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Analysis the Effect of Sharia Monetary Operations (OMS) on Inflation in Indonesia for the 2019-2021 Period

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Abstract. Monetary policy is the government's effort to maintain, increase, or decrease the amount of money in circulation in order to sustain economic growth and combat inflation. Monetary policy in the form of Sharia Open Market Operations can be implemented by issuing Bank Indonesia Sharia Certificates (SBIS), Minimum Reserve Requirements (GWM), and Standing Facilities, such as Bank Indonesia Sharia Deposit Facilities (FASBIS). This study is novel because it uses comparative effectiveness analysis, different observation periods, and has undergone classical assumption testing. The purpose of this study is to describe and assess the effects of SBIS, FASBIS, and GWM on Indonesian inflation from 2019 to 2021. The research data is sourced from the Financial Services Authority (OJK) website. Multiple linear regression analysis was performed using the Eviews 10 software. The results showed that SBIS has no significant effect on inflation, FASBIS has a significant and negative effect on inflation, and GWM has a significant and positive effect on inflation. FASBIS and GWM can explain 79.7% of inflation, with other factors accounting for the remaining 20.3%. Islamic banking must improve its financial performance by utilizing FASBIS instruments more efficiently.

Abstrak. *Kebijakan moneter merupakan upaya pemerintah untuk menjaga, menambah, atau mengurangi jumlah uang beredar guna mempertahankan pertumbuhan ekonomi dan mengendalikan inflasi. Kebijakan moneter dalam bentuk Operasi Pasar Terbuka Syariah dapat dilaksanakan melalui penerbitan Sertifikat Bank Indonesia Syariah (SBIS), penetapan Giro Wajib Minimum (GWM), serta penyediaan* standing facilities *seperti Fasilitas Simpanan Bank Indonesia Syariah (FASBIS). Penelitian ini memiliki kebaruan karena menggunakan analisis efektivitas komparatif, periode pengamatan yang berbeda, dan telah melalui uji asumsi klasik. Tujuan penelitian ini adalah untuk menggambarkan dan menilai pengaruh SBIS, FASBIS, dan GWM terhadap inflasi di Indonesia selama periode 2019–2021. Data penelitian bersumber dari situs Otoritas Jasa Keuangan (OJK). Analisis regresi linier berganda dilakukan dengan menggunakan perangkat lunak EViews 10. Hasil penelitian menunjukkan bahwa SBIS tidak berpengaruh signifikan terhadap inflasi, FASBIS berpengaruh signifikan negatif terhadap inflasi, dan GWM berpengaruh signifikan positif terhadap inflasi. FASBIS dan GWM secara bersama-sama mampu menjelaskan 79.7% variasi inflasi, sementara 20.3% sisanya dijelaskan oleh faktor lain. Perbankan syariah perlu meningkatkan kinerja keuangannya dengan memanfaatkan instrumen FASBIS secara lebih efisien.*

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INTRODUCTION

Macroeconomic performance is commonly evaluated using several key indicators, including Gross Domestic Product (GDP), unemployment, and inflation. GDP reflects the overall economic growth of a country, where an increase in GDP generally indicates an improvement in economic performance (Mankiw, 2021). Among these indicators, inflation plays a particularly important role, as it reflects the degree of price stability and purchasing power within an economy. Inflation is defined as a sustained increase in the general price level, as measured by the Consumer Price Index (CPI). Persistent inflation tends to erode people's real income and reduce their standard of living, thereby weakening overall economic stability (Samuelson and Nordhaus, 2010). In a broader context, inflation not only disrupts economic welfare but can also distort investment decisions, hinder savings behavior, and reduce international competitiveness if left uncontrolled (Blanchard, 2017).

According to the United Nations' *World Population Prospects* (2022), Indonesia is the world's fourth most populous country, with a total population of 277.5 million. According to data from the Central Statistics Agency (BPS), Indonesia has strong economic prospects, with a GDP value at current prices of IDR 19,588.4 trillion in 2022, up 5.31% from the previous year's GDP value of IDR 16,970.8 trillion. This growth indicates post-pandemic recovery momentum and the success of various fiscal and monetary stimuli implemented during 2020–2022 (World Bank, 2023).

