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The Effect of Macroeconomic Variables on Non-Performing Financing (NPF) in Islamic Commercial Banks for the Period 2012-2024

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ABSTRACT

Objective: *This study examines the effect of macroeconomic variables, namely inflation, BI Rate, and exchange rate, on Non-Performing Financing (NPF) at Islamic Commercial Banks, specifically Bank Muamalat and BCA Syariah, during the period 2012–2024.* ***Method:*** *The method used is a quantitative approach with multiple linear regression analysis, using secondary data from bank financial reports and the Bank Indonesia website. This study involves 120 data samples related to inflation, BI Rate, and exchange rates.* ***Results:*** *The results show that inflation has a negative regression coefficient on NPF in both banks, but it is not statistically significant. Conversely, the BI Rate shows a positive effect on Bank Muamalat's NPF but is not partially significant, while at BCA Syariah, the BI Rate has a negative effect and is also not significant. Finally, the exchange rate shows a different significant effect; at Bank Muamalat, the impact is not significant, while at BCA Syariah, the exchange rate is proven to have a significant positive effect on NPF. The conclusion of this study is that although inflation and the BI Rate show insignificant effects, the exchange rate significantly affects NPF at BCA Syariah.* ***Novelty:*** *This study provides useful insights for decision makers in the Islamic banking industry to anticipate changes in economic conditions and implies the importance of monitoring macroeconomic variables in managing Islamic bank financial risk.*

INTRODUCTION

In general, economics has two types, namely microeconomics and macroeconomics. In macroeconomics, it includes information on monetary economics, global trade, and development economics. In addition, macroeconomics also discusses overall economic activity, including economic growth, inflation, exchange rates (exchange rates), reductions, related economic policies and the influence of government actions, such as changes in tax rates [1]. Macroeconomic theory pays attention to economic activity around the world, especially inflation and exchange rates. Inflation itself is defined as the overall increase in prices. In addition, inflation can also be defined as a functional decrease in the value of money. The value of money correlates negatively with price increases. As for the value, it indicates how much domestic currency is needed to buy one unit of foreign currency, known as the exchange rate. According to Jennifer, for entrepreneurs or investors who receive financing from Islamic banking, interest in investing becomes uncertain when the exchange rate rises or falls [2]. This depends on the situation that can benefit the business when the exchange rate is volatile or falling. This condition has an impact on the amount of financing provided to Islamic banks.

Inflation is a macroeconomic problem that continues to be a concern for the government. When the price of general goods continues to rise, it can be said to be

inflation [3]. This means that inflation is not just an increase in the price of one or two types of goods, but a price increase that occurs widely in most of the goods and services that provide services in an economy. One of the important factors that is influenced by a country's inflation rate and vice versa also has a significant impact on the movement of the price of goods and services is the exchange rate (exchange rate). Exchange rate is the price or value of a domestic currency compared to a foreign currency. [4]. This is because the exchange rate translates the prices of goods from various countries into Indonesian currency. This makes the decision to buy or sell goods from abroad highly dependent on the exchange rate. The close relationship between domestic and international financial markets shows that exchange rate movements are also greatly influenced by the monetary policy in force in a country, especially through the determination of the BI rate. BI rate is the income of profits generated from invested funds [5]. Investors will withdraw their investments in the capital market if the BI rate is higher and they will switch to other investments, such as savings and deposits. This concept is very influential in the world of finance and investment because interest rates affect various economic decisions, both for individuals, industries, and governments.

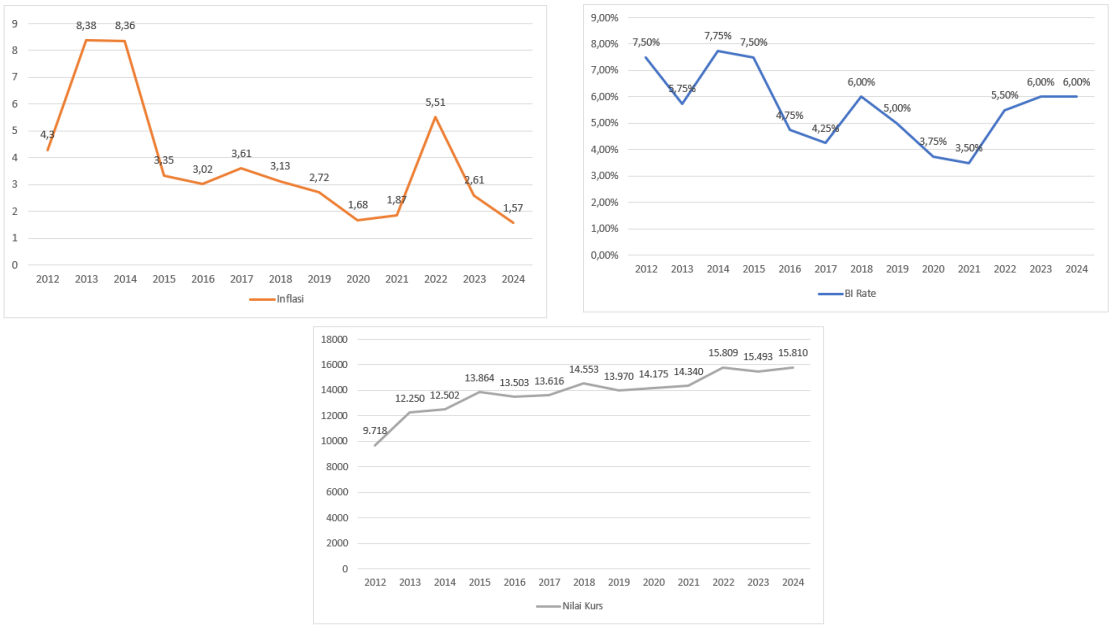

Figure 1. Inflation rate, BI Rate, and exchange rate from 2012-2024
Source: Bank Indonesia's official website[6]

