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GMM Panel Approach for Non-Performing Financial (NPF) Analysis at Indonesia's Sharia Commercial Bank

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ABSTRACT

NPF is one of the most crucial financial indicators for sharia banking since it measures the extent of funding failure. Non-performing finance (NPF) occurs when a business partner is unable to fulfill their obligations. Better financing management by the bank is indicated by a lower NPF ratio value, and vice versa. The purpose of this study is to determine how the value of NPF Bank Umum Syariah in Indonesia is impacted by particular internal bank factors, such as the Capital Adequency Ratio (CAR), Finance Deposit Ratio (FDR), Operational Expense to Income Expense (OEOI), and macroeconomic variables, such as the Exchange Rate (ER) and Gold Prices (GP), between 2018 and 2023. The approach that is employed is the Generalized Method of Moment (GMM) with panel data analysis. According to the study's findings, NPF for one year before (NPFt-1), CAR, FDR, changes in OEOI, change in ER, and changes in GP are the factors that have the biggest effects on NPF. However, NPF is unaffected by OEOI, ER, GP, change in CAR, change in FDR.

KEYWORDS: NPF, Internal Factors, Macroeconomic Variables, GMM

INTRODUCTION

Financial performance is a good indicator of how well sharia banks are doing business. One aspect of the bank's performance that has drawn a lot of attention is its problem financing, which is measured by a figure called non-performing financial (NPF) (Mishra et al., 2021). NPF indicates the extent of problematic financing that a bank faces or a situation where business partners are unable to fulfill their obligations, as well as the degree of financing failures committed by sharia banks. (Bolognesi et all., 2019), The NPF is one of the financial metrics that is crucial for a sharia bank in this situation; the lower the NPF number, the better the bank's performance. Bella and Chalid (2021). Excessive financing disbursements hinder banks' ability to perform their duties, which deteriorates bank performance as evidenced by the high NPF value (Tarchouna et al., 2017; Boumparis et al., 2019)

According to the literature, one of the primary causes of banking crises is the quick buildup of NPFs (Amin et al. 2019; Ashraf and Butt 2019; Khan et al. 2020). In support of this claim, the global COVID-19 pandemic has caused a sharp rise in non-performing loans (NPLs) in many nations, and economies all over the world are dealing with a sharp drop in credit quality, which is causing bank asset quality to deteriorate and potentially having a ripple effect on the global economy. Because NPF has a weak correlation with economic consequences, scholars in this field refer to it as "financial pollution" (Amin et al. 2019). Because the NPF's minimal ratio guarantees the recovery of a healthier banking system and fosters overall financial stability, it is crucial to keep it as low as possible (Dimitrios et al. 2016).

Numerous internal and external factors contribute to the NPF level (Gupita & Siti, 2019). Islamic banking uses basic macroeconomic indicators, external variables such as inflation, economic growth, loan interest rates, and exchange rates—to channel financing (Amzal, 2016; Hafizh et al., 2020). Internal factors include the amount of financing provided, the value of finance to deposit ratio (FDR), and the capital adequacy ratio (CAR). The findings of studies on basic macroeconomic indicators and bank-specific variables associated with non-performing financing are not entirely consistent. According to earlier studies, the loan to asset ratio lowers non-performing Finance (NPFs) (Louzis, 2022). A higher capital adequacy and deposit to asset ratio considerably raises the level of non-performing finance. On the other hand, the NPF level for the current year will drop if the NPF lag decreases and bank operational efficiency rises, and vice versa. Numerous other studies have examined NPFs using a range of criteria. These include macroeconomic aggregates as well as indicators exclusive to a given bank.

According to Moinescu and Codirlaşu (2012), Sanwari and Zakaria (2013), Amzal (2016), Khan, et al. (2020), there is a feedback effect when non-performing finances are explained by their connection to macroeconomics. In the post-crisis era, NPF is more sensitive to macroeconomic circumstances. However, Vithessonthi (2016); Us (2016); Vouldis, and Louzis (2018) use macroeconomic aspects and bank-specific methods to study NPF evolution. The ratio of non-performing finance to total fixed loans was examined by other researchers (Vithessonthi, 2016).