However, Indonesia's rapid economic expansion has resulted in a high inflation rate. According to Central Bank of Indonesia (BI) figures, Indonesia's inflation rate in 2022 was 5.51%, up from 1.87% in 2021. Every year, an inflation target is set through the Inflation Targeting Framework (ITF), in which Bank Indonesia announces and adjusts the target to ensure transparency and credibility (Hamidah et al., 2022). The ITF framework has been proven effective in anchoring inflation expectations and improving monetary transmission mechanisms in Indonesia (Warjiyo & Juhro, 2019). A reasonable rate of inflation can enhance production and investment activity (Soekapdjo, 2021), yet excessive inflation weakens purchasing power and reduces the real value of savings and wages (Mishkin, 2019).

As a result, the issue of inflation must be addressed through macroeconomic policies such as fiscal and monetary policy. The government implements fiscal policy to maintain aggregate demand, while the central bank uses monetary policy to regulate money supply and liquidity. This monetary strategy aims to maintain overall price stability (Bayuni & Srisusilawati, 2018). Monetary policy instruments in Indonesia include the BI Rate, Open Market Operations, and Bank Indonesia Certificates. Alongside the conventional system, Indonesia applies a dual monetary framework that integrates sharia-compliant instruments to accommodate Islamic banking operations (Ascarya, 2014). Sharia monetary policy, known as Operasi Moneter Syariah (OMS), seeks to achieve stability without violating Islamic principles, particularly the prohibition of riba (interest) and gharar (excessive uncertainty). These operations include instruments such as the Bank Indonesia Sharia Certificate (SBIS), the Minimum Reserve Requirement (GWM), and the Bank Indonesia Sharia Deposit Facility (FASBIS).

Previous studies, such as those by Bayuni and Srisusilawati (2018), Suripto (2022), and Dwihapsari et al. (2021), have examined the role of sharia monetary instruments in influencing inflation and economic growth. However, most prior works focus on pre-pandemic conditions and have not analyzed the comparative effectiveness of each Islamic monetary instrument under crisis conditions. The COVID-19 pandemic created unique economic distortions, particularly liquidity shocks and financial uncertainty, that may have altered the transmission of Islamic monetary policy (Mahmud et al., 2023). Therefore, it is essential to reassess the effectiveness of SBIS, FASBIS, and GWM during 2019–2021 to capture their role in stabilizing inflation amid turbulent macroeconomic conditions.

This study aims to analyze the impact of Sharia Open Market Operations, specifically SBIS, FASBIS, and GWM, on inflation in Indonesia during the 2019–2021 period, while also evaluating which of these instruments was most effective in maintaining price stability. The novelty of this study lies in its use of comparative effectiveness analysis during a crisis period, providing a comprehensive empirical assessment of Islamic monetary transmission. The results are expected to contribute theoretically to the literature on Islamic monetary operations and practically to policy formulation by Bank Indonesia to enhance the stability and efficiency of Sharia monetary policy.

LITERATURE REVIEW

Monetary Policy and Islamic Monetary Policy

Monetary policy is a policy that the government implements to control a country's finances and attain stability. The stability of the country's finances is critical to maintaining price stability, inflation, and output. Monetary policy not only maintains financial stability, but it also promotes economic growth and price stability (Widiastuti, 2021). To govern state finances, the Central Bank, as the monetary authority, has established a monetary policy that will be executed when economic development activities diverge (Yudistira, 2021).

The Central Bank as the monetary authority, seeks to promote economic growth and development. This is controlled by Law Number 3 of 2004, Article 7, which concerns Bank Indonesia. The article examines the Central Bank of Indonesia's policy for maintaining the rupiah's stability, which is an effort to keep the prices of goods and services stable, as indicated by the inflation rate. Bank Indonesia solely conducts measures that try to prevent excessive volatility in the rupiah exchange rate, without specifying a target level. Bank Indonesia has the authority to enact monetary policy on state finances while carrying out its functions. This policy will try to achieve previously established monetary targets, such as bank interest rates, which are set by the Central Bank based on economic conditions and policy objectives. All of this is done to attain a balanced inflation rate by government policies involving unique instruments (Yudistira, 2021). In 1998, there was a monetary crisis that devastated Indonesia's economy. To ensure economic stability, the government implements particular regulations that regulate and oversee money circulation. The sorts of monetary economy that can be utilized are as follows.

Monetary expansive policy

Expansionary policy is issued by the government to increase money circulation in the community. This policy is commonly referred to as an expansionary policy, which works by lowering bank interest rates, lowering minimum bank reserve requirements and purchasing government securities with the expected effect of increasing people's purchasing power as an effort to stimulate economic growth (Yudistira, 2021). In addition, studies in Indonesia indicate that monetary policy measures such as interest rate cuts and money supply expansion significantly affect economic growth and inflation through the monetary transmission mechanism (Sari and Aji, 2025).

