Is There a Relationship Between Islamic Banking Liquidity and Inflation? Empirical Evidence from Indonesia

Nisrina Jazmiyanti[1], Eko Fajar Cahyono[2], Salina H. Kassim[3]

[1,2] Department of Islamic Economics, Faculty of Economics and Business, Airlangga University, Indonesia
[3] Institute of Islamic Banking and Finance, International Islamic University of Malaysia, Malaysia

This study aims to determine if there is a relationship between the Islamic bank liquidity and inflation in the context of Indonesia. In achieving this objective, the effects of Bank Indonesia Certificates Sharia (SBIS), Bank Indonesia Islamic Deposit Facility (FASBIS), Inflation on Sharia Banking Liquidity for the period of 2011-2019 are analysed. The research method is quantitative approach and analyzed using multiple linear regression analysis. The data used in this study are secondary data obtained from official data from Bank Indonesia and the Financial Services Authority (OJK).The results showed that the Bank Indonesia Certificates Sharia (SBIS) had a significant negative effect on Islamic banking liquidity; the Bank Indonesia Islamic Deposit Facility (FASBIS) had no influence on Islamic banking liquidity; and inflation had a significant positive effect on Islamic banking liquidity. For monetary authority, this research can be used as an evaluation material for programs that are carried out specifically in the FASBIS instrument so that in the future FASBIS has an influence on Islamic banking liquidity and also while maintaining monetary instrument stability.

Keywords: SBIS; FASBIS; Inflation; Liquidity; Islamic bank

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*Correspondence:
Eko Fajar Cahyono
ekofajarc@feb.unair.ac.id

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INTRODUCTION

One of the causes of economic instability or economic shocks is none other than the result of the community using money as a commodity in order to get more profits, without undertaking the efforts of involving in real economic activities. As the expansion of money is not commensurated with the expansion in economic output, this results in "too much money chasing few goods", or better known as inflation.

In Indonesia, during the 1997/1998 Asian financial crisis which devastated the banking sector in the country, Bank Muamalat is one of the banks that survived the monetary crisis. Bank Muamalat survived because of its varied products, such as *Murabahah* financing products that were not affected by Bank Indonesia (BI) rate fluctuations, so that the real sector that used this financing also survived the adverse effects of the increase in the BI rate.

In order to provide security for customers, Islamic banks must be liquid or be able to meet their short-term obligations, namely having fresh funds or cash to serve customers in cash withdrawals and also fulfill and realize the submission of financing applications. The liquidity of a bank is influenced by the country's monetary policy. Monetary policy is carried out, among others, to prevent hyperinflation by Islamic banking putting funds into monetary instruments to avoid excess liquidity. Since the issuance of Law number 23 of 1999 concerning Bank Indonesia, BI has been given new responsibilities as a dual monetary authority, namely carrying out conventional monetary policy and Islamic monetary policy (Zein, 2015).

Bank Indonesia Certificates Sharia (SBIS) or formerly known as SWBI (Bank Indonesia Wadiah Certificate) is a certificate issued by Bank Indonesia as proof of short-term fund deposit with the *wadiah* principle. The SBIS is a monetary instrument in accordance with sharia principles created in the context of implementing monetary control. Bank Indonesia as the Central Bank may issue monetary instruments based on sharia principles called SBIS (Bank Indonesia Certificates Sharia) and can be utilized by Islamic banks to overcome excess liquidity (Arifin, 2009: 198).

FASBIS is a deposit facility provided by BI to banks to place their funds in BI within the framework of Sharia standing facilities. Sharia Standing Facilities are facilities provided by BI to Banks in the context of Sharia Monetary Operations in the context of monetary control through open market operations and the provision of standing facilities based on sharia principles.

THEORETICAL BASIS & THE HYPOTHESES DEVELOPMENT

Islamic Banking Liquidity

Bank liquidity is the ability of banks to meet their obligations, especially short-term funding obligations. In terms of assets, liquidity is the ability to convert all assets into cash. While from a liability perspective, liquidity is the ability of banks to meet funding needs through an increase in the liability portfolio. The ability of liquidity of assets depends on two main factors, namely the liquid power content of the asset itself (self-contained liquidity) and the selling power of the asset. Specifically, liquidity is the ability of banks to provide tools to repay deposits that are due and provide loans to people in need.