This study was carried out for Indonesia for the following reasons: First, the country's NPF condition was 3.26% in 2018 and rose to 3.46% in 2019, but the NPF value tended to deteriorate throughout the COVID-19 era, which ran from 2020 to 2022, despite a decline in many enterprises. Output, resulting in a decline in earnings. This circumstance does not lead to an increase in NPF at Islamic banks; in 2023, it will reach 3.41%; however, the NPF value remains below international norms, which require the bank to maintain a maximum NPF value of 2%. Second, because Indonesia is a bank-oriented economy, any carelessness on the part of the central bank and other pertinent authorities may have detrimental effects on the banking industry and, in turn, the overall economy.

The purpose of this study is to determine the relationship between the NPF of sharia banking and the shocks between macroeconomic variables and bank internal details. The findings of this study will be a valuable source of information for both Islamic banks and their customers. However, prompt research can assist the relevant authorities in implementing corrective actions. This will assist decision-makers in taking critical actions to avert future calamities. Additionally, this study contributes to the body of knowledge regarding developing economies, and economies dealing with comparable issues will find value in its conclusions.

LITERATURE REVIEW

Two significant topics that have been and are frequently discussed in the literature are financing risk analysis and the elements that determine NPF. There are two primary reasons for the growing interest in this topic. In the first place, it implies that bank-specific (internal) factors may influence financing risk, whereas other groups focus on external factors that affect NPF, such as global factors, regulations, and economic conditions. In addition, these variables have a feedback effect on NPF (Us, 2020). Both internal and external sources have the potential to initiate the phenomena of financing risk in banking. Vouldis and Louzis (2018); internal factors that impact NPF (Effendi et al., 2017).

Bank-specific characteristics that lead to risky financing distribution behavior impact NPF dynamics; in this sense, a bank's capital adequacy ratio, also known as regulatory capital or capital requirements, is one of the elements that determines the occurrence of NPF (Us, 2020). The size and liquidity of the bank are other internal factors that affect NPF. According to Firmansyah (2014), bank liquidity as shown by the FDR (Finance to Deposit Ratio) has a favorable impact on financing issues. One of the reasons banks lend money or make wise investments is the need to use excess liquidity. This may also occur, though, as a result of banks' lack of caution in foreseeing the many business risks they may fund (Purba, 2018).

According to study by Tanaskovic and Jandric (2015), the Capital Adequacy Ratio (CAR) variable has an impact on non-performing financing (NPF); the more capital a bank has, the less likely this is to happen. NPF receivables, a favorable correlation between capital rules and the NPF ratio, and the conclusion that banks need to raise capital in order to lower banking risk losses.

Another important determinant of non-performing loans (NPLs) for banks is the quantity of bank financing provided to the general public, or typically using the finance to deposits ratio (FDR) calculation. Vouldis and Louzis (2018) contend that banks that engage in excessive financing may wind up with financing that suffers from more impairment in this instance. Vithessonthi (2016) noted that following the global financial crisis, Japanese commercial banks had a bad link between lending and non-performing loans (NPLs); the imposition of stringent lending requirements resulted in the reverse relationship.

One ratio used to assess bank performance, notably in relation to non-performing financing (NPF), is operational expenditures to operational income, also known as operational expense to income expense (OEOI). Non-operational costs are all expenses unrelated to the primary business operations of the organization, whereas operational costs are all expenses associated with day-to-day business operations. The more efficiently a bank conducts its operations, the lower the OEOI value. A high OEOI Ratio indicates that the bank's operations are not yet efficient, which could lead to a decline in profitability as the profits are used to offset losses caused by high operating expenses, further impairing the company's ability to repay the loan. This OEOI may have effect on the bank's operational performance. Bank, or, to put it another way, it will raise the value of the bank's non-performing loans. According to Ridho's (2024) research, the NPL variable is significantly positively impacted by operational expenditures on operational income.

When it comes to funding, Islamic banks also use macroeconomic fundamental factors like the currency rate as a guide (Amzal, 2016; Hafizh et al., 2020). De Bock and Demyanets (2019) shown that there is a positive correlation between the exchange rate and non-performing loans (NPLs). They found that an increase in the exchange rate raises the cost of local goods, which lowers the competitiveness of businesses that focus on exporting. The ability of the company to repay its debt will suffer if this circumstance persists.

