

THE EFFECT OF SIZE ON FEE INCOME IN THE INDONESIAN BANKS

Murharsito¹, Fitri Ella Fauziah²

^{1,2}Faculty of Economic and Business, Islamic University of Nahdlatul Ulama, Jepara, Indonesia

¹Email murharsito@unisnu.ac.id

²Email fitriella@unisnu.ac.id

ABSTRACT

In response to growing competitive pressures in the banking industry, financial institutions are compelled to cultivate diversified revenue models that reduce reliance on interest income. A primary strategy involves optimizing fee-based revenue. This research empirically examines the influence of bank size on fee income in Indonesian banking. Utilizing a panel dataset from 43 general banks over the 2013-2024 period and applying a Fixed Effect Model regression, the analysis yields a key finding: bank size exerts a significant and negative influence. The control variables (CAR, LDR, NPL_NET) were found to be statistically insignificant. With the model confirming an absence of multicollinearity and heteroskedasticity, these results underscore the critical need for strategic asset management to prevent the suppression of fee income, thereby informing more sustainable business strategies for bank managers.

Keywords: bank size, fee income, Indonesian banks, panel data

ABSTRAK

Menanggapi tekanan persaingan yang semakin ketat di industri perbankan, lembaga keuangan dituntut untuk mengembangkan model pendapatan yang terdiversifikasi guna mengurangi ketergantungan pada pendapatan bunga. Strategi utamanya melibatkan optimalisasi pendapatan berbasis biaya (fee-based income). Penelitian ini secara empiris mengkaji pengaruh ukuran bank terhadap pendapatan biaya di perbankan Indonesia. Dengan menggunakan data panel dari 43 bank umum selama periode 2013-2024 dan menerapkan regresi Model Efek Tetap, analisis ini menghasilkan temuan kunci: ukuran bank memberikan pengaruh yang signifikan dan negatif. Variabel kontrol (CAR, LDR, NPL_NET) ditemukan tidak signifikan secara statistik. Dengan model yang mengonfirmasi tidak adanya multikolinearitas dan heteroskedastisitas, hasil ini menggarisbawahi pentingnya manajemen aset strategis untuk mencegah penekanan pendapatan biaya, sehingga menginformasikan strategi bisnis yang lebih berkelanjutan bagi para manajer bank.

Kata kunci: ukuran bank, pendapatan biaya, bank-bank Indonesia, data panel

1. Introduction

The profitability of Indonesian banks is being squeezed by narrowing interest margins, a consequence of intense market competition and restrictive interest rate policies. This environment makes it imperative for banks to diversify their earnings, with a strategic focus on fee-based income. This type of revenue, derived from services like transaction processing, account maintenance, and electronic banking fees, offers greater stability as it is largely insulated from the volatility of interest rates. Despite its apparent advantages, the reliance on this income stream in Indonesia remains unstable. Existing data indicate that the proportion of non-interest income for

Indonesian banks has fluctuated in the few decades.

Based on the data of Global Financial Development Index from World Bank about the share of non-interest income within the total revenue of Indonesian banks between 2000 and 2020, it is revealed that there is a considerable volatility in that ratio. Beginning the period at around 40%, the ratio plummeted to a low of 19% by 2006. A modest rebound followed, yet the figures then steadied within the 21 to 25% band for over a decade, only rising again to almost 29% in 2020. This persistent instability suggests that fee-based revenue has yet to reach its full potential as a stable and optimal contributor to overall earnings. This is a

significant concern, as fee income is widely recognized as a crucial component for building sustainable bank revenue that is independent of the uncertainties of interest rates and traditional lending.

The contemporary banking landscape has witnessed a fundamental transformation in revenue generation patterns, with financial institutions increasingly diversifying their income streams beyond traditional interest-based activities. This shift toward non-interest income, particularly fee-based revenues, has become a critical strategic imperative for banks worldwide as they navigate evolving market conditions, regulatory pressures, and technological disruptions. The relationship between bank size and fee income generation represents a compelling area of research, as it encompasses complex interactions between institutional capabilities, market positioning, and operational efficiency that vary significantly across different banking contexts and geographic regions (Molyneux, Reghezza, Torriero, & Williams, 2021).

