Research Article

Analysis of Revenue Diversification and Its Impact on ROA

Study on State-Owned Banks 2018-2024

Handriyani Dwilita ¹*, Neng Sri Wardhani ², Syafira Salsabiela ³

¹ Faculty of Social Sciences, Panca Budi Development University, Medan, Indonesia: handriyanidwilita@dosen.pancabudi.ac.id

² Faculty of Social Sciences, Panca Budi Development University, Medan, Indonesia

³ Faculty of Social Sciences, Panca Budi Development University, Medan, Indonesia: syafirasalsabielaa@gmail.com

Abstract: The financial crisis has prompted global banks to strategize, reduce loans between countries to the emergence of regional banks that fill the gap, and the emergence of regional and global competition between banks. Competition and digital transformation encourage Indonesian banks to grow and develop. One of them is the determination of bank revenue strategies to support banking performance, especially state-owned banks. The theory of income diversification in several countries, both neighboring countries, and Europe considers whether or not to diversify its income composition strategy. This study aims to examine the composition of state-owned bank revenues for the period 2018 to 2024. Is there income diversification? And how does it impact on the value of ROA of state-owned banks. This research is a qualitative research with a descriptive approach, with a research sample of 4 state-owned banks. So the research is called case study research with saturated samples. The results of the study revealed that state-owned banks (BRI, BNI, Mandiri, and BTN) did not diversify their revenues, banks only focused on interest income which controlled almost 90% of bank revenue. There was an increase in the portion of interest income in the 4th period, but it did not have an impact on the increase in ROA. Therefore, the income strategy by focusing on 1 main type of income, namely interest income, does not have an impact on the increase or decrease in the value of ROA.

Keywords: Bank; Fee-Based Income; Interest Income; Non-Interest Income; ROA

1. Introduction

Banking has a strategic role in a country's economy, banks collect funds from the community and redistribute them to the community in strategic sectors. The distribution of banking loans, especially state-owned banks, increasingly supports the progress and development of the creative economy. Financial stability and national economic growth depend on the role of banks through good performance. Since the end of the 20th century, many banks have switched partly to non-lending activities to increase fee income (wholesale banking, investment banking, bancassurance, payment service). The IMF and cross-country studies note this trend mainly in large or global banks. This change has occurred since the global financial crisis hit. International banks, especially European banks, reduced cross-border lending, i.e. their direct lending to non-affiliated entities in other countries. Some studies have found that non-interest income can increase profitability, but it is also associated with increased volatility and risk (tranding/market risk), especially when the proportion of NII is very high. The results of the study were mixed depending on the period, country, and NII components taken into account (Sudaryanti, Yuniasih, & Kurniawati, 2024) (Ardian, Sari, Rizky, & Nurhaliza, 2024)(Lambert, et al., 2015)(Mamun, Meier, & Wilson, 2023)

In the future when economic integration in the banking sector is getting stronger and more competitive, diversification of deposits will be an inevitable trend and objective to help banks increase profits, minimize risks, and improve banks' competitive positions. One of the important aspects in assessing and analyzing banking performance is to look at the income structure, especially from the comparison between interest income (Nguyen, 2019)*Interest Income*) sourced from traditional intermediation activities and non-interest income (*fee based income*) derived from commission-based activities, transaction services, and other financial services. Interest income is the main income of banking, among other income Banks rely on interest income, representing the success of profitability through the achievement of interest income, but in recent decades this has begun to change. (Sudaryanti, Yuniasih, & Kurniawati, 2024) (OJK, 2023)