Depreciation of the home currency can lead to a relative increase in the value of domestic loans in foreign currencies, which raises the value of non-performing finance by increasing debtor liabilities and making it harder to pay off bank financing. According to Roland Beck's (2015) research findings, non-performing financing is greatly impacted by the currency rate. Similarly, Surepno's (2023) research findings indicated that the exchange rate significantly improved non-performing finance. Nisa et al. (2023) has expressed a similar opinion, arguing that the exchange rate greatly enhances non-performing financing.This, however, is inversely related to the findings of a study by Iskandar (2022) that found that non-performing loans are negatively impacted by the exchange rate.

The price of gold as a factor influencing NPL is a new variable added by this study. Gold prices that are constantly rising or that are generally high will make it difficult for monetary authorities to carry out tight money policies in many nations. The price of gold can also show that its real value rises quickly when inflation is high and falls sharply when inflation declines. This means that a rise in the price of gold will raise the cost of goods in the economy, which will lower demand for those goods and lower sales value. Companies' profits will then decline, which will cause bank financing payments to be delayed.

This research contributes a new variable, namely the price of gold as a determinant of NPL. Continuous increases in gold prices or gold prices that tend to be high will obscure the duties of the monetary authorities in implementing tight money policies in many countries. The price of gold can also show that its real value rises quickly when inflation is high and falls sharply when inflation declines. As a result, a rise in the price of gold will raise the cost of goods in the economy, which will lower demand for those goods and consequently lower sales value, then company profits fall resulting in delays in payments on bank financing. Azhan (2014) found that gold prices had an impact on non-performing loans.

Based on theory and previous research findings, the following hypothesis can be made:

H_1: Capital Adequacy Ratio (CAR) influences Non-Performing Finance (NPF) of Sharia Commercial Banks in Indonesia for the period 2018 - 2023.

H_2: Finance to Deposit Ratio (FDR) influences Non-Performing Finance (NPF) of Sharia Commercial Banks in Indonesia for the period 2018 - 2023.

H_3: Operational Expense to Income Expence (OEOI) influences Non-Performing Finance (NPF) of Sharia Commercial Banks in Indonesia for the period 2018 - 2023.

H_4: Exchange Rate (ER) influences Non-Performing Finance (NPF) of Sharia Commercial Banks in Indonesia for the period 2018 - 2023.

H_5: Gold Prices (GP) influences Non-Performing Finance (NPF) of Sharia Commercial Banks in Indonesia for the period 2018 - 2023.

RESEARCH METHODS

Applied research using a quantitative method, this study aims to describe and test the established hypotheses through quantitative or statistical data analysis. Purposive sampling was used in this study, which was carried out at Indonesian Islamic commercial banks between 2018 and 2023. Secondary data, such as macroeconomic variable data and financial performance statistics from Sharia Commercial Banks, were employed in this study. The Central Statistics Agency, Bank Indonesia, and the Financial Services Authority's official websites provided the data. Panel data is what was processed.

Non Performing Finance (NPF) is the dependent variable, while the independent variables that will be studied in this study are the following: internal factors, such as the Capital Adequency Ratio (CAR), Finance to Deposit Ratio (FDR), and Operational Expenses to Operational Income (OEOI); and external factors, or macroeconomic variables, such as the exchange rate (ER) and gold price (GP).

The Generalized Method of Moment (GMM) Panel model, a dynamic linear model that aims to control the dependent variable using moment conditions in this case by including an additional (Δ) lag of the dependent variable, will be used in conjunction with multiple regression analysis to answer the proposed hypothesis, specifically whether CAR, FDR, OEOI, ER, and GP have an effect on NPF. The instrument's purpose is to increase the efficiency of the estimated parameters. The GMM approach, which combines two stage least squares (2SLS) and OLS variable regression, is employed because the number of units (n) evaluated exceeds the number of periods (t). By examining the AR(2) value, the GMM is also utilized to determine whether the residual test data still exhibits serial correlation and heteroscedasticity using the Arellano test. The Sargan/Hansen test is then used to determine whether the data is legitimate. Lastly, do a test of determination. to determine the extent to which changes in the independent variable influence changes in the total dependent variable.

It is permissible or appropriate to utilize GMM because the sample (Islamic commercial banks, N = 8 firms) in this study has more N units (than the time (t) used, which is 6). In addition, make use of recurring data, including exchange rate data. (exchange rate) and the gold price (gold price) will recur for every unit, leading to heteroscedasticity and serial correlation.

