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Analyzing Profitability Determinants in Indonesian Conventional and Islamic Banking

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Abstract

This article investigates the impact of financial ratios and macroeconomics on the profitability of conventional and Islamic banks in Indonesia. The study uses financial ratios as internal variables represented by CAR (X1), NPL/NPF (X2), and LDR/FDR (X3), while macroeconomics as an external variable is represented by BI7DRR (X4). The sample design used in this study includes conventional and Islamic banks from BUKU 1 and BUKU 2 in Indonesia, utilizing EViews and SPSS as analysis tools to test the proposed hypotheses. The analysis results show that CAR, NPL, and LDR have significant impacts on the ROA of conventional banks, while BI7DRR does not have a significant effect. On the other hand, in Islamic banks, only CAR and FDR significantly influence ROA, while NPF and BI7DRR do not have significant impacts. A paired sample t-test indicates a significant difference between the profitability (ROA) of conventional and Islamic banks. Based on these findings, it is recommended that conventional banks improve their management of CAR, NPL, and LDR, while Islamic banks need to focus on managing CAR and FDR, and develop innovative Sharia-compliant investment products to attract more stable funds.

Keywords: ROA, Financial ratios, Macroeconomics, Conventional Banks, Islamic Banks.

Introduction

The banking sector plays a crucial role in the economic development of any country. Financial services are essential for economic growth, and a reliable banking system enhances the efficiency of funds and financial investments, strengthening a country's financial and economic system (Christaria et al., 2016). Indonesia has a dual-banking system comprising conventional and Islamic banks

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(Sunarya, 2018). While conventional banks operate based on banking interest, Islamic banks follow the *Shariah* principle and are guided by Islamic economic rules that prohibit interest (Malek et al., 2022).

Table 1. Numbers of Conventional Banks in Indonesia

No	Type of Bank	2017	2018	2019	2020	2021
1	Conventional State-Owned Bank	4	4	4	4	4
2	Conventional Regional Owned Bank	26	24	24	25	25
3	Conventional Private Bank	64	64	60	58	58
4	Conventional Foreign Bank	9	9	8	8	8
Total		**103**	**101**	**96**	**95**	**95**

Source: Indonesia Statistical Centre (2022)

Table 1 above shows the number of conventional banks in Indonesia from 2017 to 2021. The number of banks decreased through the years and stayed in line from 2020 to 20221. The number of conventional banks is dominated by private banks, totalling 58 in 2021. Furthermore, Category Book Four is also dominated by conventional private banks like Bank Central Asia, Bank CIMB Niaga, Bank OCBC NISP, and others.

Table 2. Number of Islamic Banks in Indonesia

No	Type of Bank	2017	2018	2019	2020	2021
1	Islamic Regional Government Bank	**-**	**-**	2	2	2
2	Islamic Private Bank	12	12	12	12	10
Total		**12**	**12**	**14**	**14**	**12**

Source: Indonesia Statistical Centre (2022)

As per Table 2 above, Indonesia has more Islamic private banks than government banks. The number of Islamic banks decreased from 14 to 12 in 2021. However, in 2021, the Indonesian banking industry made history by introducing Bank Syariah Indonesia (BSI), a merger between BRI Syariah, Syariah Mandiri, and BNI Syariah. The merger has combined the strengths of the three Islamic banks, resulting in more comprehensive services, a larger audience, and a higher capital capacity. With the government's support for state-owned enterprises (BUMN) and business synergies, Bank Syariah Indonesia is expected to compete globally.

Hereafter, banking has its criteria for evaluating the healthiness of the performance and the standardization utilized to preserve a bank's performance since the banking industry's intermediation is between the bank and the customers (Amalia et al., 2021). Otherwise, banking performance measures the ability of the bank's competitors, and bank performance is another critical factor that stakeholders should be aware of because it determines the company's condition. However, evaluating financial performance, particularly for shareholders, will convey a signal when making investment decisions. The last

outcome or result of banking regulation and supervision that reflects the performance of national banking is the assessment of bank health.

Maintaining financial performance for banks is essential to engage customers' trust, and profitability becomes the most crucial indicator of bank performance. To analyze profitability, four ratios are measured: Return on asset, net profit margin, BOPO, and return on equity. To measure the profitability of Conventional and Islamic banks, this research study uses return on assets as the proxy of profitability. Return on assets indicates managerial efficiency, and the banks utilize ROA to generate profitability. Return on asset indicates how capable the bank's management has converted the asset into net earnings. The greater the return on assets of a bank, the higher the profit the bank receives.

Furthermore, this research also delves into comparing conventional and Islamic banks in Indonesia. Comparing the profitability of conventional and Islamic finance is essential for various reasons. It offers valuable insights into how distinct financial principles and operational structures influence financial outcomes (Salman & Nawaz, 2018). Conventional banking relies on interest-based transactions, whereas Islamic finance follows Islamic principles, emphasizing ethical investments and risk-sharing while prohibiting interest (Baloch & Chimenya, 2023). Determining which system yields greater profitability provides investors, policymakers, and regulators valuable information regarding market sustainability and ethical compatibility with investor preferences. This comparative analysis significantly impacts the development of financial instruments and services.