Many studies suggest that one strategy is to strengthen performance through increasing the portion of non-interest income, so that profitability stability is maintained. However, there is research that suggests that banks that expand their income activities to non-interest income are proven to present higher risks than banks that focus on interest income as the main income. Global and national banking shows a shift trend towards diversification of revenue sources. The banking system of neighboring Indonesia has undergone significant changes. Vietnam, the Philippines, Myanmar and Singapore experienced a decline in interest income For Vietnam itself, non-Bungan income increased from 18% in 2015 to 23% at the end of 2017. According to the World Bank, the Philippines, Myanmar and Singapore The non-interest income rate reaches 35% to 40%. Increased supervision related to non-interest income practices such as fee transparency, trading disclosure, as some sources of non-interest income can increase liquidity/operational risks. The OJK issued several regulations to increase interest rate trences and margin components such as the publication requirements of margin breakdown/lending rates, to encourage efficiency and competition. Reiters reported that the new rules that affect banks in Indonesia revealed a breakdown in lending interest rates. According to Setiawan and Arrafi (2022), income diversification in banking is needed when income from credit decreases. (Sudaryanti, Yuniasih, & Kurniawati, 2024) (Lambert, et al., 2015) (Nguyen, 2019)(Lambert, et al., 2015)(OJK, 2023)(Mamun, Meier, & Wilson, 2023)In Indonesia, interest income is still the main income, although there has been a shift by adding potential income outside of interest income. Especially for banks with their service products related to credit distribution, interest income remains the main income. This study aims to analyze the structure of interest income and non-interest income in state-owned banks for the period 2018 to 2024. Has there been an increase in income diversification in the income structure of state-owned banks in Indonesia?

2. Literature Review

Financial Intermediation Theory

Banking has an important role in strengthening, supporting the growth and stability of the economic system through its role as a financial intermediary, namely as a central role in allocating savings funds to borrowers, reducing monitoring costs and liquidity. In addition, this role also facilitates the flow of credit to the productive sector. The theory of financial intermediation explains that banks have an important role in channeling funds from people who have surplus funds to those in need, minimizing risks, monitoring costs, and information

asymmetry. Through liquidity and risk-sharing, banks are able to increase the availability of funds for the productive sector and strengthen economic stability. Banks that have good intermediation skills tend to be more aggressive and effective in developing non-interest sources of income.(Werner, 2015) (Konstantakopoulou, 2023)

Income Diversification Theory

This theory was introduced and popularized by Smith, Staikouras & Wood (2003); De Young & Rice (2004). Income diversification in banking is understood as a bank's effort to expand sources of income outside of traditional activities (interest-based) by increasing the portion of non-bank income. Such as commissions, securities trading, and other investments, Smith et al (2003) stated that the combination of fixed income and non-interest income has the potential to stabilize profits and reduce bank risk. Froot and Stein (1998) revealed that diversification is a mechanism to control risk and minimize financial distress. This is in line with the opinion of DeYoung and Rice (2004) that increasing the portion of non-interest income will increase the efficiency and profitability of banks. However, Stiroh (2004) and Stiroh &Rumble (2006) state that non-interest income can bring high volatility. The theory of income diversification provides two opinions, namely income diversification can have a positive influence on bank performance, through the opening of potential income outside of interest income, and give rise to better opinion stability. Fee-based income is considered to be a more stable income, with minimal risk (unlike credit risk) so that in the long term it can give rise to more stable risk management.(Smith, Staikouras, & Wood, 2003) (Ashyari & Rokhim, 2020)

Interest Income

In the research of Panuntun & Sutrisno (2018) in Farizi et al, it is said that the Financial Services Authority Regulation No.40/POJK.03/2019 states that credit is the provision of money or bills that can be equated with it, based on the agreement or loan agreement between banks and other parties on the condition that the borrower must pay off the debt after a predetermined period of time by providing interest, or other forms that include overdrafts or overdrafts on the customer's current account that cannot be paid in full on the last day, takeover of bills in the context of factoring activities, takeover or purchase bills from other parties. In the Banking Law no.10 of 1998, it is stated that credit is the provision of money or bills that are equivalent to based on an agreement or loan agreement between banks and other parties that require the party to pay off debts based on the term along with interest (OJK, 2023)

Non-Interest Income (Fee Based Income)

Non-interest income is bank income that does not come from traditional intermediation activities The main components of non-interest income are bancassurance products, transaction services, and other capital market activities. Non-interest income is becoming increasingly important in modern banking because it provides income diversification, reduces reliance on interest margins, and improves the stability of bank performance.

3. Proposed Method

This research is a quantitative research with a descriptive approach. The object of the research is state-owned banks, research data is secondary data taken from bank financial statement data for the period 2018 to 2024. Sampling techniques are saturated samples, case studies. The research data is processed so as to produce information and analyzed with a descriptive approach, so as to provide an overview of the condition of the object being studied. This study discusses the income structure of state-owned banks which is divided into two types of income, interest income and non-interest income (fee based income). The analysis carried out includes a descriptive analysis of trends including the increase and decrease of each income in the research period, then the ratio analysis of the income structure to see the ratio between interest income and non-interest income.

