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RESEARCH ARTICLE

DETERMINANTS OF PROFITABILITY AND ITS IMPLICATIONS FOR FIRM VALUE WITH FIRM SIZE AS A MODERATING VARIABLE (Study on Foreign Exchange Commercial Banks Listed on the Indonesia Stock Exchange During 2016–2022).

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Abstract
This study aims to analyze the determinants of profitability and their implications for firm value with firm size as a moderating variable in foreign exchange commercial banks listed on the Indonesia Stock Exchange during 2016–2022. This research employs a quantitative causal approach using panel data regression analysis. The sample consists of 20 banks selected through purposive sampling. The independent variables include capital adequacy (CAR), non-performing loans (NPL), liquidity (LDR), operational efficiency (BOPO), and capital structure (DER). Profitability is proxied by Return on Assets (ROA), while firm value is measured by Tobin's Q.

The results indicate that CAR, NPL, LDR, BOPO, and DER simultaneously have a significant effect on profitability. Partially, CAR, LDR, and DER have positive and significant effects on profitability, while NPL and BOPO negatively and significantly affect profitability. Furthermore, profitability has a positive and significant effect on firm value. Firm size significantly moderates the relationship between profitability and firm value, indicating that larger banks are more effective in translating profitability into higher market valuation.

These findings highlight the importance of strengthening capital adequacy, improving credit risk management, optimizing liquidity utilization, enhancing operational efficiency, and managing leverage prudently to improve profitability and firm value in the Indonesian banking sector.

Key words:
Capital Adequacy, Non-Performing Loans, Liquidity, Operational Efficiency, Capital Structure, Profitability, Firm Value, Firm Size, Banking.

INTRODUCTION

The rapid intensification of business competition requires firms to manage their resources efficiently to sustain profitability and enhance firm value. Profitability serves as a crucial indicator of a firm's ability to maintain operations, attract investors, and increase corporate value, as reflected in stock market performance. In capital markets, firm value closely represents investors' perceptions of financial performance and managerial effectiveness. Consequently, improving profitability and firm value has become a strategic priority for publicly listed companies, particularly in the banking industry.

In Indonesia, the capital market plays a significant role in supporting economic development by facilitating fund allocation between surplus and deficit economic units. The Indonesia Stock Exchange (IDX) provides a formal platform for firms to raise capital and for investors to allocate funds efficiently based on expected returns and risk considerations. Among the twelve industrial sectors listed on the IDX, the banking sector particularly foreign exchange commercial banks plays a vital role in maintaining financial system stability and promoting national economic growth through its inter-mediation function.

The Indonesian banking industry has experienced substantial structural changes over the past decade, especially during and after the COVID-19 pandemic. According to the Financial Services Authority (OJK), national bank credit distribution increased continuously from 2013 to 2022, primarily in the household, trade, and manufacturing sectors. Banks also expanded their branch networks to support credit distribution, although a significant decline in branch numbers occurred after 2015, indicating industry-wide efficiency initiatives. Despite increasing credit expansion, the banking sector faced heightened credit risk, operational efficiency challenges, and profitability volatility, particularly during the pandemic period (2020–2021).

Profitability, commonly measured by Return on Assets (ROA), reflects managerial efficiency in utilizing bank assets to generate income. Prior studies identify several internal determinants of bank profitability, including capital adequacy, non-performing loans (NPL), liquidity, operational efficiency (BOPO), and capital structure (DER). However, empirical evidence remains inconsistent. While Anggraeni and Citarayani (2022), Pratama (2021), and Prayoga et al. (2022) report significant relationships between these variables and profitability, other studies reveal mixed or insignificant findings, indicating unresolved research gaps.

Operational efficiency, proxied by BOPO, plays a critical role in sustaining bank performance. High BOPO reflects operational inefficiency and tends to reduce profitability, although the magnitude of its effect varies across banks depending on scale and revenue diversification. Similarly, empirical findings on the effect of capital structure (DER) on profitability remain contradictory, suggesting that contextual and structural conditions may influence these relationships.