Liquidity is the ability of a company to meet all liabilities that are less than one year old, the company usually uses liquid assets. So the company can be said to be liquid if the current assets owned are greater than current liabilities. Therefore, any bank will have a liquidity problem because the majority of liabilities that must be paid are less than one year (Imam Wahyudi et al., 2013: 211).

Quoted from a journal written by Ichsan (2013) that there are liquidity instruments that can be carried out by Islamic banks in order to meet their liquidity obligations through Islamic interbank money markets, namely Bank Indonesia Certificates Sharia (SBIS), Sharia Interbank Deposits, Interbank Mudharabah Investment Certificates (SIMA), Bank Indonesia Islamic Deposit Facility (FASBIS), Sharia Short Term Financing Facility (FPJPS), Intraday Liquidity Facility for Commercial Banks based on Sharia Principles (FLIS).

Liquidity is one of the determinants of the health of Islamic banking in paying off the funds of depositors who want to withdraw credit given using the FDR (Financing to Deposit Ratio) ratio. Financing to Deposit Ratio (FDR) is a ratio used to measure the liquidity of a bank in meeting the withdrawal of funds made by customers by relying on financing provided as a source of liquidity, by dividing the amount of financing provided by banks against Third Party Funds (DPK).

Bank Indonesia Certificates Sharia (SBIS)

Sertifikat Bank Indonesia Syariah or Bank Indonesia Certificates Sharia is a certificate issued by Bank Indonesia as proof of short-term fund deposit based on the wadiah principle. SBIS is a monetary instrument in accordance with sharia principles created in the context of monetary control. SBIS can be utilized by Islamic banks to overcome excess liquidity (Arifin, 2009: 198).

SBIS is a liquidity stabilizer instrument in the Islamic Banking Industry. In addition, SBIS is also expected to help maintain the value of the rupiah and maintain macroeconomic stability. In selling SBIS, Bank Indonesia seeks to absorb excess base money in circulation by controlling liquidity. (Razali, 2011) This SBIS monetary instrument was issued to replace the previous Islamic monetary instrument, the Bank Indonesia Wadiah Certificate (SWBI). The rules regarding SWBI and SBIS are explained by DSN MUI number 36 in 2002 and DSN MUI number 64. The basic difference is found in the contract used, the SWBI is used for the *wadi'ah* contract while in SBIS the *ju'alah* contract is used. In the SWBI instrument with a wadi'ah contract, Bank Indonesia does not stipulate a definite reward for the placement of the SWBI, but Bank Indonesia only provides voluntary rewards.

In Bank Indonesia Regulation article 7 paragraph (1) SBIS is issued through an auction mechanism. The parties entitled to participate in the auction are Sharia Commercial Banks (BUS) and Sharia Business Units (UUS). However, BUS or UUS can take SBIS auction if they meet the Financing to Deposit Ratio (FDR) requirements. BUS and UUS that can take part in SBIS auctions (FDR> 80% and are not being subject to sanctions of temporary termination for participating in SBIS auctions).

Bank Indonesia Islamic Deposit Facility (FASBIS)

Standing Facilities are activities providing rupiah funds (lending facilities) from Bank Indonesia to Banks and placement of rupiah funds (deposit facilities) by Banks at Bank Indonesia in the context of Monetary Operations. Standing facilities consist of 2 types, namely:

1. Provision of rupiah funds from Bank Indonesia to Banks (lending facility), which is a facility for banks experiencing liquidity problems by doing repo (repurchase agreement) their SBIs, SBIS, SDBI and SBN to Bank Indonesia
2. Placement of rupiah funds by a Bank at Bank Indonesia (deposit facility), which is a facility for banks that have excess liquidity by placing their funds in Bank Indonesia. The existence of FASBI and FASBIS

Based on Bank Indonesia Regulation Number 16/12 / PBI / 2014 concerning Sharia Monetary Operations, *Fasilitas Simpanan Bank Indonesia Syariah* or Bank Indonesia Islamic Deposit Facility, hereinafter referred to as FASBIS, is a deposit facility provided by Bank Indonesia to Banks to place funds in Bank Indonesia in the context of Sharia Standing Facilities. In the regulation, it is stated that FASBIS uses a wadiah contract (deposit), giving compensation when the FASBIS is due.