However, conventional and Islamic banks' operational structures and regulatory landscapes are distinct significantly, leading to notable differences in their financial performance (Yanikkaya et al., 2018). Conventional banks primarily rely on interest-based funding from deposits and loans, affording them flexibility in investment opportunities like loans, bonds, and derivatives within regulatory confines. They employ conventional risk management tools and cater to a broad customer base. In contrast, Islamic banks adhere to Islamic principles, securing funds through profit-sharing investments and equity-based financing, steering clear of interest-driven dealings and non-compliant sectors. Their adherence to stringent ethical standards and risk-sharing practices often results in lower default rates and stable funding streams. While complying with Islamic regulations entails added operational expenses, it also appeals to clients seeking ethical financial options. Understanding these operational variances is crucial for evaluating how the distinctive features of each banking model influence their profitability and market performance.

On the other hand, evaluating profitability in conventional and Islamic banks necessitates a comprehensive examination of financial ratio variables that impact banking performance. This research used Capital Adequacy Ratio (CAR) as a proxy for capital assets, Non-performing loans (NPL) and Non-performing

Financing (NPF) as a proxy for asset quality, and Loan to Deposit Ratio (LDR) or Financing to deposit ratio (FDR) as a proxy of liquidity and profitability proxy by Return on Assets. These ratios are selected for their ability to offer valuable insights into the efficiency with which banks utilize their assets to generate profits, manage equity to yield returns, and the disparity between interest income earned and interest expenses incurred.

Below is the table showing the financial performance followed by the Dependent and Independent variables used in this research study. The annual data from 2017-2021 of Conventional and Islamic banks.

Table 3. Financial Performance of Conventional Banks

Ratio	2017	2018	2019	2020	2021
ROA	0.99%	0.60%	-0.04%	-0.76%	0.74%
CAR	41.12%	31.17%	27.99%	33.38%	37.87%
NPL	2.07%	1.79%	1.62%	2.07%	1.29%
LDR	131.21%	193.77%	93.94%	84.81%	79.95%

Source: Banks official website, data collected from seven banks

The financial performance of conventional banks in Table 3 has shown fluctuations between 2017 and 2021. The Capital Adequacy Ratio (CAR) growth declined in 2019 but improved to 5% in 2021. A study by Ramadhani and Rizkan (2021) found that higher capital adequacy ratios are typically associated with higher bank profitability. However, non-performing loans and loan-to-deposit ratios have decreased since 2019. Sukmana et al. (2016) found that a high non-performing loan ratio can indicate a significant amount of loans that borrowers cannot repay. The loan-to-deposit ratio, which measures a bank's liquidity and ability to meet credit demand, has decreased from 2019 to 2021.

Table 4. Financial Performance of Islamic Banks

Ratio	2017	2018	2019	2020	2021
ROA	1.11%	1.12%	5.84%	3.03%	-0.91%
CAR	28.63%	44.17%	55.23%	74.12%	85.18%
NPF	2.58%	2.43%	1.98%	1.74%	1.62%
FDR	87.56%	60780.42%	72449.05%	92.79%	75.70%

Source: Banks official website, data collected from seven banks

On the one hand, the financial performance of Islamic banks is similar to that of conventional banks, with fluctuating results over the years. In 2021, the capital adequacy ratio of Islamic banks is lower than that of conventional banks CAR 2021. Islamic and conventional banks have seen an increase in their CAR percentage from 2019 to 2021. However, non-performing financing for Islamic

banks has been increasing since 2017. Ramadhani et al. (2021) found that non-performing financing decreases as profits increase. Table 4 also shows that the financing-to-deposit ratio for Islamic banks has an erratic pattern.

Banking profitability can be influenced by two factors - internal and external variables. External factors, or macroeconomic factors, may not directly impact banking profitability. However, macroeconomic factors can influence the financial condition of a country and can be used to make business decisions. In addition to financial performance, external variables such as macroeconomic factors measured by the BI-7 Day Reverse Repo Rate are also important in determining banking profitability. These ratios are selected for their ability to offer valuable insights into the efficacy with which banks leverage their assets to generate profits, manage equity to yield returns, and the differential between interest income earned and interest expenses incurred.

Macroeconomic factors, including the 7-Day Reverse Repo rate, hold substantial influence (Rahman et al., 2022). In Indonesia, adjustments made by the central bank (Bank Indonesia) to the 7-Day Reverse Repo rate impact financial institutions' borrowing expenses and liquidity conditions, thereby shaping their profit margins and financial well-being. According to a study by Ramadhani et al. (2021), an increase in the BI rate or BI 7-day repo can lead to an increase in the banking risk profile and inflation rate. Below is the percentage value of BI7DRR from 2017 to 2021.

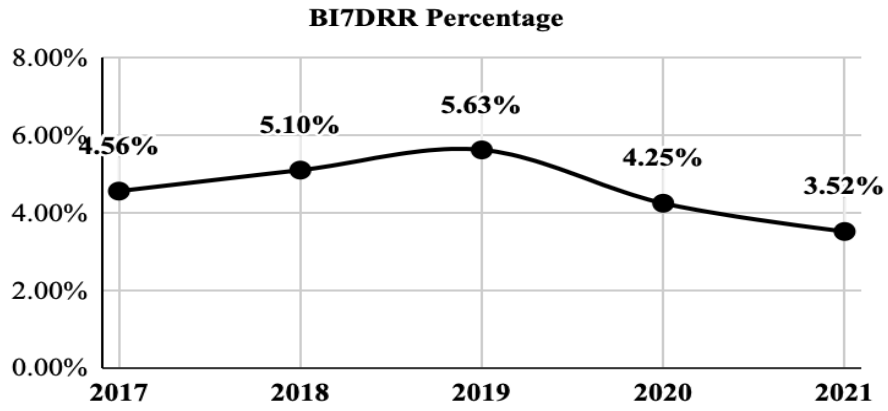

Figure 1. BI7DRR Percentage

Source: Bank Indonesia (2022)