Beyond profitability, firm value—commonly measured by Tobin's Q, has become a major concern for banking institutions. Profitability is theoretically expected to increase firm value by signaling financial soundness to investors. Nevertheless, during 2018–2019 and 2022, Indonesian foreign exchange banks experienced anomalies in which ROA increased while firm value declined, indicating a possible disconnect between accounting profitability and market valuation. This discrepancy became more pronounced during the COVID-19 pandemic, which caused substantial declines in banking firm value.

In response to pandemic-related financial pressures, the Indonesian government and the Financial Services Authority implemented countercyclical credit restructuring policies to maintain banking stability and stimulate economic recovery. Despite these interventions, fluctuations in profitability and firm value persisted, highlighting structural vulnerabilities related to capital adequacy, credit risk management, liquidity utilization, and cost efficiency.

Firm size is another factor that may influence the relationship between profitability and firm value. Banks with larger asset bases generally have better access to capital, stronger risk diversification, and higher operational resilience, which may strengthen or weaken the effect of profitability on firm value. However, empirical evidence regarding the moderating role of firm size remains limited and inconclusive.

Based on these phenomena, this study aims to examine the determinants of profitability capital adequacy (CAR), non-performing loans (NPL), liquidity (LDR), operational efficiency (BOPO), and capital structure (DER) and their implications for firm value (Tobin's Q), with profitability (ROA) as an intervening variable and firm size as a moderating variable. This study focuses on foreign exchange commercial banks listed on the Indonesia Stock

Exchange during 2016–2022, providing an integrated analysis of financial performance, market valuation, and firm-specific characteristics.

This research contributes theoretically by clarifying inconsistent empirical findings and practically by providing strategic insights for bank management, investors, and regulators in strengthening banking sustainability and enhancing firm value in the post-pandemic economic environment.

RESEARCH NOVELTY AND CONTRIBUTION

This study offers several novelties and contributions to the literature. First, it applies an integrated two-stage panel regression model that simultaneously analyzes the determinants of profitability and their implications for firm value, whereas most previous studies examine these relationships separately. Second, this research positions firm size as a moderating variable rather than merely a control variable, empirically confirming its structural role in strengthening the profitability–firm value relationship. Third, this study incorporates post-pandemic data (2020–2022), providing updated empirical evidence on banking resilience during systemic economic shocks. Finally, this research specifically focuses on foreign exchange commercial banks, a strategically important banking segment that has rarely been examined independently in prior studies.

RESEARCH QUESTIONS

1. To what extent do capital adequacy, non-performing loans, liquidity, operational efficiency, and capital structure simultaneously affect profitability in foreign exchange commercial banks listed on the Indonesia Stock Exchange?
2. To what extent does the Capital Adequacy Ratio affect profitability in foreign exchange commercial banks listed on the Indonesia Stock Exchange?
3. To what extent do non-performing loans affect profitability in foreign exchange commercial banks listed on the Indonesia Stock Exchange?
4. To what extent does liquidity affect profitability in foreign exchange commercial banks listed on the Indonesia Stock Exchange?
5. To what extent does operational efficiency affect profitability in foreign exchange commercial banks listed on the Indonesia Stock Exchange?
6. To what extent does capital structure affect profitability in foreign exchange commercial banks listed on the Indonesia Stock Exchange?
7. To what extent does profitability affect firm value in foreign exchange commercial banks listed on the Indonesia Stock Exchange?
8. To what extent does firm size moderate the effect of profitability on firm value in foreign exchange commercial banks listed on the Indonesia Stock Exchange?

LITERATURE REVIEW

Management and Organizational Theory

Management and organizational theories explain how institutions plan, organize, and control resources to achieve efficiency and sustainability. In banking institutions, managerial effectiveness determines financial stability, operational efficiency, risk management, and profitability performance. Effective organizational structures enable banks to optimize resource allocation, improve service delivery, and strengthen competitiveness.