Inflation

According to Boediono (1999) inflation is the tendency of prices to rise overall and continuously. An increase in the price of just one or two items is not called inflation, except if the increase is widespread or results in an increase in the majority of the prices of other items, namely the price of food, the price of processed food, beverages, cigarettes, and tobacco, clothing prices, health cost, education cost, recreation and sports, the cost of transportation, communication, and financial services. From this definition, there are three components that must be fulfilled so that inflation can be said, namely:

a. Price increases, i.e. if the price of a commodity becomes higher than the price of the previous period
b. General nature, namely an increase in commodity prices generally consumed by the public is not an increase in a commodity that does not cause prices to rise in general
c. Continues continuously, general price increases also will not bring up inflation, if it occurs for a moment such as price increases during Ied Mubarak or the new year is not inflation

The opposite of inflation is deflation. Deflation is a condition where the amount of goods in circulation exceeds the amount of money in circulation so that the price of goods decreases, and the value of money increases.

METHODOLOGY

The approach in this research is a quantitative approach. This research uses multiple linear regression analysis method using SPSS 21.0 application. The variables used are Bank Indonesia Certificates Sharia (SBIS), Bank Indonesia Islamic Deposit Facility (FASBIS) and Inflation. While the variable used to measure Islamic bank liquidity is FDR (Financing Deposit Ratio).

The description of the variables that will be discussed by the author so that it can be formulated that the empirical model used by the author in this study is as follows:

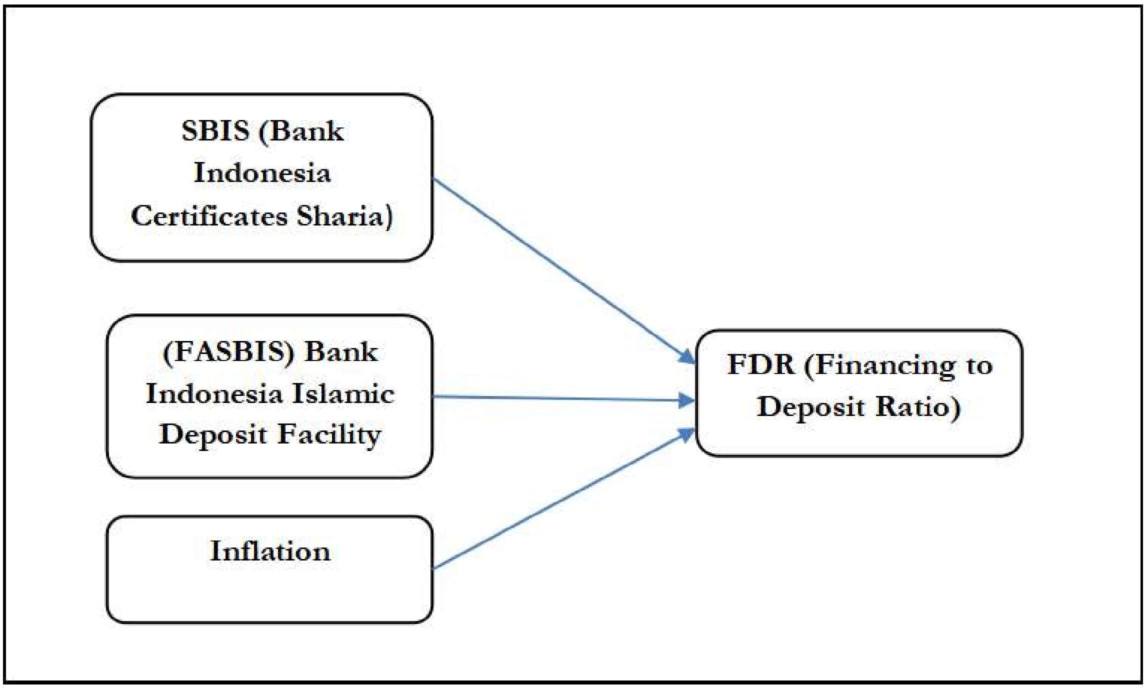

Figure 1. Model of Analysis

To answer the research objectives, namely the influence of SBIS, FASBIS and inflation on Islamic Banking Liquidity. In this study the population is Islamic Banking and the sample is the entire Islamic banking in Indonesia. The data obtained in this study are secondary data from other available sources. Data sources used in this study were obtained from several sources, namely Islamic Banking Statistics published by the Financial Services Authority, Inflation Report (Consumer Price Index) and Payment System Statistics published by Bank Indonesia.

Analysis technique used in this study is the method of multiple linear regression. Hypotheses can be formulated in this study as follows:

Hypotheses of Partial

H_0: Allegedly there is no partial effect of Bank Indonesia Certificates Sharia(SBIS), Bank Indonesia Islamic Deposit Facilities (FASBIS) and Inflation and Inflation partially affecting the Islamic Banking Liquidity in Indonesia.

$H_{a:}$ Allegedly there is a partial influence from Bank Indonesia Certificates Sharia (SBIS), Bank Indonesia Islamic Deposit Facilities (FASBIS) and Inflation and Inflation partially affecting the Islamic Banking Liquidity in Indonesia.

Hypotheses of Simultaneous

H_0: Allegedly there is no simultaneous influence of the Bank Indonesia Certificates Sharia (SBIS), the Bank Indonesia Islamic Deposit Facility (FASBIS) and Inflation simultaneously affecting the Islamic Banking Liquidity in Indonesia.

H_a: Allegedly there is a simultaneous influence of the Bank Indonesia Syariah Certificate (SBIS), the Bank Indonesia Islamic Deposit Facility (FASBIS) and Inflation simultaneously affecting the Islamic Banking Liquidity in Indonesia.

RESULT AND DISCUSSION

Descriptive Analysis

This section explains the results of research on the effect of SBIS, FASBIS and Inflation variables on Islamic banking liquidity from January 2011 to August 2019. Data is obtained from Islamic Banking Statistics published by the Financial Services Authority, Inflation Report (Consumer Price Index) and Payment System Statistics issued by Bank Indonesia.

Development of Bank Indonesia Syariah Certificate (SBIS)

Obtained from SBIS data from January 2011 to August 2019, it showed that the movement of SBIS transaction volume that moved fluctuatively with the lowest point occurred in August 2012 amounting to Rp 2,918 Billion and the highest point in March 2019 amounting to Rp 14,694 Billion. However, after that it began to decline until May 2019. It is known from the figure above that from January 2011 to November 2013 is where the level of SBIS is still relatively low because SBIS has just transitioned from SWBI. But then from December 2013 to October 2016 began to see an increase in the number of SBIS. Beginning in 2017 until August 2019 the number of SBIS fluctuated has increased and decreased dramatically as much as four times during the period of about 2 years.

Development of Bank Indonesia Islamic Deposit Facility (FASBIS)

The FASBIS data from January 2011 to August 2019 shows the development of the FASBIS level in Indonesia from January 2011 to August 2019. During this study, the lowest FASBIS level occurred in February 2011 amounting to RP 3,951 Billion among other years. Meanwhile, the highest inflation rate was in December 2018 amounting to Rp 32,591 Billion. The FASBIS curve moves up despite fluctuations from month to month. Can be seen from January 2011 to December 2013 there was a drastic increase and decrease and the amount of FASBIS funds of Rp 3,951 Billion to Rp 17,403 Billion. Then, at the beginning of 2014 until the end of 2016, the range of FASBIS funds was Rp. 10.390 billion to Rp. 22,928 billion. In early 2017 to August 2019 the amount of FASBIS funds increased from Rp 11,049 billion to Rp 32,591 billion.

