



The Effect of Return on Equity, Capital Adequacy Ratio and Financing to Deposit Ratio on Return on Assets of PT. Bank Muamalat Tbk

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ABSTRACT: The aim of this study is to analyze the impact of Return on Equity (ROE), Capital Adequacy Ratio (CAR), and Financing to Deposit Ratio (FDR) on the Return on Assets (ROA) in PT. Bank Muamalat Tbk. Quantitative approaches are used using secondary data. The data collection process involves the analysis of quarterly financial reports published by P.T. Bank Muamalat in the period 2014-2023. The researchers analyzed the loss report, the financial position report and the calculation report of the minimum capital provision obligation. Statistical analysis is carried out using the SPSS version 29 program, where double linear regression methods are applied to data processing. The results of statistical analysis based on Test F show that at a 95% confidence level ($\alpha = 0.05$), the variables ROE, CAR, and FDR together or simultaneously have a significant influence on ROA. The research hypothesis states that the independent variable has a significant impact on Return on Assets (ROA) as a dependent variable. From the results of the T test, the ROE variable has a significant effect on ROA of PT Bank Muamalat Tbk, while the CAR and FDR variables have no effect on ROA of PT Bank Muamalat Tbk. The estimate model yielded R values of 0.993 and R square of 0.986. This suggests that there is a very significant correlation between the free and the bound variables, where 98.6% of the changes in the binding variables can be explained by the free variables in this model. As for the other 1.4% affected by aspects not covered in the model.

Keyword: Return on Equity (ROE), Capital Adequacy Ratio (CAR), Financing Deposit Ratio (FDR), Return on Assets (ROA), Bank Muamalat



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INTRODUCTION

Banks play a crucial role in driving a country's economic activity. As a major financial entity, the financial institution is responsible for channelling available loanable funds from the savers to the parties using the fund, which are then used for the purchase of goods and services as well as facilitating investments. It can boost economic growth and raise the standard of living. That's why financial institutions play an important role in both the economy and everyday life ([Soemitra, 2009](#)). The financial performance and health of banks are the main focus, not just for shareholders and investors, but also for regulators, financial analysts, and the general public ([Dr O. P. Gupta &](#)

[Dongre, 2024](#)). Especially in an era of globalization and increasing economic competition, the banking industry is part of the most significant segment in a country's economy. PT. Bank Muamalat Tbk as one of the entities in the Indonesian banking sector is not exempt from the pressures faced inining its financial performance.

To ensure the sustainability of banking activity and ensure its profitability, every bank management needs to regularly monitor the financial condition of their banks. This includes a periodic evaluation of the health of banks, including Sharia banks such as BUS (Sharia General Bank) and BPRS (Sharia People's Finance Bank). The approach is based on a continuously evolving procedure for assessing the state of the bank, which emphasizes the adjustment of the mechanisms for measuring bank health in accordance with Sharia principles ([Janah & Siregar, 2018](#)).

Banks with health problems not only threaten their own existence, but also potentially harm other stakeholders linked to the bank, such as shareholders, bank managers, and the community that relies on banking services. Failures in the banking sector could have a wide-ranging negative impact on the Indonesian economy ([Hasan & Reswanty, 2021](#)).

Therefore, the Bank of Indonesia prioritizes Return on Assets (ROA) as the main indicator in assessing the health of a bank. This is because the Bank of Indonesia emphasizes the importance of the profitability of banks determined on the basis of assets funded by part of public savings funds, so that ROA is the most representative metrics in measuring banking sector profitability ([Dendawijaya, 2009](#)). Factors such as equivalence rates and bank profitability performance, measured through ROA (Return On Asset), have a direct impact on the company's financial condition. ROA is known as a significant indicator in determining the performance and success of a company in utilizing its assets ([Harahap & Harahap, 2019](#)).

Good performance in managing assets and effectively allocating capital is reflected in the high level of ROA. Financial statements are the primary source of information for decision-makers in financial contexts and are the main measure when evaluating company performance. Information about the company's profits during a particular period is also included in the financial statements ([Hakim et al., 2023](#)). One important measure of financial performance in evaluating the operational efficiency and risk management of banks is the Return on Assets (ROA). Each unit of asset owned by a bank is measured by the ROA to assess its ability to generate profits.

According to ([Putera, 2019, 110](#)) in ([Yuliana & Listari, 2021](#)) performance or management performance of the bank can be measured its level using indicators or key indicators, i.e. profitability obtained by the bank. Bank performance improved as profitability increased. Therefore, the efficiency and efficiency of banks in generating profits is reflected in their profitability ([Yuliana & Listari, 2021](#)).

Several researchers have conducted previous research related to factors that have an influence on Return on Asset (ROA). Studies that have been conducted ([Siregar, 2020](#)) found a significant effect of CAR and FDR on ROA, while ROE has an effect but is not significant. ([Mustaqim, 2020](#)) revealed the indirect effect of ROE on ROA through testing the coefficient of path analysis. The study conducted ([Yuliana & Listari, 2021](#)) revealed a positive and significant impact of CAR and FDR on ROA in BUS. Along with these findings, ([Wardani et al., 2019](#)) which explains that CAR and FDR show a positive and substantial correlation with ROA.