The figure above shows a graph of inflation, BI rate, and exchange rates from 2012-2024. In 2013, the inflation graph showed that it was at its highest point, which was 8.38%. After the surge, there was a sharp decline from 2015-2024 and became the lowest point of the inflation rate which was at 1.57%. On the BI rate chart, it increased in 2014, which was 7.75%. After this increase, the value of the BI rate from 2015-2024 is unstable every year. In 2024, it shows that the value of the BI rate will be at 6.00%, which is equivalent to 2023 and 2018. On the exchange rate chart, it shows that the exchange rate

in 2014 showed the number 12,502. The exchange rate has increased quite high and will be at 15,810 in 2024.

Financing is a business activity of Islamic banks that refers to the distribution of funds from banks to customers. According to Nusnarina, financing is divided into two categories, namely consumptive and commercial financing [7]. Consumptive financing is financing used for personal, company, and public consumption. The form of products in consumptive financing such as the purchase of a car or motorcycle, the purchase of a house, and others. According to Sunaedy & Fadillah, commercial financing is financing that is needed to meet production needs such as increasing production, trade and investment, purchasing raw materials, and products [8]. In Financing that is distributed to customers, it cannot be categorized as good. Financing that is categorized as not good can be said to be Non-Performing Financing (NPF).

Non-Performing Financing (NPF) is the ratio between problematic financing and financing that must be provided by banks. The existence of other parties who do not fulfill their responsibilities makes this a risk for banks. [9]. NPF itself has two types, namely NPF net and NPFgross. In Islamic bank practice, non-performing financing like this is included in the categories of poor financing, doubtful financing, and non-performing financing (gross NPF). In accordance with Bank Indonesia's requirements, the maximum NPF limit that is considered to be in a healthy condition is below 5%. If a bank's NPF ratio exceeds that figure, therefore, it may be in the financial category. According to Andi, this problematic financing can affect the fees charged to banks[10]. This makes the cash that will circulate in the bank run not smoothly. In addition, the cash will be able to affect the bank's profits and result in considerable losses, which will cause a decrease in the bank's profit.

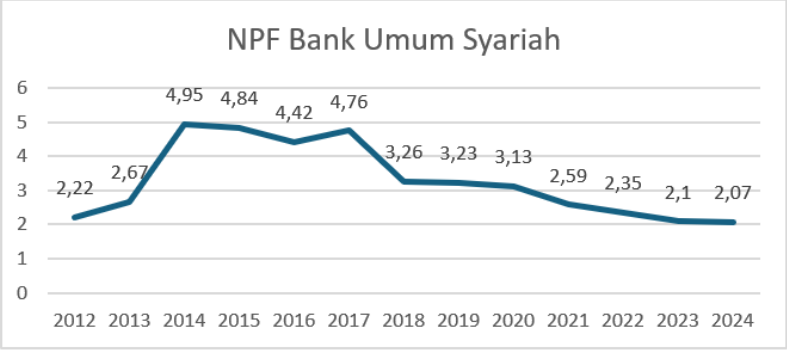

Figure 2. NPF of Sharia Commercial Banks
Source: OJK's official website "Islamic Banking Statistics"[11]

Figure 2 above shows the NPF ratio of Sharia Commercial Banks in 2012–2024 sourced from the OJK (Financial Services Authority) website. Within 10 years, NPF in Sharia Commercial Banks has changed quite significantly. In 2014 the figure showed 4.95%. In 2016, it decreased by 4.42%. In 2017, it experienced a return increase of 4.76%. From 2018 to 2024, it showed a drastic decrease of 2.07%. Thus, the NPF of Sharia

Commercial Banks can be categorized as in a healthy condition because it is still under the provisions of Bank Indonesia, which is 5%.

Quoted from the BCA Syariah and Bank Muamalat pages, it can be known about the gross NPF with a period of ten years, starting from 2012 – 2024.

Table 1. NPF of Sharia Commercial Banks

Tahun	BCA Syariah	Bank Mumalat
2012	0,10	2,09
2013	0,10	1,35
2014	0,12	6,55
2015	0,70	7,11
2016	0,50	3,83
2017	0,32	4,43
2018	0,35	3,87
2019	0,58	5,22
2020	0,50	4,81
2021	1,13	0,67
2022	1,42	2,78
2023	1,04	2,06
2024	1,05	3,35

Source: Financial statements of BCA Syariah and Bank Muamalat[12]

The table above shows that BCA Syariah has a fairly stable NPF from 2012-2024. In addition, the NPF at Bank Muamalat increased in 2014-2015. After this increase, NPF will decrease annually, namely 3.35 in 2024. Therefore, the NPF of the two banks can be categorized as healthy because it is below 5%.