Development of Inflation

Obtained from inflation data from January 2011 to August 2019 shows the development of inflation in Indonesia in the period January 2011 to August 2019. During this study, the lowest inflation rate occurred in March 2019 of 2.48%, inflation in 2018-2019 was fairly low among other years. Meanwhile, the highest inflation rate was in August 2013 which was 8.79%. From early January 2011 to December 2013 Inflation showed a decline, then increased in August 2013 by 8.79%. In early 2014 until the end of 2016 the inflation curve fluctuated where it experienced a drastic increase and decrease but in October 2015 there was even a drastic decline of the magnitude of 6.25%, then the following month to 4.89% and starting at the low point of inflation until August 2019.

Multiple Linear Regression Analysis

Table 1. Result of Multiple Linear Regression

Model	Coefficient	T-statistic	Sig.	Description
SBIS	-0.145	-8.827	0.000	Significant
FASBIS	0.002	0.169	0.866	Not Significant
Inflation	0.106	7.578	0.000	Significant
F-test 153,161 (Significance level 0,000)				

Source: SPSS 21.0 data processed

The following are the results of the regression coefficient values:

1. The SBIS variable has a regression coefficient of -0.145. That is, SBIS negatively affects the liquidity of Islamic banking. If SBIS increases by one unit, then the Islamic banking liquidity variable will decrease by 0.145 billion rupiah, and vice versa.
2. The FASBIS variable has a regression coefficient of 0.002. However, FASBIS has a significance value of 0.866 so that FASBIS has no influence with Islamic banking liquidity.
3. Inflation variable has a regression coefficient of 0.106 meaning Inflation has a positive effect on Islamic banking financing. If inflation rises by one unit, then Islamic banking liquidity will increase by 0.106 percent and vice versa.

The F value of this study is 153,161 with a significance level of 0,000. Because, the significance value is smaller than 0.05, it can be concluded that all independent variables, namely SBIS, FASBIS, and Inflation have a significant positive effect on the dependent variable, namely Islamic banking liquidity.

T test (Partial)

Table 2. Result of t test

Variable	T-statistic	Sig.
SBIS	-8.827	0.000
FASBIS	0.169	0.866
Inflation	7.578	0.000

Source: SPSS 21.0 data processed

1. The value of t value on the SBIS variable is -8.827 with a significance level of 0.000. The significance value is smaller than 0.05, it can be concluded that the SBIS variable has a significant negative effect on the Islamic banking liquidity variable.
2. The value of t value in the FASBIS variable is 0.169 with a significance level of 0.866. The significance value is greater than 0.05, it can be concluded that the FASBIS variable does not significantly influence the Islamic banking liquidity variable.
3. The t value for the Inflation variable is 7.578 with a significance level of 0.000. The significance value is smaller than 0.05, it can be concluded that the Inflation variable has a significant positive effect on the Islamic banking liquidity variable.

Coefficient of Determination R^2

The R2 value of 0.816 shows that SBIS, FASBIS and Inflation can explain the variation in Islamic banking liquidity of 0.816 or 81.6%, while the rest of 0.184 or 18.4% is explained by other variables outside the independent variables used in this study.

Table 3. Result Coefficient of Determination

Model	R	R Square	R^2
	0.906	0.821	0.816

Source: SPSS 21.0 data processed

The influence of SBIS on Islamic Bank Liquidity

Based on the results of partial regression testing, it is known that SBIS has a significant negative effect on Islamic banking liquidity. This is indicated by the significance value of SBIS <0.05 which is equal to 0,000. Based on table 2 it is known that the SBIS variable t test is -8,827, so it can be concluded that SBIS has a significant negative effect indicating an inverse relationship between SBIS variables and Islamic banking liquidity.

