The Effect of Net Interest Margin, Fee-Based Income, and Operating Expenses on Profitability in Banking Subsector Companies for the 2022-2024 Period

Natazya Deska Dila*, Angga Permadi Karpriana
Faculty of Economics and Business, Universitas Tanjungpura Pontianak, Pontianak, Indonesia
*e-mail: b1031221228@student.untan.ac.id

ABSTRACT

Profitability reflects a company's ability to gain profits in a sustainable manner and is a benchmark for assessing financial health. This research is to analyze the influence of net interest margin (NIM), cost-based income (FBI) and operational cost efficiency (BOPO) on profitability as measured by ROA in banking subsector companies listed on the IDX. The total data sample is 105, with the sampling method namely purposive sampling. Data were analyzed using multiple linear regression techniques and processed using SPSS software. Partially, NIM positively and significantly influences ROA, FBI positively but not significantly influences ROA, and BOPO negatively and significantly influences ROA. Meanwhile, simultaneously, these three variables are proven to influence ROA significantly.

Keywords: Fee Based Income; Net Interest Margin; Operating Expenses Operating Income; Profitability

INTRODUCTION

Banks are institutions that provide various financial services to the wider community. Their primary role is to collect funds from the public and facilitate those in need of financing (Nurhasanah & Maryono, 2021). This demonstrates the crucial role banks play in a country's economic growth, where a country's development can also be seen through the utilization of the financial sector (Puspitasari et al., 2021). A healthy banking system in a country tends to reflect positive economic growth (Rusdiansyah et al., 2022). Therefore, analyzing the factors influencing financial performance is crucial for identifying issues that impact bank profitability and stability, thus helping to predict failures and manage these issues.

ROA is used as an indicator to assess a bank's financial performance, namely, it measures the bank's ability to generate profits from its total assets (Putra & Rahyuda, 2021). ROA is used because it can demonstrate the level of efficiency in the use of all assets and serves as an indicator to assess financial condition.

ROA, as a profitability indicator, is influenced by several internal factors, including the Net Interest Margin (NIM). NIM reflects a company's ability to generate profits from the difference between interest income and its earning assets. A higher NIM indicates an increase in the bank's profit margin over the difference in interest income. According to Inayati (2020), NIM has a positive effect on ROA. An increase in NIM indicates a bank's effectiveness in managing its earning assets, which increases the company's ROA. Meanwhile, according to Pratama et al. (2021), NIM negatively affects ROA, and according to Pryanti et al. (2025), NIM has a positive but insignificant effect on ROA. These findings still show varying results, so further analysis with more recent data and periods is needed to better reflect current conditions.

With increasing competition in the banking sector and the development of financial technology, non-interest income sources are becoming increasingly important. Fee-based income (FBI) is a source of income from non-interest services, including commissions and fees, exchange rate differences, and other income (Bintari et al., 2019). Barokah's (2023) research shows that the FBI positively and significantly influences ROA. Conversely, a study by Ibnusolikhin et al. (2023) revealed that the FBI negatively and significantly influences ROA. Mutahharun & Tara (2025) found a different finding, with the FBI positively but not significantly influencing ROA. These findings indicate varying results, so further analysis with more recent data and periods is needed for more comprehensive results.

*corresponding author's email: b1031221228@student.untan.ac.id

BOPO is an indicator for assessing bank operational efficiency. This ratio reflects the ratio of operating expenses incurred by a bank to its revenue. A high BOPO ratio will reduce profitability due to increased costs (Anggarani Putri et al., 2024). According to Febrina et al. (2019), BOPO negatively and significantly affects ROA of banks listed on the IDX. Meanwhile, according to Nugroho (2019), BOPO has no effect on ROA. Therefore, further analysis is needed to align with current conditions.

The above phenomenon indicates that previous research results are inconsistent regarding the influence of NIM, FBI, and BOPO on ROA, and there is limited research examining the influence of these three variables simultaneously in recent periods. This necessitates further research to provide more relevant empirical evidence that aligns with current conditions.

The urgency of this research lies in the importance of understanding the internal financial components of banks that can drive profitability, thereby increasing competitiveness and financial stability. In an increasingly competitive environment between banks, banks are required to rely not only on interest income but also manage other revenue sources.