Financial Management Theory

Financial management theory focuses on optimal investment, financing, and operational decisions aimed at maximizing firm value. In banking, financial management decisions concerning capital adequacy, credit risk, liquidity, efficiency, and capital structure directly influence profitability and market valuation.

Signaling Theory

Signaling theory explains that financial performance indicators convey information to investors. High profitability signals strong management performance and financial stability, increasing investor confidence and firm value. Conversely, declining profitability sends negative signals, potentially reducing market valuation.

Conceptual Definitions of Research Variables

Profitability

Profitability refers to a bank's ability to generate earnings from its assets and operations. In this study, profitability is measured by Return on Assets (ROA), which reflects managerial efficiency in utilizing total assets to produce net income.

Firm Value
Firm value represents market perceptions of a company's performance and growth prospects. It is measured using Tobin's Q, which compares the market value of a firm to the replacement cost of its assets. Higher Tobin's Q indicates stronger investor confidence and market valuation.

Capital Adequacy Ratio (CAR)
CAR measures the adequacy of a bank's capital relative to its risk-weighted assets. A higher CAR indicates stronger capital buffers, enabling banks to absorb losses and support credit expansion while maintaining financial stability.

Non Performing Loans (NPL)
NPL represents the proportion of loans that are classified as problematic due to borrowers' failure to meet repayment obligations. High NPL ratios reflect poor credit quality and increased credit risk, which may reduce profitability.

Loan to Deposit Ratio (LDR)
LDR measures a bank's liquidity by comparing total loans to total deposits. Optimal LDR levels indicate effective inter-mediation, while excessively high LDR may increase liquidity risk and reduce profitability.

Operational Efficiency (BOPO)
BOPO reflects operational efficiency by comparing operating expenses to operating income. Lower BOPO indicates higher efficiency and better cost management, which is expected to enhance profitability.

Capital Structure (DER)
Debt to Equity Ratio (DER) measures the proportion of debt financing relative to shareholders' equity. High leverage may increase financial risk and interest burden, potentially reducing profitability if not managed efficiently.

Firm Size
Firm size represents the scale of a bank's operations, commonly measured by total assets or the logarithm of total assets. Larger firms tend to have greater resource availability, diversification, and risk absorption capacity.

Empirical Studies Review
Numerous empirical studies have examined determinants of bank profitability. Anindiansyah et al. (2020) found that CAR, NPL, BOPO, and LDR jointly influence bank profitability. Buchory (2018) reported that operational efficiency significantly affects profitability, while liquidity and credit risk show mixed effects.
Regarding individual determinants, several studies confirm a positive relationship between CAR and profitability (Majumder & Li, 2018; Ayim & Agyemang, 2021), while others report insignificant or negative effects due to inefficient capital utilization (Tan et al., 2017; Spaseska et al., 2022). Studies on NPL largely indicate a negative relationship with profitability (Rahmi & Herlina, 2021; Zhang et al., 2016), though some findings suggest insignificant or positive effects under certain conditions (Kidane, 2020).
Liquidity, measured by LDR, also shows inconsistent results. Some studies report negative effects due to liquidity risk (Alali, 2019; Karakas & Acar, 2022), while others find positive effects from optimal credit expansion (Fadhilah & Wahyuni, 2021). BOPO is generally found to negatively affect profitability, indicating that inefficiency reduces earnings (Dsouza et al., 2022), although positive effects are observed when revenue growth exceeds cost increases (Neves et al., 2020).
Capital structure studies reveal mixed findings. Lubis and Siregar (2022) found a negative impact of DER on profitability, whereas Fauzi and Anggraini (2023) reported a positive relationship due to productive debt utilization.
Profitability is widely considered a key determinant of firm value. Several studies report a positive relationship between profitability and firm value (Debore, 2021; Anggreini & Oktaviana, 2022). However, other studies find no significant effect, suggesting that market valuation is also influenced by leverage, dividend policy, and macroeconomic conditions (Haryanto et al., 2021; Sochib et al., 2021).
Firm size has been examined as a moderating variable. Risqi and Suyanto (2022) found that firm size strengthens the effect of profitability on firm value, while other studies report insignificant moderating effects (Dicky, 2023).

