

Trend Analysis Of Net Profit at Sharia Bank

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Abstract

Introduction to The Problem: During the Covid-19 period, the financial world experienced obstacles in achieving net profit, including Islamic banks. How is the current net profit trend of Islamic banks seen from various trend analysis methods.

Purpose/Objective Study: To determine the trend of Bank Muamalat's net profit using linear, quadratic and exponential trend methods.

Design/Methodology/Approach: This paper uses a descriptive method with a quantitative approach.

Findings: The research findings show that there is a downward trend in net Profit from Bank Muamalat in all three trend analysis methods and the quadratic trend method is the most accurate method with the largest R Square value compared to the linear trend and exponential trend.

Paper Type: Research Article

Keywords: Trend Analysis ; Linear Trend ; Quadratic Trend ; Exponential Trend

Introduction

The occurrence of the Covid-19 event had a tremendous impact on world conditions, including the banking world. Some of the impacts are mergers between banks and an increase in the level of non-performing financing (NPF) (Latorre et al., 2020). In Indonesia in 2021 there was a merger of three Islamic banks under the government, namely Bank Syariah Mandiri, Bank Rakyat Indonesia Syariah and Bank Negara Indonesia Syariah into Bank Syariah Indonesia. In terms of NPF, Islamic banking in Indonesia experienced an increase in 2020 compared to 2019, from 3.33% to 3.46% (Yusrizal et al., 2021). On the other hand, the liquidity ratio of Islamic banks in Indonesia has also decreased except for Bank Negara Indonesia Syariah (Diana et al., 2021). In other aspects in terms of profitability, there was also a decline in Islamic banks (Effendi, 2020; Nur Ajizah & Widarjono, 2022; Padli & -, 2021; Seto et al., 2022). This shows that Covid-19 has had a tremendous impact on the world of Islamic banking in Indonesia. But other findings also show that there is no change in the financial performance of Islamic banking (Ilhami & Thamrin, 2021).

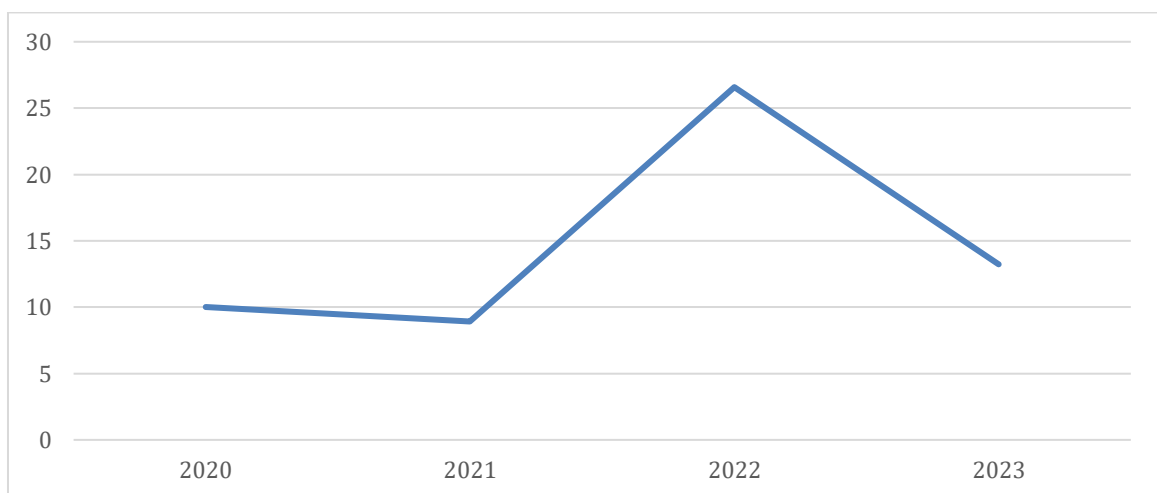
The profitability ratio is a very important ratio because it relates to the bank's ability to generate profits (Agus, 2019). If the bank's ability to generate profits is reduced, it will have an impact on many things. One of them is for operational activities and meeting the needs of Islamic banks (Sulistyo & Arif Marah Manunggal, 2022). It can also have an impact on investors. Banks that do not make a profit will

make investors think about putting their funds in the bank (Ningtyas & Triyanto, 2019). The more a company's profitability increases, the more valuable the company's value will be in the eyes of investors (Yuni, 2022). This is a very important reference for the management of a company, including Islamic banks.