Monetary contractive policy

Monetary policy can be classified into expansionary and contractionary approaches. A contractionary monetary policy is the opposite of an expansionary policy and is implemented by the government with the aim of reducing the circulation of money in the community. This approach, often referred to as the *tight money* policy, primarily seeks to lower the country's inflation rate. To achieve this, the government may take several measures, such as raising bank interest rates, selling government bonds or securities, and increasing bank reserve requirements to restrict money supply. Throughout its implementation, the government undertakes various actions to ensure that the policy operates effectively and meets its objectives (Yudistira, 2021). In the context of Sharia monetary policy, the government manages the

country's finances in accordance with Islamic principles. This includes adherence to the prohibition of usury (*riba*), gambling (*maysir*), excessive uncertainty (*gharar*), and other activities that contradict Islamic values (Chapra, 1985). Empirical evidence shows that a contractionary monetary policy initially led to unfavorable financial conditions during the first two quarters. However, these conditions were subsequently followed by nearly three quarters of favorable financial outcomes, demonstrating the policy's delayed but positive effects on financial stability (Juhro and Njindan, 2019).

Islamic monetary policy is founded on the fundamental principles of islamic economics, which are as follows (Karim, 2016):

a. Allah has the most absolute rights because He is the absolute owner.
b. Humans are earth's leaders (caliphs), not its owners.
c. Everything that mankind own and earn is with Allah's permission, so that less fortunate brothers can share in the riches of their more fortunate brothers.
d. Wealth should not be built up or hoarded.
e. Wealth must move and circulate.
f. Reducing the economic disparities between people can help to prevent collective conflict.
g. Statutory and voluntary obligations are established for all individuals, including the poorest members of society.

Sharia Monetary Instruments in Indonesia

Islamic monetary tools used in Indonesia function similarly to traditional banking systems. However, its rules are based on Islamic law. Here are some definitions of the Islamic monetary instruments used in Indonesia (Latumaerissa, 2017):

a. Bank Indonesia Sharia Certificate (SBIS)
   Bank Indonesia Sharia Certificate (SBIS) is a short-term sharia financial product denominated in rupiah. This security is issued by Bank Indonesia and follows sharia rules.
b. Bank Indonesia Sharia Deposit Facilities (FASBIS)
   Bank Indonesia's Sharia Deposit Facility (FASBIS) is a service offered to Islamic commercial banks, Islamic business units, and rupiah and foreign exchange money market brokers. This service allows them to deposit funds in Bank Indonesia using rupiah.
c. Reserve Requirement Ration (GWM)
   The minimum reserve requirement ratio (GWM) in Islamic banks is defined by Bank Indonesia laws and the Moral Appeal for Islamic Banking. This notion is comparable to what Bank Indonesia does in conventional banking.
d. Sharia Interbank Money Market (PUAS)
   PUAS (Islamic Interbank Money Market) is the activity of borrowing and lending monies among Islamic banks. This activity occurs when one bank has extra liquidity and loans it to another bank that requires liquidity. PUAS transactions might last anywhere from one business day (overnight) to a year.
e. Reverse Repo of Government Sharia Securities
   Reverse Repo of State Islamic Securities (RR-SBSN) or State Sukuk are government securities issued in accordance with sharia principles. These securities provide proof of ownership of a share of SBSN assets in rupiah money.

Sharia Compliant Inflation Control Instruments in Indonesia

Islamic economists argue that inflation harms the economy because it disrupts the functions of money, particularly its roles as a store of value, a medium for advance payment, and a unit of account. Inflation also reduces public motivation and positive attitudes toward saving, encourages excessive consumption especially of non-essential and luxury goods, and diverts investment to non-productive sectors such as the

accumulation of unproductive assets (Karim, 2007). According to Taqiuddin Ahmad ibn Al-Maqrizi (1364-1441 AD), inflation is categorized into two groups: Natural inflation is a sort of inflation caused by natural events beyond human control, such as natural disasters. When a natural disaster strikes, agricultural products and food ingredients become scarce owing to crop failure, resulting in a reduction in existing supply. As a result, prices skyrocketed, resulting in price increases for a variety of other goods and services. In addition to natural factors, Al Maqrizi stated that inflation could develop owing to human error. This inflation is caused by three factors, either separately or jointly. Corruption and ineffective governance, high tax burdens, and increasing currency circulation are the three factors (Marakbi and Villieu, 2020)