Several studies are related to this study. The first relevant research conducted by Tasya Feby Windasari from Ganesha Education University entitled "The Influence of Inflation, Bank Indonesia Wadiah Certificate, Rupiah Exchange Rate on Non-Performing Financing (NPF) in Sharia Commercial Banks in 2015-2018)" stated that the results of inflation variables and rupiah exchange rates have a positive and significant influence on non-performing financing (NPF)[13]. Meanwhile, the second previous relevant research conducted by Herni Hernawati & Oktaviani Rita Puspasari from the University of Kuningan entitled "The Influence of Macroeconomic Factors on Non-Performing Financing" stated that the results of the study showed that inflation had a positive but insignificant impact on non-performing financing (NPF)[14]. BI interest rates and exchange rates have a positive and significant impact on non-performing financing (NPF). Meanwhile, the third relevant research conducted by M. Fadhillah Fauzukhaq, Devita Sari, & Suhenda Wiranata from Syarif Hidayatullah State Islamic University Jakarta entitled "The effect of inflation, BI rate, exchange rate, CAR and FDR on non-performing financing of Bank Syariah Mandiri" stated that the results of the study showed that inflation had a positive impact on non-performing financing (NPF), but it was not significant[15]. The BI Rate and the exchange rate have a positive and significant impact on non-performing financing (NPF). Therefore, the researcher is interested in examining the influence of macroeconomic variables on Non-Perfoming Finance (NPF) in Sharia Commercial Banks (BCA Syariah and Bank Muamalat). The researcher chose the two banks because it was based on a significant difference and can be seen from the NPF ratio. In addition, the two banks have assets of over seven trillion. This allows

researchers to get more comprehensive results regarding inflation, interest rates, and the exchange rate against the bank's NPF. The researcher assumes that whether the NPF can be influenced by macroeconomics or not, especially on inflation, the exchange rate (exchange rate) and the BI rate. Based on the description above, it can be known that the formulation of the problem of this study is whether there is an influence of inflation, interest rates, and exchange rates on NPF in BCA Syariah and Bank Muamalat. Therefore, the purpose of this study is to analyze the influence of inflation, BI rate, and exchange rate on NPF in BCA Syariah and Bank Muamalat for the period 2012-2024.

RESEARCH METHOD

The method used in this study is with a quantitative approach. The quantitative approach is an approach that is based on concrete data in the form of numbers [16]. This research is used to dig up information related to the research problem and come to appropriate conclusions based on data analysis[17]. The data analysis technique in this study uses multiple linear regression techniques through SPSS analysis tools. The purpose of this study is to explore the relationship that explains the influence of the Independent variable and the Dependent variable. This study uses secondary data as a source of data obtained through the Bank Indonesia website and the financial statements of BCA Syariah and Bank Muamalat. The sample from this study was taken by the purposive sampling method, namely data taken with the criteria that have been selected by the researcher. The samples used in this study are inflation variables, BI rate, and Exchange Rate Value taken from Bank Indonesia's website during 2012-2024. Meanwhile, the NPF variable is taken from the quarterly financial statements of BCA Syariah and Bank Muamalat for the period 2012-2024 with data collected as many as 104 samples.

RESULTS and DISCUSSION

A. Descriptive Statistical Test

Table 2. Descriptive Statistical Results

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Inflasi	52	1.33	8.40	3.9387	1.93015
BIRate	52	3.50	7.75	5.5577	1.29915
NilaiKurs	52	9226	16503	13664.12	1863.688
NPFBankMuamalat	52	.67	7.23	3.7910	1.71740
NPFBCASyariah	52	.01	1.91	.6848	.47527
Valid N (listwise)	52				

This descriptive statistical analysis was based on 52 valid samples (N=52) for all variables, providing an overview of the mean values, value ranges, and data dissemination rates. For independent variables, Inflation (X1) has an average of 3.9387, which moves in a range from a minimum value of 1.33 to a maximum of 8.40. The level of variability of the Inflation data is moderate, indicated by the standard deviation of 1.93015. Meanwhile, the BI Rate (X2) has a higher average than inflation, which is 5.5577,

with a low value of 3.50 and a high of 7.75. The spread of BI Rate data is relatively smaller than inflation, as evidenced by the standard deviation of 1.29915. The Exchange Rate Value variable (X3) shows the highest average among the X variables, reaching 13664.12, with a very wide data range, from 9226 to 16503. This large difference between the minimum and maximum values causes the Exchange Rate to be the variable with the highest level of variability, with a standard deviation of 1863,688.

When observing the dependent variables, there is a significant difference between the two banks. Bank Muamalat's NPF (Y1) shows an average NPF of 3.7910, with data ranging from a minimum of 0.67 and a maximum of 7.23. Bank Muamalat's standard NPF deviation is 1.71740, which indicates that this bank's NPF figure has a considerable variation from the average. On the other hand, BCA Syariah's NPF (Y2) has a much lower (better) NPF performance and is more stable. BCA Syariah's average NPF is only 0.6848, with a low value of 0.01 and a high of 1.91. The standard deviation is very small, at 0.47527, indicating that BCA Syariah's NPF data tends to be stable and closely concentrated around its low average value.