Based on the identified problems, this study aims to provide solutions by analyzing the influence of Net Interest Margin (NIM), Federal Reserve (FBI), and Operating Income Tax (BOPO) on ROA in banking subsector companies listed on the Indonesia Stock Exchange (IDX). Theoretically, it will strengthen the literature in financial accounting and banking, and practically benefit bank managers, investors, and other stakeholders in developing and managing more efficient financial strategies to improve their companies' financial performance.

LITERATUR REVIEW

Signalling Theory

In 1973, Spence proposed the signaling theory. According to him, the owner or sender will send signals in the form of information describing the condition of a company. The information received by investors can be positive or negative. A positive signal occurs when a company reports increased profits, while a negative signal occurs when reported profits decrease (Purba, 2023). This relates to financial performance, as reflected in indicators in financial statements, which are then used to assess the bank's potential for profit.

Return on Assets (ROA)

ROA illustrates how effectively a company manages and utilizes its assets to generate a surplus, as measured by the percentage return achieved (Febrina et al., 2019). ROA is calculated using the following equation (Putra & Rahyuda, 2021):

$$\boxed{Return\ on\ Assets = \frac{Earning\ After\ Tax}{Total\ Asset} x\ 100}$$

Net Interest Margin (NIM)

Net Interest Margin (NIM) is a ratio that describes the percentage of net interest earned by a bank on its productive assets. According to Purba (2023), NIM indicates the effectiveness of managing a company's productive assets to achieve net interest income. NIM is also a key factor determining bank profitability (Putra & Rahyuda, 2021). An increase in NIM leads to an increase in ROA. To calculate net interest income (NIM), the following equation is used (Putra & Rahyuda, 2021):

$$\boxed{Net\ Interest\ Margin = \frac{Net\ Ineterest\ Revenue}{Total\ of\ Productive\ Assets} x\ 100}$$

*corresponding author's email: b1031221228@student.untan.ac.id

***Fee Based Income* (FBI)**

FBI is income generated from non-credit activities, which originates from service fees and other operational activities. This income does not come from loan interest, but rather from service fees such as administration, provisions, commissions, and other transactions. Fee-based income is one way for banks to cope with conditions when credit provision slows and interest rates rise, which impacts credit distribution and company revenue (Sasongko & Mahastant, 2023). According to Indah Bintari et al. (2019), the components included in FBI are (a) commissions and provisions; (b) exchange rate differences; and (c) operating income. To calculate Fee-Based Income, the following formula is used (Febrina et al., 2019).

$$\boxed{Fee\ Based\ Income = \frac{Operating\ Income\ Excluding\ Interest}{Operating\ Income}\ x\ 100}$$

Operating Expenses Operating Income (BOPO)

The BOPO (Operating Cost of Goods Sold) ratio indicates the extent of operating costs compared to overall operating revenue (Maulla, 2022). BOPO is used to measure a company's operational efficiency. The lower the BOPO value, the more efficient the company's operations. Conversely, the higher the BOPO value, the higher the costs incurred to generate revenue, indicating low operational management efficiency. Here's how to calculate BOPO (Ardianti & Zulkifli, 2024):

$$\boxed{Operating\ Expenses\ Operating\ Income = \frac{Operating\ Expense}{Operating\ Income} x100}$$

The Effect of Net Interest Margin on Return On Assets

NIM measures a bank's ability to manage assets that can generate interest income (Nurhasanah & Maryono, 2021). The higher the NIM, the greater the net interest income achieved, and of course, increases the company's net profit. This increase in net profit directly affects the increase in ROA, because ROA reflects the amount of profit achieved from all assets owned. Research by Nurhasanah & Maryono (2021), Natanael & Mayangsari (2022), Setyaningsih et al. (2023), Siregar et al. (2021), Amitasari et al. (2024), Alam & Tui (2023), Anton et al. (2021), Mulyadi & Cipta (2022), Cahyani et al. (2022), and Prakoso & Agustina, 2024) shows that NIM contributes positively to ROA. Thus, the following hypothesis can be drawn:

H_1: Net Interest Margin positively and significantly affects Return On Assets

The Effect of Fee Based Income on Return on Assets

FBI is the income earned by banks from non-interest activities, including fees, commissions, foreign exchange earnings, and other operating income (Kornitasari et al., 2023). FBI is a source of non-interest income for banks. If FBI increases, bank revenue will also increase, increasing company profits and directly affecting ROA. Research by Ibnusolikhin et al. (2023), Fadhol (2019), Bintari et al. (2019), and Arianti et al. (2022) revealed that FBI positively and significantly affects ROA. Thus, the following hypothesis can be drawn:

H_2: Fee Based Income positively and significantly affects Return On Assets

The Effect of BOPO on Return on Assets

BOPO is a measure of the efficiency of managing a bank's operational activities. High operating costs can lead to lower profits and can affect ROA (Difa et al., 2022). According to research by Desmon et al. (2023), Pratama et al. (2021), Farhanditya & Mawardi, 2021), Anton et al. (2021), Pryanti et al. (2025), Maulana et al. (2021), Agam & Pranjoto (2021), Prena & Nareswari (2022), Kirana & Waluyo (2022), and Setiyono et al. (2022), BOPO negatively and significantly affects ROA. The following hypotheses can be drawn:

*corresponding author’s email: b1031221228@student.untan.ac.id

H_3: BOPO negatively and significantly affects Return on Assets

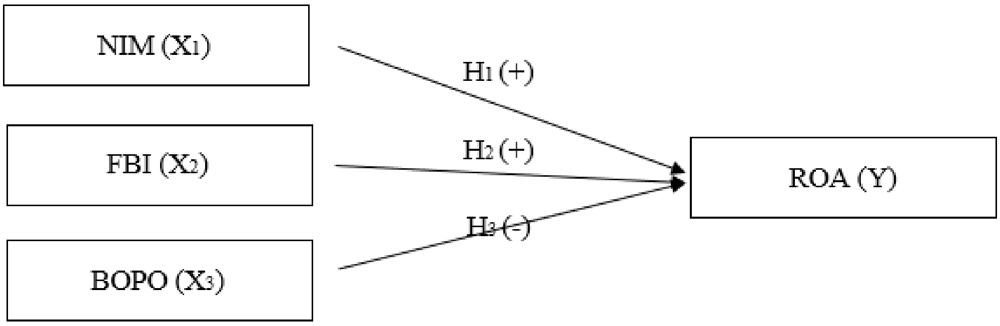

Figure 1. Conceptual Framework

RESEARCH METHOD

This research employed a quantitative method with an associative approach. This method utilizes statistical analysis to focus on data processed in numerical form and to test predetermined hypotheses (Sugiyono, 2013). Meanwhile, the associative approach is utilized to indicate the influence between the tested variables. In this study, this approach was applied to examine whether net interest, non-interest income, and operational efficiency significantly affect ROA.

The primary research subjects were banks listed on the Indonesia Stock Exchange (IDX) during the 2022-2024 period. The sample was selected using a purposive sampling technique, resulting in a total of 105 data samples. Data were obtained from financial statements on the IDX website, www.idx.co.id. Data were collected using a documentation method by accessing secondary data from official sources and analyzed using multiple linear regression techniques processed with SPSS software. According to Ardianti & Zulkifli (2024), the following equation is used.

$$\mathbf{Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e}$$

Where:

Y = ROA; a = Constant; X_1 = NIM; X_2 = FBI; X_3 = BOPO; β_1, β_2, β_3 = Coefficient; e = error

RESULTS AND DISCUSSION

Table 2. Descriptive Statistical Analysis

Statistik Deskriptif					
	N	**Min**	**Max**	**Mean**	**Std. Deviation**
Y ROA	105	.00	3.15	1.0571	.75269
X_1 NIM	105	1.34	7.98	4.0856	1.42607
X_2 FBI	105	.79	18.86	8.3821	4.67387
X_3 BOPO	105	52.78	99.38	83.0070	10.90760
Valid N (listwise)	105				

Source: Ouput SPSS, 2025

*corresponding author's email: b1031221228@student.untan.ac.id

Table 3. Normality Test

Keterangan	*Asymp. Sig. (2-tailed) > 0,05*	Conclusion
Unstandardized Residual	0,200	Data normal

Source: Ouput SPSS, 2025

The significance value is 0.200, which means that the data meets the normality test because the value is > 0.05, thus meeting the requirements for the next analysis.

