

The Role of Operational Efficiency on Islamic Commercial Banks

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ABSTRACT

The study aims to analyze the effect of Fee-Based Income (non-interest income) and the Capital Adequacy Ratio on Profitability with an Efficiency bank as an intervening variable. The research object was a Sharia commercial bank registered in OJK from 2010 to 2019 with a sample of 11 banks. This type of research is quantitative research. Sampling was carried out by the purposive sampling method. The analysis tool used is multiple linear regression and analysis path (path analysis) using SPSS version 21 software. The study showed a positive and significant influence on Fee-Based Income and profitability. While the Fee-Based Income has a substantial effect on the operational efficiency ratio (OER), and the Capital Adequacy Ratio has a negative and significant effect on OER. The results of the path analysis showed that the bank efficiency (OER) was unable to mediate the influence of fee-based income on profitability but was able to negotiate the impact of the capital adequacy ratio on profitability in Islamic commercial banks from 2010 to 2019.

Keywords: fee-based income, capital adequacy ratio, profitability, bank efficiency

INTRODUCTION

Fee-based income, or non-interest income in banking, has become a concern of many researchers. Fee-based income is an essential source of income that can support the success of banking^{1,2}. Furthermore, the researchers also pay attention to fee-based income on banks' efficiency. In obtaining fee-based income,

¹ Philip Segun Olowolaju, "Effect of Non-Interest Income on Profitability of Deposit Money Banks in Nigeria," *Journal of Banking and Financial Dynamics* 2 (2018): 1-8, <https://doi.org/10.20448/journal.525.2018.21.1.8>.

² M Mostak Ahamed, "Asset Quality , Non-Interest Income , And Bank Profitability : Evidence From Indian Banks," *Economic Modelling* 63 (2017): 1-14, <https://doi.org/10.1016/j.econmod.2017.01.016>.

it is necessary to develop an efficient infrastructure. This banking efficiency plays a vital role in supporting profitability.^{3,4,5}

Banking has the opportunity to increase profitability from fee-based income.⁶ In the view of banking diversification, fee-based income or non-interest income can encourage bank efficiency.⁷ However, there are differences in the research results on the effect of fee-based or non-interest income on profitability. Sun et al. and Lisnawati found that high fee-based income (non-interest income) could not increase bank profitability^{8,9}. This is because the increase in revenue derived from fee-based income has not been able to cover the costs incurred to obtain fee-based income. The high price of infrastructure that banks must pay to receive fee-based income is one of the causes of the high costs. Based on this research gap, this research was conducted. This research will answer fee-based income so that it can increase banking profitability.

Based on the perspective of efficiency theory, in the long term, the output of activity fluctuates in producing efficiency.¹⁰ Banks can achieve efficiency at certain stages, but it is not necessarily the case at other stages. As a business entity, banks are very interested in achieving efficiency.¹¹ The operational efficiency ratio in banking can be measured by the OER (ratio of operating costs

³ Gwahula Raphael, "Bank-Specific, Industry-Specific And Macroeconomic Determinants Of Bank Efficiency In Tanzania: A Two Stage Analysis," *European Journal of Business and Management* 5, no. 2 (2013): 142-55.

⁴ Anh-Tuan Doan, Kun-Li Lin, and Shuh-Chyi Doong, "What Drives Bank Efficiency? The Interaction Of Bank Income Diversification And Ownership," *International Review of Economics and Finance*, 2017, <https://doi.org/10.1016/j.iref.2017.07.019>.

⁵ Abayomi Oredede, "Cost Efficiency Determinants: Evidence from the Canadian Banking Industry," *International Journal of Business and Management* 15, no. 1 (2020): 86-98, <https://doi.org/10.5539/ijbm.v15n1p86>.

⁶ Ming-lu Wu, "Examining the Internal Determinants of Profitability of Commercial Banks in China: A Panel Data Modeling Based Empirical Study," *International Journal of Managerial Studies and Research* 8, no. 3 (2020): 1-12, <https://doi.org/10.20431/2349-0349.0803001>.

⁷ Thi Lam Anh Nguyen, "Diversification and Bank Efficiency in Six ASEAN Countries," *Global Finance Journal* 37, no. September 2017 (2018): 57-78, <https://doi.org/10.1016/j.gfj.2018.04.004>.

⁸ Lisna Lisnawati, "Pengaruh Intellectual Capital Dan Non Interest Income Terhadap Kesehatan Bank Syariah Yang Terdaftar Di Bursa Efek Indonesia Periode 2015-2019," *International Journal of Accounting, Taxation, and Business* 1, no. 1 (2020): 45-67.