B. Normality Test

1. Bank BCA Syariah

Table 3. Results of the BCA Syariah NPF Normality Test

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Unstandardized Residual	52	-.53832	.84418	.0000000	.31427195	.510	.330	-.436	.650
Valid N (listwise)	52								

Skewness measures the symmetry of data distribution. To assess normality, we compare the value of the Skewness Statistic with the value of the Standard Error (Std. Error) of Skewness.

$$\text{Racing Skewness} = 1.545\frac{0.510}{0,330}$$

Since the Skewness Ratio (1.545) is within the ±2 boundary, the residual is considered not too skewed, indicating a tendency of the normal distribution in terms of skewness. A positive value of 0.510 indicates a slight positive swelling (slanted to the right)

The kurtosis measures the peak and tail thickness of the data distribution. Just like Skewness, we compare the Kurtosis Statistics with the Standard Error (Std. Error) of Kurtosis.

$$\text{Rasio Kurtosis} = = -0.671\frac{-0.436}{0.650}$$

Since the Kurtosis Ratio (-0.671) is within the ±2 boundary, the residual distribution does not have peaks that are too pointed or too flat, which also indicates a normal

distribution tendency. A negative value −0.436 indicates a slight dip lower than the normal distribution.

Overall, based on the criteria of Skewness and Kurtosis (where the ratio of both is within the limit of ±2), the Unstandardized Residual of Bank Muamalat's NPF model is considered to be normally distributed.

2. Bank Muamalat

Table 4. Results of Bank Muamalat's NPF Normality Test

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Unstandardized Residual	52	-2.94275	3.12538	.0000000	1.66370739	-.009	.330	-1.198	.650
Valid N (listwise)	52								

To assess Skewness, the residual statistical value was recorded very small, which was -0.009, with a Standard Error (Std. Error) of 0.330.

$$\text{Racing Skewness} = -0.027\frac{-0.009}{0.330}$$

Since the absolute value of this ratio (-0.027) is far below the conventional limit between -2 and +2, the residual model of Bank Muamalat's NPF has a very symmetrical distribution. This indicates that in terms of symmetry, the data tends to be normal.

To assess Kurtosis, the recorded statistical value is -1.198 with a Standard Error of 0.650.

$$\text{Rasio Kurtosis} = -1.843\frac{-1.198}{0.650}$$

Since the absolute value of the Kurtosis ratio (1.843) is within the limit of ±2 (although it is close to the limit), it can be concluded that the residual does not have peaks that are too pointed or too flat compared to the normal distribution.

Overall, because the Skewness ratio (-0.027) and the Kurtosis ratio (-1.843) are both within the ±2 limit, the Unstandardized Residual from the Bank Muamalat NPF model is considered to be normally distributed based on the Skewness and Kurtosis criteria.

C. Heteroscedasticity Test

1. Bank Muamalat

Table 5. Heteroscedasticity Test of Bank Muamalat's NPF

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.012	1.104		.011	.991
	Inflasi	-.093	.068	-.243	-1.370	.177
	BIRate	.189	.095	.333	1.996	.052
	NilaiKurs	5.706E-5	.000	.144	.917	.364

a. Dependent Variable: Abs_Res

Based on table 5 above, the significance value for the Inflation variable (X1) is 0.177. Since this value is greater than 0.05, Inflation has no significant influence on residual variance. Furthermore, the significance value for the BI Rate (X2) variable is 0.052. Although this value is very close to the limit of 0.05, because 0.052 is still greater than 0.05, the BI Rate is also considered to have no significant influence on residual variance. Finally, for the Exchange Rate variable (X3), the significance value is 0.364. Since 0.364 is much greater than 0.05, the exchange rate has no significant effect on residual variance. Thus, since the significance values of all independent variables (Inflation, BI Rate, and Exchange Rate) are all greater than 0.05, it is concluded that Bank Muamalat's NPF regression model has met the assumption of homogeneity or is free from heteroscedasticity problems.

2. Bank BCA Syariah

Table 6. Heteroscedasticity of Bank BCA Syariah NPF Results

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-.042	.236		-.179	.859
	Inflasi	.005	.015	.055	.331	.742
	BIRate	-.027	.020	-.210	-1.335	.188
	NilaiKurs	3.200E-5	.000	.356	2.402	.060

a. Dependent Variable: Abs_Res

Based on table 6 above, the significance value for the Inflation variable (X1) is 0.742. Since the value of 0.742 is much greater than 0.05, Inflation has no significant effect on the Absolute Residual Value. Similarly, the significance value for the BI Rate (X2) variable is 0.188, which is also greater than 0.05, so the BI Rate has no significant effect on the residual variance. Meanwhile, for the Exchange Rate Value variable (X3), the significance value was recorded at 0.060. Although this value is very close to the limit, since 0.060 is still greater than 0.05, the Exchange Rate Value also has no significant effect on the Residual Absolute Value. Thus, since the significance values of the three independent variables (Inflation, BI Rate, and Exchange Rate) are all above the limit of 0.05, it is concluded that BCA Syariah's NPF regression model has met the assumption of homogeneity or is free from heteroscedasticity problems.