4. Results and Discussion

The research variables analyzed in this study are interest income and fee base income. The following is presented data related to the conditions of the increase or decrease in the value of Interest Income from 2018 to 2024

Table 1. Interest income at state-owned banks in Indonesia for the period 2018 to 2024.

(in millions of rupiah)

Bank	Year					
	I	II	III	IV	V	VI
BBNI	3.924.712	1.676.875	(6.146.984)	52.528.269	5.111.414	44.999.694
BBRI	10.173.472	14.008.285	7.758.768	134.812.692	27.121.178	6.276.097
BBTN	2.489.920	(324.180)	466.605	21.916.740	1.489.329	4.827.668
BMRI	10.532.520	4.091.137	2.132.859	96.973.425	20.162.352	18.691.557

Table 2. Ratio of increases and decreases in Interest Income from 2018 to 2024.

Bank	Year					
	I	II	III	IV	V	VI
BBNI	4%	2%	-6%	75%	4%	25%
BBRI	4%	5%	3%	80%	8%	2%
BBTN	6%	-1%	1%	89%	3%	9%
BMRI	6%	2%	1%	76%	8%	7%

In the two tables above, the amount of increase or decrease experienced by state-owned banks for the period from 2018 to 2024 is explained. Here's the explanation:

1) Period I is an assessment of the increase or decrease in interest income from 2018 to 2019. and the result is the highest increase experienced by Bank Mandiri by 6%.

2) In period II describing an increase or decrease from 2019 to 2020, the highest increase was experienced by BRI of 5%

3) In period III of the increase in sales from 2020 to 2021, the highest increase was experienced by BRI of 3%

4) In period IV, describing an increase or decrease from 2021 and 2022, the largest increase was experienced by BTN with an increase of 89%.

5)   In period V describing the increase or decrease in 2022 and 2023, the largest increase was experienced by BRI and Mandiri by 8%

6)   In period VI, describing the increase or decrease in 2023 and 2024, the largest increase was experienced by BNI by 25%

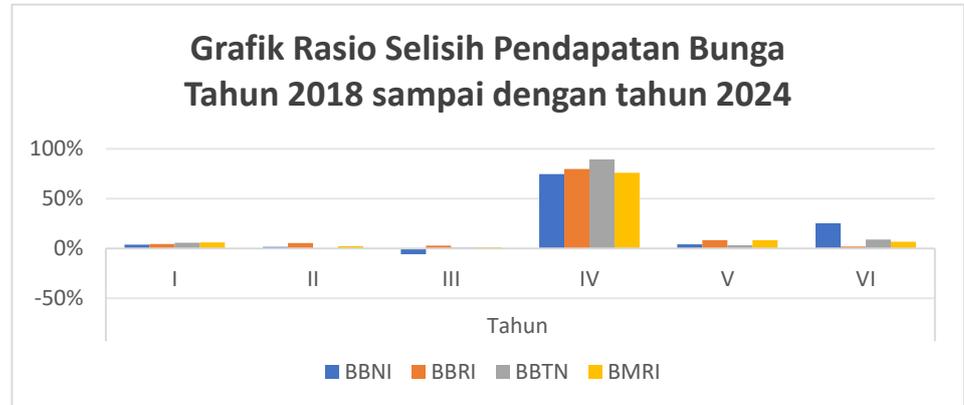If you look at the graph picture, it will look like the graph below

Figure 1. Graph of the difference in interest income of state-owned banks from 2018 to 2024.

This increase illustrates an increase in interest income receipts from the previous year, indicating an increase in banks' dependence on interest income. In figure 1. It is clear that there was a significant increase in the fourth (4) period, namely from 2021 to 2022, to close to 89%. And in the period from 2023 to 2024, BNI experienced a very high surge in interest income compared to other state-owned banks.

In addition to interest income, banks also have another source of income called fee-based income, which is income outside of interest income. The following are details of the increase and decrease in fee-based income from year to year, starting from 2018 to 2024.