Based on Figure 1, the highest BI7DRR was recorded in 2019 at 5.63%, but decreased in 2020 until 2021 to 3.52%. An increase in the interest rate also leads to higher financing expenses, which may discourage investment due to the high costs. According to Bank Indonesia, using the BI 7-Day (Reverse) Repo Rate instrument as the current policy rate of interest is expected to have three significant impacts:

a. It will create robust monetary policy indicators, with the BI-7 Day Reverse Repo Rate (BI7DRR) as the primary benchmark in financial markets.
b. It will also increase the effectiveness of monetary policy transmission by impacting fluctuations in financial markets and banks' interest rates.

According to Salman and Nawaz (2018), there are differences between conventional and Islamic banks in terms of their characteristics. Islamic banking is interest-free, unlike conventional banking, as it follows different principles and risk profiles. Islamic banks must adhere to various unique laws and have higher minimum capital requirements for establishment. Additionally, Islamic banking is asset-based, meaning that the bank must pay extra taxes and registration fees, but ultimately passed on to the clients, raising the overall cost. These differences are also reflected in the products offered by Islamic banks, such as *Ijarah, Mudarabah, Murabah*, and *Musharakah*.

Based on research, the financial performance and macroeconomic variables are important in determining the banking industry's profitability. Previous studies by Setiawan et al. (2017) used variables such as ROA, NPM, FDR, OER, and BI Rate and found that fixed deposit rates and BI rates significantly impact ROA. Specifically, FDR has a positive effect on ROA, while BI rate has a simultaneous effect on ROA. Meanwhile, Sukmana et al. (2016) studied CAR, ROA, BOPO, NPF, and FDR variables. They identified that conventional banks have significantly higher ROA than Islamic banks, while conventional banks have better CAR than Islamic banks.

However, NPF is better in conventional banks than the NPL of conventional banks. This research examined the profitability of conventional and Islamic banks based on financial performance and macroeconomics. This research used return on assets as a proxy of profitability. (ROA) as a dependent variable. The independent variables of conventional banks are CAR, NPL, and LDR as internal variables and BI7DRR as external variables. The independent variables of Islamic banks are CAR, NPF, FDR, and BI7DRR. This study will identify the profitability of conventional and Islamic banks by examining the ratio analysis that affects the bank's financial performance and the macroeconomic variables that affect the bank's profitability. The conventional bank will use return on asset, non-performing loan, capital adequacy ratio, loan-to-deposit ratio, and BI7DRR as the independent variables. However, the Islamic bank will use the variables of capital adequacy ratio, non-performing finance, financing-to-deposit ratio, and BI7DRR. This research period is from 2017Q1-2021Q4 in Indonesia.

Methods

This chapter helps to achieve the objectiveness of this research study. Generally, there are two methods for conducting research: quantitative and qualitative. The quantitative method uses statistical data and specific statistical

and mathematical tools to support or refute the hypothesis (Apuke, 2017). In contrast, a qualitative method focuses on finding the fundamental causes through words, explanations, and observation (Anderson, 2006). Likewise, this research study uses a quantitative method and specific statistical software to achieve the research objective.

On the other hand, this research also uses descriptive methods, nature, and the connection between the studied phenomena (Nuryaman et al., 2015). According to Sari et al. (2017), the goal of descriptive statistics is data analysis without the intention of forming general inferences from data. However, this research uses descriptive and quantitative analysis to examine the Impact of internal and external variables on profitability in conventional and Islamic banks.

According to Andrianti (2017), samples are a subset of the population researchers observe. A sample represents a subset of the total number of people and the traits they share. Because the samples are representative of the population, sampling methods should be chosen following the considerations that have been considered. Furthermore, the samples are selected based on the criteria below.

1. Financial report data were taken in the period (2017-2021).
2. The samples are conventional banks and Islamic banks in Indonesia.
3. The total assets of the samples are under 20,000,000 Million and above 2,500,000 Million.
4. The value of the variables should be positive and not contain zero values.
5. The banks are from BUKU I and BUKU II.

To meet the research objectives, the researcher applied the five characteristics above. Point three determines that the total assets of the samples are under 20,000,000 million and above 2,500,000 million to compare conventional and Islamic banks fairly. The criteria are in accordance with the research by Redmond et al. (2007), which studied the effect of bank size on profitability and stated that bank size is one factor that measures the firms' profitability.

This research uses secondary data to gather various resources for data analysis. The information utilized in this study was acquired from the websites of each bank, the Indonesia Stock Exchange, and the Indonesia Statistical Center. The data will be compiled from banks' quarter reports. Based on the criteria above, the banks selected as the sample of this research study are:

Table 5 List of Conventional Banks

No	Conventional Banks
1	PT. Bank Maspion Indonesia, tbk
2	PT. Bank Ganesha, tbk
3	PT. Bank OKE Indonesia, tbk

4	PT. Allo Bank Indonesia
5	PT. Seabank Indonesia
6	PT. Bank Amar Indonesia, tbk
7	PT. Prima Master Bank

Table 6 List of Islamic Banks

No	Islamic Banks
1	PT. Bank BCA Syariah
2	PT. Panin Dubai Syariah Bank, tbk
3	PT. Bank BTPN Syariah, tbk
4	PT. Bank KB Bukopin Syariah
5	PT. Bank Aladin Syariah
6	PT. Bank Victoria Syariah
7	PT. Bank BJB Syariah

Based on the criteria determined, conventional banks have 111 observations, Islamic banks have 98, and 209 total data observations are retrieved from each bank's financial report. The banks selected are based on the already determined criteria and must be compared with Apple by looking at their total assets.