Bank Indonesia has implemented the Inflation Targeting Framework (ITF) as the main strategy for its monetary policy since July 2005, replacing the previous monetary targeting framework that focused on base money (Warjiyo & Juhro, 2019). The adoption of this framework represents a shift toward a more transparent and forward-looking policy regime that aims to achieve and maintain price stability through inflation control. Within this framework, Indonesia applies two types of monetary policies: expansionary and contractionary, depending on macroeconomic conditions (Juhro and Njindan, 2019). When inflationary pressures rise, contractionary policies are implemented through Open Market Operations (OMO), such as selling Bank Indonesia Certificates (SBI) and Bank Indonesia Sharia Certificates (SBIS), as part of its Sharia Monetary Operation, to absorb excess liquidity (Bayuni & Srisusilawati, 2018). Conversely, when the economy slows and society faces economic hardship, Bank Indonesia applies expansionary policies by repurchasing SBI and SBIS circulating in the market, thereby increasing the money supply and stimulating economic growth (Latumaerissa, 2017). Through this counter-cyclical mechanism, Bank Indonesia seeks to maintain macroeconomic stability, support sustainable growth, and align monetary policy with the objectives set forth under Law No. 4 of 2023 concerning the Development and Strengthening of the Financial Sector (P2SK Law).

Theoretical Framework

This study looks at how much Sharia Monetary Operations (OMS) affects Indonesian inflation between 2019 and 2021. Based on the theoretical background and prior research on the link between independent variables and dependent variables to be researched, the theoretical framework can be stated as follows:

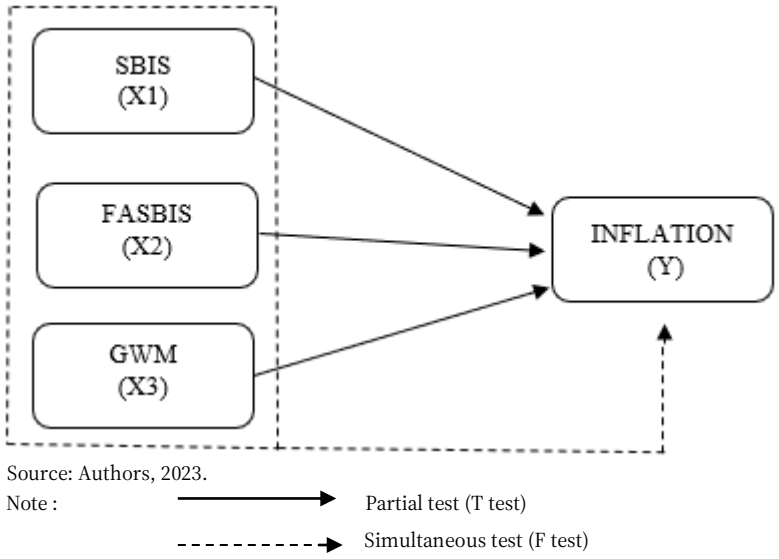

Figure 1 Theoritical framework in the research on Analysis the Effect of Sharia Monetary Operations (OMS) on Inflation in Indonesia for the 2019-2021 Period

Hypothesis

The effect of SBIS on inflation

Bank Indonesia Sharia Certificates (SBIS) are short-term securities issued by Bank Indonesia as part of the Sharia Open Market Operations to manage liquidity in Islamic financial institutions (Soemitra, 2017). An increase in SBIS issuance or return rate leads Islamic banks to place more funds in SBIS, reducing the amount of money circulating in the economy. As a result, liquidity contraction occurs, which can help reduce inflationary pressures. This mechanism aligns with the Islamic monetary transmission channel, where liquidity absorption by the central bank contributes to maintaining price stability (Ascarya, 2014; Warjiyo and Juhro, 2019).

Previous empirical studies have shown that SBIS significantly affects inflation in Indonesia. Bayuni and Srisusilawati (2018) found that SBIS influences inflation, although the magnitude of its explanatory power is relatively small. Theoretically, SBIS serves as a contractionary instrument; thus, an increase in SBIS volume is expected to reduce inflation through decreased liquidity in Islamic financial markets. Based on theory and previous research, the hypothesis is formulated as follows:

H1: SBIS has a significant and negative effect on inflation in Indonesia.