So the results of the analysis above show that the variable of Bank Indonesia Syariah Certificate (SBIS) has a significant negative effect on Islamic banking liquidity. That is, if there is an increase in SBIS, the FDR will decrease. If the Bank Indonesia Certificates Sharia increases, it will reduce the Islamic banking liquidity. Where it is known that if there are idle banking funds, banks will tend to put their funds on SBIS will reduce the level of liquidity where the distribution of funding funds is low. Conversely, if banks tend to turn their funds for financing, it will cause a decrease in the level of SBIS and cause an increase in Islamic banking liquidity.

The Influence of FASBIS on Islamic Banking

Based on the results of partial regression testing, it is known that FASBIS has no significant effect on Islamic banking liquidity. This is indicated by the significance value of FABIS> 0.05 which is equal to 0.866. Based on table 2 it is known that the FASBIS variable t test is 0.169, so it can be concluded that SBIS have no significant effect.

According to Bank Indonesia Regulation No. 10/36/PBI of 2008 concerning sharia standing facilities stated that the longest period of FASBIS is 14 calendar days calculated from the date of transaction settlement until the due date. Thus, it can be concluded that Islamic Banking puts its funds in FASBIS with a very short period of time ranging from 1 day to 14 days, which means that funds flow in FASBIS very fast turnover so that FASBIS has no effect on liquidity.

FASBIS has a very short period of time and causes the FASBIS to have no influence on the liquidity of Islamic banking in Indonesia. When compared with SBIS that it is known that SBIS has a long period of time ranging from 1 month to 1 year, so that SBIS has an influence on the liquidity of Islamic banking.

Influence of Inflation on Islamic Banking Liquidity

Based on the results of partial regression testing, it is known that inflation has a significant positive effect on Islamic banking liquidity. This is indicated by the significance value of Inflation <0.05 which is equal to 0,000. Based on table 2 it is known that the FASBIS variable t test is 7,578, so it can be concluded that inflation has a significant positive effect indicating a direct relationship between SBIS variables and Islamic banking liquidity. This means that if there is an increase in inflation, the amount of FDR especially financing also increases.

So based on the results of Cahyono's analysis (2009) If inflation has increased, then the amount of FDR will decrease. Vice versa, if the FDR increases, it will reduce the percentage of inflation. If inflation rises, the interest rate decreases, causing creditors to prefer financing in Islamic banks because interest rates are low and also Islamic banks implement a profit sharing system. However, if inflation decreases, the interest rate will increase and cause creditors to prefer financing to conventional banks because it is more profitable for them. So the results of the analysis above show that the Inflation variable affects the liquidity of Islamic banking. If inflation rises, Islamic banking liquidity will increase.

DISCUSSION

The Impact SBIS on FDR

The analysis conducted indicates that an increase in Bank Indonesia Certificate Sharia (SBIS) has a significant negative effect on Islamic banking liquidity, leading to a decrease in the Financing to Deposit Ratio (FDR). This finding aligns with the study by (Rahmat & Rizal, 2023), which specifically focuses on the impact of SBIS on liquidity in Islamic commercial banks. The study highlights that SBIS affects liquidity in Islamic banks, supporting the notion that changes in SBIS levels influence the liquidity position of Islamic banks. Moreover, the research by Pradesyah & Triandhini (2021) also contributes to this understanding by emphasizing the major positive impact of SBIS on Islamic banking assets. This further corroborates the idea that SBIS plays a crucial role in shaping the dynamics of Islamic banking liquidity. The findings suggest that fluctuations in SBIS levels can significantly influence the liquidity position of Islamic banks, as observed in the analysis. In contrast, the study by Salsabila et al. (2022) did not find a significant effect of the FDR variable on financial distress, indicating that FDR may not directly impact financial distress in Indonesian Islamic banks. This contrasts with the primary analysis indicating that SBIS has a notable effect on Islamic banking liquidity through its impact on the FDR. Therefore, the synthesis of these references supports the conclusion that Bank Indonesia Certificate Sharia (SBIS) has a substantial influence on Islamic banking liquidity, particularly through its effect on the Financing to Deposit Ratio (FDR). The research underscores the importance of monitoring SBIS levels as they can significantly impact the liquidity position of Islamic banks.