Results and Analysis

Descriptive Statistics Analysis

Table 7 Descriptive Statistics of Conventional Banks

	ROA	CAR	NPL	LDR	BI7DRR
Mean	1.0179	33.3304	2.1507	123.8729	4.5998
Median	0.9500	23.6800	2.1700	92.4600	4.5000
Maximum	4.7400	103.8300	4.8400	780.3600	6.0000
Minimum	0.0200	12.0300	0.0400	36.0400	3.5000
Std. Dev.	0.7339	22.2051	1.0943	123.9870	0.8239

Source: EViews 12, (2023).

Based on Table 7 above, the results of the descriptive analysis of conventional banks are as follows: All the variables used can be considered relatively good because the Standard Deviation is less than the mean, except Std. Dev of the LDR variable is almost similar to the Mean.

Table 8. Descriptive Statistics of Islamic Banks

	ROA	CAR	NPF	FDR	BI7DRR
Mean	1.9985	26.5563	2.4095	94.3501	4.5858
Median	0.5850	23.1950	2.8500	90.5950	4.6250
Maximum	13.5800	61.4400	4.9600	196.7300	6.0000

Minimum	0.0100	14.4500	0.0100	55.7300	3.5000
Std. Dev.	3.4734	11.1641	1.6974	22.7805	0.8402

Source: EViews 12, (2023)

The descriptive statistics for Islamic banks from Table 8 indicate that all the variables used can be considered relatively good, as the standard deviation is less than the mean, except for the standard deviation of the ROA variable, which is higher than the *mean*. The Return on Assets (ROA) as a measure of profitability has a mean value of 1.998, a median value of 0.585, a maximum value of 13.580, a minimum value of 0.010, and a standard deviation value of 3.473. According to the rules of thumb, the data is more spread out when the standard deviation is higher than the mean (Ghozali, 2016). The ROA results show that the variables are heterogeneous, indicating that a high deviation is not favourable. This may be due to the larger values in the data, leading to a varied spread of the data as the standard deviation value is greater than the average value.

Table 9. The Comparison of Descriptive Statistics Analysis

	Dependent Variable			***Independent Variables***		
	YC[1]		YI[2]	XC[3]		XI[4]
Mean	1.017	<	1.998	123.872	>	94.350
Median	0.950	>	0.585	92.460	>	90.595
Maximum	4.740	<	13.580	780.360	>	196.730
Minimum	0.200	<	0.010	36.040	<	55.730
Std. Dev	0.733	<	3.473	123.987	>	11.490

The comparison of descriptive analysis results of conventional and Islamic banks showed dissimilarity. For instance, the mean value of Islamic banks (1.998) for the dependent variable is greater than that of conventional banks (1.017). The independent variable's mean value of conventional banks is greater (123.872). The mean value indicates the average data used in this research. Furthermore, the descriptive analysis also shows the maximum and minimum values of the data. Based on the table above, the maximum value for the dependent variable of conventional banks (4.740) is smaller than that of Islamic banks (13.580). Hence, conventional banks have a greater value of independent variables (780.360). This value can be found in the LDR of PT. Bank OKE Indonesia, Tbk. Q3 2018.

[1] YC = ROA of Conventional Banks

[2] YX = ROA of Islamic Banks

[3] XC = Independent variables of Conventional Banks

[4] XY = Independent variables of Islamic Banks

The dissimilarity between conventional and Islamic banks can also be found in the standard deviation results. According to Setiawan et al. (2013), the standard deviation value determines financial performance stability over some time. Based on the descriptive analysis results for the dependent variable of conventional banks, the standard deviation (0.733) is lower than that of Islamic banks (3.473). Hence, for independent variables, conventional banks have a higher value (123.987) than Islamic banks (11.490). However, the descriptive analysis results indicate that both banks have a tight comparison.

Classical Assumption Analysis

Normality Test

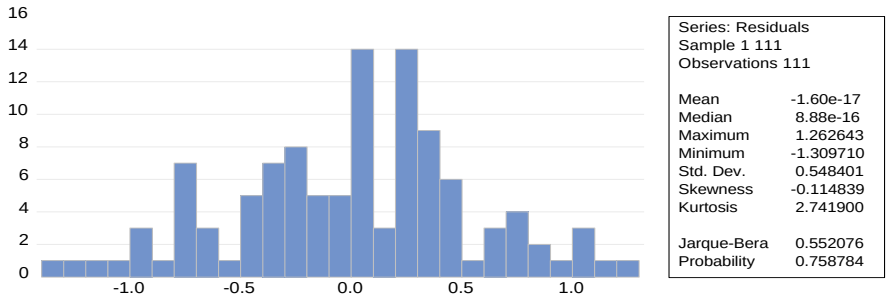

Figure 1. Normality Test of Conventional Banks
Source: EViews 12, (2023)

The figure above shows the normality test result of Conventional Banks. Based on this result, the probability of Conventional Banks is 0.758. As a rule of thumb, if the probability of Conventional Banks is> 0.05, it means the data is in a normal distribution, indicating that the Conventional Banks' normality test is successful.