Table 3. Fee-based income at state-owned banks in Indonesia for the period 2014 to 2024. (in millions of rupiah)

Bank	Year					
	I	II	III	Iv	V	VI
BBNI	1.049.069,0	(541.873,0)	634.377,0	794.813,0	160.436	129.071,0
BBRI	2.486.821,0	1.675.173,0	881.189,0	1.732.840,0	851.651	(262.835,0)
BBTN	(179.697,0)	(74.188,0)	(152.586,0)	471.756,0	624.342	(930.481,0)
BMRI	1.202.649,0	(766.355,0)	1.958.613,0	3.393.455,0	1.434.842	3.299.090,0

Table 4. Ratio of increase and decrease in Fee Based Income from 2014 to 2024.

Bank	Year					
	I	II	III	IV	V	VI
BBNI	6%	-3%	4%	4%	2%	1%
BBRI	9%	5%	3%	5%	5%	-1%
BBTN	-6%	-2%	-5%	15%	15%	-24%
BMRI	4%	-3%	7%	10%	3%	8%

In the two tables above, the amount of increase or decrease in fee-based income experienced by state-owned banks for the period from 2018 to 2024 is explained. Here's the explanation:

1) Period I is an assessment of the increase or decrease in the ncome fee-based from 2018 to 2019. And as a result, the highest increase was experienced by BRI by 9%.

2) In period II describing the increase or decrease from 2019 to 2020, the highest increase was experienced by BRI of 5%

3) In period III, depicting an increase or decrease in 2020 to 2021, the highest increase was experienced by Bank Mandiri of 7%

4) In period IV, describing the increase or decrease from 2021 to 2022, the largest increase was experienced by BTN by 15%.

5) In period V describing the increase or decrease from 2022 to 2023, the largest increase was experienced by BTN by 15%

6) In period VI, describing the increase or decrease in 2023 and 2024, the largest increase was experienced by Mandiri by 8%

If viewed from the display of the graph, the increase or decrease in fee-based income can be seen as follows:
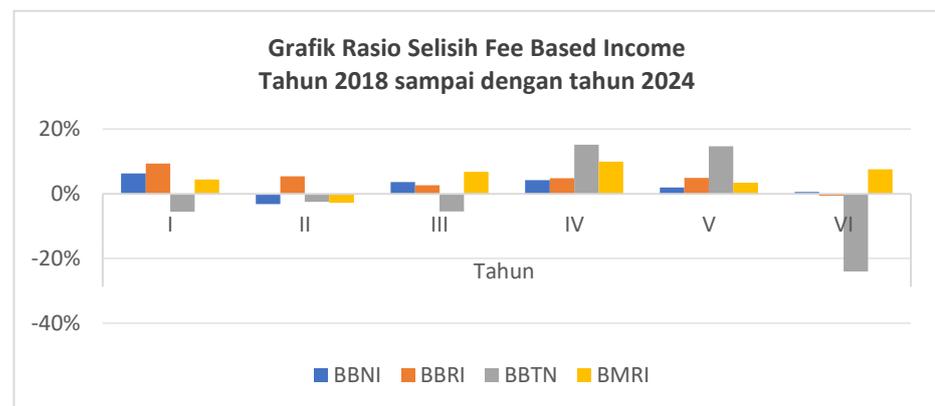

Figure 2. Graph of the difference ratio of Fee Based Income of SOE Banks from 2018 to 2024.

In the graph above, the difference in the ratio of fee-based income of state-owned banks during the period 2018 to 2024, which is divided into 6 periods. In period I (2018-2019), it appears that BTN has a fee-based income difference ratio below zero (-6%) and continues until period III (2020-2021). And experienced a significant increase in period IV (2021-2002) up to a rate of 15% from -5%. however, in period VI (2023-2024) there was a very significant decrease of -24%.

Income Structure Ratio

The revenue structure provides an overview of the portion of each income to its total revenue. In banking, bank income is divided into Bungan income and non-income (fee-based income). The following are the results of the calculation of the income ratio of state-owned banks for the period 2018 to 2024.

Table 5. Revenue Ratio in the Revenue Structure of State-Owned Banks in Indonesia for the 2018 to 2024 Period.