The theoretical foundation underlying the bank size-fee income relationship draws from multiple streams of literature, including revenue diversification theory, economies of scale and scope, and market power considerations. Revenue diversification theory suggests that banks pursue non-interest income as a means to reduce earnings volatility and enhance overall profitability, particularly during periods of compressed net interest margins (Sudrajat & Hübner, 2019). Larger banks, with their broader customer bases and more extensive product portfolios, are theoretically better positioned to capitalize on cross-selling opportunities and develop multiple fee-generating channels that can provide more stable revenue streams compared to their smaller counterparts who may face resource constraints in diversifying their service offerings.

Recent empirical studies from diverse geographic contexts provide compelling evidence of the positive association between bank size and fee income performance,

though with notable variations across different market environments. There is a documentation of a positive linkage between bank size, non-interest income share, and profitability in Middle East and North Africa (MENA) banks, with larger institutions demonstrating stronger linkages between non-interest income and return on assets in their econometric models (Abu Khalaf, Awad, & Ellis, 2024). Similarly, there is a finding that non-interest income significantly contributes to profitability across 492 banks in 28 Asian countries, with bank size serving as an important control variable that moderates the effectiveness of fee-based revenue strategies (Mehzabin, Shahriar, Hoque, Wanke, & Azad, 2023).

The efficiency effects of pursuing fee-based income strategies present a nuanced perspective on the bank size-fee income relationship, with some studies suggesting potential trade-offs between revenue diversification and operational efficiency. One evidence from Nigerian banks indicating that technical efficiency and total factor productivity may decline as bank output shifts toward non-interest and fee-based income, implying that the pursuit of fee revenues may involve scale or efficiency trade-offs that vary with institutional size (Osuagwu, Isola, & Nwaogwugwu, 2018). This finding highlights the importance of considering not only the revenue generation potential of fee-based strategies but also their implications for overall operational efficiency and resource allocation within banking organizations.

In the Indonesian banking context, recent studies reveal interesting changing aspects regarding how fintech developments and digital transformation affect the traditional size-fee income relationship. It is revealed that while fintech payment growth generally exhibits a negative relationship with bank fee-based income, it acts as a complement for small commercial banks, suggesting that technological innovations may actually support fee income generation for smaller institutions rather than substituting it entirely (Kando &

Trinugroho, 2022). These findings challenge conventional wisdom about the disadvantages faced by smaller banks in the digital era and suggests that strategic adoption of fintech solutions may help level the playing field in fee income generation.

The role of electronic banking and digital transaction volumes in driving fee income has become increasingly prominent in recent research, with Indonesian studies providing valuable insights into how technological adoption affects the size-fee income relationship. It is found that electronic banking transaction volumes significantly increase fee-based income among Indonesian banks listed on the stock exchange, with their panel regression analysis explaining 75.4% of the variance in fee income through electronic banking metrics (Anita & Christine, 2023). This finding suggests that banks of all sizes can potentially benefit from digital transformation initiatives, though the capacity to implement and scale such technologies may still favor larger institutions with greater technological resources.

Based on the literature above, it can be concluded that there is an inconsistency regarding the impact of bank size on the generation of fee income. The first stream emphasizes the importance of the size of the bank on the fee income generation (Abu Khalaf et al., 2024; Mehzabin et al., 2023; Molyneux et al., 2021; Osuagwu et al., 2018; Sudrajad & Hübner, 2019). On the other hand, several findings report that the size of the bank has no influence on the generation of fee income of banks (Anita & Christine, 2023; Kando & Trinugroho, 2022). Therefore, this article would like to scrutinize the effect of bank size on the fee income generation of the banking industry. The object of this research is Indonesian banks. This is important because the Indonesian banking industry has proved its resilience in facing many problems, moreover, Indonesian banking also indicates solid performance and shows robust adaptability to the business environment.