FASBIS Impact on FDR

The analysis from the partial regression testing indicates that the Bank Indonesia Islamic Deposit Facility (FASBIS) does not have a significant effect on Islamic banking liquidity. This finding contrasts with the study by (Supiyadi, 2021), which delves into the determinants of Islamic bank profitability and stability in Indonesia. While 's study focuses on profitability and stability rather than liquidity, it provides insights into the factors influencing Islamic banking performance, which can indirectly impact liquidity management strategies. On the other hand, the research by Abdo et al. (2022) explores the dynamics of bank liquidity holding in Islamic and conventional banks. Although this study does not directly address the impact of FASBIS on Islamic banking liquidity, it offers valuable insights into liquidity management practices in Islamic banking systems. Understanding the dynamics of liquidity holding in banks can shed light on the broader context within which FASBIS operates and its implications for liquidity management. Moreover, the study by ElMassah et al. (2019) on liquidity in UAE Islamic banks could provide additional perspectives on liquidity risk management in Islamic banking. While the focus is on UAE banks, the findings may offer relevant insights into liquidity risk factors that could be applicable to the Indonesian context and the role of facilities like FASBIS in managing liquidity challenges. In summary, while the specific impact of FASBIS on Islamic banking liquidity is not directly addressed in the references or literatures, insights from studies on profitability, stability, and liquidity risk management in Islamic banks can provide a broader understanding of the factors influencing liquidity management strategies in Islamic banking institutions.

Inflation Impact on FDR

The regression testing results suggest that inflation has a significant positive effect on Islamic banking liquidity. This is in line with the study by (Ikramina & Sukmaningrum, 2021), which found a positive relationship between inflation and non-performing financing in Indonesian Islamic banks, impacting liquidity levels. Conversely, Alam et al. (2022) found no evidence supporting the idea of inflation positively affecting Islamic banking profitability. Specifically, their research on Bank BRI Syariah in Indonesia showed that inflation did not impact profitability. This discrepancy highlights the complexity of how inflation affects Islamic banking performance, indicating variations across different institutions. Moreover, Malek and Rao (2022) discovered a negative and significant influence of macroeconomic inflation on the profitability of Islamic banks in Asia. This contrasting result suggests that the impact of inflation on Islamic banking performance is not universally positive and can differ based on specific contexts and banking practices. In summary, the comparison of these studies emphasizes the nuanced relationship between inflation and Islamic banking performance. While some research indicates a positive impact of inflation on liquidity in Islamic banks, other studies present conflicting findings, demonstrating that the influence of inflation on Islamic banking outcomes is multifaceted and dependent on various factors.

CONCLUSION

Based on the analysis and discussion of research results by testing hypotheses using multiple linear regression analysis, the following conclusions can be drawn:

1. Partially, Bank Indonesia Certificates Sharia (SBIS) has a significant negative effect on Islamic banking liquidity in Indonesia in the period January 2011 - August 2019.
2. Partially, the Bank Indonesia Islamic Deposit Facility (FASBIS) has no influence on Islamic banking liquidity in Indonesia in the period January 2011 - August 2019.
3. Partially, inflation has a significant positive effect on the liquidity of Islamic banking in Indonesia in the period January 2011 - August 2019.
4. Simultaneously, the results of the study indicate that there is a significant influence between SBIS, FASBIS, and Inflation on Islamic banking liquidity in Indonesia in the period January 2011 - August 2019.

Based on the findings, several suggestions can be forwarded. For Bank Indonesia (BI) and the Financial Services Authority (OJK) as a monetary authority, this research can be used as an evaluation material for programs that are carried out specifically in the FASBIS instrument so that in the future FASBIS has an influence on Islamic banking liquidity and also while maintaining monetary instrument stability. For the economy, this research becomes an insight as a new science to find out Islamic monetary instruments and macroeconomic variables on Islamic banking liquidity.

For further research, it is expected to further develop the variables used and also be able to examine using the panel data regression model and develop theories so that further research is better and comprehensive and it is also expected that further research can be compared with Malaysia or Brunei.

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