The GMM Estimation Panel can be expressed generally as follows:

$$Y_{it} = \alpha Y_{it-1} + \beta X_{it} + \omega_i + \varepsilon_{it} \quad \text{.....(1)}$$

i = 1, …, N = cross units (number of sharia-compliant banks that were examined)

t = 1, …, t = time periods (2018 - 2023)

X = independent variables (CAR, FDR, OEOI, ER, GP)

Y_{it} = dependent variable period t

Y_{it-1} = dependent variable lags one period

α = persistent coefficient

ω_i = specific error term group

ε_{it} = error term

In order to estimate the GMM model, the difference GMM and System GM models are first chosen. Next, α_{OLS} is determined using Pooled OLS estimation; next, α_{FE} is determined using the fixed effects model; and finally, α_{D-GMM} is determined using the difference GMM estimation. The differential GMM is a better choice for parameter estimation If $\alpha_{D-GMM} > \alpha_{FE}$. In the meantime, the GMM system is better suited to estimate the parameters of this study if $\alpha_{D-GMM} \leq \alpha_{FE}$. System GMM's additional moment conditions will lessen the bias associated with parameter estimation (Arellano and Bover, 1995).

The GMM Dynamic System Panel model is generally described as follows:

$$Y_{it} = \alpha Y_{it-1} + \beta X_{it} + v_{it} @ \Delta IV \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

$$\Delta Y_{it} = \alpha \Delta Y_{it-1} + \beta \Delta X_{it} + \Delta v_{it} @ \Delta IV \quad \ldots\ldots\ldots\ldots (3)$$

The model in equations (2) and (3) is followed by the model specifications utilized in this study:

$NPF = C_1 + C_2 NPF_{t-1} + C_3 CAR + C_4 FDR + C_5 OEOI + C_6 ER + C_7 GP @ \Delta NPF_{t-2}\ \Delta CAR_{t-1}\ \Delta FDR_{t-1}\ \Delta OEOI_{t-1}\ \Delta ER_{t-1}\ \Delta GP_{t-1}$

$\Delta NPF = C_8 + C_9 \Delta NPF_{t-1} + C_{10} \Delta CAR + C_{11} \Delta FDR + C_{12} \Delta OEOI + C_{13} \Delta ER + C_{14} \Delta GP @ NPF_{t-2}\ CAR_{t-1}\ FDR_{t-1}\ OEOI_{t-1}\ Gt_{t-1}\ ER_{t-1}\ GP_{t-1}$.

NPF, CAR, FDR, OEOI, ER, GP = non performing finance, capital adequency ratio, finance deposits ratio, operatioanl expense to income expense, exchange rate, gold price

CAR_{t-1} , FDR_{t-1} , $OEOI_{t-1}$, ER_{t-1} , GP_{t-1} = CAR one period prior, FDR one period prior, OEOI one period prior, ER one prior, GP one period prior

ΔNPF, ΔCAR, ΔFDR, OEOI, ΔER, ΔGP = changes in non-performing finance, changes in capital adequacy ratio, changes in finance deposits ratio, changes in operating expense to income expense, changes in exchange rate, changes in gold price

ΔCAR_{t-1} , ΔFDR_{t-1} , $\Delta OEOI_{t-1}$, ΔER_{t-1} , ΔGP_{t-1} = CAR modification one period prior, change in FDR one period prior, change in OEOI one period prior, change in ER one period prior, change in GP one period prior

ΔNPF_{t-1} = changes in non-performing finance one period prior

ΔNPF_{t-2} = changes in non-performing finance in the previous two periods

RESULTS AND DISCUSSION

The Arellano test was used as the initial step to determine whether heteroscedasticity was still present in the data.

Table 1. Arellano Test

Test order	m-Statistic	rho	SE(rho)	Prob.
AR(1)	0.561890	12.853773	22.875946	0.5742
AR(2)	-0.211923	-32.826575	154.898623	0.8322

The Arellano test findings show that the probability value is more than 0.05 and that the data is still heteroscedastic, so that the next stage can be carried out

Table 2 displays the results of the second step, which involves selecting between the difference GMM and system GMM models by processing the data with EViews.

Table 2.GMM model selection

Variabel	Pooled OLS (α_{OLS})	Fixed Effect (α_{FE})	Difference GMM (α_{D-GMM})
NPF (-1)	0,449	-0,026	-0,848

Table 2 shows that the GMM system is more suitable for estimating the parameters utilized in the research since the NPF(-1) coefficient for difference GMM is smaller than the Fixed Effect coefficient ($\alpha_{D-GMM} \leq \alpha_{FE}$).