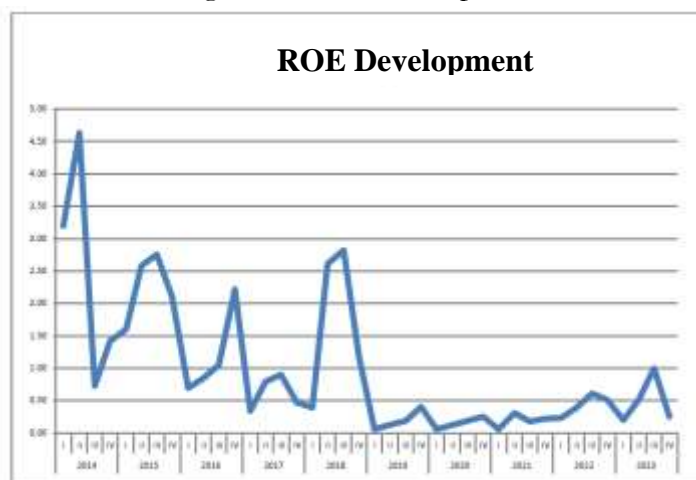
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Research by (Irnawati et al., 2020) revealed that FDR has a significant positive effect on ROA, while CAR has a positive but insignificant effect. Different from previous researchers (Hakim et al., 2023), showing CAR and FDR have no effect on ROA. (Hasan & Reswanty, 2021) added that the CAR variable has a significant effect on the ROA variable while the FDR variable has no significant effect on the ROA variable.

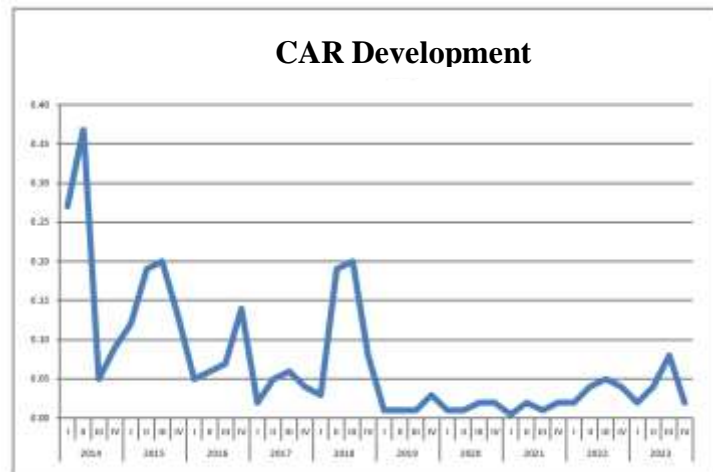
From 2013 to 2016, PT. Bank Muamalat Tbk has a sufficient Financing to Deposit Ratio (FDR) ratio. However, from 2017 to 2022, there was a decrease that indicated an improvement in quality. In 2013, FDR peaked at 99.99%, but fell to 38.33% by 2021, demonstrating the ability of Bank Muamalat Indonesia to maintain its liquidity. The Ratio of Return On Assets (ROA) continues to decline from 0.50% in 2013 to 0.2% in 2021. Return on Equity (ROE) during the period 2013-2021 has not reached an adequate level. The Ratio of Operating Costs to Operating Income (BOPO) from 2013 to 2021 continues to increase, rising from 93.86% to 99.29% by 2021. The Capital Adequacy Ratio (CAR) of Bank Muamalat Indonesia from 2013 until 2021 shows excellent performance (Eliza & Risnaini, 2022).

Figure 1. ROE Development



This is in line with the data that the researchers have already analyzed. The data presented reflects the financial performance of an entity, which can be seen from some key metrics such as Return on Equity (ROE), Capital Adequacy Ratio (CAR), Financing to Deposit Ratio (FDR), and Return On Assets (ROA) over the period from 2014 to 2023. The above picture shows quite significant fluctuations in ROE during the period. In 2014, the ROE was in the range of 0.73% to 4.63%, which means that shareholder capital returns are still relatively low. However, in 2018, ROE peaked at 2.82% in the third quarter. After that, ROE fell again and even reached a low of 0.06% in the first quarter of 2019 and 2020.

Figure 2. CAR development



CAR, which shows the ratio of capital adequacy, gives an overview of the company's ability to absorb losses and protect deposits. Data indicate that CAR tends to decline from 2014 to 2018, which marks lower bank capital for risk absorption. However, in 2021 quarter IV, CAR climbed sharply to 23.76%, indicating a significant capital increase. Furthermore, CAR continued to rise to 34,06% in the second trimester of 2022, which is the highest rate in the period.