D. Autocorrelation Test

1. Bank Muamalat

Table 7. Bank Muamalat NPF Autocorrelation Test Results

Model Summary[c,d]

Model	R	R Square[b]	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.642[a]	.412	.375	1.11638	1.844

a. Predictors: Lag_X3, Lag_X1, Lag_X2

b. For regression through the origin (the no-intercept model), R Square measures the proportion of the variability in the dependent variable about the origin explained by regression. This CANNOT be compared to R Square for models which include an intercept.

c. Dependent Variable: Lag_Y

d. Linear Regression through the Origin

Based on table 7, the resulting Durbin-Watson value is 1.844. To make a definitive interpretation of whether the model is autocorrelation-free, this value of 1.844 must be compared with the relevant lower limit (dL) and upper limit (dU) values based on the number of samples (N=52) and the number of independent variables (k=3). However, in general, a Durbin-Watson value close to 2 indicates that there is no autocorrelation, either positive or negative. Given that the value obtained was 1.844, which is very close to 2, this provides a strong early indication that Bank Muamalat's NPF regression model tends to be free of autocorrelation issues. The autocorrelation problem (chain correlation between residuals) is said to be non-existent if the DW value is between dU and 4−dU [Implied statistical criteria]. Since the value of 1.844 is around midpoint 2, this suggests that the assumption of the absence of autocorrelation is met.

2. Bank BCA Syariah

Table 8. Bank BCA Syariah NPF Autocorrelation Test

Model Summary[c,d]

Model	R	R Square[b]	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.790[a]	.625	.601	.24580	1.811

a. Predictors: Lag_X3, Lag_X1, Lag_X2

b. For regression through the origin (the no-intercept model), R Square measures the proportion of the variability in the dependent variable about the origin explained by regression. This CANNOT be compared to R Square for models which include an intercept.

c. Dependent Variable: Lag_Y

d. Linear Regression through the Origin

Based on table 8 above, the resulting Durbin-Watson value is 1.811. Taking into account the number of samples as many as N=52 and three independent variables (k=3), this DW value of 1.811 is in the range where the assumption of the absence of autocorrelation is met, since the value is very close to 2.. In conclusion, with a Durbin-Watson value of 1.811, BCA Syariah's NPF regression model can be considered free from autocorrelation problems.

E. Multicollinearity Test

1. Bank Muamalat

Table 9. Multicollinearity Test of Bank Muamalat NPF

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.834	2.620		.319	.751		
	Inflasi	-.157	.161	-.176	-.974	.335	.597	1.676
	BIRate	.311	.225	.236	1.385	.173	.675	1.480
	NilaiKurs	.000	.000	.146	.913	.366	.761	1.314

a. Dependent Variable: NPFBankMuamalat

Based on table 9, the Inflation Variable has a Tolerance value of 0.597 and a VIF value of 1.676. The BI Rate variable has a Tolerance value of 0.675 and a VIF value of 1.480. The Exchange Rate Value variable has a Tolerance value of 0.761 and a VIF value of 1.314.

Since the Tolerance values for all variables (0.597, 0.675, 0.761) are all greater than 0.10, and the VIF values for all variables (1.676, 1.480, 1.314) are all much smaller than 10, it can be concluded that Bank Muamalat's NPF regression model is free from multicollinearity problems. This means that the relationships between independent variables are not too close, so regression models can be used well.

2. Bank BCA Syariah

Table 10. Results of the NPF Multicollinearity Test of Sharia Banks

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Toleranc e	VIF
1	(Constant)	-1.695	.495		-3.425	.001		
	Inflasi	-.019	.030	-.077	-.623	.537	.597	1.676
	BIRate	-.002	.042	-.006	-.053	.958	.675	1.480
	NilaiKurs	.000	.000	.708	6.471	.000	.761	1.314

a. Dependent Variable: NPFBCASyariah

Based on the results presented, the Inflation variable (X1) has a Tolerance value of 0.597 and a VIF value of 1.676. The BI Rate (X2) variable has a Tolerance value of 0.675 and a VIF value of 1.480. The Exchange Rate Variable (X3) has a Tolerance value of 0.761 and a VIF value of 1.314. Since the Tolerance values for all three variables (0.597, 0.675, and 0.761) are all much greater than 0.10, and the VIF values for all variables (1.676, 1.480, and 1.314) are all much smaller than 10, it can be concluded that BCA Syariah's NPF regression model is free from multicollinearity problems. This shows that there is no significant correlation between the variables of Inflation, BI Rate, and Exchange Rate.

F. Multiple Linear Regression Test

1. Bank Muamalat

Table 11. Results of Bank Muamalat NPF Multiple Linear Regression Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.834	2.620		.319	.751
	Inflasi	-.157	.161	-.176	-.974	.335
	BIRate	.311	.225	.236	1.385	.173
	NilaiKurs	.000	.000	.146	.913	.366

a. Dependent Variable: NPFBankMuamalat

Bank Muamalat NPF = 0.834 − 0.157(Inflation) + 0.311(BI Rate) + 0.000(Exchange Rate)

a. The constant in this model is 0.834, which indicates that if all independent variables are zero, then the average NPF of Bank Muamalat is 0.834.

b. Inflation (X1) has a negative coefficient of 0.157, which means that the increase in inflation tends to lower Bank Muamalat's NPF, assuming the BI Rate variable and the fixed exchange rate.−
c. The BI Rate (X2) has a positive coefficient of 0.311, indicating that the increase in the BI Rate tends to increase Bank Muamalat's NPF. assuming the variables of Inflation and Exchange Rate are fixed.
d. The exchange rate value (X3) has a regression coefficient of 0.000. indicates that the increase in the Exchange Rate tends to increase Bank Muamalat's NPF, assuming that the inflation variable and the BI Rate remain constant.