The effect of FASBIS on inflation

The Bank Indonesia Sharia Deposit Facility (FASBIS) is a liquidity management tool that allows Islamic banks to deposit excess funds at Bank Indonesia under profit-sharing arrangements. When the FASBIS rate increases, Islamic banks are encouraged to place more excess liquidity at the central bank, which reduces the amount of financing extended to the public. This leads to a decrease in money supply and consequently helps lower inflation (Widiastuti, 2021; Warjiyo and Juhro, 2019).

Empirical findings from Bayuni and Srisusilawati (2018) indicate that the relationship between FASBIS and inflation is weak and statistically insignificant. However, from a theoretical perspective, FASBIS plays a stabilizing role in absorbing excess liquidity within the Islamic banking sector. Thus, higher FASBIS placements are expected to suppress inflationary pressures. Based on theory and prior studies, the hypothesis is stated as follows:

H2: FASBIS has a significant and negative effect on inflation in Indonesia.

The effect of GWM on inflation

The Minimum Statutory Reserves (GWM) represent the portion of deposits that Islamic banks must hold at Bank Indonesia, serving as a key monetary control mechanism. An increase in GWM requirements restricts banks' ability to extend financing, thereby reducing money supply and dampening inflationary pressures. Conversely, lowering GWM increases liquidity, which can stimulate spending and potentially raise inflation (Karim, 2007; Warjiyo and Juhro, 2019).

According to Bayuni and Srisusilawati (2018), GWM has a measurable impact on inflation, although the strength of this relationship is relatively modest. From a theoretical standpoint, GWM operates as a contractionary instrument; hence, higher reserve requirements are expected to reduce inflation through a decline in circulating money. Based on the above explanation, the hypothesis is formulated as follows:

H3: GWM has a significant and negative effect on inflation in Indonesia.

METHOD

This research applies a mixed-method approach that combines quantitative and qualitative analysis. The quantitative approach is based on the positivistic paradigm, emphasizing measurement of variables using numerical data and statistical tests to produce objective conclusions (Sugiyono, 2018). Quantitative methods

are suitable for studies involving measurable phenomena, clearly defined variables, and hypothesis testing (Ghozali and Ratmono, 2017). Meanwhile, the qualitative component is used in the form of comparative effectiveness analysis, which aims to interpret and compare the relative impact of each Sharia monetary instrument (SBIS, FASBIS, and GWM) on inflation. This combination allows the research to generate not only statistical evidence but also contextual interpretation related to the performance of Sharia monetary policy during the study period.

This research uses secondary data obtained from official publications of Bank Indonesia (BI) and the Financial Services Authority (OJK). Secondary data refer to information collected indirectly through official reports and documents (Sugiyono, 2018). The dataset consists of monthly time-series data from January 2019 to December 2021, covering the period of Indonesia's economic fluctuation due to the COVID-19 pandemic. The variables used in this study include SBIS, FASBIS, GWM, and Indonesia's inflation rate, all expressed in percentage or nominal rupiah values according to official reports.

The study involves one dependent variable and three independent variables. The dependent variable is inflation (Y), while the independent variables are the Bank Indonesia Sharia Certificate (SBIS) as X_1, the Bank Indonesia Sharia Deposit Facility (FASBIS) as X_2, and the Minimum Statutory Reserve Requirement (GWM) as X_3. The quantitative analysis employs multiple linear regression to determine the magnitude and direction of the effect of SBIS, FASBIS, and GWM on inflation. Before performing regression, classical assumption tests consisting of normality, multicollinearity, autocorrelation, and heteroscedasticity are carried out to ensure the validity of the regression model (Gujarati, 2004; Ghozali and Ratmono, 2017). Data analysis is conducted using EViews 10 software, which supports statistical estimation and diagnostic testing for time-series data.

The regression model follows Sugiyono (2018) and is formulated as:

$$Y = \alpha + \beta 1\ X1 + \beta 2\ X2 + \beta 3\ X3 + e \quad (1)$$

Description:

Y	=	Value of the dependent variable (inflation)
X1	=	Value of independent variable 1 (SBIS)
X2	=	Value of independent variable 2 (FASBIS)
X3	=	Value of independent variable 3 (GWM)
a	=	Constant
β1	=	Slope or regression coefficient 1
β2	=	Slope or regression coefficient 2
β3	=	Slope or regression coefficient 3
e	=	Error

RESULTS AND DISCUSSION

Classical Assumption Test

Normality test

Table 1 Normality test result in the research on Analysis the Effect of Sharia Monetary Operations (OMS) on Inflation in Indonesia for the 2019-2021 Period

Jarque-Bera	1.031
Probability	0.596

Source: Research finding by authors, 2023 (processed data).