Figure 3. FDR Development

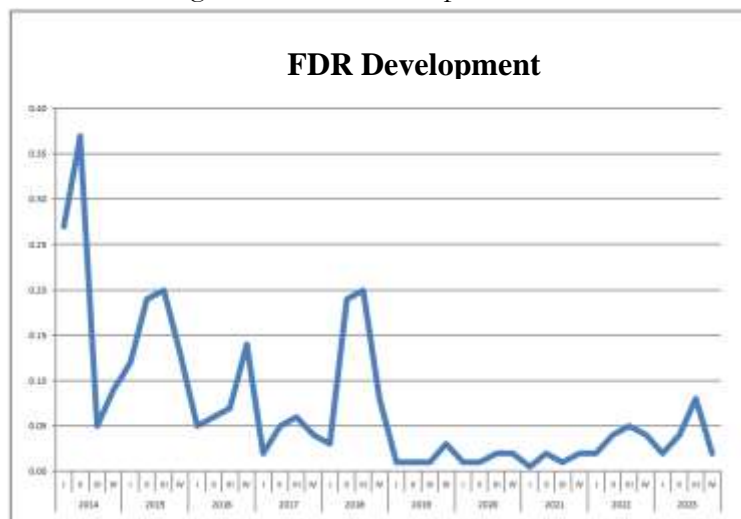


Figure 4. ROA Development

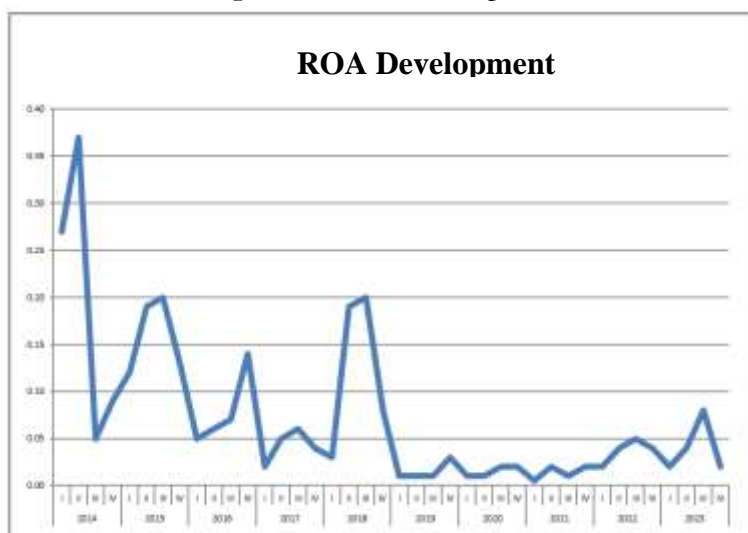


Figure 3 shows that FDRs tend to decline from 2014 to 2021, indicating that banks are more cautious in channeling credit. However, by the fourth quarter of 2021, FDR reached its lowest point of 38.49%, which means that the banks were very conservative in channelling credit. And in Figure 4 data shows that ROA tends to be low and fluctuating during the period. In 2014, ROAs were in the range of 0.05% to 0.37%, which indicates that banks are not optimal in maximizing profits from their assets. After that, ROA continued to decline and even reached a low of 0.01% in some three-months in 2019 and 2020. However, the ROA began to rise again in 2022 and reached its peak in the third quarter in 2023, which is 0.08%. Overall, data show that bank financial performance has experienced quite significant fluctuations during that period. There have been some periods when the financial ratio is at a less favourable level, such as low ROE and ROA, decreasing CAR, and very low or high FDR. However, in the last period, which is 2023, there are indications of improvement in financial performance, especially in rising ROE, ROA and CAR and FDR that are at a more moderate rate.

Developments that show the decline in sharia banking conditions in Indonesia raise interest for further investigation, especially in the context of any financial institution, including the Bank of Indonesia Muamalat, which has been a pioneer in sharia banking in the country.

Although the relationship between ROE, CAR, and FDR with bank ROA has been discussed extensively in academic literature, there are still debates and inconsistencies in the research results. Some studies found a positive relationship between ROE and ROA, while others showed a negative or insignificant relationship. Similarly with CAR and FDR, variations in previous research findings show the complexity of the factors involved in affecting the bank's financial performance. Thus, the study is conducted with the intention of further investigating the impact of ROE, CAR, and FDR on bank ROA by taking into account the broader context. The study also takes into account various internal and external factors that potentially influence the interaction between these variables. From the above phenomenon, researchers are interested in analyzing how ROE, CAR and FDR conditions of P.P. Bank Muamalat Indonesia Tbk. As well as whether these three ratios have an impact on ROAs. Research and analysis of the impact of ROEs, CARs, FDRs on the ROA's. A deep understanding of this correlation can help bank managers, regulators, and other

stakeholders make the right decisions to improve bank stability and health. Through a better understanding of these relationships, regulator, bank management, and shareholders can make wiser decisions to keep the banking sector as a whole stable and healthy.

Return on Equity (ROE)

ROE, which is an abbreviation of Return on Equity, is a ratio that calculates the efficiency of a company in managing the capital invested by its shareholders. This ratio compares the company's net profit to its equity, and provides an overview of how well the company uses its own capital to generate profits, assessing the rate of profitability of the investments invested in the company (Wardani et al., 2019). Increased Return On Equity (ROE) shows a better ability of the bank to use internal capital to obtain net profits (Romdhoni & Chateradi, 2018).