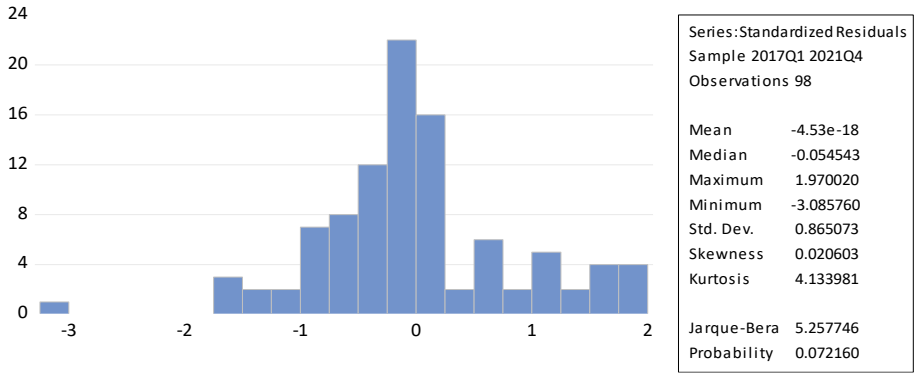

Figure 2. Normality Test of Islamic Banks

The figure above shows the normality test results of Islamic Banks. Based on this result, the probability of Islamic Banks is 0.07216. As a rule of thumb, if the probability of Islamic Banks is> 0.05, the data is in a normal distribution, which indicates that the normality test of Islamic Banks is successful. Ghozali (2016) examined the normality test to ascertain whether dependent and independent variables encounter an abnormal data distribution. Considering the results among conventional and Islamic banks, both normality test results indicate that the data is normally distributed.

Heteroscedasticity Test

A heteroscedasticity test is conducted to test the regression model to see whether there is dissimilitude between one to another residual variance, and it occurs if there is inconstant residual variance.

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	0.241736	Prob. F(4,105)	0.9141
Obs*R-squared	1.003745	Prob. Chi-Square(4)	0.9092
Scaled explained SS	2.017222	Prob. Chi-Square(4)	0.7326

Figure 3. Heteroscedasticity Test of Conventional Banks

Source: EViews 12, (2023)

The figure above presented the heteroscedasticity test of conventional banks using the Breusch – Pagan - Godfrey method. This method was applied because one of the variables is suspected of being related to the error variance. Hence, this method was applied to avoid the heteroscedasticity problem in the result. Building upon the rule of thumb, if the significant 0.05 < the probability Chi-Square (0.9092), the regression model is not experiencing heteroscedasticity problems. Figure 14 presents the heteroscedasticity test of Islamic banks using the Breusch – Pagan - Godfrey method. Building upon the rule of thumb, if the significant 0.05 < the probability Chi-Square (0.7203), the regression model is not experiencing heteroscedasticity problems. Furthermore, regardless of the results among conventional and Islamic banks on heteroscedasticity, neither test has experienced heteroscedasticity problems.

Autocorrelation Test

An autocorrelation test is conducted to determine whether a linear relation exists between the errors of a series of observations. The autocorrelation test results of conventional and Islamic banks are further down.

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

F-statistic	0.433166	Prob. F(2,103)	0.6496
Obs*R-squared	0.917491	Prob. Chi-Square(2)	0.6321

Figure 4. Autocorrelation Test of Conventional Banks

Perceive as the results, the value of Prob. Chi-square is (0.6321) > the significant value (0.05). Build upon the rules of thumbs if the value of Prob. A chi-square larger than the significant value means the data is not experiencing autocorrelation problems. The autocorrelation test of Islamic banks was investigated using the Durbin-Watson approach. Perceive as the results, the Durbin Watson value of Islamic banks is 1.1498. Build upon the rules of thumb if the Durbin Watson value -2 < 1.1498 < 2 implies no autocorrelation problem. In conclusion, there is no autocorrelation problem with either result.

Multicollinear Test

A multicollinear test was obtained to ascertain the relationship between independent variables. Hence, if there is a greater correlation between the variables Y, the relation between variables X and Y will be hampered. According to the results, conventional banks' highest matrix value is 0.680. This value is found in the correlation between the loan-to-deposit ratio and CAR. The correlation between each variable in the figure above shows a value less than 0.8. Based on the rules of thumb, if the matrix value is below 0.8, every variable doesn't contain a multicollinearity problem.

	CAR	NPF	FDR	BI7DRR
CAR	1.0000	-0.6044	0.0245	-0.3348
NPF	-0.6044	1.0000	0.2866	0.0502
FDR	0.0245	0.2866	1.0000	-0.1281
BI7DRR	-0.3348	0.0502	-0.1281	1.0000

Figure 5. Multicollinear Test of Islamic Banks

Perceive to the results, the highest matrix value of Islamic banks is 0.604. This value was found in the correlation between NPF and CAR. The correlation between each variable in the figure above shows a value less than 0.8. Based on the rules of thumb, if the matrix value is below 0.8, every variable does not contain a multicollinearity problem (Shrestha, 2020). The figures above present the multicollinear results of conventional banks and Islamic banks. Both results conclude that there is no multicollinearity problem because the matrix value of both banks is below 0.8.