Bank	Income Type	Year						
		2018	2019	2020	2021	2022	2023	2024
BBNI	Fee Based Income	0,13	0,14	0,13	0,15	0,14	0,13	0,08
	Interest Income	0,87	0,86	0,87	0,85	0,86	0,87	0,92
BBRI	Fee Based Income	0,10	0,11	0,11	0,11	0,11	0,10	0,10
	Interest Income	0,90	0,89	0,89	0,89	0,89	0,90	0,90
BBTN	Fee Based Income	0,08	0,06	0,06	0,05	0,07	0,09	0,05
	Interest Income	0,92	0,94	0,94	0,95	0,93	0,91	0,95
BMRI	Fee Based Income	0,14	0,13	0,12	0,14	0,14	0,13	0,13
	Interest Income	0,86	0,87	0,88	0,86	0,86	0,87	0,87

In the results of the calculation above, the income structure of each state-owned bank can be seen as follows:

1) BNI has an income structure that has not been diversified in balance/average, interest income still dominates with a value of 85% to 92% of bank revenue. And the highest ratio in 2024

2) BRI has an undiversified income structure, with interest income dominating by 89% to 90%

3) BTN has an undiversified revenue structure, bungan income still dominates revenue of 91% to 95%

4) Mandiri has an undiversified income structure, interest income still dominates income of 86% to 88%

Some research states that income diversification can improve the financial performance of banks, such as ROA. The following are the ROA achievements of state-owned banks from 2018 to 2024.
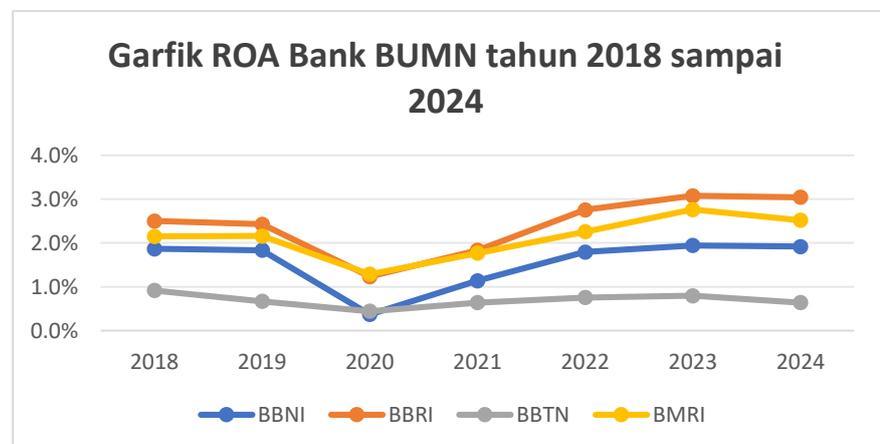
Figure 3. ROA chart of state-owned banks for the period 2018 – 2024.

In the picture, the average ROA value above 1.5% shows that the bank is in good or healthy condition. Even from 2022 to 2024, the ROA value for three state-owned banks has increased, some even reaching a value of 3%, namely Bank BRI. This condition does not occur in BTN banks, during the period 2018 to 2024, no more than 1%.

The bank's revenue consists of interest income and non-interest income (fee-based income). These two revenues are a composition designed to improve the bank's performance. The ideal composition of the two sources of income of banks still varies from country to country. Some countries have decided to provide almost the same portion between interest income and non-interest income. As economic integration in the banking sector becomes stronger and more competitive, income diversification will become an inevitable trend. And this helps banks in increasing profits, minimizing risk, and improving their competitive position in the system (Nguyen, 2019)