Table 4. Multicolliniearity Test

Variabel	*Tol* > 0,10	VIF < 10	Conclusion
NIM (X_1)	0,882	1,134	Variables X_1, X_2, X_3 do not have multicollinearity
FBI (X_2)	0,906	1,103	
BOPO (X_3)	0,823	1,216	

Source: Ouput SPSS, 2025

Based on the test results, variable X1 reflects that the tolerance value is 0.882 > 0.10 and VIF 1.134 < 10. Variable X2 shows a tolerance value of 0.906 > 0.10 and a VIF value of 1.103 < 10. Meanwhile, variable X3 has a tolerance value of 0.823 > 0.10 and a VIF value of 1.216 < 10. The test results show that the three variables do not experience multicollinearity.

Table 5. Heteroscedasticity Test Results

Variabel	Sig > 0,05	Kes.
NIM (X_1)	0,094	Variabel X_1, X_2, X_3 tidak adanya heteroskedastisitas
FBI (X_2)	0,570	
BOPO (X_3)	0,457	

Source: Ouput SPSS, 2025

From the test results, the three variables X1, X2, X3 have a Sig. value > 0.05, this indicates that there is no heteroscedasticity.

Table 6. Autocorrelation Test Results

Durbin-Watson (-2 sampai +2)	Ket.
0,1662	Tidak ada autokolerasi

Source: Ouput SPSS, 2025

Based on the results of data analysis, it shows that there is no autocorrelation because the D-W value is 0.1662 which is between -2 and +2.

*corresponding author's email: b1031221228@student.untan.ac.id

Table 7. Results of Multiple Linear Regression Analysis

Ket.	B
Constant	5.702
NIM (X_1)	0,075
FBI (X_2)	0,008
BOPO (X_3)	-0,060

Source: Ouput SPSS, 2025

The following is a regression model from the analysis results.

$$\mathbf{Y = 5.702 + 0,075X_1 + 0,008X_2 - 0,060X_3}$$

This means that every 1% increase in NIM will increase ROA by 0.075%, while every 1% increase in FBI will increase ROA by 0.008%. Meanwhile, every 1% increase in BOPO will reduce ROA by 0.060%.

Table 8. t-test Result

No.	Hypothesis	B	T	*Sig < 0,05*	Conclusion
1.	NIM positively and significantly affects ROA.	0.075	4.273	0.000	Accpeted
2.	FBI positively and significantly affects ROA.	0.008	1.548	0.125	Rejected
3.	BOPO negatively and significantly affects ROA.	-0.060	-25.597	0.000	Accepted

Source: Ouput SPSS, 2025

The t-test results show that NIM positively and significantly affects ROA, indicated by a significance value of 0.000, meaning significance <0.05. Meanwhile, FBI positively but insignificantly affects ROA with a significance value of 0.125, which is >0.05. Meanwhile, BOPO negatively and significantly affects ROA, indicated by a significance value of 0.000, meaning significance value <0.05.

Table 9. F-Test Result

Uji F < 0,05	Conclusion
0,000	X1, X2, X3 have a significant influence on ROA.

Source: Ouput SPSS, 2025

The sig. value obtained is 0.000 < 0.05, thus it is known that X1, X2 and X3 have a significant influence on Y.

Table 10. R-Square Test

Adjusted R Square	0,900	90% variasi pada ROA dapat dipengaruhi oleh variasi variabel independen.

Source: Ouput SPSS, 2025

*corresponding author's email: b1031221228@student.untan.ac.id

The adjusted R Square value of 0.900 indicates that the independent variables can explain 90.00% of the change in ROA, while the other 10.00% comes from variables not studied.

Based on the test results, it was found that NIM positively and significantly affected banks' ROA in the 2022-2024 period. This is based on descriptive statistics, which show a mean NIM of 4.0856%, with a maximum value reaching 7.98%. This value is within the favorable range in the banking industry, which generally has an NIM between 3% and 5%. This reflects the ability of the banking companies in the study sample to generate interest income through their productive assets. From a signaling theory perspective, this situation sends a positive signal to investors and other external parties regarding the bank's financial stability. These results align with research by Nurhasanah & Maryono (2021), Inayati (2020), and Ramadanti & Setyowati (2022), which states that NIM positively and significantly affects ROA. Thus, Ha is accepted.