Multiple Regression Analysis

Multiple regression analysis is one of the examination methods used in this research study to estimate the effect between independent and dependent variables. Comprehend the multiple regression results of conventional banks, this research study used a fixed effect model and gave the formulation of the regression coefficient for each independent variable as follows:

LOG(ROA) = -5.730744 + 0.676938*LOG(CAR) – 0.330197 *LOG(NPL) + 0.660233*LOG(LDR) + 0.218996*LOG(BI7DRR)

Comprehend to the multiple regression results of Islamic banks, this research study used a fixed effect model and gave the formulation of the regression coefficient for each independent variable as follows:

LOG(ROA) = 13.51401 – 1.342605*LOG(CAR) - 0.019039*LOG(NPF) – 1.800003*LOG(FDR) – 1.135879*LOG(BI7DRR)

Hypotheses Testing

T-Test

A test was conducted to determine whether or not the dependent variables influenced each other. A significant 0.05 or 5% value and T-Table were used to determine the influence. The results of the T-Table are shown below:

1. The T-Table for Conventional Banks is 1.9826
2. The T-Table for Islamic Banks is 1.9858

Table 10. T-Test of Conventional Banks

Variable	t-Statistic	Prob.
C	-5.475045	0.0000
CAR	2.202615	0.0299
NPL	-3.703048	0.0003
LDR	2.835293	0.0055
BI7DRR	0.552102	0.6028

Table 11. T - Test of Islamic Banks

Variable	t-Statistic	Prob.
C	3.070808	0.0028
CAR	-2.186300	0.0315
NPL	0.151163	0.8802
LDR	-2.769302	0.0069
BI7DRR	-1.600081	0.1132

F- Test

A study was conducted to determine the relationship between independent and dependent variables and whether they influence each other. The study used a significant 0.05 or 5% value and the F-Table for analysis. The results of the F-Table for conventional and Islamic banks are shown below:

1. The F-Table value for conventional banks is 2.300053296.
2. The F-Table value for Islamic banks is 2.312338517.

Table 12. F - Test of Conventional Banks

F-statistic	8.573539
Prob (F-statistic)	0.000000

Source: EViews 12, (2023)

Based on the F-Test results for conventional banks, the F-statistic value is 8.573, greater than the F-Table value of 2.300. Furthermore, the Prob (F-statistic) value is 0.000, which is less than the significant value of 0.05. This result indicates that H1 is accepted while H0 is rejected. Therefore, it emphasizes that there is a simultaneous effect between CAR (X1), NPL (X2), LDR (X3), and BI7DRR (X4) on Return on Asset (Y).

Table 13. F - Test of Islamic Banks

F-statistic	28.73130
Prob (F-statistic)	0.000000

Source: EViews 12, (2023)

The F-Test results of Islamic banks show that the F-statistic value is 28.731, greater than the F-Table value of 2.312. Additionally, Prob (F-statistic) is 0.000, smaller than the significant value of 0.05. The results indicate that H1 is accepted and H0 is rejected. This emphasizes that there is a simultaneous effect between CAR (X1), NPF (X2), FDR (X3), and BI7DRR (X4) on Return on Asset (Y). Upon analysis of the results above, it can be seen that the F-tests of conventional and Islamic banks are similar. Both generate the result that H1 is accepted and H0 is rejected. This confirms a simultaneous effect between the independent variables (X) and the dependent variable (Y).

Coefficient Determination

A sufficient determination test was conducted to determine the percentage of dependent and independent variables. The outcome of the adjusted R-squared of conventional banks is (0.407) or 40%. The value indicates that the return on assets (Y) can be illustrated as 40% with capital adequacy ratio (X1), non – non-performing loan (X2), loan-to-deposit ratio (X_3), BI7DRR (X_4). According to Sugiyono (2017), a value of 40% is considered strong to define the variation of a variable. Consequently, the remaining 60% of the variation in return

on assets is explained by the variables outside the independent variables in this research study.

The outcome of the adjusted R-squared of Islamic banks is (0.740) or 74%. The value indicates that the return on assets (Y) can be illustrated as 74% with capital adequacy ratio (X_1), non – non-performing financing (X_2), financing to deposit ratio (X_3), and BI7DRR (X_4). According to Sugiyono (2017), a value of 74% is considered very strong when defining the variation of a variable. Consequently, the remaining 26% of the variation in return on assets is explained by variables outside the independent variables in this research study. According to the results above, conventional and Islamic banks R^2 are similar. The result of conventional banks is perceived in the strong category by 40% value, while the result of Islamic banks is perceived in the very strong category by 74% value.

Paired Sample T – Test

A paired sample t-test is conducted if the sample test elaborates the same variables but encounters different treatments (Afriyana, 2019). The test intends to interpret whether a significant difference exists between conventional and Islamic banks' profitability results. The paired t-test is selected for comparing profitability between conventional and Islamic banks because it can provide a targeted comparison while accounting for individual bank characteristics through pairing. It is essential to confirm or meet assumptions like normality, independence, and equality of variances to uphold the accuracy of the test outcomes and the deductions made from the analysis. Further, this test is run using SPSS 26.

Table 15. Paired Sample T - Test Results

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	ROA Conventional - ROA Islamic	-.98143	3.59781	.36343	-1.70274	-.26011	-2.700	97	.008

Perceive to the results above, the value of df is 97. Based on the distribution table, 97 indicates that the t – t-table value is (1.984). Based on the results above, the sig. (2-tailed) ROA value of conventional and Islamic banks is (0.008) < (0.05), and the t – calculate (2.700) > t – table (1.984). It emphasizes that H_0 is accepted,

elucidating a statistically significant difference between the ROA of conventional and Islamic banks.