⁹ "Non Interest Income and Performance of Commercial Banking in China," *Hindawi Scientific Programming* 2017 (2017): 1-8.

¹⁰ Gatien Verley et al., "Universal Theory of Efficiency Fluctuations," *Physical Review E - Statistical, Nonlinear, and Soft Matter Physics* 90, no. 5 (2014): 1-10, <https://doi.org/10.1103/PhysRevE.90.052145>.

¹¹ Hendrawan Raharjo, Anita Wijayanti, and Riana R Dewi, "Analisis Pengaruh Kinerja Keuangan Dan Inflasi Terhadap Profitabilitas Bank Umum Syariah Di Indonesia (Tahun 2014-2018)," *Jurnal Ilmiah Akuntansi Dan Manajemen (JIAM)* 16, no. 1 (2020): 15-26.

to operating income).¹² Fee-based income that can increase efficiency is expected to increase profitability.^{13,14,15,16}

Based on the report from the Financial Services Authority (OJK) (2021), the operational efficiency ratio of banking in Indonesia from 2016 to early 2019 experienced a reasonably high increase. However, from mid-2019 to 2021, there was a significant decline in the operational efficiency ratio for both conventional and Islamic commercial banks. This condition occurs due to the COVID-19 pandemic, which has weakened the performance of banks, thereby reducing the profits banks earn. This research was conducted on 14 Islamic commercial banks for the period 2010 to the end of 2019. Islamic commercial banks were chosen as the object of study because even though the number of assets was still small compared to commercial banks and, in 2019, it experienced a decline, this decline still showed positive and positive results. Conditions are still better than other commercial banks.¹⁷

This study explores the effect of fee-based (non-interest) income in increasing bank profitability. Banks that are successful in managing fee-based income so that they can create efficiency can increase profitability. The capital adequacy ratio (CAR) is the other component that affects profitability. Research by Saif-alyousfi et al., and Margono et al., states that a large CAR illustrates the more robust capital owned by banks. A high CAR value will further support the achievement of bank profitability targets.^{18,19}

Fee-based income, or non-interest income in banking, has been a concern for many researchers. Fee-based revenue is an important source of revenue that can support banking success. In addition, researchers also pay attention to the effect of fee-based income on bank efficiency. To obtain cost-based revenue,

¹² Nardi Sunardi, "Pengaruh Intellectual Capital (Ib-Vaic Tm), FDR Dan CAR Terhadap Efisiensi Biaya Dan Implikasinya Pada Kinerja Perusahaan Bank Umum Syariah Indonesia," *Jurnal Sekuritas Manajemen Keuangan* 1, no. 1 (2017): 1-17.

¹³ Ahamed, "Asset Quality , Non-Interest Income , And Bank Profitability : Evidence From Indian Banks."

¹⁴ Wu, "Examining the Internal Determinants of Profitability of Commercial Banks in China: A Panel Data Modeling Based Empirical Study."

¹⁵ Nguyen, "Diversification and Bank Efficiency in Six ASEAN Countries."

¹⁶ Harjum Muharam and Bianda Bellinda, "Diversifikasi Pendapatan, Kinerja Bank, Dan Peran Moderasi Tipe Kepemilikan," *Jurnal Bisnis Strategi* 29, no. 1 (2020).

¹⁷ Ihsan Effendi and Prawidya Hariani RS, "Dampak Covid 19 Terhadap Bank Syariah Impact of Covid-19 On Islamic Banks," *Ekonomikawan: Jurnal Ilmu Ekonomi Dan Studi Pembangunan* 20, no. 79 (2020): 221-30.

¹⁸ "Profitability of Saudi Commercial Banks : A Comparative Evaluation between Domestic and Foreign Banks Using Capital Adequacy , Asset Quality , Management Quality , Earning Ability and Liquidity Parameters," *International Journal of Economics and Financial Issues* 7, no. 2 (2017): 477-84.

¹⁹ "Roles of Capital Adequacy and Liquidity to Improve Banking Performance," *Journal of Asian Finance, Economics and Business* 7, no. 11 (2020): 75-81, <https://doi.org/10.13106/jafeb.2020.vol7.no11.075>.

efficient infrastructure development is required. Banking efficiency plays an important role in supporting profitability.

Based on this research gap, this study was conducted to answer how fee-based income can increase banking profitability. In the perspective of efficiency theory, in the long run, the output of the activity will fluctuate in producing efficiency. Banks can achieve efficiency at some stage, but not always at others. As a business entity, banks are very interested in achieving efficiency. The ratio of operational efficiency in banking can be measured by OER (ratio of operating expenses to operating income). Cost-based revenues that can improve efficiency are expected to increase profitability.