Based on the test results, it was found that the FBI positively but insignificantly affected ROA in the banking subsector companies that were part of the study sample. This result is based on descriptive statistics showing an average FBI of 8.3821%, with a maximum value reaching 18.86%. This reflects that although there is a fairly high level of variation in non-interest income between banks, its overall contribution to profitability is not statistically strong enough to significantly affect ROA. In signaling theory, the FBI should be a positive signal for investors and other external parties, because it shows that bank income does not solely depend on credit interest. However, in this study, the signal given by the FBI is not strong enough to directly and significantly affect profitability, which is due to the suboptimal management of non-interest income sources in most of the banks sampled. This finding is in line with what was revealed in research by Mutahharun & Tara (2025) and (A'yunina et al., 2024) that the FBI positively but insignificantly affects ROA. Thus, Ha is rejected.

Based on the test results, it was found that BOPO negatively and significantly affected ROA. This result is based on descriptive statistics, which showed a mean BOPO of 83.0070% with a maximum value reaching 99.38%. This value indicates that bank operational efficiency is still relatively low. This condition reflects that most banks in the sample have not carried out operational activities efficiently. From a signaling theory perspective, a high BOPO ratio will send a negative signal to investors and other external parties because it indicates weak cost control and inefficient operational activities. The findings obtained are consistent with research results from Pratama et al. (2021), Difa et al. (2022), Desmon et al. (2023), which showed that BOPO negatively and significantly affected ROA. Thus, Ha is accepted.

CONCLUSION

From the data analysis results, it can be concluded that NIM positively and significantly affects ROA in banks, indicating that interest income from productive assets plays a significant role in improving bank financial stability. Furthermore, FBI has a positive but insignificant effect on ROA in banks, reflecting that the role of non-interest income in profitability is still relatively small. Meanwhile, BOPO negatively and significantly affects ROA in banks, indicating that operational efficiency is an important aspect in determining bank profitability. These findings strengthen the understanding of signaling theory, which states that financial ratios can be used as signals for stakeholders to assess company performance. Practically, this study provides banking management with an overview that productive asset management and operational efficiency need to be optimized to increase company profitability.

REFERENCES

Agam, D. K. S., & Pranjoto, G. H. (2021). Pengaruh CAR, LDR, BOPO, dan Size Terhadap ROA pada Sektor Perbankan yang Terdaftar di BEI. *Jurnal Kajian Ilmu Manajemen*, *1*(2), 160–167. https://journal.trunojoyo.ac.id/jkim

*corresponding author’s email: b1031221228@student.untan.ac.id

Alam, N., & Tui, S. (2023). Pengaruh Cadangan Kerugian Penurunan Nilai dan Net Interest Margin terhadap Profitabilitas pada Bank BUMN yang terdaftar di Bursa Efek Indonesia. *YUME : Journal of Management*, *6*(2), 220–232. www.idx.co.id.

Amitasari, Yogantara, K. K., & Darmita, M. Y. (2024). Pengaruh Net Interest Margin (NIM), Capital Adequacy Ratio (CAR), dan Non Performing Loan (NPL) terhadap Profitabilitas pada Perusahaan Perbankan yang Terdaftar di Bursa Efek Indonesia Periode 2017-2021. *Journal Research of Accounting (JARAC)*, *5*(2), 322–332.

Anggarani Putri, K., Herlinawati, E., & Hamdani, D. (2024). Analisis Pengaruh NPL, LDR, NIM dan BOPO Terhadap Profitabilitas Pada PT Bank Pembangunan Daerah Banten, Tbk Periode 2014-2023. *JEMSI (Jurnal Ekonomi, Manajemen, Dan Akuntansi)*, *10*(6), 3234–3243. https://doi.org/10.35870/jemsi.v10i6.3355

Anton, Purnama, I., & Sunaryo, J. (2021). Analisis Pengaruh CAR, BOPO, LDR, dan NIM Terhadap ROA Bank Yang Terdaftar Di BEI Tahun 2015-2019. *Jurnal BANSI (Bisnis, Manajemen Dan Akuntasi)*, *1*(1), 60–75.

