672 > 0.05$ . It means  $H_0$  is accepted, and the REM model is the more appropriate model.

**Table 5.** Lagrange Multiplier (LM) Test Results

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	55.20392 (0.0000)	0.158463 (0.6906)	55.36238 (0.0000)

Source: EViews 60 output (processed data), 2025

Based on the table above, the Lagrange Multiplier (LM) test results show a Breusch-Pagan probability value of  $0.0000 < 0.05$ , indicating that  $H_1$  is accepted. Therefore, the REM model is the best model to use in this study.

Therefore, the best model to use in this study is the Random Effects Model (REM).

**Panel Data Regression Test Results.** According to the results of the previous model selection test, the best model was the Random Effects Model (REM). Therefore, the subsequent regression analysis was conducted using the REM model.

**Table 6.** Random Effects Model (REM) Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.034776	0.064032	-0.543106	0.5880
ROA	-0.193037	0.030015	-6.431421	0.0000
CAR	0.001352	0.035357	0.038231	0.9696
BOPO	-0.199538	0.075787	-2.632884	0.0095

Source: EViews 60 output (processed data), 2025



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The estimation results indicate that the best model used is REM. Based on the regression, the ROA variable has a significant negative effect on ETR ( $p < 0.01$ ), while CAR does not significantly affect ETR. Meanwhile, BOPO is shown to have a significant negative effect on ETR ( $p < 0.05$ ).

These findings demonstrate that banks with high profitability (high ROA) typically have a lower effective tax burden, thus indicating tax management practices. Furthermore, operational efficiency (BOPO) is also negatively related to ETR, indicating that the more efficient a bank operates, the greater its reported taxable profit, which in turn impacts the effectiveness of the tax burden. The CAR variable does not show a significant effect, suggesting that capital adequacy is not a major determinant of banking companies' tax effectiveness.

#### F-Test (Simultaneous).

**Table 7.** F-Test Results (Simultaneous)

R-squared	0.254284	Mean dependent var	0.085034
Adjusted R-squared	0.236243	S.D. dependent var	0.083263
S.E. of regression	0.072766	Sum squared resid	0.656574
F-statistic	14.09439	Durbin-Watson stat	1.792252
Prob(F-statistic)	0.000000		

Source: EViews 60 output (processed data), 2025

The F-test results demonstrate an F-statistic of 14.094 and a probability of  $0.0000 < 0.05$ . It means that the independent variables used in the study (ROA, CAR, and BOPO) simultaneously have a significant effect on ETR.

#### T-Test (Partial).

**Table 8.** t-Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.034776	0.064032	-0.543106	0.5880
ROA	-0.193037	0.030015	-6.431421	0.0000
CAR	0.001352	0.035357	0.038231	0.9696
BOPO	-0.199538	0.075787	-2.632884	0.0095

Source: EViews 60 output (processed data), 2025

Based on the t-test results for the REM model, it was concluded that:

1. ROA influences ETR, with a sig. Value of  $0.0000 < 0.05$ , thus  $H_a$  is accepted and  $H_o$  is rejected.
2. CAR influences ETR, with a sig. Value of  $0.9696 > 0.05$ , thus  $H_a$  is rejected and  $H_o$  is accepted.
3. BOPO influences ETR, with a sig. Value of  $0.0095 < 0.05$ , thus  $H_a$  is accepted and  $H_o$  is rejected.

#### Coefficient of Determination ( $R^2$ ) Test.

**Table 9.** Results of the Coefficient of Determination ( $R^2$ ) Test

R-squared	0.762359
Adjusted R-squared	0.675479
S.E. of regression	0.072719
Sum squared resid	0.491784



Log likelihood 174.3276  
Source: EViews 60 output (processed data), 2025

The R-squared value of 0.7624 and the Adjusted R-squared of 0.6755 indicate that approximately 76.24% of the variation in ETR can be explained by ROA, CAR, and BOPO. Meanwhile, the remaining 23.76% is influenced by factors outside the research model.

**The Effect of Financial Performance (ROA) on Tax Effectiveness (ETR).** The research results show that ROA has a significant negative effect on ETR. It means that the higher a bank's profitability, the lower its effective tax burden. It may occur because companies with high profitability have a greater incentive to implement tax planning to minimize their tax burden.

The finding that ROA negatively impacts ETR aligns with agency theory, where management attempts to reduce tax burdens to improve financial performance, which appears favorable to shareholders.