This research explores the effect of fee-based (non-interest) income in increasing bank profitability. Banks that successfully manage fee-based revenues so as to create efficiencies can increase profitability. The capital adequacy ratio (CAR) is another component that affects profitability. Research by Saif-alyousfi et al. and Margono et al. states that a large CAR describes stronger capital held by banks. A high CAR value will further support the achievement of the bank's profitability targets. This research is expected to contribute to the literature by filling in existing research gaps and providing a new understanding of fee-based income management in Islamic banking in Indonesia, especially in the context of efficiency and profitability.

METHODS

The study analyzes the effect of fee-based income (non-interest income) and capital adequacy ratio on profitability with bank efficiency (OER) as the intervening variable. This type of research is quantitative research. The data used is secondary data with a population of all Islamic Commercial Banks registered at OJK for 2010-2019. The selected research sample is 11 Islamic Commercial Banks taken using purposive sampling with collection methods through indirect observation and internet research on the OJK official website and each bank. Test the hypothesis and it is done using multiple regression analysis techniques, including the R2 determination Test, the F test, and T-test and path analysis tests (path analysis) to test the effect of intervening variables. Data were analyzed using the computer application E-views ten and SPSS version 21.

RESULT AND DISCUSSION

Stationarity testing in this study was carried out using the Unit Root Test developed by Dickey-fuller. The results obtained are as follows:

Table 1. Result of Stationarity Test

Variable	Prob* Level	Description	Prob* 1 st different	Description
NII	0.0804	Not Stationer	0.0001	Stasioner
CAR	0.0000	Stationer	0.0000	Stasioner
OER	0.0646	Not Stationer	0.0000	Stasioner
ROA	0.0381	Stationer	0.0000	Stasioner

Source: Secondary data, processed, 2021

From the description of the table above, it can be seen that all research variables (NII, CAR, OER, and ROA) show the value of $\text{prob}^* < 0.05$ at the first different level so that it can be stated that all variables are stationary.

The classical assumption test was carried out in four stages: normality, multicollinearity, autocorrelation, and heteroscedasticity. A good regression model is a model that is free from the classical assumption test. The results of the classical assumption test that has been carried out with the SPSS version 21 data processing program are as follows:

Table 2. Result of Classic Assumption Test

Test	Results	Information
Normality	Asymp. sig.(2-tailed) = 0.79, < 0.05 .	Normal Distributed Data
Multicollinearity	Tolerance: NII=0.952, CAR= 0.741, OER= 0.766 > 0.10 , VIF: NII= 1.051, CAR= 1,350, OER= 1.305 < 10	There are no symptoms of multicollinearity
Autocorrelation	$du < \text{DW test} < 4-du = 1.734 < 1.863 < 2.266$	There are no indication of autocorrelation
Heteroscedasticity	Significance value NII = 0.536, CAR = 0.180, OER = 0,768 > 0.05	There is no indication of heteroscedasticity

Source: Secondary data, processed, 2021

Based on the description of the table above, it can be concluded that the regression model is free from classical assumption test deviations, and the data used has been generally distributed so that the regression model of this study can be continued to the stage of multiple regression analysis and path analysis.

Hypothesis Test

The results were obtained with two analytical models, including multiple regression analysis and path analysis, to test the effect of intervening variables. The results of multiple regression analysis are shown in Table 3, which explains the partial effect of each independent variable on the dependent variable. While Figure 1 and Table 4 illustrate the influence of the independent variable on the dependent variable through the intervening variable.

Table 3. Regression Result

Model	T value	sig	Conclusion
NII → ROA	2.761	0.007	Significant
CAR → ROA	-0.239	0.811	Not Significant
OER → ROA	-	0.000	Significant
	18.98		
	7		
NII → OER	-1.214	0.228	Not Significant
CAR → OER	-5.830	0.000	Significant

Noted: NII: Fee-Based Income, CAR: Capital Adequacy Ratio, OER: Bank Efficiency, ROA: Profitability