ROE calculation formula:

$$ROE = \frac{\text{Total Net Profit}}{\text{Total Equity}} \times 100\%$$

The following are the assessment standards for determining the rank of this ratio:

Peringkat	Rasio ROE	Kriteria
1	ROE > 23 %	Sangat Baik
2	18 % < ROE ≤ 23 %	Baik
3	13 % < ROE ≤ 18 %	Cukup Baik
4	8% < ROE ≤ 13 %	Kurang Baik
5	ROE ≤ 8%	Tidak Baik

Source: (OJK, 2019)

Capital Adequacy Ratio (CAR)

Capital is a crucial element in the company's expansion and in mitigating the risk of losses. The ability of the bank to handle risk related to credit and productive assets at risk will increase with the increase in the CAR. If the CAR reaches the BI standard of 8%, this indicates that the bank has sufficient capacity to support its operations, which contributes significantly to the bank's profitability (Kuncoro & Suhardjono, 2002). Banks must be prepared to face potential risks, as a wide range of major risks can arise in the banking sector. In addition, the use of capital also plays a role inining public confidence in the performance of banks. Increased bank capital improves the bank's health that can be measured through the CAR. Thus, banks can better manage the risk of potential losses arising from credit or risk assets (Romdhoni & Chateradi, 2018). This is in line with a review (Syafina, 2019) that says that the high CAR indicates that banks have a strong financial readiness to cope with potential losses from troubled loans or risky assets.

CAR calculation formula:

$$CAR = \frac{\text{Total capital}}{ATMR} \times 100\%$$

Here are the assessment standards to determine the rank of this ratio:

Peringkat	CAR	Kriteria
1	CAR > 15%	Sangat Baik
2	13,5% < CAR ≤ 15%	Baik
3	12% < CAR ≤ 13,5%	Cukup Baik
4	8% < CAR ≤ 12%	Kurang Baik
5	CAR ≤ 8%	Tidak Baik

Source: (OJK, 2019)

Financing to Deposit Ratio (FDR)

Financing to Deposit Ratio or FDR can be understood as a ratio that shows the proportion of the loan granted by the bank to the total deposit fund it receives. Each bank has a varied liquidity requirement, influenced by factors such as the type of business of the bank and its operational scale. FDR reflects the appropriateness of bank funds from credit distribution to meet customer withdrawal requests. Simply put, FDR measures the extent to which banks can respond to withdrawing depository funds by using credit that has been distributed to the customer (Ariyani, 2016). In accordance with the provisions of the Bank of Indonesia, FDR amounts must range from 80% to 100%. Therefore, it is important to keep FDR levels balanced. A bank that is unable to manage its liquidity properly risks operational difficulties that could potentially lead to bankruptcy (Rufaidah et al., 2021).

As for the FDR calculation formula is as follows:

$$FDR = \frac{\text{Total financing}}{\text{Total third party funds}} \times 100\%$$

The FDR ratio also reflects the level of risk and capacity of a bank. Some bankers agree that the bank's FDR rate that is considered safe is about 80%. However, the acceptable limit is in the range of 85% to 100% (Ariyani, 2016).

Return on Assets (ROA)

Return on Assets (ROA) is a profitability indicator that is often the focus of financial report analysis, as this ratio can reveal how effective a bank is in generating profits (Yafiz et al., 2018). Return on Asset (ROA) in banking refers to how good a bank is in generating profitability by using its assets effectively. This financial ratio assesses how profitable the bank is by comparing its net income to its overall assets (Habibi et al., 2022). The same is expressed by (Shidiq et al., 2023) the rate of profitability of the bank is measured using ROA, which compares the net profit to the total assets it owns. According to Antariksa (2006) in (Irnawati et al., 2020) explains that Return on Asset (ROA) is influenced by various factors both internal and external. Internal factors include capital adequacy reflected in the Capital Adequacy Ratio (CAR) as well as the level of liquidity measured through the Financing to Deposit Ratio. (FDR). On the other hand, external factors that influence the ROA include currency exchange rates such as rupee rates.

ROA calculation formula:

$$ROA = \frac{\text{Total Net Profit}}{\text{Total Assets}} \times 100\%$$

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Here are the assessment standards to determine the rank of this ratio:

Peringkat	Rasio ROA	Kriteria
1	$ROA > 1,450\%$	Sangat Baik
2	$1,215\% < ROA \leq 1,450\%$	Baik
3	$0,999\% < ROA \leq 1,215\%$	Cukup Baik
4	$0,765\% < ROA \leq 0,999\%$	Kurang Baik
5	$ROA \leq 0,765\%$	Tidak Baik

Source: (OJK, 2019)

METHOD

To thoroughly investigate and measure the impact of Return on Equity (ROE), Capital Adequacy Ratio (CAR), and Financing to Deposit Ratio (FDR) on the Return on Asset (ROA) of PT. Bank Muamalat Tbk, the study employed a quantitative research approach utilizing double linear regression analysis; data was meticulously collected through a detailed examination of three-month financial reports published by PT. Bank Muamalat for the period 2014-2023, which included the loss report, financial position report, and minimum capital obligation calculation report, with the data analysis conducted using SPSS version 29 and incorporating various statistical tests such as the Classical Assumption Test, Determination Test, Correlation Tests, Partial T Tests, and Simultaneous F Tests to evaluate the influence of the independent variables on ROA, thereby ensuring robust assessment of validity and reliability in the research findings.