Interpretation Results

The Influence of CAR towards ROA

The T-test on the influence of CAR on ROA at conventional banks produces a probability value of 0.000 (P < 0.05 = 0.000). The result elucidates that Ha is accepted and H0 is rejected, showing that the CAR of conventional banks has a significant impact on ROA. The upshot of this test is similar to the previous research conducted by Amalina et al. (2015). Sukmadewi et al. (2020) show the factual truth of Conventional banks. The relationship between CAR and Return on Assets (ROA) in conventional banks is significant because a higher CAR typically implies lower leverage. Lower leverage means that the bank relies less on borrowed funds and more on its capital, which can lead to a lower ROA. This is because the cost of equity capital is usually higher than that of debt capital, so a bank with a high CAR may have lower profitability due to higher capital costs.

On the other hand, a bank with a lower CAR may be more leveraged, leading to potentially higher returns on assets due to the amplified effect of leverage on profitability. However, higher leverage also increases the risk of insolvency if the bank's assets experience significant losses. Increasing the quality of CAR will likely affect the profits shown by ROA; this is very supportive of the continuity of business activities, which is increasing the adequacy of capital, and the tendency to increase profits generated on assets will also increase. So, it is necessary to maintain this condition for the bank or further increase the CAR because the increasing CAR automatically creates trust for the public in conventional banks.

Corresponding with the resulting test of conventional banks, Islamic banks showed negative significant results in hypothesis testing. The result elucidates that Ha is accepted and H0 is rejected, showing that the CAR of conventional banks negatively impacts ROA. The negative significant impact of the Capital Adequacy Ratio (CAR) on the Return on Assets (ROA) within Islamic banks illustrates a distinctive interplay influenced by Islamic principles and regulatory environments (Alnajjar & Othman, 2021). A higher CAR within Islamic banks, signalling stronger capital reserves concerning risk-weighted assets, correlates with diminished ROA.

This correlation implies that while bolstering capital adequacy bolsters financial stability and aligns with Islamic finance tenets, it may constrain profitability by curtailing leverage and potential asset returns. Islamic banks often prioritize stability and risk-sharing over profit maximization through conventional interest-based practices. Therefore, elevated CAR levels may signify prudent risk management and compliance with regulatory norms safeguarding depositor funds and upholding Islamic principles, albeit at the expense of

profitability goals. This revelation emphasizes the nuanced strategy Islamic banks must adopt to balance financial robustness and meet the ethical and regulatory demands inherent in their operational framework.

These findings align with the research conducted by Moorcy et al. (2020), which emphasizes that there is a negative significant influence on ROA. These findings illustrate that if the ratio of CAR increases, the profitability of Islamic banks will decrease. Moreover, the high ratio of CAR is suspected to reduce banks' ability to expand their business because the greater the capital reserves used to cover the risk of loss, the situation will decrease banks' profitability (Adzani et al., 2018). Based on the conventional and Islamic banks' results, the t – -t-statistic of 2.202 is higher than that of Islamic Banks' -2.186, and the mean value of conventional banks is higher than that of Islamic banks. This case can be explained by the fact that the established period of conventional banks in Indonesia is longer than that of Islamic banks (Sukmana et al., 2016). Experiencing that conventional banks can garner their capital rather than Islamic banks. However, this research study seems consistent with the previous research done by Sukmana et al. (2016), which found that the CAR of conventional banks is better than the CAR of Islamic banks.

The Influence of NPL/NPF towards ROA

NPL of conventional banks produces a probability value (0.0003) ($P < 0.05 = 0.0003$), which means that Ha is accepted. The result elucidates that the NPL of conventional banks has a negative significant influence on ROA. The outcome of this research is in line with research conducted by Widyastuti et al. (2021), Indah Putrianingsih et al. (2016), and Darmawan et al. (2020) found that NPL has a negative significant impact on ROA. A large NPL value can cause a large percentage of credit failure values so that it can cause a decrease in bank profitability. It can be concluded that the higher the NPL value of a bank, the higher the value of the banks' profitability (Widyastuti et al., 2021).

On the other hand, the NPF of Islamic banks perceives the probability (0.880) ($P > 0.05 = 0.880$), which means that H0 is accepted. The results elucidate that the NPF of Islamic banks has no significant influence on ROA. This research finding is in line with the research conducted by (Dewi, 2019), which elucidates that the increase in NPF value does not influence the Islamic bank's profitability. It happened because the mean value of NPF is 2.409, below the Bank Indonesia standard by 5%, so the value of NPF will not affect the Islamic bank's profitability. Hence, the bad NPF ratios indicate that Islamic banks should be more prudent in channelling working capital financing funds (Indriastuti et al., 2019).

Regarding both results tests, the t – t-statistic of conventional banks is -3.703, higher than the t – t-statistic of Islamic banks, 0.151. In this case, there is a distinction between both results; conventional banks show a significant negative

influence, and Islamic banks show there is no significant influence. Therefore, this research found that the NPF of Islamic banks is worse than the NPL of conventional banks. The output aligns with the research conducted by (Indriastuti et al., 2019). This situation is delineated by the difference in loan contracts applied among conventional and Islamic banks. Therefore, the increase in financing problems in Islamic banks is due to under-control customers since there is a degradation in assets (Indriastuti et al., 2019). The degradation happened because Islamic banks could not expand their financing in the current economic situation.