Other than size, capital adequacy might influence the generation of bank fee income. Stronger capital might support bank to develop its ability in seeking fee income. There is inconsistency across research results in this topic. Better capitalization affect the generation of bank fee income (De Bandt, Camara, Pessarossi, & Rose, 2017). However, it is not always the case, the influence of capital just at certain point, beyond that it will undermine bank profitability (Riyanti, 2024).

Similarly, this research will also test the impact of loan to deposit ratio on fee income generation. The higher loan to deposit ratio reflects the efficiency of bank, and in turn it improves the financial services of bank including the service that produce fee income. Several previous research have indicated the contradiction about this relationship. On one hand, it has been proved that Loan to deposit ratio significantly affect profitability in general (Twairesh & ALserhan, 2025). On the other hand it has no influence (Rahayu, 2022).

Finally, this paper will investigate the effect of Non-Performing Loan on fee income generation. Non-performing might hamper the fee income seeking by bank by credit stringency policy that implemented after the rise of NPL, this will decrease the fee income, because the tight relationship between credit channeling and fee income. There is a contradiction on the research result regarding to this, in one research. NPL has negative impact on fee income (Shrestha & Khadka, 2024), while the other find it has no influence (Sabrina, Ali Yusuf, & K, 2025).

2. Literature Review and Statement of Hypothesis

The hypothesis that bank size exerts a positive and significant influence on fee income generation is grounded in the resource-based advantages inherent to larger financial institutions. These banks possess extensive capital, a broader customer base, and the capacity to offer a more diverse array of financial products and services. This scale

enables them to leverage their market presence and extensive networks to command higher fees and commissions, thereby directly increasing their fee-based revenue streams (Amir & Islam, 2023). The ability to cross-sell services to a large, established clientele provides a foundational mechanism through which size translates into enhanced non-interest income.

A critical channel through which bank size boosts fee income is technological advancement. Larger banks have the financial resources to invest heavily in sophisticated digital infrastructure, such as mobile banking platforms, ATM networks, and electronic payment systems. Studies, including one on Indonesian banks, confirm that transactions through these electronic channels significantly drive fee-based income (Haryanto & Septiawan, 2024). The ability to innovate and roll out such technologies effectively allows larger banks to create new fee-generating services and capitalize on operational efficiencies, further solidifying the positive relationship between their scale and fee income.

Furthermore, in competitive and evolving markets, larger banks are better positioned to diversify their income streams strategically. Research in the European Union and German banking sectors indicates that as competition intensifies or traditional interest margins face pressure, banks are incentivized to expand into non-traditional, fee-generating activities (Vozková & Teplý, 2018). Larger institutions can more readily undertake this strategic shift, using their scale to absorb initial costs and market new services, which in turn leads to a higher share of fee income and can improve overall risk-adjusted returns.

While the preponderance of evidence supports a positive and significant relationship, it is important to acknowledge that the strength of this effect can be moderated by contextual factors. Larger banks may encounter increased regulatory scrutiny and operational complexities that could potentially offset some benefits of scale. Moreover, external shocks, such as the

COVID-19 pandemic, have been shown to alter the dynamics of fee income generation, indicating that the relationship, while generally positive, is not entirely immune to market-wide economic conditions (Gunawan, Alfarisi, & Rahim, 2025). Nonetheless, the cumulative evidence strongly posits that bank size is a key determinant in fostering higher and more significant fee income.

H₁: Bank size positively and significantly influences fee income

Loan to Deposit Ratio (LDR) indicates the extent to which third-party funds (TPF) or customer deposits have been disbursed as credit. A high LDR is considered high if it's >78%, indicating aggressive credit distribution. Fee income is income from fees or commissions, which is non-interest income derived from services such as transactions (transfers, payments), credit/debit cards, trade finance, custody, sales of investment/insurance products, and digital services (e-wallets, apps).