In the third stage, the appropriateness of incorporating a one-period lag dependent variable (NPL) into the GMM system model is assessed. Verify the validity by examining the Sargan/Hansen J test value; table 3 displays the findings.

Table 3. GMM Model's Regression Coefficient

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	50.65901	156.7869	0.323107	0.7482
C(2)	1.051695	0.385161	2.730527	0.0309
C(3)	-0.159653	0.068465	-2.331893	0.0190
C(4)	-0.088764	0.039138	-2.267928	0.0443
C(5)	-0.162716	0.116006	-1.402648	0.1681
C(6)	-7.929692	24.94299	-0.317913	0.7521
C(7)	3.472119	8.232714	0.421747	0.6754
C(8)	1.390899	1.275107	1.090810	0.2816
C(9)	0.124844	0.175493	0.711392	0.4808
C(10)	-0.035702	0.060450	-0.590609	0.5579
C(11)	-0.019969	0.080507	-0.248040	0.8053
C(12)	0.119768	0.060377	1.983647	0.0232
C(13)	-2.214650	0.742219	-2.983822	0.0450
C(14)	2.118246	0.523595	4.045194	0.0019
Determinant residual covariance		60.40521		
J-statistic		0.003463		

The Sargan/Hansen J test results, which are based on the data processing results provided in Table 3, indicate that the probability value is 0.003463, which is less than α = 0.05. This indicates that the instruments being measured are valid and significant, and that the dependent variable lag, specifically NPF_{t-1} / dependent variable (NPL) lag one period, is suitable for use in the chosen model. The GMM system is suitable for examining the impact of the independent variable on the dependent variable, according to the findings of the Arellano and J-statistic tests. This allows

for the subsequent step, which is to interpret the regression coefficient for each independent variable.

The determination test, the fourth stage, examines the R-squared (R^2) to ascertain the extent to which the CAR, FDR, OEOI, ER, and GP variables impact the variation in the NPL variable.

Table 4. Coefficient Determination of the NPF Model

R-squared	0.730204	Mean dependent var	1.974167
Adj R-squared	0.734086	S.D. dependent var	1.794312
S.E. of regression	2.745276	Sum squared resid	128.1212
D-W stat	2.208950		

Equation: NPF=C(1) + C(2)*NPF(-1) + C(3)*CAR + C(4)*FDR + C(5)
*OEOI + C(6)*ER + C(7)*GP
Instruments: D(NPF(-2)) D(CAR(-1)) D(FDR(-1)) D(OEOI(-1)) D(ER(-1)) D(GP(-1)) C

Table 4's R^2 value of 0.7302 indicates that variations in the CAR, FDR, OEOI, ER, and GP variables account for 73.02 percent of the total variation in the NPF variable, with other variables not included in the model accounting for the remaining 26.98 percent. This further demonstrates that the model is suitable for observing the impact of all independent variables on the dependent variable.

Table 5. Coefficient Determination of NPF Change Model

R-squared	0.721597	Mean dependent var	0.177500
Adj R-squared	0.766780	S.D. dependent var	1.939890
S.E. of regression	2.183372	Sum squared resid	119.1779
D-W stat	2.841419		

Equation: D(NPF)=C(8) + C(9)*D(NPF(-1)) + C(10)*D(CAR) + C(11) *D(FDR) + C(12)*(OEOI) + C(13)*D(ER) + C(14)*D(GP)
Instruments: NPF(-2) CAR(-1) FDR(-1) OEOI(-1) GT(-1) INF(-1) INT(-1) ER(-1)

Table 5's R^2 value of 0.7215 indicates that changes in the change variables CAR, FDR, OEOI, ER, and GP account for 72.15 percent of the overall variation in the NPF change variable, with other variables accounting for the remaining 27.85 percent. in the model, which further demonstrates that the model is suitable for observing the impact of each independent variable on the dependent variable.

Next, use the GMM system model to estimate the parameters; table 3 shows the outcomes. The following variables can affect the non-performing financing of Indonesian sharia commercial banks based on each probability value with the threshold $\alpha = 0.05$: NPF is also significantly impacted by the following factors: change in operational expense to operational income (ΔOEOI) with a probability of 0.0232 in a positive direction, change in exchange rate (ΔER) with a probability of 0.0450 in a negative direction, change in gold price (ΔGP) with a probability of 0.0019 in a positive direction, and non-performing finance in the previous period (NPF_{t-1}) with a probability value of 0.0309 in a positive direction, capital adequacy ratio (CAR) with a probability value of 0.0190 and a negative direction. In the meantime, non-performing financing is unaffected by other factors (OEOI, ER, GP, changes in CAR, and changes in FDR).