There are four factors underlying the bank's shift from non-traditional activities, namely: domestic deregulation, technological innovation, changes in corporate behavior and banking crisis The World Bank report states that several neighboring countries such as Vietnam have experienced a decline in the dominance of interest income as the main income with an increase in the non-interest income ratio of 18% in 2015 and continued to rise to 23% at the end of 2017. And when compared to other neighboring countries, this ratio is still low, the Philippines, Myanmar and Singapore have non-interest income levels of 35%-40% (Gamra & Plihon, 2011) For era Observation state-owned banks evident not choose strategy Diversification income to Increase Performance . Composition income almost Depend Entirely at income flower , that is about more from 80%. At value ROA Average be at Ratio at above 1,5% except BTN bank which only at Range 1%. Thing Ini give picture although state-owned banks in Indonesia not do Diversification income , but Performance bank Especially from value Return result assets (LENGTH) still good . Banks that entire Income Depend at income flower (or flower clean) get Depressed when quality credit experience problem . This that happen at year 2024 that is happen trend Increased credit Problematic (Mohamad, 2024) (Sari & Sari, 2018) . At year 2021 to year 2022, value ROA up enough tall if views at Graphs 3, condition Ini Line with Occurrence Increased income flower at era that same . Ini get become one picture that Increase income flower get Support Increase Return result assets (LENGTH). But condition Ini not happen at the BTN bank, composition pendapatan bank BTN juga didominasi oleh pendapatan bunga rata-rata ditingkat 91% sampai 95%, namun nilai ROA bank BTN tidak sebaik bank BUMN lainnya. Kondisi ini mematahkan asumsi bahwa dominasi pendapatan bank berasal dari pendapatan bunga (tidak terjadi diversifikasi pendapatan) tidak serta merta dapat meningkatkan kinerja keuangan, khususnya imbal hasil aset (ROA). ROA merupakan salah satu gambaran kinerja perusahaan terkait pemanfaatan dan imbal hasil aset (Hasibuan, Handayani, Bangun, & Dwilita, 2025) (Asih & Irawan, 2021). Ini sejalan dengan pendapat lain bahwa diversifikasi berdampak negatif terhadap profitabilitas, semakin tinggi diversifikasi maka akan semakin tinggi risiko bank yang muncul (Nguyen, 2019).

Research conducted by Lesven and Levine (2007) on banks in 13 Western European countries, found that banks with a higher ratio of non-interest income to overall income would perform better. Diversifying revenues in various bank operational activities will increase risks

to the banking system. These results are in line with research conducted by Zhao et al. on 159 Chinese commercial banks (2006-2020) where there was a positive relationship between income diversification and bank performance. Therefore, it is recommended that commercial banks develop diversified non-interest businesses and balance the portion between interest income and non-interest income. However, different results are stated from the results of a study by Delpachitra and Lester (2013) who conducted a study of 9 banks in Australia, income and diversification of non-interest income will reduce profitability and do not increase the risk of default. This means that non-interest income will not benefit the bank. Li and Zhang (2013) stated that non-interest income is riskier than profit income, but will provide diversified benefits for shareholders. According to Mayasari (2012), the condition of banking competition in Indonesia is in a monopolistic condition, the increase in production input costs can increase revenue at a lower level than the input price. Banks respond to changes in input prices and with each increase increase their revenue output below their proportional level   (Nguyen, 2019) (Zhao, Mei, & Wang, 2025) (Nguyen, 2019)(Ganefi, Ermawati, & Hakim, 2021)

Digital developments can provide a new direction for banking revenue strategies, including the possibility of developing non-interest banking revenues. Syahrani and Fitri stated that digital transactions have a positive and significant impact on increasing fee-based income at Islamic commercial banks in Indonesia. Of course, the use of digital technology in banking transactions pays attention to security and convenience. The results of a survey conducted on bank customers stated that 85% of customers prefer to use mbanking over conventional services, and on average they make at least 5 digital transactions per day, and 68% of customers stated that service fees for digital transactions are still in the reasonable category. The role of digital in banking services can increase the potential for increasing bank fee-based income. Even digital-based services in banking services can expand the range of services of the younger generation, whose activities cannot be separated from digital. This is in accordance with the results of research conducted by Batubara and Anggraiani (2022). Therefore, it is important to develop mobile banking services, and invest in digital technology and innovation services to improve banking performance (such as sharia), especially in the digital era. De Jonghe (2010) and Fiordelisi et al. (2011) stated that the expansion of banks' non-interest income will give rise to fixed costs, which will lead to increased leverage and higher risks in bank operations. Diversification emerged and changed banking strategies because of the need for banks to achieve their goals of making profits, increasing competitiveness, especially in economically integrated conditions.   (Syahrani & Fitri, 2025) (Aspan, Pratama, & Malikhah, 2022) (Syahrani & Fitri, 2025)(Ashyari & Rokhim, 2020)(Syahrani & Fitri, 2025)(Nguyen, 2019)

5. Conclusions

In the Indonesian banking market, especially state-owned banks, both those included in the KBMI 3 and KBMI 4 categories, do not choose their income diversification strategy, these state-owned banks still rely on interest income as their main income. Although digital transformation has been adopted by the national banking system, the development of fee-based income has not been maximized or improved specifically for state-owned banks. Since its inception and development until now, Indonesian banks have focused on their function as fund intermediaries, raising funds and

distributing credit, until interest income has become the core business of state-owned banks until now.