Determinants of Bank Profitability
Bank profitability reflects managerial efficiency in utilizing assets and capital to generate earnings. Return on Assets (ROA) is widely used to measure profitability in banking due to its ability to represent asset utilization efficiency. Prior studies indicate that profitability is influenced by various internal financial factors, including capital adequacy, credit risk, liquidity, operational efficiency, and capital structure.

Capital Adequacy and Profitability
Capital Adequacy Ratio (CAR) measures a bank's ability to absorb potential losses and maintain financial stability. Regulatory compliance with minimum CAR requirements reflects prudential banking practices and risk resilience. Several studies report a positive and significant relationship between CAR and profitability, suggesting that well-capitalized banks are better positioned to expand lending and manage risks effectively (Majumder & Li, 2018; Ayim & Agyemang, 2021; Sunaryo, 2020). Conversely, other studies find insignificant or even negative effects, indicating that excess capital that is not optimally deployed may reduce profitability (Tan et al., 2017; Anindiansyah et al., 2020; Spaseska et al., 2022). These mixed findings suggest the need for further investigation in different banking contexts.

Non Performing Loans and Profitability
Non-Performing Loans (NPL) represent credit risk arising from borrowers' failure to meet repayment obligations. Higher NPL ratios are generally associated with declining profitability due to reduced interest income and increased provisioning costs (Tan et al., 2017; Abbas et al., 2019). Several studies confirm a negative and significant relationship between NPL and profitability (Rahmi & Herlina, 2021; Zhang et al., 2016). However, other studies report insignificant or even positive effects, implying that certain banks can still generate profits despite higher NPL levels, particularly when NPL ratios remain within manageable thresholds (Kidane, 2020; Barra & Ruggiero, 2022). This inconsistency highlights the importance of contextual analysis.

Liquidity and Profitability
Liquidity reflects a bank's ability to meet short-term obligations and fund credit expansion. Loan to Deposit Ratio (LDR) is commonly used to measure liquidity. Excessively high LDR levels may reduce profitability by increasing liquidity risk and funding pressure, while optimal credit distribution can enhance interest income. Prior research presents mixed evidence, with some studies finding a negative impact of LDR on profitability (Alali, 2019; Karakas & Acar, 2022) and others reporting positive and significant effects due to efficient loan expansion (Fadhilah & Wahyuni, 2021; Setyaningsih & Maftukhin, 2023). These findings indicate the dual nature of liquidity in influencing profitability.

Operational Efficiency and Profitability
Operational efficiency is measured using the BOPO ratio, which compares operating expenses to operating income. Lower BOPO values indicate better efficiency and are generally associated with higher profitability. Empirical studies largely support a negative relationship between BOPO and ROA, suggesting that higher operating costs reduce profitability (Dsouza et al., 2022; Pinasti & Mustikawati, 2018). However, some studies report positive relationships when increased costs are accompanied by proportionally higher revenues (Neves et al., 2020; Shahriar et al., 2022). These findings imply that the impact of efficiency on profitability depends on revenue diversification and managerial strategies.

Capital Structure and Profitability
Capital structure, proxied by Debt to Equity Ratio (DER), reflects a bank's financing strategy and leverage level. High DER may increase financial risk and interest burden, potentially reducing profitability. Several studies find a negative relationship between DER and ROA (Lubis & Siregar, 2022). Conversely, positive effects are also reported when debt is efficiently utilized for productive expansion (Fauzi & Anggraini, 2023). These conflicting results suggest that the profitability effect of leverage depends on risk management and asset productivity
.