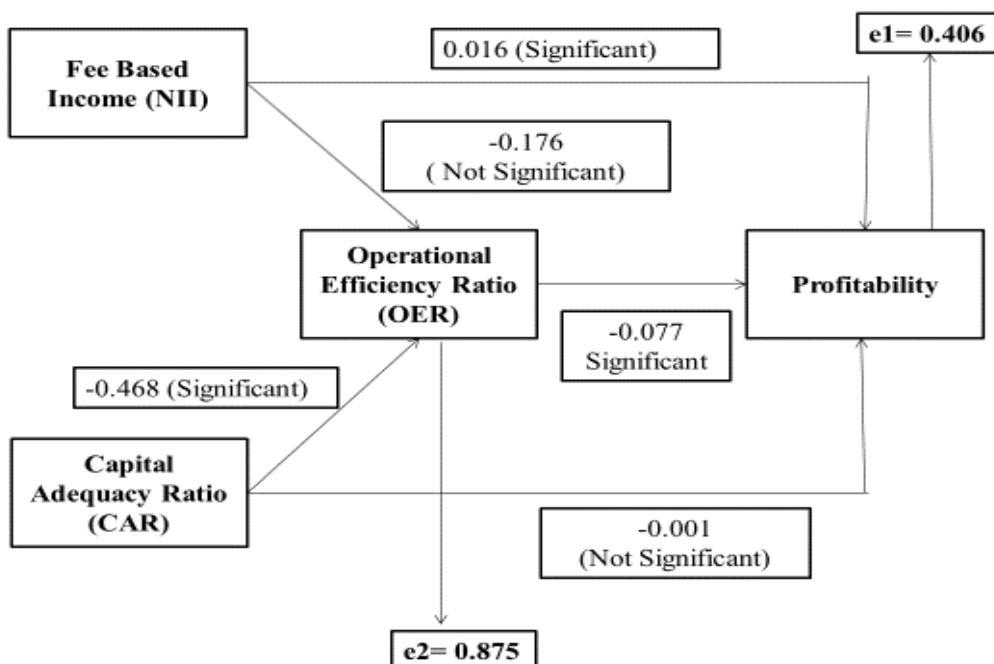


Figure 1. Path Analysis

Table 4. Mediating Result Analysis

Model	t value	t table	Conclusion
NII→OE	1.1972	1.989	Rejected
R→ROA			
CAR→O	4.0286	1.989	Accepted
ER→RO			
A			

Noted: NII: Fee-Based Income, CAR: Capital Adequacy Ratio, OER: Bank Efficiency, ROA: Profitability

Based on the results of the analysis above, it is known that the NII variable has a positive effect on profitability as indicated by its significance value of 0.007, where this value is smaller than $= 0.05$, and the t arithmetic value is greater than the t table, namely $2.761 > 1.989$. so H1 is accepted. The increase in fee-based income can increase bank profitability because the increase in fee-based income can be used as additional margin income obtained by the bank, which has been adjusted with minimal risk so that it will have a positive impact on profit growth. The results of the study are supported by Wu²⁰, Ahamed²¹, and Olowolaju²².

Capital adequacy ratio (CAR) has no significant effect on profitability as indicated by its significance value of 0.811 which is more critical than 0.05, and the t arithmetic value, which is smaller than the t table, namely $(-0.239) < 1.989$, so H2 is rejected. The Bank continually strives to keep the CAR value above the minimum criteria required by Bank Indonesia regulations, a minimum of 8%. However, this high CAR tends not to be managed effectively by banks to generate profits, but banks invest them in the form of non-liquid assets so that there is no effect on increasing ROA. The research is in line with Wibisono and Prasanjaya & Ramantha, which state that CAR has no influence on bank profitability^{23,24}.

The analysis results in state that NII's effect on OER is insignificant, indicated by a significance value of 0.228 which is more significant than $= 0.05$, and the importance of t count $(-1.214) < t$ table 1.988 , so H3 is rejected. The results identify the size of non-interest income does not necessarily affect the OER ratio. This is because the NII level obtained by the bank is still relatively low, and most of the bank's income is still dominated by revenue sharing. Revenue sharing

²⁰ Wu, "Examining the Internal Determinants of Profitability of Commercial Banks in China: A Panel Data Modeling Based Empirical Study."

²¹ Ahamed, "Asset Quality , Non-Interest Income , And Bank Profitability : Evidence From Indian Banks."

²² Olowolaju, "Effect of Non-Interest Income on Profitability of Deposit Money Banks in Nigeria."

²³ "Pengaruh CAR, NPF, BOPO, FDR, Terhadap ROA Yang Dimediasi Oleh NOM," *Jurnal Bisnis & Manajemen* 17, no. 1 (2017): 41–62.

²⁴ "Analisis Pengaruh Rasio CAR, BOPO, LDR Dan Ukuran Perusahaan Terhadap Profitabilitas Bank Yang Terdaftar Di BEL," *E-Jurnal Akuntansi Universitas Udayana* 1 (2013): 230–45.

requires high operating costs, so most of the OER ratio is influenced by interest income. Research is in line with Sufian et al.²⁵ and Sahusilawane²⁶.