Ardianti, Y. N., & Zulkifli. (2024). *Analisis Pengaruh CAR, BOPO, NIM dan LFR terhadap ROA pada Bank Neo Commerce Tbk Tahun 2016-2022*. *4*(2), 629–652.

Arianti, S. P., Fatah, A., & Wahyuni, S. T. (2022). Pengaruh Fee Based Income, Likuiditas, dan Kredit Bermasalah terhadap Profitabilitas Perbankan Konvensional. *Jurnal Bharanomics*, *3*(1), 29–38. https://doi.org/10.46821/bharanomics.v3i1.328

A'yunina, D., Fachrur, M. M., & Taruna, M. S. (2024). PENGARUH CAR, NPL, LAR, FBIR TERHADAP ROA: BANK BUMN (2012-2021). *Journal of Accounting and Management's Student (JAM'S)*, *1*(2), 1–15.

Barokah, A. (2023). Pengaruh Fee Based Income, Spread Bagi Hasil, dan Financing to Deposit Ratio terhadap Profitabilitas. *Jurnal Edunomika*, *8*(1), 1–14.

Cahyani, L. S., Tripuspitorini, F. A., & Nurdin, A. A. (2022). Pengaruh CAR, LDR dan NIM terhadap ROA Pada Bank Umum yang Terdaftar di BEI. *Indonesian Journal of Economics and Management*, *2*(2), 379–387. https://doi.org/10.35313/ijem.v2i2.3139

Desmon, Yulistina, & Nadhira, T. S. (2023). Analisis Pengaruh BOPO, NIM dan LDR terhadap Profitabilitas Bank yang Terdaftar pada BEI di Indonesia. *Seminar Nasional-Universitas Borobudur*, *2*(1).

Difa, C. G. La, Setyowati, D. H., & Ruhadi. (2022). Pengaruh FDR, NPF, CAR, dan BOPO Terhadap Profitabilitas Bank Umum Syariah di Indonesia. *Journal of Applied Islamic Economics and Finance*, *2*(2), 333–341. https://doi.org/10.35313/jaief.v2i2.2972

Fadholi, A. (2019). Pengaruh Pendapatan Berbasis Biaya Pada Return of Asset (ROA) pada Bank Bank di Indonesia. *Perspektif: Jurnal Ekonomi Dan Manajemen Akademi Bina Sarana Informatika*, *17*(1), 84–89.

Farhanditya, F. D., & Mawardi, W. (2021). Pengaruh BOPO, NPL DAN LDR terhadap Return on Asset dengan Net Interest Margin sebagai Variabel Intervening (Studi pada Bank Umum Go Public yang Terdaftar di BEI Periode 2015-2019. *DIPONEGORO JOURNAL OF MANAGEMENT*, *10*(3), 1–15. http://ejournal-s1.undip.ac.id/index.php/dbr

Febrina, G., Arum, M., & Argamaya. (2019). Pengaruh Fee Based Income dan Biaya Operasional Pendapatan Operasional terhadap Tingkat Profitabilitas. *Jurnal Media Riset Akuntansi*, *9*(2), 187–200.

*corresponding author's email: b1031221228@student.untan.ac.id

Ibnusolikhin, A. F., Diana, N., & Mawardi, C. M. (2023). Pengaruh Interest Based Income dan Fee Based Income terhadap Return on Assets pada Perusahaan Perbankan yang Terdaftar di BEI Tahun 2019-2021. *E_Jurnal Ilmiah Riset Akuntansi*, *12*(1), 232–241. http://riset.unisma.ac.id/index.php/jra,

Inayati, S. R. (2020). Analisis Pengaruh Net Interest Margin (NIM), Loan to Deposit Ratio (LDR),terhadap Return on Assets (ROA) pada Perusahaan Perbankan yang Terdaftar di BEI Tahun 2012-2016. *Jurnal Akuntansi Dan Keuangan Syariah*, *4*(1), 41–53.