The dual linear regression model used is:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e$$

Description:

- Y = Dependent Variable (ROA)
- a = Constant coefficient
- b₁-b₃ = Independent variable coefficient
- X₁ = *Return On Equity* (ROE)
- X₂ = *Capital Adequacy Ratio* (CAR)
- X₃ = *Financing to Deposit Ratio* (FDR)
- e = *Error*

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RESULT AND DISCUSSION

ROE, CAR, FDR and ROA calculation table for the three-month period 2014-2023

Years	Triwulan	ROE	CAR	FDR	ROA
2014	I	3.20	17.72	110.62	0.27
	II	4.63	16.42	106.64	0.37
	III	0.73	14.82	105.82	0.05
	IV	1.42	14.22	94.22	0.09
2015	I	1.60	14.64	103.35	0.12
	II	2.58	13.67	115.05	0.19
	III	2.76	13.77	111.38	0.20
	IV	2.10	12.36	103.93	0.13
2016	I	0.70	12.10	111.87	0.05
	II	0.85	12.78	113.86	0.06
	III	1.05	12.75	110.62	0.07
	IV	2.22	12.74	109.56	0.14
2017	I	0.34	12.83	105.50	0.02
	II	0.79	12.94	104.90	0.05
	III	0.90	11.58	101.62	0.06
	IV	0.47	13.62	99.87	0.04
2018	I	0.40	10.16	104.45	0.03
	II	2.62	15.92	100.45	0.19
	III	2.82	12.12	93.82	0.20
	IV	1.17	12.34	86.71	0.08
2019	I	0.06	12.58	84.01	0.01
	II	0.13	12.01	80.46	0.01
	III	0.19	12.42	80.82	0.01
	IV	0.41	12.42	86.76	0.03
2020	I	0.06	12.12	86.59	0.01
	II	0.13	12.13	87.16	0.01
	III	0.19	12.48	74.23	0.02
	IV	0.25	15.21	69.77	0.02
2021	I	0.06	15.06	67.06	0.01
	II	0.31	15.12	64.66	0.02
	III	0.18	15.26	63.49	0.01
	IV	0.22	23.76	38.49	0.02
2022	I	0.23	33.39	41.42	0.02
	II	0.40	34.06	41.85	0.04
	III	0.61	33.86	39.42	0.05
	IV	0.51	32.70	40.79	0.04
2023	I	0.20	32.38	42.64	0.02
	II	0.51	31.28	42.90	0.04
	III	1.00	28.67	45.16	0.08
	IV	0.25	29.42	47.24	0.02

Source: www.bankmuamalat.co.id

Analysis of Return on Equity (ROE)

A ratio known as Return On Equity (ROE) is a ratio to measure how effectively a company uses investor capital to generate profits. The condition of a company will get better if the ROE gets higher, and vice versa. The better a company utilizes the capital of its shareholders productively and profitably can be seen from the rising value of ROE. This shows the company's ability to make substantial profits from its owners' investments. In sharia banks, a higher return on equity (ROE) usually results in a higher Return on Asset (ROA), which indicates that the bank's overall operations are successful (Siregar, 2020). Based on the above table of Returns on Equity, there is a fairly significant fluctuation in ROE from year to year, as well as between quarters in the same year. The highest ROE was recorded in the second quarter of 2014, which was 4.63%. This indicates that in that period, compared to equity ownership, the amount of net profit generated by banks was quite high. While the lowest ROEs were recorded for some periods, namely the first quarter in 2019, the first quarter in 2020, and the first quarter in 2021, with a ROE value of 0.06%. This suggests that in those periods the company has not optimally utilized shareholder capital to generate profits. In general, the ROE from 2014 to 2021 tends to decline. This may indicate that over the course of the time, banks have experienced a decrease in net profit yield where banks are less efficient in using their own capital. In 2022 and 2023, there was a slight increase in ROE compared to previous years, although it has not reached its peak in 2014. Various aspects can trigger fluctuations in Return on Equity (ROE), including economic conditions, company business strategy, operational efficiency, capital structure, etc (Subowo & Akhmadi, 2017). Overall, this interpretation of ROE suggests that companies need to evaluate and improve their business strategy as well as operational efficiency to improve their ability to create profitability from their own capital. However, it is also necessary to consider external factors that may affect ROE, such as the economic and industrial conditions faced by companies (Fauziah & Wijaya, 2023). To increase ROE effectively, companies must not only focus on internal improvements but also adapt to the external challenges and opportunities presented by the wider economic and industry landscape (Naim, 2022). By considering internal and external factors, companies can better position themselves to improve their financial performance and generate sustainable returns for their shareholders.

Analysis of Capital Adequacy Ratio (CAR)

Capital Adequacy Ratio is an indicator that indicates the level of capital required by a banking institution. Capital plays a crucial role in bank operations, because adequate capital availability not only supports the sustainability of banking activities, but also drives business growth. In addition, adequate capital can serve as a deterrent to minimize the potential losses that banks may encounter (Romdhoni & Chateradi, 2018). The bank's capital availability to handle risks in its operational activities is shown by a higher CAR value (Rufaidah et al., 2021).