The normality test determines if the variables analyzed are normal and the data is regularly distributed (Gujarati, 2004). Based on the Jarque–Bera normality test, the probability value is 0.596, which is higher than the significance level of 0.05. This result indicates that the residuals follow a normal distribution, confirming that the regression model meets the normality assumption and is appropriate for further analysis.

Autocorrelation test

Table 2 Autocorrelation test result in the research on Analysis the Effect of Sharia Monetary Operations (OMS) on Inflation in Indonesia for the 2019-2021 Period

F-statistic	0.975408	Prob. F(2,29)	0.3891
Obs*R-squared	2.206034	Prob. Chi-Square(2)	0.3319

Source: Research finding by authors, 2023 (processed data).

The autocorrelation test is used to detect whether the residuals in one period are correlated with those in another period (Gujarati, 2004). Table 2 shows a Chi-square probability value of 0.3319, which is higher than the 5% significance level. This indicates that the residuals are not significantly correlated over time. Therefore, the research model is free from autocorrelation problems.

Heteroskedasticity test

Table 3 Heteroskedasticity test (Breusch-Pagan-Godfrey) result in the research on Analysis the Effect of Sharia Monetary Operations (OMS) on Inflation in Indonesia for the 2019-2021 Period

F-statistic	0.446532	Prob. F(3,31)	0.7215
Obs*R-squared	1.449799	Prob. Chi-Square(3)	0.6939
Scaled explained SS	1.179995	Prob. Chi-Square(3)	0.7578

Source: Research finding by authors, 2023 (processed data).

Heteroscedasticity indicates that there are multiple variations of variables in the regression model. If the reverse occurs, the variant of the variables in the regression model has the same value, this is called homoscedasticity (Gujarati, 2004). The heteroscedasticity test yields an Obs*R-squared probability value of 0.6939, which is greater than α (0.05), indicating that there is no heteroscedasticity. This suggests that the error variance in this data is equal, a condition known as homoscedasticity.

Multicolinearity test

Table 4 Multicollinearity test result in the research on Analysis the Effect of Sharia Monetary Operations (OMS) on Inflation in Indonesia for the 2019-2021 Period

Variable	CoefficientVariance	Centered VIF
SBIS	0.004965	6.345759
FASBIS	0.002604	1.142941
GWM	0.015254	6.692847

Source: Research finding by authors, 2023 (processed data).

Multicollinearity refers to a linear relationship between independent variables. The multicollinearity test determines whether the regression model has a strong or perfect correlation between independent variables (Gujarati, 2004). The multicollinearity test is performed by examining the Variance Inflation Factor (VIF) value. The regression model avoids multicollinearity as all independent variables have VIF values less than 10, indicating a lack of strong correlation between SBIS, FASBIS, and GWM variables in the data.

Simultaneous Test (F Test)

The F test is used to assess the simultaneous effect of independent variables on the dependent variable. The F test determines whether the overall model is viable. The F test results can be seen in the Table 5.

Table 5 F test result in the research on Analysis the Effect of Sharia Monetary Operations (OMS) on Inflation in Indonesia for the 2019-2021 Period

R-squared	0.797003	Mean dependent var	2.233429
Adjusted R-squared	0.777359	S.D. dependent var	0.741259
S.E. of regression	0.349762	Akaike info criterion	0.844084
Sum squared resid	3.792340	Schwarz criterion	1.021838
Log likelihood	-10.77147	Hannan-Quinn criter.	0.905444
F-statistic	40.57063	Durbin-Watson stat	2.367138
Prob(F-statistic)	0.000000		

Source: Research finding by authors, 2023 (processed data).

The F table formula employs the Excel equation = FINV(p, DF1, DF2), where:

a. P value/sig value: probability (e.g., 0.05). Probability is the error value determined by researchers based on statistical computations.
b. DF1: first degree of freedom, or the number of independent variables (k) = 3.
c. DF2: second degree of freedom, or number of samples minus number of independent variables minus one (n-k-1) = 1 (36-3-1) = 32.

Thus, the following excel formula can be obtained: =FINV (0.05;3;32). Then the F table value is 2.901. The calculated F value obtained from the analysis results via Eviews is 40.57063. The calculated F value (40.57063) > F table (2.901). Furthermore, the research results show a p-value of 0.00, which is lower than the probability value of 0.05. This suggests that the regression model can be employed in this study, as the SBIS, FASBIS, and GWM variables have a significant impact on inflation.