Bintari, V. I., Santosa, A. D., & Hamzah, R. A. (2019). Pengaruh Interest Based Income dan Fee Based Income terhadap Return On Assets pada Bank Mandiri (Persero) Tbk. *Jurnal Ekonomi Manajemen*, *5*(1), 24–34. http://jurnal.unsil.ac.id/index.php/jem

Kirana, P. A., & Waluyo, D. E. (2022). Pengaruh NPL, LDR, BOPO Terhadap ROA pada Bank yang Terdaftar di Bursa Efek Indonesia Periode 2012-2021. *Jurnal CAPITAL: Kebijakan Ekonomi, Manajemen, & Akuntansi*, *4*(2), 46–63. www.idx.co.id

Kornitasari, Y., Zahirah, Q. R., & Muna, N. (2023). Pengaruh Fee Based Income dan Giro Wajib Minimum terhadap Return On Assets Bank Umum Syariah di Indonesia Tahun 2018-2022. *Jurnal Manajemen Bisnis Syariah*.

Maulana, P., Dwita, S., & Helmayunita, N. (2021). Pengaruh CAR, NPL, LDR dan BOPO terhadap Return On Assets (ROA) pada Bank Terdaftar di Bursa Efek Indonesia Tahun 2017-2019. *Jurnal Eksplorasi Akuntansi*, *3*(2), 316–328. http://jea.ppj.unp.ac.id/index.php/jea/index

Maulla, L. A. (2022). *Pengaruh NPF, FDR, CAR Dan BOPO Terhadap ROA Pada Bank Umum Syariah Di Indonesia Periode 2016-2020*. *22*(2), 1–12.

Mulyadi, N. L. A., & Cipta, W. (2022). Pengaruh Net Interest Margin dan Non Performing Loan terhadap Return on Asset pada Perusahaan Perbankan yang Terdaftar di Bursa Efek Indonesia. *Jurnal Manajemen Dan Bisnis*, *4*(3).

Mutahharun, T., & Tara, N. A. A. (2025). Pengaruh Fee Based Income, Third Party Funds dan Non Performing Financing terhadap Profitabilitas pada Industri Perbankan yang Terdaftar di Bursa Efek Indonesia Periode 2019-2023. *Jurnal Management Review*, *5*(1), 1–10.

Natanael, N., & Mayangsari, S. (2022). Pengaruh NIM, BOPO, CAR dan Ukuran Perusahaan terhadap Profitabilitas Perusahaan Sektor Perbankan. *Jurnal Ekonomi Trisakti*, *2*(2), 1091–1102. https://doi.org/10.25105/jet.v2i2.14682

Nugroho, D. (2019). Pengaruh CAR, BOPO, NIM, dan NPL terhadap ROA Industri Bank Umum Swasta Nasional Buku 3 Periode 2014-2018. *Jurnal EMBA*, *7*(3), 4222–4229.

Nurhasanah, D., & Maryono, M. (2021). Analisa Pengaruh Rasio Keuangan terhadap Profitabilitas pada Perusahaan Perbankan Periode 2016-2018. *Jurnal Keuangan Dan Bisnis*, *9*(1), 85–95. https://doi.org/10.32497/keunis.v9i1.2317

Prakoso, A. B., & Agustina, R. (2024). Pengaruh Net Interest Margin, Loan to Deposit Ratio, dan Non-Performing Loan Terhadap Return On Asset (Studi pada Perbankan yang Listing di BEI). *JFAS : Journal of Finance and Accounting Studies*, *5*(3), 169–176. https://doi.org/10.33752/jfas.v5i3.5250

Pratama, M. S., Mubaroh, S., & Afriansyah, R. (2021). Pengaruh CAR, LDR, NIM, BOPO terhadap ROA pada Sektor Perbankan Go Public di BEI 2016-2018. *INOVASI*, *17*(1), 118–126.