References

Ardian, N., Sari, P. B., Rizky, M. C., & Nurhaliza, I. (2024). Introduction to the potential of fintech lending in supporting creative economy development in Pematang Serai Village, Langkat Regency. *Journal of Community Service Sapangambei Manoktok Hitei, 4*(2), 242–250. https://doi.org/10.36985/krwmj495

Ashyari, M. Z., & Rokhim, R. (2020). Revenue diversification and bank profitability: Study on Indonesian banks. *Journal of Business Strategy, 24*(1), 34–42. https://doi.org/10.20885/jsb.vol24.iss1.art3

Asih, S., & Irawan, I. (2021). The effect of ROA, CAR, and LDR on sukuk prices in Sharia banks in Indonesia. *FRIDAY, 13*(1), 132–142.

Aspan, H., Pratama, A., & Malikhah, I. (2022). Digital banking in Indonesia: The development of cashless culture and regulations. *International Journal of Research and Review, 9*(1). https://doi.org/10.52403/ijrr.20220162

Gamra, S. B., & Plihon, D. (2011). Revenue diversification in emerging market banks: Implications for financial performance. *IDEAS Working Paper.*

Ganefi, H. S., Ermawati, W. J., & Hakim, D. B. (2021). Market structure, income diversity, and stability: Empirical study of the Indonesian banking industry. *Journal of Finance and Banking, 25*(3), 701–716. https://doi.org/10.26905/jkdp.v25i3.5887

Hasibuan, N., Handayani, L., Bangun, A. S., & Dwilita, H. (2025). Analysis of liquidity ratio, profitability ratio, and solvency ratio in financial statements of PT Bank Rakyat Indonesia (Persero) Tbk for the 2019–2023 period. *Scientific Journal of Economics and Management, 3*(2), 533–546.

Konstantakopoulou, I. (2023). Financial intermediation, economic growth, and business cycles. *Journal of Risk and Financial Management, 16*(12), 514. https://doi.org/10.3390/jrfm16120514

Lambert, F., Deb, P., Ehrentraud, J., González-Hermosillo, B., Ichiue, H., & Oksana, M. (2015). International banking after the crisis: Increasingly local and safer? In *Global financial stability report: Navigating monetary policy challenges and managing risks* (pp. 55–91). International Monetary Fund.

Mamun, A., Meier, G., & Wilson, C. (2023). How do non-interest income activities affect bank holding company performance? *Finance Research Letters, 53*, 103630. https://doi.org/10.1016/j.frl.2023.103630

Mohamad, K. (2024, August). *Rating 105 banks: Bank assets are getting less productive.* Bank News Info.

Nguyen, K. N. (2019). Revenue diversification, risk, and bank performance of Vietnam commercial banks. *Journal of Risk and Financial Management.*

Otoritas Jasa Keuangan. (2023). *Indonesian banking statistics.* OJK.

Sari, P. B., & Sari, T. J. (2018). Factors that affect non-performing loans: Case study on PT Bank Rakyat Indonesia Tbk Binjai Branch. *Journal of Business and Public Accounting, 9*(1), 56–67.

Smith, R., Staikouras, C., & Wood, G. (2003). Non-interest income and total income stability (Working Paper No. 198). *Bank of England.* https://doi.org/10.2139/ssrn.530687

Sudaryanti, D. S., Yuniasih, Y., & Kurniawati, A. (2024). Revenue diversification in the banking industry in Indonesia: Implications for performance and risk. *Journal of Accounting, 19*(1), 15–25. https://doi.org/10.37058/jak.v19i1.9185

Syahrani, S., & Fitri, A. O. (2025). The effect of digital transactions on fee-based income in Indonesian Sharia commercial banks. *Journal of Economics, Management and Banking, 2*(1), 90–96.

Werner, R. A. (2015). A lost century in economics: Three theories of banking and the conclusive evidence. *International Review of Financial Analysis, 43*, 30–45. https://doi.org/10.1016/j.irfa.2015.08.014

Zhao, Y., Mei, Y., & Wang, J. (2025). Bank performance and non-interest income diversification: Evidence from Chinese commercial banks. *PLOS ONE*, 20(1), e0321899. https://doi.org/10.1371/journal.pone.0321899