This study's findings are consistent with the findings of Ikrimah (2023), who found a negative relationship between ROA and ETR in the financial sector. They explained that higher bank profitability tends to encourage management to engage in tax avoidance practices to reduce tax burdens, resulting in a lower effective tax rate (ETR). This study also found a significant negative effect of ROA on ETR.

**The Effect of the Capital Adequacy Ratio (CAR) on Tax Effectiveness (ETR).** The CAR variable did not significantly influence the ETR. This finding demonstrates that banking capital adequacy is not a factor influencing tax effectiveness. Capital management is more focused on maintaining bank financial stability in accordance with OJK/BI regulations, rather than on tax savings.

The insignificant CAR results support the trade-off theory, which emphasizes that capital is directed more towards balancing risk and return, rather than as a tax-saving instrument.

Unlike Pamungkas' (2016) research, which explained that CAR significantly influences ETR, this study found no significant effect. This difference is likely due to the different research periods, post-pandemic economic conditions, and differences in the characteristics of the bank samples. In Dewi's research, CAR was seen as influencing tax rates because it is related to a bank's ability to maintain capital adequacy; however, in this study, this variable was not shown to influence ETR variations significantly.

**The Effect of Operating Costs on Operating Income (BOPO) on Tax Effectiveness (ETR).** Estimation results indicate that BOPO has a significant negative effect on ETR. The more efficient a bank is in managing operating costs (low BOPO), the higher its effective tax burden tends to be. Conversely, less efficient banks (high BOPO) have a lower ETR, likely due to lower pre-tax profits.

The negative effect of BOPO on ETR is consistent with tax theory, which states that the level of operational efficiency will influence the amount of taxable profit and ultimately the effective tax rate.

The results related to BOPO align with research by Ikrimah (2023) and Mauludi et al. (2025), which also found a negative relationship between operational efficiency and the effective tax rate. It means that the higher a bank's operating costs (the less efficient it is), the lower the effective tax rate paid, as banks attempt to reduce their tax liabilities through managing operational expenses.



Therefore, the results of this study strengthen empirical evidence that operational efficiency (BOPO) plays a significant role in determining the effective tax burden in the banking sector.

**The Effect of Return on Assets (ROA), Capital Adequacy Ratio (CAR), and Operating Expenses to Operating Income (BOPO) on Tax Effectiveness (ETR).** The results of the simultaneous test (F-test) indicate that ROA, CAR, and BOPO simultaneously significantly influence ETR. This finding indicates that banking financial performance not only has a partial impact but also collectively determines corporate tax effectiveness.

Conceptually, high profitability (ROA) will increase the tax base, capital adequacy (CAR) strengthens the bank's ability to cover fiscal obligations, while operational efficiency (BOPO) plays a role in reducing cost burdens, thereby maintaining stable taxable profit. These three factors, when considered simultaneously, reflect a bank's healthy financial condition and have implications for better tax compliance. Therefore, the results of this study align with the theory that corporate tax effectiveness cannot be separated from overall financial performance.

**Managerial Implications.** These findings have important implications for bank management and regulators. First, high profitability (ROA) has been shown to lower the effective tax rate, necessitating regulators to strengthen oversight of potential tax avoidance practices. Second, although CAR does not significantly impact ETR, banks must still maintain adequate capital in accordance with regulations to ensure financial system stability. Third, improved operational efficiency (BOPO) increases both profits and the effective tax burden, necessitating management to balance cost efficiency strategies with tax compliance.

## CONCLUSION

The purpose of this study was to analyze the effect of financial performance on tax effectiveness in banking companies listed on the Indonesia Stock Exchange (IDX) for the 2020–2023 period using the best-fit model, the Random Effects Model (REM). The results yielded several key findings. First, ROA negatively and significantly affected ETR, indicating that higher bank profitability actually reduced the effective tax burden, indicating the practice of tax planning. Second, CAR did not significantly affect ETR, indicating that bank capital adequacy did not significantly influence variations in effective tax burden. Third, BOPO had a significant negative effect on ETR, indicating that more efficient bank operations resulted in greater profits, which in turn increased the effective tax burden.

Simultaneously, ROA, CAR, and BOPO were shown to influence ETR significantly. It demonstrates that financial performance collectively is a crucial factor influencing tax effectiveness in the banking sector. The coefficient of determination also indicates that the financial performance variables in this research model can explain the majority of the variation in tax effectiveness. It concludes that profitability and operational cost efficiency are the two dominant factors influencing banking companies' tax effectiveness, while capital adequacy plays a relatively limited role.

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