One measure of the Company's profitability is net profit. Net profit is the profit earned by Islamic banks after deducting expenses. The more net profit the company earns, the better the company's financial performance. Increasing net profit conditions provide greater dividend opportunities for investors (Prayogi, 2022). For this reason, the development of the company's net profit is highly considered by investors. One way to be able to know the development of the Company's profit is to see the trend of the Company's net profit which will be used as an investment place. By looking at the trend of the company's earnings, investors can predict the future possibilities and make decisions. This is known as trend analysis.

Trend analysis is an analysis of forecasting possible future conditions based on past data (Andi Indrawati, 2017). Trend analysis can be done in various ways such as with the quadratic, linear and exponential trend method approaches (Syafii et al., 2023). Some studies show different results for the accuracy of these three methods. According to Awaluddin et al., (2021) and Rini & Ananda, (2022) that the linier method has an advantage over the other two methods in producing accurate forecasting results. While Nuzwan Sudariana et al., (2023) shows that the exponential method is more effective. Meanwhile Rani & Pasukat, (2023) said that the quadratic trend is more effective. So all three methods have the possibility to be effective according to the conditions at hand.

This research seeks to analyze trends using these three models and see which model is most effective in forecasting the future state of the object of research. The object of this research is Muamalat bank. This is based on the fluctuations in net profit from Bank Muamalat as an example is data from 2020-2023. This study will take data from 2008-2023 as time series data that will be used for trend analysis of the three methods.



Source : annual report muamalat, 2020-2023

Figure 1. Development of Net Profit of Bank Muamalat

Methodology

This research is a quantitative descriptive research using trend analysis with three analysis methods namely linear trend, quadratic trend and exponential trend. To be able to do good forecasting, sufficient data is needed so that future projections can be estimated (Wahyuti et al., 2022). This research was conducted with an interval of 2008-2023. The choice of interval data is done so that the data owned is sufficient and can also see the development of Muamalat bank in facing several major events in economic development starting with the 2008 crisis, 2014 and the Covid-19 event in 2019-2021.

To see the linear trend analysis method can use the following equation (Dajan, 1986) :

$$Y = a + bX \quad (1)$$

Where Y is the variable for which the trend is sought, X is the time variable (year), a is a constant value and b is a parameter.

The exponential trend formula is (Dajan, 1986):

$$Y = ab^t \quad (2)$$

Where: Y = estimated trend value/forecast value t = time/period a, b are constants.

The quadratic trend equation is as follows (Dajan, 1986):

$$Y = a + bt + ct^2 \quad (3)$$

Where: Y = estimated trend value/forecast value t = time/period a, b are constant values.

Furthermore, the selection of a trend forecasting model can be done by comparing the coefficient of determination R^2 . In general R^2 the value can be defined as follows (Dajan, 1986):

$$R^2 = \frac{(\sum \hat{Y}_{t-\underline{Y}})^2}{(\sum Y_{t-\underline{Y}})^2} \quad (4)$$

Where: t time/period Yt time series value in period t, \hat{Y} t forecast value in period t, \underline{Y} average time series value. The greater the R^2 value, the better the model / correct model obtained.