NPF in the prior period has a positive effect on NPF in the prior year, meaning that when the NPF in the prior period rises, According to the statistical interpretation of the data processing results, the NPF in the previous year will also increase, and vice versa, when the NPF in the previous period declines, the NPF in the previous year will decrease. This outcome is consistent with Louzis's (2022) research, which finds that lowering the NPL lag and improving bank operational effectiveness will lower the current year's NPL level and vice versa. It follows that Islamic banking management must promptly implement a policy approach to lower the NPF if it has increased in the preceding period; otherwise, the NPL will rise in the next period.

CAR has a negative impact on NPF, indicating that the NPF value falls as the capital adequacy ratio rises and vice versa. This study supports the findings of Tanaskovic and Jandric (2015), and Louziz (2022) that there is Mutamimah's (2012) research, This supported the effect of the Capital Adequacy Ratio (CAR) variable on NPF and showed a positive link between capital constraints and the NPF ratio. The research's findings suggest that in order for sharia banking institutions to be able to withstand the risk of losses due to troublesome financing, they must maintain and even grow their capital adequacy. The likelihood of NPF receivables happening decreases as a bank's capital increases.

NPF is negatively impacted by FDR, meaning that when FDR rises, NPF falls and vice versa. This means that sharia banking in Indonesia can lower NPF by increasing its financing to business partners, who are partners rather than creditors and debtors, allowing for direct banking supervision of partners. These findings, however, contradict research by Louzis (2022), Vouldis and Louzis (2018), and Vithessonthi (2016), which found that banks that engage in excessive funding thereafter had higher NPF values.

NPL is positively impacted by changes in Operational Expense to Income Expense (OEOI), hence a

rise in OEOI will raise NPL and vice versa. It follows that sharia banking needs to find ways to boost its operational revenue or become more effective at covering operating expenses.

The initial macroeconomic factors examined in this study are: Exchange rate fluctuations have a negative impact on the NPF, meaning that a decline in the value of the rupiah will result in an increase in the NPF and vice versa. When the rupiah depreciates, partners' business operations are likely to be disrupted, which may lead to a decrease in profits and a reduction in the ability to pay sharia banks. As a result, sharia banking needs to exercise caution because the rupiah has been steadily declining in value recently (rupiah depreciation). In other words, before the rupiah depreciates, banking Sharia needs to swiftly announce a policy plan. The price of gold is the second variable examined, and the results are significant and pointing in the right direction, indicating that an increase in the price of gold will result in an increase in the NPF and vice versa.

CONCLUSIONS

The following conclusions can be drawn from the processing and discussion results:

1. Non-Performing Finance (NPF) is impacted by the Capital Adequacy Ratio (CAR), but changes in CAR have no effect on the NPF of Indonesian Sharia Commercial Banks for the 2018–2023 period
2. Non-Performing Finance (NPF) is impacted by the Finance to Deposit Ratio (FDR), although changes in the FDR have no effect on the NPF of Indonesian Sharia Commercial Banks for the 2018–2023 period.
3. During the 2018–2023 period, changes in Operational Expense to Income Expense (OEOI) have an impact on the NPF of Indonesian Sharia Commercial Banks, whereas OEOI has no influence on NPF.
4. Exchange Rate (ER) has no effect on Non-Performing Finance (NPF), however changes in ER affect the NPF of Sharia Commercial Banks in Indonesia for the 2018 - 2023 period.
5. Non-Performing Finance (NPF) is unaffected by the price of gold (GP), GP fluctuations have an impact on the NPF of Indonesian Sharia Commercial Banks during the years 2018–2023

RECOMMENDATIONS

Several recommendations can be made to the policy authorities in the sharia banking sector and the sharia council based on the analysis conducted in this study. These include the following: when implementing policies to influence non-performing finance (NPF), sharia banking companies should better maintain their capital adequacy, fund collection and distribution, and changes in operational costs to operational income. Regarding macroeconomic variables, we pay more attention to the conditions of changes in exchange rates and changes in the price of gold. Finally, this study only uses a single nation analysis and a small number of factors, which can be enhanced and expanded for future studies.

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