Profitability and Firm Value
Firm value, commonly measured using Tobin's Q, represents market perception of a firm's performance and growth prospects. Profitability serves as a strong signal to investors regarding managerial effectiveness and financial stability. Many studies report a positive and significant effect of profitability on firm value, indicating that higher ROA enhances investor confidence and market valuation (Debore, 2021; Anggreini & Oktaviana, 2022). However, other studies find insignificant relationships, implying that firm value may be more strongly influenced by external conditions, leverage policies, dividend strategies, and growth expectations rather than accounting profits alone

(Haryanto et al., 2021; Sochib et al., 2021). These discrepancies underline the complexity of market valuation mechanisms.

Firm Size as a Moderating Variable

Firm size reflects the scale of operations and resource availability, commonly measured by total assets. Larger banks tend to have stronger capital access, diversified operations, and greater risk absorption capacity. Several studies suggest that firm size moderates the relationship between profitability and firm value by strengthening investor confidence in large firms (Risqi & Suyanto, 2022; Aprilia, 2025). However, other studies report that firm size does not significantly moderate this relationship, indicating that size alone does not guarantee stronger market valuation effects (Dicky, 2023; Hidayar, 2022). These mixed findings support the inclusion of firm size as a moderating variable in this study.

Hypotheses

H1: Capital adequacy, non-performing loans, liquidity, operational efficiency, and capital structure simultaneously affect profitability.
H2: Capital Adequacy Ratio (CAR) has a significant effect on profitability.
H3: Non-Performing Loans (NPL) have a significant effect on profitability.
H4: Loan to Deposit Ratio (LDR) has a significant effect on profitability.
H5: Operational efficiency (BOPO) has a significant effect on profitability.
H6: Capital structure (DER) has a significant effect on profitability.
H7: Profitability has a significant effect on firm value.
H8: Firm size moderates the relationship between profitability and firm value.

RESEARCH METHODOLOGY

Research Design

This study employs a quantitative causal research design with a deductive approach. The deductive approach is applied by formulating hypotheses derived from established theories and previous empirical findings, which are subsequently tested using numerical data. The research is also classified as a verificative study aimed at confirming or rejecting existing theories related to bank profitability and firm value.

Panel data analysis is utilized, combining time-series data from 2016 to 2022 and cross-sectional data of foreign exchange commercial banks listed on the Indonesia Stock Exchange (IDX). This design allows for a comprehensive examination of both inter-temporal and inter-firm variations in financial performance.

Research Object and Period

The objects of this study are foreign exchange commercial banks listed on the Indonesia Stock Exchange during the period 2016–2022. The research was conducted from February 2024 to January 2025 using annual financial statements.

Variables and Measurement

This study involves independent, intervening, moderating, and dependent variables.

Independent Variables: Capital Adequacy Ratio (CAR), Non-Performing Loan (NPL), Loan to Deposit Ratio (LDR), Operating Expenses to Operating Income (BOPO), and Debt to Equity Ratio (DER). Intervening Variable: Profitability, measured by Return on Assets (ROA). Moderating Variable: Firm Size, measured by total assets. Dependent Variable:Firm Value, measured using Tobin's Q.

Data Source and Collection

The study uses secondary quantitative data obtained from the official websites of foreign exchange commercial banks listed on the Indonesia Stock Exchange. Panel data were compiled using annual financial statements for the period 2016–2022. Data processing and econometric analysis were conducted using E-Views 12.

Population and Sample

The population consists of 45 Foreign Exchange Commercial Banks listed on the IDX during 2016–2022. The sampling method applied is non probability purposive sampling, with criteria including:

1) Banks listed before 2016 and never delisted during the observation period

2) Availability of complete financial statements from 2016–2022
3) No merger or acquisition during the observation period
4) Conventional (non-Islamic) banking institutions
5) Government-owned regional banks that are publicly listed

Based on these criteria, 20 banks were selected as the final research sample.