The findings are consistent with a study (Laseari et al., 2022) that shows that a high capital adequacy ratio correlates positively with the bank's ability to manage credit risk and other risky assets. Increasing the capital adequation ratio can strengthen protection for customers, which in turn can potentially increase their confidence in banks. This can have a positive impact on the growth of bank profitability. According to the CAR (Capital Adequacy Ratio) data in the above table in 2014,

CAR is at a fairly high level, ranging from 14.22% to 17.72%. However, CAR has been declining consistently since 2015 to reach its lowest point in quarter IV in 2016 with CAR of 12.74%. 2017 shows a recovery of CAR, although still at a moderate level, varying from 11.58% to 13.62%. In 2018, CAR experienced a sharp decline in quarter I with CAR only 10.16%, but then increased sharply in quarter II to 15.92%. During the period 2019 to 2020, CAR tends to be stable and in a relatively low position, i.e. about 12% to 15%. Nevertheless, in the fourth quarter in 2021, CAR increased significantly to 23.76%. The very high increase of CAR occurred in 2022, with CAR reaching its highest level in the second trimester of data of 34.06%. Despite then experiencing a decrease in the next three significant trimester CAR, CAR remained at a high level above that of 30%. However, the general trend is that the CAR tends to increase significantly in 2021 and 2022, having been at a relatively low level in previous years. This high CAR increase indicates that banks have a better ability to provide capital for business expansion as well as bear potential financial losses ([Mukaromah & Supriono, 2020](#)).

Analysis of Financing to Deposit Ratio (FDR)

The Financing to Deposit Ratio (FDR) shows the proportion of funds channelled by a bank compared to the total of third-party deposits accrued by it. This indicator describes the extent to which the bank relies on its source of liquidity, the loan channelled to meet the withdrawal of funds by the depository. Specifically, FDR describes the bank's ability to use financing distribution to offset potential losses from customer withdrawals. The financial position of the sharia bank is more liquid and performs better when its FDR values are higher ([Hasan & Reswanty, 2021](#)). Between 2014 and 2016, FDR rates tended to be high, ranging from 94% to 115%. FDRs above 100% indicate the success of banks in optimizing the use of customer funds to finance the various financial needs of the community. However, high FDR values can also indicate that banks face higher liquidity risks ([Maulana Rachman et al., 2022](#)).

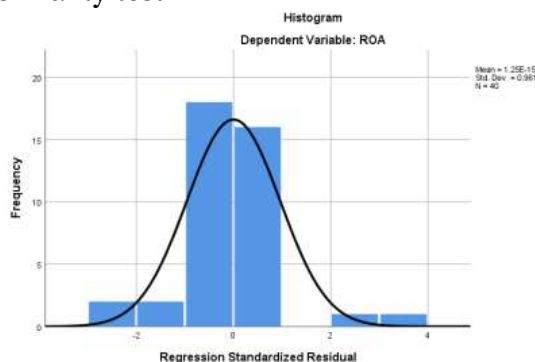
In the 2017-2018 period, FDR values gradually decreased from the 105% range to about 87% by the end of 2018. This decline may indicate that banks are striving to manage liquidity risk more carefully and keep the FDR ratio at a healthier rate. In 2019, the FDR continues to decline and is in the range of 80% to 87%. A FDR close to 80% is considered quite ideal, as banks can maintain adequate liquidity while still channelling financing to the public. However, in the period 2020-2021, FDR values have declined significantly to reach levels below 70%. This may indicate that banks are becoming more cautious in channeling financing, possibly due to unfavourable economic conditions or the presence of other risk factors being considered. In 2022 and 2023, FDR values began to rise slowly, but remain at a relatively low level, less than 50%. This increase may reflect the efforts of banks to increase the provision of financing to the public as the economy recovers. FDR value fluctuations can reflect bank liquidity management and financing strategies, as well as the possibility of external factors such as economic conditions affecting bank decisions in channeling financing. For example, banks can increase the FDR by increasing the receipt of funds and optimizing the use of those funds ([Maulana Rachman et al., 2022](#)).

Analysis of Return On Asset (ROA)