A high LDR ratio indicates a high volume of credit disbursed to customers. Higher credit distribution leads to higher transaction volumes, which in turn increase fees. Each credit transaction is accompanied by costs such as provision/credit binding fees, administration fees, notary and appraisal fees (often charged to customers), credit insurance fees, collection or loan account servicing fees, which constitute fee income for the bank. Therefore, a high LDR and optimal absorption of third-party funds lead to increased fee-based services.

H₂: LDR positively and significantly influences fee income

CAR is the ratio of Capital divided by Risk-Weighted Assets (RWA). CAR indicates a bank's ability to absorb losses and maintain stability. Banks with a high CAR tend to be more conservative in taking risks. Activities that generate fee income (e.g., securities underwriting, derivatives, structured products) often carry higher market/operational risks. If a bank focuses

on maintaining a high CAR, it is suspected that the bank is trying to reduce risky activities that actually generate significant fee income. Banks may be less aggressive in expanding fee-based services to maintain the capital ratio.

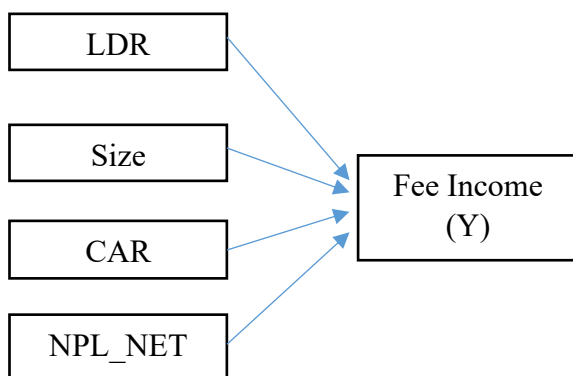
H₃: CAR negatively and significantly influences fee income

Non-Performing Loan_Net (NPL_Net) is the net non-performing loan ratio, indicating the quality of a bank's assets after deducting the allowance for possible losses (Provision for Earning Asset Losses/PPAP) established to cover potential losses from non-performing loans (substandard, doubtful, and loss).

NPL_Net reflects the quality of a bank's credit portfolio. A high NPL indicates increased credit risk, leading banks to tighten lending (risk aversion). However, lending is often associated with fee-based services such as administration fees, insurance fees, or transaction costs. If credit decreases, fee income from credit-related activities can also decrease. Therefore, a high NPL leads to a decrease in fee income.

H₄: NPL Net negatively and significantly influences fee income

3. Research Model



4. Method

Employing a quantitative methodology, this research investigates the influence of equity on fee income in Indonesia's banking sector through panel data regression. The dataset consists of secondary data from the annual financial reports of 43 banking companies listed on the IDX, covering a 12

years period from 2013 to 2024. Sourced from the OJK, this data yielded a total of 486 observations for analysis.

This study investigates how a bank size level influences its fee income—the dependent variable, calculated as the proportion of fee and commission income to total operating income. Size, the independent variable, represents the asset owned supporting bank operations and service development.

The analysis employs several control variables to account for other influential factors: the Capital Adequacy Ratio (CAR) for capital risk-bearing capacity, the Loan to Deposit Ratio (LDR), and Net Non-Performing Loans (NPL_NET) for credit risk.

This study employs the following regression equation.:

$$NII_{it} = \alpha + \beta_1 CAR_{it} + \beta_2 LDR_{it} + \beta_3 LOGSIZE_{it} + \beta_4 NPL_NET_{it} + \varepsilon_{it} \dots \dots \dots (1)$$

The research utilizes a panel data regression analysis, particularly the Fixed Effect Model (FEM), selected through standard tests (Redundant Fixed Effects and Hausman). The model's validity was confirmed by checking for classical assumptions like multicollinearity and heteroscedasticity. Data analysis was conducted using EViews, including the preliminary processing and descriptive statistics.

Ultimately, this research aims to empirically determine whether higher bank size significantly contributes to increasing fee-based income, thereby assessing its viability as a strategy for non-interest income diversification in a challenging interest margin environment.