Partial Test (T Test)

The t-test is used to assess the partial influence of independent variables on the dependent variable. The t-test results are presented in Table 6.

Table 6 T test result in the research on Analysis the Effect of Sharia Monetary Operations (OMS) on Inflation in Indonesia for the 2019-2021 Period

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.338741	0.201010	6.660086	0.0000
SBIS	-0.024832	0.070461	-0.352424	0.7269
FASBIS	-0.237639	0.051030	-4.656887	0.0001
GWM	0.581881	0.123507	4.711326	0.0000

Source: Research finding by authors, 2023 (processed data).

The regression equation model is as follows:

$$\text{Inflation} = 1.338741 - 0.024832X1 - 0.237639X2 + 0.581881X3 + e \quad (2)$$

Hypothesis 1

Hypothesis 1 stated that SBIS has a significant and negative effect on inflation. The test results show that SBIS has a t-statistic of -0.352424 and a p-value of 0.7269. The criteria for significance are a p-value < 0.05 and |t-statistic| > t-table. Since the p-value is greater than 0.05 and the absolute value of the t-statistic (0.352424) is less than the critical t-value (2.0369), SBIS does not have a significant effect on inflation. Thus, hypothesis 1 is rejected.

Hypothesis 2

Hypothesis 2 proposed that FASBIS has a significant and negative effect on inflation. The t-statistic is -4.656887 and the p-value is 0.0001. Both criteria for significance are met: the p-value < 0.05 and |t-statistic| >

t-table. The coefficient of FASBIS is -0.237639, indicating that a one-unit increase in FASBIS reduces inflation by 0.237639 units, assuming other variables remain constant. Thus, hypothesis 2 is accepted.

Hypothesis 3

Hypothesis 3 stated that GWM has a significant and negative effect on inflation. The t-statistic is 4.711326 with a p-value of 0.0000. Both criteria are satisfied (p-value < 0.05 and |t-statistic| > t-table), showing a significant positive impact. The coefficient of GWM is 0.581881, meaning that a one-unit increase in GWM raises inflation by 0.581881 units, assuming other factors remain constant. Thus, hypothesis 3 is rejected.

Coefficient of Determination

Table 7 Coefficient of determination result in the research on Analysis the Effect of Sharia Monetary Operations (OMS) on Inflation in Indonesia for the 2019-2021 Period

R-squared	0.797003	Mean dependent var	2.233429
Adjusted R-squared	0.777359	S.D. dependent var	0.741259
S.E. of regression	0.349762	Akaike info criterion	0.844084

Source: Research finding by authors, 2023 (processed data).

Table 7 presents the results of the coefficient of determination in the study analyzing the effect of Sharia Monetary Operations (OMS) on inflation in Indonesia during the 2019–2021 period. The R-squared value of 0.797 indicates that approximately 79.7% of the variation in inflation can be explained by the independent variables included in the model, namely FASBIS and GWM. The remaining 20.3% of the variation is influenced by other factors not included in the model. The adjusted R-squared of 0.777359 accounts for the number of predictors in the model and provides a more accurate measure of the explanatory power. The S.E. of regression (0.349762) is smaller than the S.D. of the dependent variable (0.741259), indicating a good model fit and reliable prediction of inflation. Overall, the results suggest that the model is capable of explaining a substantial portion of inflation variability, confirming the influence of FASBIS and GWM on inflation during the study period.

The effect of Sharia Monetary Operations on inflation

The effect of SBIS on inflation

The partial test results show that SBIS has no significant effect on inflation. This finding is consistent with Suripto (2022), who also found that SBIS does not have a substantial effect on inflation in Indonesia at a 5% significance level. The limited impact of SBIS is likely due to the relatively small role of sharia-compliant monetary instruments compared to conventional instruments, which are used more widely in the banking sector (Raseuky, 2019). Therefore, to increase the effectiveness of SBIS in influencing inflation, the sharia banking and financial sector needs to expand its market share. Greater participation in sharia-compliant finance is expected to have a more meaningful and long-term effect on controlling inflation in Indonesia (Bayuni and Srisusilawati, 2018).