Data Analysis Techniques

Descriptive Statistics

Descriptive statistics were applied to summarize data distribution, central tendency, and dispersion to describe the financial conditions of the sample banks.

Panel Regression Analysis

Panel regression analysis was conducted using three models:

Model 1 (Determinants of Profitability):

$ROA_{it}=\alpha+\beta_1 CAR_{it}+\beta_2 NPL_{it}+\beta_3 LDR_{it}+\beta_4 BOPO_{it}+\beta_5 DER_{it}+\varepsilon_{it}$

Model 2 (Effect of Profitability on Firm Value):

$TQ_{it}=\alpha+\beta_6 ROA_{it}+\varepsilon_{it}$

Model 3 (Moderation Effect of Firm Size):

$TQ_{it}=\alpha+\beta_7 (ROA\times SIZE)_{it}+\varepsilon_{it}$

Model Selection Tests

Model selection was determined through:

1. Chow Test (Common vs Fixed Effect)
2. Lagrange Multiplier Test (Common vs Random Effect)
3. Hausman Test (Fixed vs Random Effect)

Classical Assumption Tests

The study performed normality, multicollinearity, and heteroscedasticity tests to ensure estimator reliability.

Moderated Regression Analysis

Moderated Regression Analysis (MRA) was applied to test whether firm size strengthens or weakens the effect of profitability on firm value.

Hypothesis Testing

Hypotheses were tested using:

1. F-test to assess simultaneous effects
2. t-test to assess partial effects

All statistical tests are performed at a 5% significance level using E-Views 12.

DISCUSSION

PANEL DATA REGRESSION ANALYSIS RESULTS

Regression Structure Model 1: The Effect of Financial Ratios on Profitability

Based on the results of model selection tests (Chow test, Hausman test, and Lagrange Multiplier test), this study applies the Fixed Effect Model (FEM) as the most appropriate estimation model. The FEM estimation produces the following multiple linear regression equation:

Table 1

Panel Data Regression Results for Model 1

Dependent Variable: Y
Method: Panel Least Squares
Date: 09/09/25 Time: 15:58

Sample: 2016 2022
Periods included: 7
Cross-sections included: 20
Total panel (balanced) observations: 140

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	0.054798	0.024077	2.843114	0.0109
X2	-0.051346	0.016348	-1.988748	0.0413
X3	0.469659	0.098987	4.744646	0.0000
X4	-3.172297	0.123850	-25.61410	0.0000
X5	0.204214	0.076147	2.681839	0.0073
C	-4.634318	0.189633	-24.43830	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
Root MSE	0.648474	R-squared		0.806863
Mean dependent var	-4.531516	Adjusted R-squared		0.724817
S.D. dependent var	1.037952	S.E. of regression		0.715497
Akaike info criterion	2.328753	Sum squared resid		58.87257
Schwarz criterion	2.854046	Log likelihood		-138.0127
Hannan-Quinn criter.	2.542216	F-statistic		7.396627
Durbin-Watson stat	1.795684	Prob(F-statistic)		0.000000

Source: Researcher's EViews 12 Output, 2025

Based on Table 1, the partial multiple linear regression equation is formulated as follows:
$Y=-4.63431783272+0.0547976222157(\ln X1)-0.0513455601458(\ln X2)+0.469659388108(\ln X3)-3.17229737042(\ln X4)+0.20421360485(\ln X5)+\varepsilon 1$
Where: $\beta_1 = 0.0547976$, $\beta_2 = -0.0513456$, $\beta_3 = 0.4696594$, $\beta_4 = -3.1722974$, $\beta_5 = 0.2042136$, R^2 : 0.806863

Regression Structure Model 2: The Effect of Profitability (Y) on Firm Value (Z)
Based on the results of model selection tests (Chow test, Hausman test, and Lagrange Multiplier test), this study also applies the Fixed Effect Model (FEM) as the most appropriate model. The FEM estimation produces the following regression equation:

Table 2
Panel Data Regression Results for Model 2

Dependent Variable: Z
Method: Panel Least Squares
Date: 09/03/25 Time: 14:01
Sample: 2016 2022
Periods included: 7
*Cross-section*s included: 20
Total panel (balanced) observations: 140

Variable	Coefficient	Std. Error	t-Statistic	Prob.
$\hat{Y}1$	0.226858	0.040741	5.568305	0.0000
C	1.345627	0.157466	8.545495	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				

Root MSE	0.145452	*R-squared*	0.850824
Mean dependent var	1.051104	Adjusted *R-squared*	0.758525
S.D. dependent var	0.196980	S.E. of regression	0.157765
Akaike info criterion	-0.717938	Sum squared resid	2.961889
Schwarz criterion	-0.276692	Log likelihood	71.25566
Hannan-Quinn criter.	-0.538629	F-statistic	4.884409
Durbin-Watson stat	1.616984	Prob(F-statistic)	0.000000

Source: Researcher's EViews 12 Output, 2025

The regression equation is formulated as follows: lnZ = 1.345627+0.226858(lnY1)+ε2
Where: β_6 = 0.226858, R^2 : 0.850824

Regression Structure Model 3: The Moderating Role of Firm Size

Based on the results of model selection tests (Chow test, Hausman test, and Lagrange Multiplier test), this study applies the Fixed Effect Model (FEM) as the most appropriate model. The FEM estimation produces the following regression equation:

Table 3

Panel Data Regression Results for Model 3

Cross-section random effects test equation:
Dependent Variable: Z
Method: Panel Least Squares
Date: 10/22/25 Time: 10:39
Sample: 2016 2022
Periods included: 7
Cross-sections included: 20
Total panel (balanced) observations: 140

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-15.46287	6.948264	-2.225429	0.0261
Y1Y2	0.118975	0.058625	2.029429	0.0424

Effects Specification

Cross-section fixed (dummyvariables)

Root MSE	0.212836	R-squared	0.877031
Mean dependent var	0.343475	Adjusted R-squared	0.778695
S.D. dependent var	0.295368	S.E. of regression	0.232817
Akaike info criterion	0.071979	Sum squared resid	6.341864
Schwarz criterion	0.555249	Log likelihood	17.96148
Hannan-Quinn criter.	0.268365	F-statistic	4.851021
Durbin-Watson stat	1.461386	Prob(F-statistic)	0.000000

Source: Researcher's EViews 12 Output, 2025

The regression equation is: Z=−15.46287+0.118975(lnY1Y2)+ε3Z =
Where: β_7 = 0.23795, R^2 : 0877031

Descriptive Statistics and Financial Condition of Banks

The descriptive analysis indicates that foreign exchange commercial banks listed on the Indonesia Stock Exchange during 2016–2022 generally exhibited sound financial conditions, although with considerable variability across banks and periods.

1. The average Capital Adequacy Ratio (CAR) of 21.67%, which is well above the OJK minimum requirement of 8%, indicates that banks were sufficiently capitalized and capable of absorbing potential losses. Although CAR fluctuated, its upward trend reflects improving capital resilience.
2. The average Non-Performing Loan (NPL) ratio of 2.76%, which remains below the regulatory threshold of 5%, suggests that the sampled banks maintained relatively healthy asset quality. Despite fluctuations, the declining trend indicates improving credit risk management.
3. Liquidity, proxied by Loan to Deposit Ratio (LDR), recorded an average of 83.28%, which falls within the healthy category, implying that banks were generally able to channel collected funds into productive lending activities. However, the declining trend reflects cautious lending behavior, particularly during the pandemic period.
4. Operational efficiency measured by BOPO averaged 86.77%, indicating that most banks were able to manage operating costs efficiently, although certain banks experienced inefficiencies. The increasing trend of BOPO suggests growing cost pressures within the banking industry.
5. The average Debt to Equity Ratio (DER) of 6.26 reveals substantial variation in financing strategies, ranging from conservative to aggressive leverage policies.