*corresponding author's email: b1031221228@student.untan.ac.id

Prena, G. Das, & Nareswari, S. K. D. (2022). Pengaruh Penerapan PSAK 71, BOPO dan NPL Terhadap Profitabilitas Pada Perbankan yang Terdaftar di BEI. *WACANA EKONOMI (Jurnal Ekonomi, Bisnis Dan Akuntansi)*, *21*(2), 175–184. https://doi.org/10.22225/we.21.2.2022.175-184

Pryanti, S. A. P. A., Gunadi, I. G. N. B., & Gama, A. W. S. (2025). Pengaruh Capital Adequacy Ratio, Non-Performing Loan, Loan to Deposit Ratio, Net Interest Margin, dan BOPO terhadap Return on Asset pada Perusahaan Perbankan yang Terdaftar di Bursa Efek Indonesia Periode 2020-2022. *Jurnal EMAS*, *6*(4), 951–965. https://doi.org/10.36733/emas.v6i4.10023

Purba, R. B. (2023). *TEORI AKUNTANSI ; Sebuah Pemahaman Untuk Mendukung Penelitian di Bidang Akuntansi*. CV. Merdeka Kreasi Group. https://www.researchgate.net/publication/369793571

Puspitasari, C., Aprilia, F., Mentarie, & Bilkis, M. S. (2021). Pengaruh NIM, LDR, Dan BOPO terhadap Profitabilitas Perbankan yang Tercatat di BEI Selama Pandemi. *Global Financial Accounting Journal*, *05*(01).

Putra, D. P. W. P., & Rahyuda, H. (2021). Pengaruh NIM, LDR, NPL, BOPO terhadap ROA pada Bank Umum Swasta Nasional Devisa di Indonesia. *E-Jurnal Manajemen*, *10*(11), 1181–1200. https://doi.org/10.24843/ejmunud.2021.v10.i11.p07

Ramadanti, F., & Setyowati, E. (2022). Pengaruh NPL, LDR, BOPO dan NIM Terhadap ROA Pada PT. Bank Mandiri (Persero) Tbk Tahun 2013-2021. *Jurnal Ekombis Review*, *10*(2), 695–706. https://doi.org/10.37676/ekombis.v10i12

Rusdiansyah, M., Hayat, A., & Hamdani. (2022). Pengaruh Non Performing Loan, Net Interest Margin, Beban Operasional Berbanding Pendapatan Operasional dan Fee Based Income terhadap Laba Perusahaan. *Jurnal Ilmiah Akuntansi Dan Keuangan*, *4*(8), 3674–3682. https://journal.ikopin.ac.id/index.php/fairvalue

Sasongko, A. R. P., & Mahastant, L. A. (2023). Peran Manajemen Risiko dan Inovasi dalam Memoderasi Pengaruh Fee Based Income terhadap Perubahan Laba Bank BUMN. *Jurnal Manajemen Dan Organisasi*, *14*(3), 255–267. https://doi.org/10.29244/jmo.v14i3.47359

Setiyono, A. T., Yuhanum, A., & Wicaksono, S. D. (2022). Pengaruh CAR, NPL Dan BOPO Terhadap ROA Pada Perusahaan Perbankan Yang Terdaftar Di Bei Periode 2018-2020. *ProBank : Jurnal Ekonomi Dan Perbankan*, *7*(2), 162–172. http://e-journal.stie-aub.ac.id/index.php/probank

Setyaningsih, A., Maftukhin, & Ernitawati, Y. (2023). Pengaruh Biaya Operasional Pendapatan Operasional (BOPO), Loan to Deposit Rasio (LDR) dan Net Interest Margin terhadap Return on Asset (ROA) pada Perusahaan Perbankan yang Terdaftar di Bursa Efek Indonesia. *Jurnal Bina Akuntansi*, *10*(2), 696–715.

Siregar, S. L., Simanjuntak, J., Ndruru, F., & Afiezan, H. A. (2021). Pengaruh Capital Adequacy Ratio (CAR), Non Performing Loan (NPL), Biaya Operasional dan Pendapatan Operasional (BOPO), Net Interest Margin (NIM) dan Quick Ratio (QR) terhadap Return on Asset (ROA) pada Perusahaan Perbankan. *Jurnal Ilmiah MEA (Manajemen, Ekonomi, Dan Akuntansi)*, *5*(2), 345–363.

Sugiyono. (2013). *Metode Penelitian Kuantitatif Kualitatif dan R&D*. Alfabeta Bandung.

*corresponding author's email: b1031221228@student.untan.ac.id