2. Bank BCA Syariah

Table 12. Results of Bank BCA Syariah NPF Multiple Linear Regression Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-1.695	.495		-3.425	.001
	Inflasi	-.019	.030	-.077	-.623	.537
	BIRate	-.002	.042	-.006	-.053	.958
	NilaiKurs	.000	.000	.708	6.471	.000

a. Dependent Variable: NPFBCASyariah

BCA Syariah NPF = −1.695 − 0.019(Inflation) − 0.002(BI Rate) + 0.000(Exchange Rate)

The interpretation is carried out by assuming that other independent variables are constant:

a. Constant: -1,695 A constant value of -1,695 indicates that if the variables of Inflation, BI Rate, and Exchange Rate are zero, then the average NPF of BCA Syariah is -1,695.
b. Inflation (X1): -0.019 The regression coefficient of Inflation is negative, which is -0.019. This means that every increase in one unit of inflation will cause BCA Syariah's NPF to decrease by 0.019, assuming the variable BI Rate and the fixed exchange rate.
c. BI Rate (X2): -0.002 The BI Rate regression coefficient is negative, which is -0.002. This means that every increase in the BI Rate by one unit will cause BCA Syariah's NPF to decrease by 0.002, assuming that the Inflation and Exchange Rate variables remain constant.
d. Rate Value (X3): 0.000 Regression coefficient The Rate Value is 0.000. This shows that there is a very small positive influence on BCA Syariah's NPF. This means that the increase in the Exchange Rate tends to increase BCA Syariah's NPF, assuming that the inflation variable and the BI Rate remain constant.

G. R Square Test

1. Bank Muamalat

Table 13. R Square Test Results of Bank Muamalat

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.248[a]	.062	.003	1.71491

a. Predictors: (Constant), NilaiKurs, BIRate, Inflasi

b. Dependent Variable: NPFBankMuamalat

Based on the results of the R Square test contained in table 13 for Bank Muamalat, it can be interpreted that the R Square value obtained is 0.062. This value of 0.062, if multiplied by 100%, means that only 6.2% of the total variation that occurs in Bank Muamalat's NPF can be explained simultaneously by the variables Inflation, BI Rate, and Exchange Rate. The remainder, 93.8%, was influenced or explained by other variables outside of the regression model used.

2. Bank BCA Syariah

Table 14. R Square Test Results of Bank BCA Syariah

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.750[a]	.563	.535	.32394

a. Predictors: (Constant), NilaiKurs, BIRate, Inflasi

b. Dependent Variable: NPFBCASyariah

Based on the results of the R Square test in table 14 presented for Bank BCA Syariah, the value of the determination coefficient (R Square) is 0.563. The interpretation of the R Square value of 0.563 is that 56.3% of the total variations or fluctuations that occur in Bank BCA Syariah's NPF can be explained simultaneously by the variables Inflation (X1), BI Rate (X2), and Exchange Rate (X3). This indicates that the regression model used has a significant explanatory power for BCA Syariah's NPF. Meanwhile, the remaining variation in Bank BCA Syariah's NPF of 43.7% was influenced or explained by other variables that were not included in this study model.

H. Partial T-Test

1. Bank Muamalat

Table 15. Partial T Test Results of Bank Muamalat

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.834	2.620		.319	.751
	Inflasi	-.157	.161	-.176	-.974	.335
	BIRate	.311	.225	.236	1.385	.173
	NilaiKurs	.000	.000	.146	.913	.366

a. Dependent Variable: NPFBankMuamalat

To interpret the Partial t-test by comparing the tcount with the ttable, the ttable value must first be determined based on the number of data (N) as many as 52 and the number of independent variables (k) as many as 3. Using the degree of freedom (df) N−k−1, which is 52−3−1=48, and a significance level of 0.05 (double-sided), the t-value of the table was obtained as 2.0106. The value of this table is not present in the given source and is calculated using a standard statistical table. The decision-making criterion is that the independent variable has a significant effect if the absolute value of t is greater than the t of the table (t count >2.0106).

Based on table 15, the Inflation variable has a calculated t-value of -0.974,. Because the absolute value of t calculated 0.974 is smaller than t table 2.0106 (0.974 < 2.0106), it is concluded that Inflation does not have a significant effect on Bank Muamalat's NPF. Furthermore, the BI Rate variable has a calculated t value of 1,385,. Because the absolute value of t calculated 1.385 is also smaller than the table 2.0106 (1.385 < 2.0106), the BI Rate partially does not have a significant effect on Bank Muamalat's NPF. Finally, the Exchange Rate variable has a calculated t-value of 0.913,. Similarly, because the absolute value of t calculated 0.913 is smaller than t table 2.0106 (0.913 < 2.0106), the exchange rate does not have a significant effect on Bank Muamalat's NPF. Thus, it can be concluded that none of the three macroeconomic variables individually meet the statistical criteria to have a significant influence on Bank Muamalat's NPF.