RESULTS

1. Capital adequacy, non-performing loans, liquidity, efficiency, and capital structure simultaneously have a significant effect on profitability. This finding indicates that the combination of internal factors namely capital adequacy, non-performing loans, liquidity, efficiency, and capital structure plays a crucial role in determining the profit performance of Foreign Exchange Commercial Banks during the period 2016–2022. These five independent variables constitute dominant factors in enhancing profitability, as evidenced by the coefficient of determination (R-squared) of 0.80686. This result implies that 80.68% of the variation in profitability can be explained by the independent variables, while the remaining 19.32% is influenced by other factors outside the research model.
2. Capital adequacy, proxied by the Capital Adequacy Ratio (CAR), partially has a positive and significant effect on profitability. This result indicates that higher capital adequacy improves the bank's ability to generate profits in Foreign Exchange Commercial Banks during the period 2016–2022.
3. Non-performing loans, proxied by the Non-Performing Loan (NPL) ratio, have a negative and significant effect on profitability (ROA). This finding suggests that an increase in non-performing loans reduces bank profitability in Foreign Exchange Commercial Banks during the period 2016–2022.
4. Liquidity, proxied by the Loan to Deposit Ratio (LDR), has a positive and significant effect on profitability. This result indicates that a higher proportion of credit distribution relative to third-party funds increases the bank's opportunity to enhance profitability in Foreign Exchange Commercial Banks during the period 2016–2022.
5. Efficiency, proxied by the Operating Expenses to Operating Income ratio (BOPO), has a negative and significant effect on profitability (ROA). This finding implies that lower operational inefficiency, as reflected by a lower BOPO ratio, leads to higher profitability in Foreign Exchange Commercial Banks during the period 2016–2022.
6. Capital structure, proxied by the Debt Equity Ratio (DER), has a positive and significant effect on profitability (ROA). This result indicates that a stronger capital structure enhances the bank's capacity to generate profits in Foreign Exchange Commercial Banks during the period 2016–2022.
7. Profitability, proxied by Return on Assets (ROA), has a positive and significant effect on firm value (Tobin's Q). This finding indicates that higher bank profitability increases firm value in Foreign Exchange Commercial Banks during the period 2016–2022. The coefficient of determination (R-squared) of 0.850824 indicates that 85.08% of the variation in firm value (Z) can be explained by profitability (Y1), while the remaining 14.92% is explained by other factors outside the research model.
8. The interaction between profitability and firm size has a positive and significant effect on firm value (Tobin's Q). This result indicates that firm size moderates the relationship between profitability and firm value in Foreign Exchange Commercial Banks during the period 2016–2022. The coefficient of determination (R-squared) of 0.877031 indicates that 87.21% of the variation in firm value (Z) can be explained by the interaction between profitability (Y1) and firm size (Y2), while the remaining 12.79% is influenced by other variables outside the research model.

CONCLUSION

This study shows that capital adequacy, non-performing loans, liquidity, efficiency, and capital structure simultaneously have a significant effect on profitability in Foreign Exchange Commercial Banks during the period 2016–2022. The high coefficient of determination indicates that internal financial factors play a dominant role in explaining bank profitability. Partially, capital adequacy, liquidity, and capital structure positively and significantly affect profitability, while non-performing loans and operational inefficiency negatively and significantly reduce profitability. These findings confirm that effective risk management, optimal capital allocation, and operational efficiency are critical determinants of bank profit performance.

Furthermore, profitability significantly enhances firm value, as measured by Tobin's Q, indicating that higher returns on assets strengthen market valuation. The moderating analysis reveals that firm size positively and significantly strengthens the relationship between profitability and firm value. This result suggests that larger banks are better able to leverage profitability to increase firm value, reflecting greater market confidence and operational resilience. Overall, the findings provide empirical evidence that profitability serves as a key transmission mechanism through which internal financial performance influences firm value, particularly when reinforced by firm size.

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