The effect of FASBIS on inflation

The test results indicate that FASBIS has a significant and negative effect on inflation. This is because FASBIS is one of the Islamic monetary instruments that serves as a short-term liquidity management tool. When Islamic banks have extra liquidity, they can put it into FASBIS. This occurs because FASBIS is a sharia-based monetary instrument used for short-term liquidity management. When Islamic banks have excess liquidity, they can invest it in FASBIS, reducing the money supply in circulation and helping to control inflation. FASBIS also contributes to the stability of the Islamic interbank money market by providing a secure avenue for cash placement, limiting volatility in rates and yields, and thereby supporting

price stability. This finding is consistent with Jannah (2020), who found that monetary operations, including sharia-based instruments have a significant effect on inflation in Indonesia. Monetary policy is a government endeavor to maintain, increase, or decrease the amount of money in circulation in order to promote economic growth and combat inflation (Naf'an, 2014; Sudarsono, 2017; Wibowo and Mubarok, 2017). Similarly, Mahmud et al. (2023) found that FASBIS is effective in mitigating inflationary pressures through a stable and Sharia-compliant monetary transmission mechanism. Supporting this, Dwihapsari et al. (2021) emphasized that the effectiveness of Islamic monetary policy instruments in curbing inflation has improved over time, aligning with the broader objectives of Indonesia's dual monetary system. Thus, FASBIS plays a crucial role as an Islamic monetary policy instrument in maintaining price stability and supporting sustainable economic growth.

The effect of reserve requirement ratio on inflation

The test results show that GWM has a significant and positive effect on inflation. This finding is consistent with Bayuni and Srisusilawati (2018), who also found a significant positive relationship between GWM and inflation in Indonesia. Although the initial hypothesis expected a negative effect, the positive result can be attributed to the economic conditions during 2019–2021, particularly the COVID-19 pandemic. The pandemic led to higher price levels and economic disruptions, which limited the effectiveness of GWM in controlling inflation (Yamali and Putri, 2020). This suggests that the transmission of Islamic monetary policy through liquidity instruments, such as GWM, remains constrained under extraordinary economic conditions, supporting Imaduddin's (2019) observation that the financing channel of Islamic monetary policy has a relatively weak influence on economic performance. Overall, while GWM is designed to regulate money supply and control inflation, the results indicate that during periods of economic shock, its impact may be positive rather than negative, highlighting the importance of context in evaluating monetary policy effectiveness.

Comparative Effectiveness Analysis

According to a comparative effectiveness analysis, FASBIS is more effective in controlling inflation than SBIS and GWM from 2019 to 2021. FASBIS' higher effectiveness can be attributed to its flexibility as a short-term instrument, which enables Islamic banks to adapt swiftly to changes in liquidity conditions. Furthermore, because FASBIS are used more frequently than other instruments, they have a more consistent impact on the liquidity of the Islamic banking system. The more direct transmission mechanism of FASBIS, which reduces Islamic banks' funding capability, contributes to its effectiveness in controlling inflationary pressures. This finding is consistent with Ascarya (2014), which emphasizes the importance of short-term liquidity management instruments in the transmission of Islamic monetary policy, and supports argument from Bank Indonesia (2020) about the critical role of FASBIS in the framework of Islamic monetary operations. Furthermore, this conclusion is strengthened by recent empirical findings from Winarto and Beik (2024), who demonstrated that FASBIS has a significant short-term effect on inflation, based on a VECM analysis of monthly data from 2017 to 2022. Supporting evidence is also provided Hardi (2024), who affirm that Islamic monetary instruments, including FASBIS, play a vital role in the transmission of monetary policy and inflation control in Indonesia.

CONCLUSION

The study finds that Bank Indonesia Sharia Certificates (SBIS) had no significant effect on inflation in Indonesia during 2019–2021. In contrast, Bank Indonesia Sharia Deposit Facilities (FASBIS) has a significant negative effect on inflation, demonstrating its effectiveness as a short-term liquidity management tool in stabilizing prices. Meanwhile, Minimum Reserve Requirements (GWM) has a significant positive effect on inflation, contrary to the initial hypothesis, likely due to the COVID-19 pandemic, which caused economic disruptions and limited the instrument's effectiveness in controlling price levels. These findings suggest

that Islamic banks need to optimize the use of FASBIS to enhance liquidity management and support inflation control. Furthermore, the positive relationship between GWM and inflation implies that policymakers should consider economic conditions when implementing reserve requirements. For future research, evaluating the long-term impact of all sharia-based monetary instruments, as well as their effects on profitability, liquidity, and operational efficiency, could provide deeper insights into the effectiveness of Islamic monetary policy in Indonesia.

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