The data analysis technique used in this study is the trend analysis method with the selected model and supported by Excel (displaying R^2 value output, and data graphs and assisting calculations). The steps are :

1. Descriptive statistical analysis
2. Determining the best model with R squared.
3. Perform Forecasting.

Results and Discussion

A. Descriptive Statistical Analysis

The following is data on the development of Bank Muamalat's net profit from 2008-2023:

Table 1. Net Profit Development Data of Bank Muamalat (in billion)

Year	Amount
2008	203,36
2009	50,19
2010	170,94
2011	273,62
2012	389,41
2013	165,14
2014	57,17
2015	74,49
2016	80,51
2017	26,11
2018	46
2019	16,32
2020	10,01
2021	8,92
2022	26,58
2023	13,24

Source: processed data, 2024

From the data above, it can be seen that there are fluctuations in the increase and decrease in net profit at Bank Muamalat. In 2008 to 2009 there was a 75 percent decrease in net profit owned by Bank Muamalat. Then it rose to a very significant 389.41 in 2012. Then decreased again to reach 57.17 in 2014. Rise again and drop to 26.11 in 2017. During Covid-19 there was a decline starting from 16.32 to 8.92 in 2021. It strengthened in 2022 and fell again in 2023. The picture of the ups and downs can be seen from the graph below :

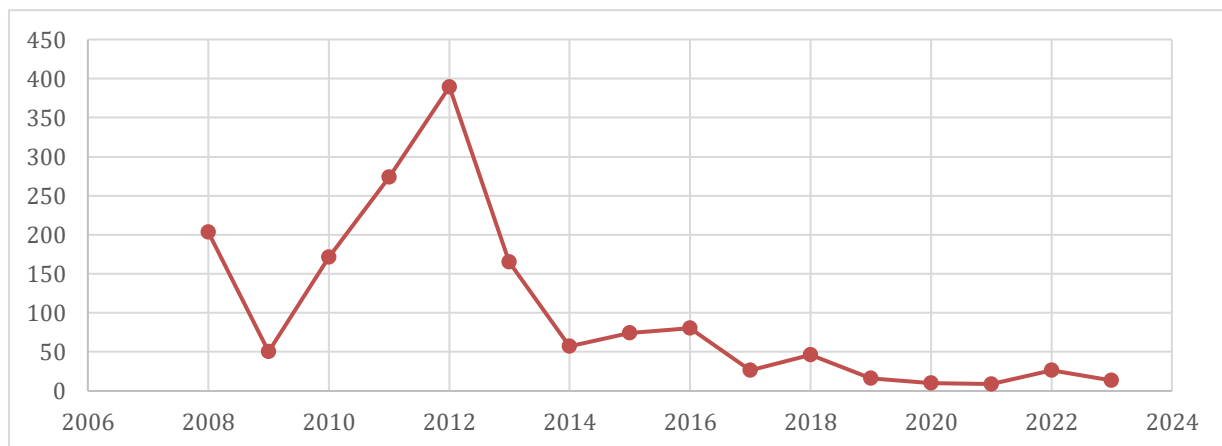


Figure 2. Development of Muamalat Net Profit 2008-2023

Table 2. Descriptive Statistics of Net Profit of Bank Muamalat

Descriptive Statistics	Net Profit
Minimum	8,92
Maximum	389,41
Mean	100,750625
Standar Deviation	107,2053318
Median	53,68
Skewnes	1,509461769
Kurtosis	1,805479914

Source: processed data, 2024

From Table 2, it can be seen that the descriptive statistical value for the minimum value is 8.92 billion, the maximum value is 389.41 billion, the mean value is 100.750625 billion, the standard deviation value is 107.2053318, the median is 53.68, there is no mode value, the skewness value is 1.509461769 and the kurtosis value is 1.805479914.

B. Determining Best Model with R Squared

To choose the best model between these 3 models, it is seen from the R Squared value obtained. As follows:

Table 3. R Squared Value Model

Model	Value R Squared
Linier	0,45
Quadratic	0,4512
Exponential	0,3253

Source: processed data, 2024

From the data table above, it can be seen that the best model among the three models above based on the R Squared value is the Quadratic model but the value is only slightly different from the linear model. While the exponential model is the model with the lowest value so that the accuracy obtained is below the other two models.