Based on the study's results, the effect of CAR on OER is negative, which is indicated by the significance value of 0.000, which is smaller than =0.05, and the t-count (-5.380) <1.988, so H4 is accepted. This is because, in general, banks that have high capital can finance risky assets and losses arising from operational activities with their money. This will encourage a decrease in bank debt to external parties so that the operating costs incurred by the bank will also decrease. Decreased operational costs will impact the smaller OER value so that the increase in CAR will reduce the level of OER owned by banks. Sunardi and Miftahurrohman supported the research²⁷.

From the results of the research conducted, it was found that OER had a significant adverse effect on profitability, indicated by the significance value 0.000, which was smaller than =0.05, and the t-value, which was smaller than the t-table value, namely (-18.987) <1.989, so H5 was accepted. A high OER value indicates an increase in operational costs to be incurred by the bank, resulting in inefficient bank operations. If the bank's condition is weak, the impact will reduce the profitability growth that the bank will receive. Harahap and Ruslan et al. support research,²⁸.

Based on the results of the Sobel test, it was found that OER could not mediate the effect of NII on profitability. This is shown by the results of the Sobel test, which states that the t count is 1.1972, smaller than 1.989, so H6 is rejected. This research is supported by Wu²⁹, which says that non-interest income positively affects profitability. A study by Sufian et al.³⁰ also states that fee-based income (non-interest income) does not affect efficiency.

However, the operational efficiency ratio was able to mediate the effect of CAR on profitability. This is indicated by the t-value of 4.0286, more significant than the t-table 1.989, so H7 is accepted. This research is supported by Ailiyah, which states that the capital adequacy ratio affects Profitability (ROA) through

²⁵ "Globalization and Bank Efficiency Nexus: Empirical Evidence from the Malaysian Banking Sector," *Benchmarking: An International Journal* 24, no. 5 (2017), <https://doi.org/10.1108/BIJ-09-2014-0090>.

²⁶ "Pengaruh Likuiditas, Kualitas Aktiva, Sensitivitas Pasar, Fee Based Income, Dan Margin Bunga Terhadap Efisiensi Pada Bank Pembangunan Daerah" (STIE Perbanas Surabaya, 2017).

²⁷ Miftahurrohman, "Analisis Faktor-Faktor Yang Mempengaruhi Tingkat Efisiensi Perbankan Syariah Dengan Pendekatan Data Envelopment Analysis (Studi Pada Bank Syariah Negara-Negara ASEAN)," *Jurnal Lentera Akuntansi* 4, no. 1 (2019): 71–91.

²⁸ "The Role Of Efficiency Mediation In The Effect Of Banks Size On Bank Profitability In Indonesia," *Hasanuddin Economics and Business Review* Vol. 3, no. 1 (2019): 49–58, <https://doi.org/10.26487/hebr.v3i1.1846>.

²⁹ Wu, "Examining the Internal Determinants of Profitability of Commercial Banks in China: A Panel Data Modeling Based Empirical Study."

³⁰ Sufian, Kamarudin, and Nassir, "Globalization and Bank Efficiency Nexus: Empirical Evidence from the Malaysian Banking Sector."

the OER ratio. High capital adequacy will reduce the OER value so that the lower OER value will increase the profitability received by the bank.

CONCLUSION

Based on this study's results, Islamic commercial banks should focus on improving fee-based income and CAR management to increase profitability. Islamic banks that can manage fee-based income and CAR could increase profitability. This study contributes to the theory of efficiency. OER failed to mediate the effect of fee-based income on profitability. Based on efficiency theory, increasing efficiency should be able to increase profitability. However, this study found that increasing efficiency has not been able to encourage the role of fee-based income in achieving profitability.

The limitations of the study lie in the research variables and indicators used. The variables used are financial performance variables only and do not include macroeconomic variables. The hands and references used are also less than perfect and do not support the maximization of research results, so it is hoped that further researchers can add to the literature and use relevant indicators, especially regarding fee-based income, profitability, and bank efficiency, so that they can obtain more accurate research results.

Author's Contribution

Faqih Nabhan: Contribute to formulating research ideas, collecting data, processing data, and interpreting data.

Ayu Widyaningsih: Contributing to writing systematics, research methods, and analyzing interpretation results, the language proofread.

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Declaration of Competing Interest

The author declares that there is no conflict of interest.

Ethical Approval

Ethical approval No patient-identifying parts in this paper were used or known to the authors. Therefore, no ethical approval was requested.

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