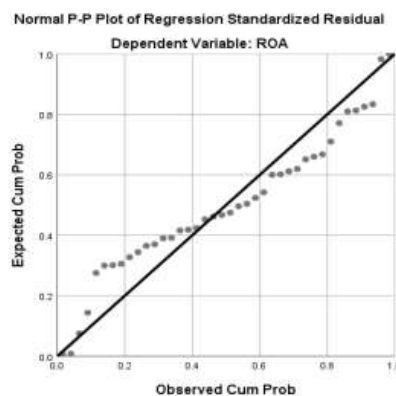
Return on Asset is an indicator that shows the profit or profit of a company from the total assets of the bank itself. High ROA values indicate the success rate of company asset management. It's potentially generating increased profits in the forthcoming period. (Pravasanti, 2018). Based on the Return on Assets (ROA) data from 2014 to the third trimester of 2023, the overall ROA trend is declining consistently every year, although there are fluctuations in certain periods. On the other hand, the lowest ROAs were recorded in a number of periods, namely quarter I, II, III 2019, quarter I,II, III 2020, and quarter I 2021 with a figure of 0.01%. The period with a relatively high ROA occurred in 2014 with an average ROA of 0.2%. This depicts in that period, banks managed to utilize their assets effectively to generate significant profits. After 2014, ROAs tend to drop to their lowest points in 2019 and 2020. The factors causing this could be economic conditions, competition between companies, or a decline in the efficiency of business operations (Sahlan & Abdi, 2022). In 2021 and 2022, ROAs began to show an upward trend even though they were still at low levels. This can be an indication that companies are beginning to make improvements in asset management and increase their profitability. In the third quarter of 2023, ROA reached 0.08%, the highest since the fourth quarter in 2018. This can be a sign that the company has successfully improved the efficiency and profitability of the assets it owns. Overall, the above ROA data indicates that the company is experiencing fluctuations in its ability to generate profits from its own assets. Although there are periods of low ROA, recent trends indicate that improvements can be expected to continue in the future with proper strategy and management.

Classical Assumption Test

Normality test



Picture 1



Picture 2

Based on the analysis of the histogram (Figure 1), it can be concluded that the data presented indicates a normal distribution. This is seen from the perfectly formed curve shape. Furthermore, in Plot (figure 2), the observation describes that the spread of data points tends to approach a line, which also indicates the normality of the data.

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		Unstandardized Residual
N		40
Normal Parameters ^{a,b}	Mean	0.0000000
	Std. Deviation	0.21003566
Most Extreme Differences	Absolute	0.102
	Positive	0.098
	Negative	-0.102
Test Statistic		0.102
Asymp. Sig. (2-tailed)		0.200 ^{c,d}

It appears that the Asymp Sig value exceeds the Alpha value, which is $0.200 > 0.05$ based on the results of the Kolmogorov-Smirnov One Sample test shown in the table above. Therefore, it can be concluded that the distribution of data variables follows a normal pattern.

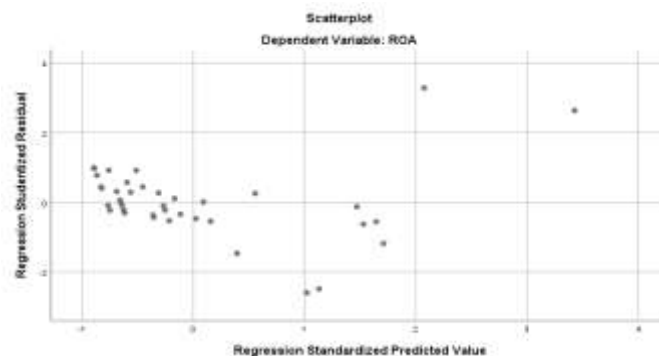
Multicollinearity

Model			
		Tolerance	VIF
1	(Constant)		
	ROE	0.547	1.829
	CAR	0.237	4.217
	FDR	0.180	5.567

a. Dependent Variable: ROA

VIF value ≤ 10 and Tolerance value > 0.1 based on the results shown in the table above. This shows that there is no problem of multicollinearity between the independent variables studied, namely ROE, CAR, and FDR.

Heteroscedasticity



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The point spread on the plot shown in the above picture does not indicate any particular grouping or pattern. This indicates that the data is free from the problem of heteroscedasticity, which means there are no deviations in the assumptions in the analysis of the research.

Autocorrelation

Model Summary ^b			
Model	R	R Square	Durbin-Watson
1	0.993 ^a	0.987	2.150

a. Predictors: (Constant), ROE, CAR, FDR
b. Dependent Variable: ROA

Referring to the table above then known:

$$DW = 2.150$$

$$du = 1.6589 \text{ (seen from Durbin Watson's table)}$$

$du < DW < (4 - du) = 1.6589 < 2.150 < 2.3411$. This indicates the absence of autocorrelation in the data, which means that it does not indicate the existence of a relationship or correlation between the values on the data.

Table 1. Results of Double Linear Regression Test Analysis

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.002	0.018		-0.089	0.929
	ROE	0.076	0.002	1.009	38.175	0.000
	CAR	0.000	0.000	0.028	0.690	0.494
	FDR	-	0.000	-0.023	-0.496	0.623

a. Dependent Variable: ROA

Double Linear Regression Equation:

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3$$

$$ROA = -0.002 + 0.076 ROE + 0.000 CAR - 7.104E-5 FDR$$

$b_0 = -0.002$ shows that when ROE, CAR, and FDR are equal to zero, then the average ROA value is -0,002 or -0,2%.

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$b1 = 0.076$ suggests that any increase in ROE of 1 unit correlates with an increase in ROA of 0.076, assuming the other independent variables are unchanged. This indicates a positive relationship between ROE and ROA.

$b2 = 0.000$ indicates that the CAR has no influence on the ROA, or that the influence is very small and negligible.