The shape of the curve and the equation obtained are shown in the 3 curves below:

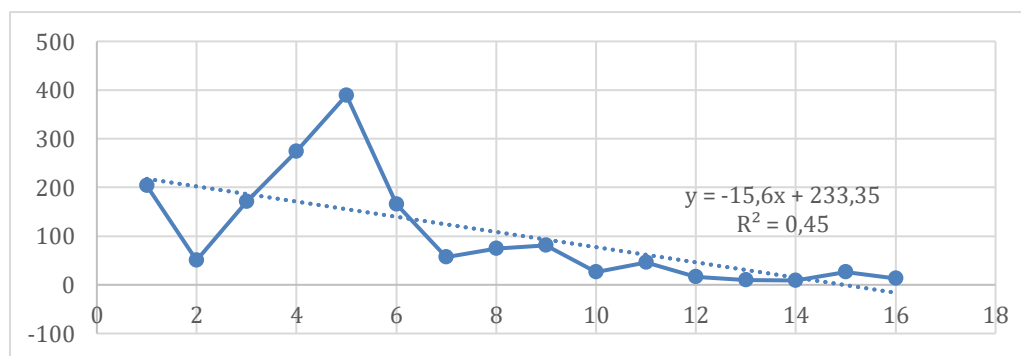


Figure 3: Linear Trend Graph of Net Profit of Bank Muamalat

From figure 3, it can be seen how the straight line tendency of prediction based on linear trend. This trend shows a decrease in the value of net profit based on data obtained from muamalat net profit in 2008-2023. Although there was an increase in several years, the downward trend was more dominant than the increase. This causes the forecasting of net profit to show a decrease. The actual values obtained are close to the forecasting line in 2008, 2010, 2013, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022 and 2023. The most distant forecasting with actual values was in 2009, 2011 and 2012. Based on the processed data, the linear trend equation is obtained as follows:

$$y = -15,6x + 233,35 \quad (5)$$

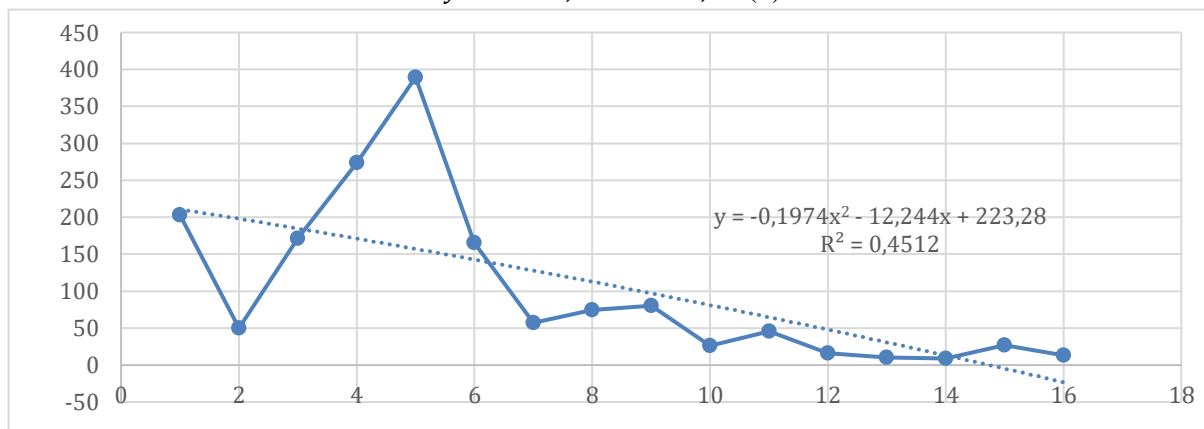


Figure 4: Quadratic Trend Graph of Net Profit of Bank Muamalat

From figure 4, it can be seen that the forecasting trend obtained shows a straight line that tends to decrease more sharply than the trend method. It is equally influenced that although there are periods of increase in muamalat net profit, the downward trend is more dominant compared to the linear method. From the graph, it can be seen that the forecasting values that are close to the actual values are in 2008, 2010, 2013, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022 and 2023. While the years with the most distant value between the forecast and the actual value are 2009, 2011 and 2012. Based on the processed data, the following equation is obtained :