The Influence of LDR/FDR towards ROA

Based upon the results test, the LDR of conventional banks t–test perceives a probability value of 0.005 P < 0.05 = 0.005, which means that Ha clarifies that the LDR of conventional banks significantly influences ROA. These findings align with the previous research conducted by Azmy et al. (2019) and Peling et al. (2018), which found that LDR significantly impacts ROA. It means that if there is an enhancement in LDR value, the profitability of conventional banks will also increase. The outcome is identical to the theory that states banks with inadequate liquidity cause banks to fail to operate, so bank licenses are revoked (Banker Association for Risk Management, 2016). The relationship between the Loan Deposit Ratio (LDR) and Return on Assets (ROA) in conventional banks is significant because the LDR reflects the bank's lending activities and liquidity management strategies, which can impact its profitability measured by ROA. A higher LDR means that the bank is extending more loans relative to its deposits. While lending activities generate interest income, they also carry risks, such as default and credit risk. Therefore, a high LDR can potentially lead to higher interest income but also higher credit losses, which can affect the bank's ROA.

Furthermore, the research findings of Islamic banks elucidate that there is a negative significant impact on the ROA of Islamic banks. These findings align with the research conducted by Hasibuan et al. (2022) and Rusydiana et al. (2021), who stated that FDR has a negative and significant impact on the ROA of Islamic banks. The relationship between the changes in FDR and the profitability of Islamic banks is that when the FDR value is increased, it will decrease the profitability of Islamic banks. This case is distinct from the results of conventional banks. Hence, the greater the FDR ratios indicated, the lower the banks' liquidity. It is due to the amount of funding needed to finance credit that is getting bigger. However, this contradicts the research conducted by Hasibuan et al. (2022), who stated that FDR has no significant impact on the ROA of Islamic banks. Both test results show similarities. The t–t-statistic results of conventional banks 2.835 are higher than the t–t-statistic results of Islamic banks -2.769. This finding aligns with the research by Nurhadi et al. (2017). However,

the significant results of conventional and Islamic banks describe the banks' good performance in managing their funds obtained from customers' savings, deposits, and credit distribution.

The Influence of BI7DRR towards ROA

Conventional banks' BI-7 Day Reverse Repo Rate (BI7DRR) shows insignificant results towards ROA, authenticating that $H_{0\,is}$ accepted while H_a is rejected. This conclusion was obtained from the probability of the t-test (0.600) ($P > 0.05 = 0.600$). The research result is in line with the research conducted by (Dwijayanthy et al., 2009). It stated that BI7DRR has no significant influence on banks' profitability. However, according to the research, there is a correlation between BI7DRR and the inflation rate. This phenomenon ensues because the fluctuation of BI7DRR is part of government policy and impacts inflation. However, this research and research conducted by Dwijayanthy et al. (2009) showed distinct results, with research conducted by Wasita et al. (2022) stating that BI7DRR significantly affects banks' profitability.

By the output of conventional banks, Islamic banks' output showed no significant impact on Islamic banks' profitability. Perceive from the probability value of Islamic banks is 0.111 larger than the significant value 0.05, authenticating that $H_{0\,is}$ accepted while H_a is rejected. The research output is the research done by Mellaty et al. (2021), who stated that there is no significant influence of BI7DRR on Islamic bank's profitability; it elucidates that if the value of BI7DRR increases, it will not affect Islamic bank's profitability. That can be illustrated because Islamic banks use Syariah agreement, not interest. After all, Islamic banks' business activities are based on the economic *Syariah* principle.

The research output is distinct from the research done by Amzal (2016) and Prima Anindya et al. (2022), who stated that the BI Rate significantly impacts Islamic banks' profitability (ROA). The Bank Indonesia director announced the changes of BI7DRR as a financial market liquidity management to meet the operational objectives of monetary policy. Discerning the conventional and Islamic bank's t-test results, both are similar, showing no significant impact of BI7DRR on banks' profitability. The increase in BI7DRR did not directly affect the profitability of conventional and Islamic banks because the distribution of funds by both banks did not directly impact BI7DRR. BI7DRR has a very low significant percentage as conventional and Islamic banks' measurement ratios. However, conventional banks' profitability can be measured from CAR, NPL, and LDR. Meanwhile, the profitability of Islamic banks can be measured using CAR and FDR.

Conclusions

This study reveals various factors influencing the profitability of conventional and Islamic banks in Indonesia. Based on the analysis conducted, it

was found that financial ratios such as CAR, NPL, and LDR significantly impact the Return on Assets (ROA) of conventional banks, while macroeconomic variables such as BI7DRR do not show a significant effect. Conversely, in Islamic banks, only CAR and FDR are proven to significantly influence ROA, while NPF and BI7DRR do not have a significant impact. These findings underscore the importance of effective capital and liquidity management in enhancing bank profitability, both conventional and Islamic.

The results of this study have practical implications for bank management and policymakers. For conventional banks, it is crucial to improve the management of CAR, NPL, and LDR to increase profitability. Islamic banks, on the other hand, need to focus on managing CAR and FDR, as well as developing investment products that comply with Sharia principles to attract more stable funds. Policymakers can also use these findings to adjust regulations and policies to support the stability and growth of the banking sector, especially in facing dynamic economic conditions.

Looking forward, this study suggests further research to explore other factors that may affect bank profitability, including additional external variables and non-financial aspects such as management quality and technological innovation. Additionally, more in-depth comparative analysis between conventional and Islamic banks in various countries can provide broader insights into how different economic and regulatory contexts influence banking performance. Thus, this research not only contributes to the academic literature but also provides practical guidance for the banking industry in improving its profitability and stability in the future.

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