5. Result And Discussion

Table 1. Summary of Research Descriptive Statistics

Variable	Mean	Median	Max	Min	Std.dev
FEE INCOME	0.129038	0.003259	0.932803	-0.365811	0.216859
CAR	65.72791	22.925	14.061	0	703.8198
LDR	90.2701	86.41	527.91	0	41.46086
LOG (SIZE)	17.17275	17.00731	21.35311	5.442426	2.413754
NPL NET	1.482965	1.15	9.92	0	1.318937

Source: Data Processed, 2025

Table 1 displays descriptive statistics for the five main variables in this study: FEE INCOME, CAR, LDR, LOG(SIZE), and NPL_NET

The average FEE INCOME ratio was 0.1290 with a standard deviation of 0.2169, reveals variation in non-interest income contributions across banks. The minimum value of -0.3658 indicates a bank with a low proportion of fee income, while the maximum value of 0.9328 indicates a high dependence on non-interest income.

CAR had an average of 65.73 and a standard deviation of 703.82, with a minimum value of 0 and a maximum of 14,061, reflecting significant diversity in capital adequacy and the conservative approach of some banks.

The LDR recorded an average of 90.27 with a standard deviation of 41.46, with a minimum value of 0 and a maximum of 527.91. A low value indicates more efficient bank operations, while a high value indicates operating costs significantly exceeding operating income.

LOG(SIZE), the natural logarithm of total bank equity, has a mean of 17.17, a standard deviation of 2.41, a minimum value of 5.44, and a maximum of 21.35, indicating variation in capital size and strength across banks.

NPL_NET has a mean of 1.48 and a standard deviation of 1.32, with a minimum value of 0 and a maximum of 9.92, indicating that the majority of banks maintain a manageable credit risk profile, while a maximum value indicates high risk. A negative NPL_NET value indicates that the allowance for impairment losses is greater than the total non-performing loans.

Model Selection

Table 2. Model Selection Test

No	Test Type	Test Statistic	Probability
1	Chow Test (Redundant Fixed Effect)	F-statistic = 6,567611 Chi-square = 226.1189	0,00
Decision: P-value < 0,05 → PLS rejected → Utilize Fixed Effect Model			

No	Test Type	Test Statistic	Probability
2	Hausman Test (Correlated Random Effect)	Chi-square = 23.84155	0,0001
Decision: P-value < 0,05 → Random Effect rejected → Utilize Fixed Effect Model			

Source: Data Processed, 2025

This exploration uses panel data, so a series of tests are required to ascertain the most proper estimation model.

The first step is the Chow test to compare the Pooled Least Squares (PLS) model with the Fixed Effects Model (FEM). The test outcomes present an F-statistic of 6.567611 with a probability of 0.00 and a cross-section Chi-square value of 226.1189 with a probability of 0.00. Due to the probability values are less than 0.05, the null hypothesis is denied, so the Fixed Effects model is more proper than PLS.

A Hausman test was then operated to confirm the alternative between Fixed Effects and Random Effects. The results of this test showed a Chi-square value of 23.84155 with a probability of 0.0001. Due to it is below the 0.05 significance level, the null hypothesis is denied, and the Fixed Effects model is deemed more proper than the Random Effects (REM) model.

Based on these two tests, it can be concluded that the most proper appraisal model for this study is the Fixed Effects Model, as it is able to accommodate differences in the specific characteristics of each bank that remain constant throughout the observation period, resulting in a more accurate estimate of the relationship between equity and fee-based income.

Classical Assumption Test

Multicollinearity Test

Table 3. Multicollinearity Test Results

Variable	FEE INCOME	CAR	LDR	LOG (SIZE)	NPL_NET
FEE INCOME	1	0.00997	- 0.079872	0.271612	0.203627
CAR	0.00997	1	0.014927	- 0.052695	0.060462

Variable	FEE INCOME	CAR	LDR	LOG (SIZE)	NPL_ NET
FEE INCOME	1	0.00997	- 0.079872	0.271612	0.203627
LDR	0.079872	0.014927	1	- 0.145693	0.036358
LOG (SIZE)	0.271612	-0.052695	- 0.014927	1	0.191579
NPL_NET	-0.203627	-0.060462	0.036358	- 0.191579	1

Source: Data Processed, 2025

In this study, one of the classical assumption tests supervised was to detect potential multicollinearity between independent variables. The multicollinearity examination was operated by analyzing the correlation values between variables.