$$y = -0,1974x^2 - 12,244x + 223,28 \quad (6)$$

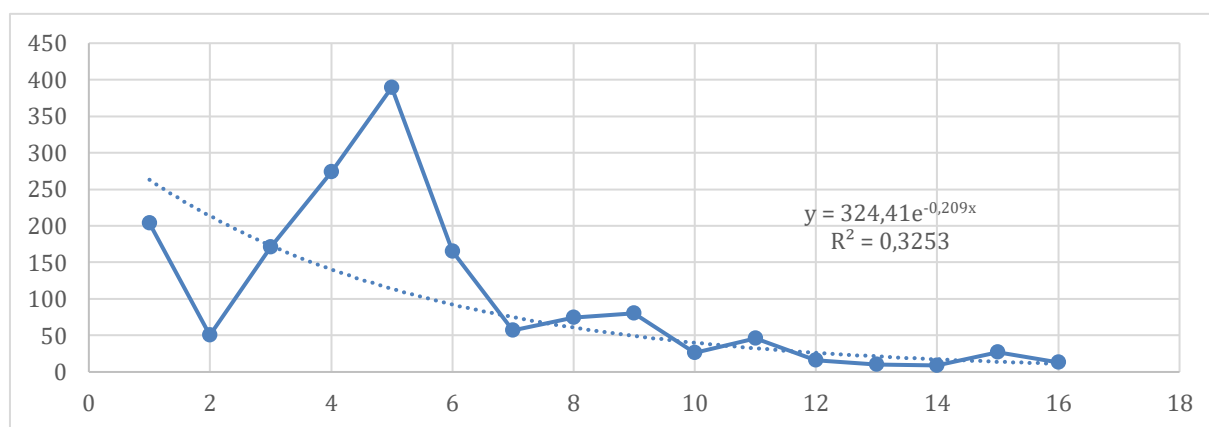


Figure 5 : Exponential Trend Graph of Net Profit of Bank Muamalat

From figure 5, it can be seen that the forecasting trend obtained shows a sloping line that tends to decrease more sharply than the trend method. It is equally influenced that although there are periods of increase in muamalat net profit, the downward trend is more dominant compared to the linear method. From the graph, it can be seen that the forecasting values that are close to the actual values are in 2010, 2014, 2015, 2017, 2018, 2019, 2020, 2021, 2022 and 2023. While the years with the most distant value between the forecast and the actual value are 2008, 2009, 2011, 2012 and 2013. Based on the processed data, the following equation is obtained :

$$y = 324,41e - 0,209x (7)$$

Based on the 3 curves above, it can be seen that the accuracy of the linear and quadratic methods is better than the exponential. This can be seen from the distance between the actual value and the forecasting value where the exponential method deviates more than the other two methods. This shows that for the case of muamalat, the quadratic and linear methods are better than the exponential. This is in line with research Awaluddin et al., (2021) and Rini & Ananda, (2022) which states that the linear trend method is the right method to do forecasting as well Rani & Pasukat, (2023) which shows that the quadratic method is also an appropriate forecasting method. This research is also in line with the research of Yonhy et al., (2013) which states that quadratic trend analysis has slightly better quality than linear trends. In this study, the quadratic trend had an R Square of 0.4512 and the linear trend was 0.45, in the study the quadratic R Square was 0.691 versus 0.687. This shows that basically the two methods have little difference and are better than exponential.

C. Perform Forecasting

After obtaining the equation, the next step is to apply it in the form of forecasting in the following year to the net profit of Muamalat bank. From the equation that has been obtained, the forecasting value of Muamalat's net profit for 2024-2026 is as follows:

Table 4. Predicted Value of Net Profit of Bank Muamalat 2024-2026

Method	Year	Prediction
Linier	2024	-31,85
	2025	-47,45
	2026	-63,05
Quadratic	2024	-41,9024
	2025	-48,4166
	2026	-55,3256
Exponential	2024	9,287303075
	2025	7,535673467
	2026	6,114409549

Source : *processed data*

From the data in table 4, we can conclude that based on equations (5), (6), and (7) it is found that there is a decrease in net profit value from 2024 to 2026. This decline is based on data from 2008-