$b3 = -7.104E-5$ The variable regression coefficient of the Financing to Deposit Ratio (FDR) is -7.104E-5 or -0.00007104. If the FDR has an increase of 1 unit, then the ROA will have a decrease of 0.0000710, assuming the other independent variables are unchanged. This indicates that the FDA has an opposite or negative impact on the ROA.

Table 2. Results of the Determination Coefficient Test

Model Summary ^b					
Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	0.993 ^a	0.986	0.985		0.00992

a. Predictors: (Constant), FDR, ROE, CAR
b. Dependent Variable: ROA

The double determination coefficient $R^2 = 0.986$, which means ROE, CAR and FDR can perfectly explain the variation in the dependent variable ROA, which is 98.6%. This indicates that there is a very close correlation between the variables.

The double correlation coefficient (R) = 0.993, which means that the overall relationship between variables is interrelated in nature.

Standard Error of the estimate (SE) = 0.009, which means that the average deviation/error measurement between variables is small because of the spacing of 0.009

Table 3. Statistical T-Test Results

Coefficients ^a						
Model		Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
1	(Constant)	-0.002	0.018		-0.089	0.929
	ROE	0.076	0.002	1.009	38.175	0.000
	CAR	0.000	0.000	0.028	0.690	0.494
	FDR	-7.104E-5	0.000	-0.023	-0.496	0.623

a. Dependent Variable: ROA

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To test the significance of the regression model then the following criteria should be observed:

H_0 : if $t_{count} > t_{table}$ then H_0 is rejected and H_1 is received

H_1 : if $t_{count} < t_{table}$ then H_0 is accepted and H_1 is rejected

1. The variable t stat ROE (X1)= 38.175, meaning $t_{count} > t_{table}$ is $38.175 > 2.02619$ meaning H_1 is accepted. This shows that the ROE variable has a significant impact on the ROA of Bank Muamalat Tbk.
2. Variable t stat value CAR (X2)= 0.690, meaning $t_{count} < t_{table}$ is $0.690 < 2.02619$ which means H_0 accepted. This indicates that the CAR variable has no influence on the ROA of P.T. Bank Muamalat Tbk.
3. Variable t stat value FDR (X3)= -0.496, meaning $t_{count} < t_{table}$ is $-0.496 < 2.02619$ which means H_0 accepted. This indicates that the FDR variable has no influence on the ROA of Bank Muamalat Tbk.

Another way to make a conclusion is by looking at the significance in the table. In the table above, only the significantity of the ROE variable (X1) is known that is smaller than α or $sig < \alpha$, so that the conclusion has only the variable of ROE that has a significant impact on the ROA of Bank muamalat.

Table 4. Results of F Test Statistics

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.254	3	0.085	860.514	0.000 ^b
	Residual	0.004	36	0.000		
	Total	0.258	39			

a. Dependent Variable: ROA
b. Predictors: (Constant), FDR, ROE, CAR

To test the significance of the regression model then the following criteria should be observed:

H_0 : if $F_{count} > F_{table}$ then H_0 is rejected H_1 is received

H_1 : if $F_{count} < F_{table}$ then H_0 is received, and H_1 is rejected

$$F_{count} > F_{table} = 860.514 > 3.11$$

Thus, according to the criteria, H_1 is accepted. Another way to draw a conclusion is by looking at the significance in the table. In the table above known $sig = < 0,000$ means $sig < \alpha$, so the conclusion H_1 is accepted, meaning the independent variable is simultaneously influenced by the dependent variable.

CONCLUSION

After analyzing the findings, the researchers concluded the following:

1. Variable t stat ROE (X1)= 38.175, meaning $F_{count} > t_{table}$ and $sig < \alpha$ is $38.175 > 2.02619$ and $0,000 < 0.05$ meaning H1 accepted. This shows that the ROE variable has a significant impact on the ROA of Bank Muamalat Tbk.
2. Variable t stat CAR (X2)= 0.690, meaning $F_{count} < t_{table}$ and $sig > \alpha$ is $0.690 < 2.02619$ and $0.494 > 0.05$ meaning H0 accepted. This indicates that the CAR variable has no influence on the ROA of P.T. Bank Muamalat Tbk.
3. Variable t stat value FDR (X3)= -0.496, meaning $F_{count} < t_{table}$ and $sig > \alpha$ is $-0.496 < 2.02619$ and $0.623 > 0.05$ meaning H0 accepted. This indicates that the FDR variable has no influence on the ROA of P.T. Bank Muamalat Tbk.
4. The results of the Simultaneous F Test where $F_{count} > F_{table}$ and $sig < \alpha$ are $860.514 > 3.11$ and $0,000 < 0,05$ so that the conclusion of H1 is accepted, it means that independent variables simultaneously affect dependent variables.

Based on the results of the study, it can be recommended that PT. Bank Muamalat Tbk should focus on strategies to increase their Return on Equity (ROE), as this variable is proven to have a significant impact on Return on Assets (ROA), while for Capital Adequacy Ratio (CAR) and Financing to Deposit Ratio (FDR) which do not show a significant influence on ROA, banks may need to re-evaluate the management of these two aspects to optimize their effectiveness, but still maintain a good balance between the three variables considering that simultaneously they affect ROA, so a holistic approach in financial management is still needed to improve the overall performance of the bank.

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