Based on the output results, all correlation coefficients between the independent variables FEE INCOME, CAR, LDR, LOG (SIZE), and NPL_NET were below 0.85. The highest correlation was recorded for LOG(SIZE) and FEE INCOME at 0.271612, while the correlations for other variables were also relatively low and did not approach 0.85. This condition indicates that there is no strong linkage between the independent variables that could potentially cause multicollinearity. Thus, it can be ended that the regression model has met the assumption of being free from multicollinearity and is therefore suitable for further analysis.

Heteroskedasticity Test

To guarantee that the residual variance in the regression model remains constant, a heteroscedasticity test is performed. One method used to detect heteroscedasticity is by observing the pattern in the residual graph. The figure shows that the residual values are concentrated around 0 and do not form a specific pattern. The residuals are also randomly distributed above and below the horizontal axis without showing any systematic pattern, and are in the relatively stable range of -0.4 to 0.8 and do not widen as the number of observations increases. This condition indicates that the

residual variance is constant (homoscedasticity). Therefore, it can be stated that this regression model has met the assumption of homoscedasticity and shows no indication of heteroscedasticity problems, making the model suitable for further hypothesis testing.

Goodness of Fit Analysis

The determination of the goodness of fit of the research is displayed in the following table.

Table 4. Goodness of Fit Test Results

Indicator	Value	Interpretation
Adjusted R-square	0,424483	After adjustment, approximately 42,58% of the variation in fee income can be explained by the model.
F-statistic	7,506996	The F-statistic value is significant at the 5% level because Prob(F) < 0,05.
Probability F-statistic	0,0000	This finding suggests that the independent variables jointly exert a significant effect on fee income.

Source: Data Processed, 2025

R-squared value of 0.490684 obtained from the regression test results indicates that 49.06% of the variation in fee income can be simplify by the independent variables in this study, namely equity (log size) and the control variables CAR, LDR, and NPL_NET. After adjusting for the number of variables and observations, the R-squared value becomes 0.424483, meaning that roughly 42.58% of the variation in fee income can still be explained by the model. This condition illustrates that the model has quite good explanatory power in the context of panel data for the banking sector in Indonesia. In addition, the F-statistic value of 7.506996 with a probability of 0.0000 (less than 0.05) indicates that the independent variables used simultaneously have a significant effect on fee income at the 5% significance level. Therefore, this regression model is considered suitable for analyzing the influence of independent variables on fee income.

Tabel 5. Hypothesis Test Analysis

Variable	Coefficient	Std. Error	t-Statistic	P-value	Conclusion
C (constant)	0,451792	0,127506	3,543303	0,0004	Significant
CAR	-6,18E-06	1,24E-05	-0,49787	0,6189	Not Significant (p > 0,05)
LDR	-0,00011	0,000288	-0,38582	0,6999	Not Significant (p > 0,05)
LOG (SIZE)	-0,01675	0,007572	-2,21277	0,0276	Significant (p < 0,05) → Negative effect
NPL NET	-0,01658	0,008867	-1,86983	0,0623	Significant (p > 0,1)

Source: Data Processed, 2025

Based on the outcome of panel data regression using the Fixed Effects Model method, the logarithm of equity LOG(SIZE) variable has a coefficient of -0.01675 with a t-statistic of -2.213 and a probability (p-value) of 0.0276 . Due to the p-value is less than 0.05 , it can be ended that equity has a partial significant accomplish on fee-based income at the 5% significance level. The negative sign on the coefficient indicates that the higher a bank's equity, the greater the tendency for fee-based income to decline, assuming other control variables remain constant.