2. Bank BCA Syariah

Table 16. Partial T Test Results of Bank BCA Syariah

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-1.695	.495		-3.425	.001
	Inflasi	-.019	.030	-.077	-.623	.537
	BIRate	-.002	.042	-.006	-.053	.958
	NilaiKurs	.000	.000	.708	6.471	.000

a. Dependent Variable: NPFBCASyariah

With a total of 52 data (*N*), a total of 3 independent variables (*k*) (Inflation, BI Rate, Exchange Rate), and a significance level of 0.05 (two sides), the degree of freedom (*df*) is *N−k−1,* which is 52−3−1=48. The *table t-value* for *df=48 at a=0.05* is 2.0106. The test criterion is that the independent variable has a significant effect if the absolute value *t* is calculated greater than *the t* table (*t* count > 2.0106).

Inflation (*X1)* has a *calculated* value of -0.623. Because the absolute value *of tcal* -0.623 is smaller than *ttable* 2.0106 (-0.623 2.0106), it is concluded that Inflation partially does not have a significant effect on Bank BCA Syariah's NPF. The BI Rate (<*X2)* has a *calculated* value of -0.053. Because the absolute value *of tcal* -0.053 is much smaller than *the ttable* 2.0106 (-0.053 2.0106), it is concluded that the BI Rate partially does not have a significant effect on Bank BCA Syariah's NPF. The exchange rate value (<*X3)* has a *calculated* value of 6,471. Because the absolute value *of tcal* 6,471 is greater than *ttable*

2.0106 (6,471 2.0106), it is concluded that the exchange rate partially has a significant effect on Bank BCA Syariah's NPF. Overall, only the Exchange Rate variable met the statistical criteria >*of the* table > calculations, so the Exchange Rate was the only independent variable in this model that significantly affected Bank BCA Syariah's NPF, while Inflation and BI Rate did not show a significant influence partially.

I. Simultaneous F Test

1. Bank Muamalat

Table 17. Results of Bank Muamalat Simultaneous F Test

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.259	3	3.086	1.049	.379[b]
	Residual	141.164	48	2.941		
	Total	150.423	51			

a. Dependent Variable: NPFBankMuamalat

b. Predictors: (Constant), NilaiKurs, BIRate, Inflasi

The results of the Simultaneous F Test (Overall Significance Test) for Bank Muamalat's NPF by comparing *Fcal* and *Ftable*, must first determine the *Ftable value*. Based on data with the number of observations (*N*) as many as 52, and the number of independent variables (*k*) as many as 3 (Inflation, BI Rate, and Exchange Rate), the degree of freedom used is *df1=k=3 and df2=N−k−1=52−3−1=48.* Using a significance level of 0.05, *the Ftabel* value is 2.798.

Based on table 17, the *Fcal* value obtained is 1.049. The test criterion is that the independent variables simultaneously have a significant effect if *the Fcal* is greater than *the Ftable*. Because the *Fcal* value of 1,049 is smaller than the *Ftable* of 2,798, it is concluded that simultaneously (together), the variables of Inflation, BI Rate, and Exchange Rate do not have a significant influence on Bank Muamalat's NPF. This conclusion is also supported by a significance value (Sig.) of 0.379, which is much greater than 0.05.

2. Bank BCA Syariah

Table 18. Results of Bank BCA Syariah NPF Simultaneous F Test

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.483	3	2.161	20.592	.000[b]
	Residual	5.037	48	.105		
	Total	11.520	51			

a. Dependent Variable: NPFBCASyariah

b. Predictors: (Constant), NilaiKurs, BIRate, Inflasi

Based on the data totaling 52 observations, the degrees of freedom for this test are *df1=3 and df2=N−k−1=48.* Using a significance level of 0.05, the *required Ftable* value is approximately 2.798 (this value is taken from standard statistical calculations and needs to be independently verified). The *Fcal value* obtained from the test results was 20,592. The decision-making criterion in the F test is that if *the Fcal* is greater than *the Ftable*, then

the independent variables simultaneously have a significant effect. Because *the Fcal* value of 20,592 is much greater than *the Ftable* value of 2,798, it is concluded that simultaneously (together), the variables Inflation (*X1), BI Rate (X2), and Exchange* Rate (*X3)* have a significant influence on the dependent variables of Bank BCA Syariah's NPF. This conclusion is also supported by the significance value (Sig.) in table 18 which shows the number 0.000, which is much smaller than the significance limit of 0.05.

The effect of inflation on the NPF of Muamalat and BCA Syariah banks

Research method From the test results in this study, it is shown that the Inflation variable has a negative regression coefficient to the NPF of the two banks. For Bank Muamalat's NPF, the Inflation coefficient is -0.157, which indicates that the increase in inflation tends to lower Bank Muamalat's NPF. However, this influence is not partially significant. This is evidenced by the Significance value (Sig.) which is much greater than 0.05, which is 0.335, and *the calculated t-value* of -0.974 which is in absolute terms smaller than *the t* table of 2.0106.

Similarly, for BCA Syariah's NPF, Inflation has a negative regression coefficient of -0.019. This coefficient indicates that every increase in one unit of inflation will cause BCA Syariah's NPF to decrease by 0.019. However, just like Bank Muamalat, inflation also does not have a significant partial effect on BCA Syariah's NPF. This is indicated by the Inflation Significance value of 0.537, which is greater than 0.05, as well as the t-value of -0.623 which is absolutely smaller than *the t* of table 2.0106.