2023. Predictions given by linear and quadratic methods even show that Muamalat bank not only decreased but also experienced a loss. While in the exponential method there is a decrease in net profit but Muamalat bank is still predicted to benefit during 2024-2026. This is described as follows:

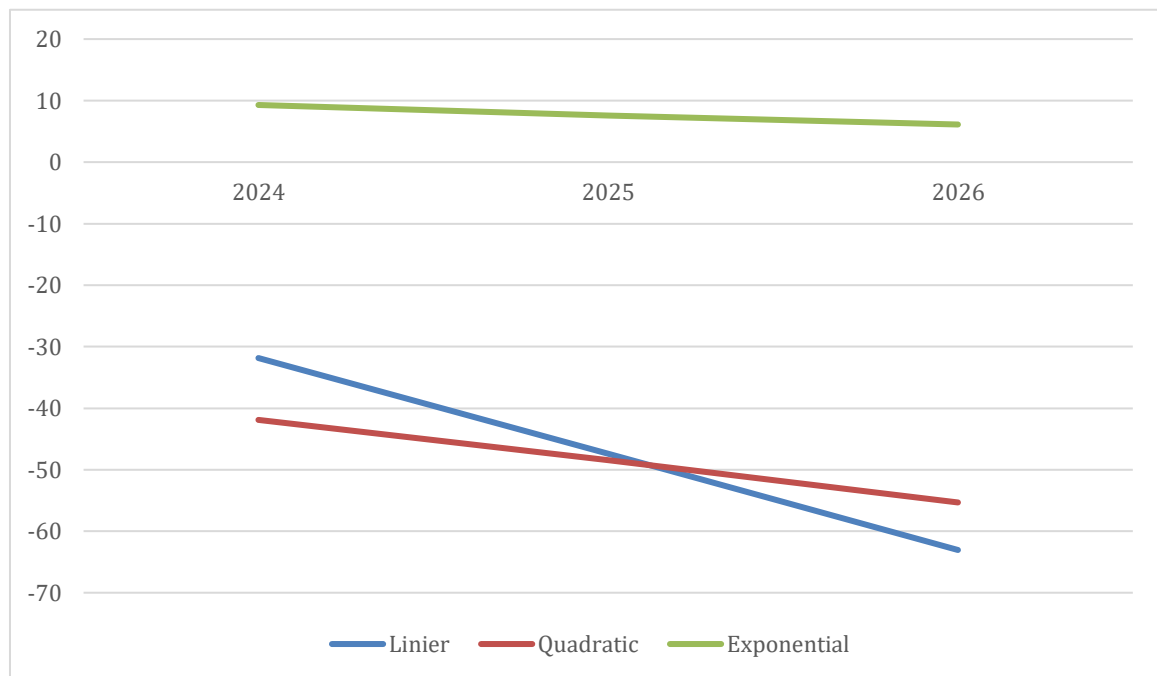


Figure 6: Muamalat Net Profit Prediction 2024-2026

Based on the prediction overview above, this can serve as a reference for investors in placing their funds in Bank Muamalat. The potential losses or decline in profits experienced by Bank Muamalat will have an impact on investors. The dividends received will become smaller or may not be received at all. As Yuni, (2022) stated, profit is an important factor for investors to invest in a company. Furthermore, it will also impact the internal operations of the Muamalat bank itself; if the bank experiences a decline in profits, even to the point of incurring losses, it could disrupt the company's operations. This can be a consideration for the bank management to take action in the future.

Conclusion

From the research above, it can be concluded that the trend of net profit for Bank Muamalat based on historical data is experiencing a decline. The decline referred to is a decrease in profit and even incurring losses based on the equations obtained. The best method for predicting net profit in the case of Bank Muamalat among the three methods is the Quadratic method. The Linear method is the best method after Quadratic, and the Exponential method has accuracy below the other two methods. This can be seen from the R Square values of the three methods.

For further research, it can be compared by adding other Islamic banking objects as a comparison or by comparing it with other forecasting methods. Time series-based forecasting methods are closely related to time data and the duration of observation. It can also be done by extending the observation period so that the observation time becomes longer.

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