On the other hand, variables CAR, LDR, and NPL_NET have p-values of 0.6189 , 0.6999 , and 0.0623 respectively. CAR and LDR values are not significant, while NPL_NET value is significant at the level of 10 percent degree of confidence. However, simultaneous testing using the F-statistic yields a significant result with a probability value of 0.0004 . This denotes that all independent variables in the model collectively influence fee-based income. Thus, the research hypothesis stating that equity significantly influences fee income is accepted, with a negative effect. This finding also suggests that increasing bank equity should be accompanied by appropriate

strategies for managing service-based income to avoid a decline in fee income contributions.

Firstly, operational inefficiencies can undermine the fee income potential of larger banks. Contrary to the assumption of economies of scale, larger institutions often suffer from diseconomies of scale, where increased bureaucracy and complexity lead to operational inefficiencies. This can reduce the profitability of fee-based services, as larger banks may be less agile and slower to adapt to market changes than their smaller, more nimble competitors. Consequently, this creates a profitability paradox where the extensive resources of larger banks are not effectively leveraged to enhance fee income (Setiawan & Prakoso, 2024).

Secondly, the regulatory environment and a focus on financial stability can constrain fee generation. Larger banks are typically subject to more stringent regulatory oversight and higher capital requirements, which can limit their ability to engage in the riskier, higher-margin activities that often generate substantial fees. This prioritization of stability over aggressive income diversification means that while larger banks may be more financially sound, this can come at the cost of reduced fee income, as they operate with less flexibility than smaller banks (Akmal, Pribadi, & Anshari, 2025).

Finally, strategic priorities can lead larger banks to deprioritize fee income. In many cases, larger banks may maintain a strategic focus on traditional interest income, especially in environments where interest rates are favorable. This can result in a relative decline in fee income as a proportion of total revenue. Even when attempting to substitute fee income for declining interest margins, this strategy is often less effective for larger banks if internal structures or market conditions do not robustly support high fee generation, limiting the success of such diversification efforts (Kaur & Kaur, 2020) (Kaur & Kaur, 2020).

With regards to the effect of CAR on fee income which is not significant. This might be caused by the dominant resource to

develop fee income activities is not capital, but it depends more on customer expansion and product innovation. This is in line with finding that capital is not always influence profitability of bank (Riyanti, 2024).

Regarding the effect of the LDR on fee income, it is not significant. This might be caused by the role of LDR which is more related with the income of bank from the credit activity, while fee income is not included in that activity. This is in line with the finding that capital does not always influence the profitability of a bank (Rahayu, 2022).

In terms of association of NPL with fee income, it is found that it has weak effect. This is because a rise in NPL might impede a bank's pursuit of fee income due to the implementation of stringent credit policies. The resulting decrease in credit channeling subsequently reduces fee income, highlighting the close relationship between lending activities and commission-based revenue. This finding is in line with (Shrestha & Khadka, 2024).

6. Conclusion

This study aims to empirically inquire into the linkage between bank size and fee income within Indonesian banking sector, a critical inquiry known the industry's push for revenue diversification. The analysis, based on a robust panel data regression using the Fixed Effect Model for 43 banks from 2013 to 2024, confirms that overall model is significant. Size indicates the significant effect, while NPL has weak influence, and CAR and LDR do not individually have a significant impact on fee income.

Contrary to the initial hypothesis and much of the established literature that posits a positive relationship, the rulings announce that bank size employ a statistically significant negative influence on fee income. Otherwise, variables—CAR, LDR, and NPL_NET—do not individually have a significant impact on fee income. This suggests that larger banks in Indonesia are not, in fact, more effective at generating non-interest income from fees and commissions.

This result indicates that the situation in Indonesia's banking sector is more complex.

Finally, this research contributes to the academic discourse by presenting confirmation from the Indonesian context that contradicts the dominant narrative of a positive size-fee income nexus. It highlights the importance of contextual and operational factors that can reverse expected theoretical relationships. Future studies could build upon these findings by incorporating additional variables, such as specific measures of digital adoption efficiency or managerial quality, to gain a more nuanced understanding of the drivers behind fee income generation. In conclusion, for Indonesian banks seeking to build sustainable non-interest revenue, the key lies not in unchecked growth, but in strategic asset management and operational excellence.

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