Overall, although Inflation shows a negative relationship (an increase in inflation is associated with a decrease in NPF) in both banks, the relationship is not statistically significant. This result is in agreement with Arfan's (2020) research which said that the value of financing and non-performing loans in Islamic commercial banks is still relatively small compared to conventional banks, the impact of inflation is not significant on NPF[18].

The Effect of BI Rate on Bank Muamalat and BCA Syariah NPFs

The results of the analysis of the influence of the BI Rate on the NPF of Bank Muamalat and BCA Syariah are different. In Bank Muamalat, the BI Rate (X2) variable has a positive regression coefficient of 0.311. This coefficient shows that the increase in the BI Rate tends to increase Bank Muamalat's NPF. However, the effect is statistically insignificant. This is supported by the *t* count as 1.385,, which is in absolute less than the value of *t* table of 2.0106, and the Significance value (Sig.) of 0.173 which is greater than the limit of 0.05,. This result is in line with Annisa's research which states that the BI Rate has a positive but insignificant effect on *non performing financing*[19]. An increase in the BI Rate can lead to an increase in the cost of funds as well as a decrease in financing demand, including in Islamic banks; Although Islamic banks are not interest-based, they are still affected by market expectations and profit sharing margin adjustments.

In the NPF BCA Syariah model, the BI Rate (X2) has a negative regression coefficient of -0.002. This coefficient means that every one unit increase in the BI Rate will cause BCA Syariah's NPF to decrease by 0.002, assuming other variables remain the same. As in Bank Muamalat, the influence of the BI Rate on BCA Syariah's NPF is also not partially

significant. This is indicated by the value *t* count as -0.053,, which is very much smaller than the value of *t* table 2.0106, and the Significance value (Sig.) of 0.958,. The results of this test are in agreement with Redho's research which states that the BI rate has a negative and insignificant effect on the NPF of Sharia Banks in Indonesia[20]. Basically, Sharia Banking does not know the interest system in its operations.

In summary, the results of statistical testing show that the BI Rate, although it has a positive relationship direction for Bank Muamalat and negative for BCA Syariah, there is no significant influence of the BI Rate partially on Bank Muamalat's NPF or on BCA Syariah's NPF

The Effect of Exchange Rate on Bank Muamalat and BCA Syariah NPFs

In the regression analysis that has been carried out, the Exchange Rate (X3) shows significantly different results between the two banks. In Bank Muamalat's NPF, the Exchange Rate has a regression coefficient of 0.000, which indicates that an increase in the Exchange Rate tends to increase Bank Muamalat's NPF. However, this effect is statistically not statistically significant. This is supported by a Significance (Sig.) value of 0.366, which is greater than 0.05, and a value of *t* count 0.913, which is in absolute less than *t* Table 2.0106. This result is in line with Silvia's research which states that the exchange rate has a positive but insignificant effect on the NPF of Sharia banks[21]. This is due to the fact that foreign exchange financing in Islamic banking is worth about 5% of the total financing provided by Bank Indonesia on average. As a result, changes in the exchange rate in Islamic bank NPFs are almost not affected at all.

On the other hand, in the BCA Syariah NPF model, the Exchange Rate (X3) shows a regression coefficient of 0.000, which indicates that there is a very small positive influence on the BCA Syariah NPF, so that the increase in the Exchange Rate tends to increase the BCA Syariah NPF. In contrast to Bank Muamalat, this influence is partially significant on BCA Syariah's NPF. This significance is indicated by a Significance value (Sig.) of 0.000, which is much smaller than 0.05, and a value of *t* count of 6,471, which in absolute terms is much greater than *t* Table 2.0106. The results of this test are in line with Herni and Oktavia's research which concluded that the Exchange Rate Has a Positive and Significant Effect on Non-Performing Financing (NPF)[14]. Import production and financing costs will increase due to fluctuations in the rupiah exchange rate against the dollar, especially when there is depreciation. Ultimately, this will result in a decrease in revenue, especially for businesses working in the export-import and import raw materials industries. A decline in revenue will make it harder for businesses to pay their bank debts.

CONCLUSION

Fundamental Finding : The results indicate that inflation has a negative effect on Non-Performing Financing (NPF) in both Bank Muamalat and BCA Syariah, suggesting that an increase in inflation tends to reduce NPF, although this relationship is not statistically significant in either bank. The BI Rate shows different relationship directions between the two banks, where in Bank Muamalat the BI Rate has a positive effect

indicating that an increase in the BI Rate tends to increase NPF, while in BCA Syariah the BI Rate has a negative effect indicating a decrease in NPF due to an increase in the BI Rate, yet both influences are not statistically significant. The Exchange Rate produces the most contrasting results, where in Bank Muamalat the Exchange Rate has a positive effect on NPF but the influence is not significant, whereas in BCA Syariah the Exchange Rate also has a positive effect and the influence is statistically significant. **Implication :** These findings indicate that macroeconomic variables do not always produce uniform impacts on financing risk across Islamic banks, suggesting that institutional characteristics and financial management practices may influence how external economic conditions affect NPF levels. **Limitation :** This study only examines three macroeconomic variables—Inflation, BI Rate, and Exchange Rate—and focuses on two Islamic banks, which may limit the generalizability of the findings to other Islamic banking institutions. **Future Research :** Future studies are expected to include additional macroeconomic and bank-specific variables as well as a broader sample of Islamic banks in order to obtain a more comprehensive understanding of the factors influencing Non-Performing Financing.

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