



## The Impact of Government Sukuk Emissions on Islamic Banking Activities in Indonesia

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### Abstract

*This paper aims to explore the crowding-out effect in the context of Islamic economics. Specifically, has the government's issuance of sukuk resulted in a decrease or even a negative impact on the financing growth of Islamic banks? In order to examine this effect, we use monthly data from all Islamic commercial banks in Indonesia from January 2008 to December 2023. This study employs autoregressive distributed lag (ARDL) for data analysis. The results indicate that the growth in outstanding government sukuk is negatively and significantly related to the financing growth of Islamic banks, especially in the short term. In the long term, the growth in outstanding government sukuk tends not to have a significant effect on banking activities. Therefore, the growth of outstanding government sukuk has directly hampered Islamic economy and banking development.*

**Keywords:** Government sukuk; Islamic banking; Islamic financing

### INTRODUCTION

Does the government's sukuk issuance have an impact on Islamic banking activities? In the last decade, outstanding government sukuk have continued to increase, while the main activities of Islamic banking have tended to decline over time. At the end of 2023, the total outstanding government sukuk has reached IDR996.41 trillion or around 18.57% of the total outstanding government securities. Compared with 2008, the total outstanding has increased by around 21,100.14% or an average of around 54.12% per year. In contrast, the growth of deposits

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and financing from Islamic banks tends to slow down over time. The average growth in deposits and financing was only 1.67% and 1.78%, respectively. This phenomenon indicates that the withdrawal of government debt through sukuk has absorbed deposits from Islamic banks, thus having a negative impact on their financing activities.

The economic and banking literature has extensively studied the relationship between government debt and banking activities. The negative relationship between government debt and banking activity is known as the crowding-out effect. This term refers to conditions where government debt growth is inversely proportional to bank credit growth. The increase in government debt tends to absorb bank deposits, so it has an impact on reducing credit for the private sector (Khan & Gill, 2009; Majumder, 2007). There is ample evidence regarding the crowding out effect and its negative consequences for the economy, both in developed countries and emerging markets (Akkina & Celebi, 2002; Albertazzi et al., 2012; Al-Majali, 2018; Anyanwu et al., 2017; Atukeren, 2005; Chakraborty, 2006; Cumber & Birch, 2006; De Bonis & Stacchini, 2013; Furceri & Zdzienicka, 2012; Herndon et al., 2013; Kumar & Woo, 2010; Looney, 1995; Majumder, 2007; Panizza & Presbitero, 2012; Reinhart & Rogoff, 2010; Reinhart & Rogoff, 2011; Rossiter, 2002; Saeed & Ali, 2006). However, increasing government debt is not always inversely proportional to credit growth. In many cases, government debt growth is directly proportional to credit growth, which is called crowding in effect. This effect has also been widely demonstrated in various countries, for example, Pakistan (Hyder & Qayyum, 2001; Khan & Gill, 2009; Looney & Frederiken, 1997; Naqvi, 2002) and Fiji (Jayaraman, 1998).

According to De Bonis and Stacchini (2013), the crowding-out effect can occur in three ways. First, additional government debt encourages banks to become permanent holders of government securities. Second, economic pressures cause banks to be forced to invest in government securities, which are actually risk-free. Third, a high increase in government debt will encourage an increase in interest rates, thereby reducing private demand for bank credit. Meanwhile, the crowding, in effect, generally occurs due to additional government debt intended for domestic spending purposes, such as funding for infrastructure projects, providing subsidies, and social assistance. In the case of crowding in effect, the increase in government debt initially absorbs bank deposits, but these funds will



flow back into the domestic economic system, thereby increasing private deposits and credit again.

In the context of Islamic economics and banking in Indonesia, this phenomenon of crowding out or crowding in effect is important to understand. The total assets of Islamic banks in Indonesia are very small compared to conventional banks, while the number of Islamic-based private sectors is larger than non-Islamic ones. Based on data from the Financial Services Authority (OJK, *Otoritas Jasa Keuangan*), at the end of 2023, the total assets of Islamic banks will only be IDR782.10 trillion or around 7.04% of the total assets of non-Islamic banks, which will reach IDR11,113.32 trillion. Meanwhile, Indonesia's Islamic economy's scale cannot yet be measured comprehensively. However, when referring to the public corporate sector, around 63.12% of the total corporations listed on the Indonesia Stock Exchange (IDX) are Islamic corporations. This shows that the demand or need for Islamic financing is very high. Therefore, if the crowding-out effect occurs in the context of Islamic economics and banking, it will greatly impact the development of an Islamic-based economy.

On the other hand, the government is very aggressively campaigning for the Islamic economy and has the ambition to make Indonesia the center of the world's Islamic economy. However, the policies taken, including debt policy, may have contradicted this ambition. This study is explicitly aimed at exploring the crowding-out effect in the context of Islamic economics and banking in Indonesia. Specifically, we will test whether government sukuk emissions have a negative and significant impact on Islamic banking activities. This is the first study in the world to study the crowding effect in the context of Islamic economics and banking. Therefore, it is hoped that the results of this study will have a major contribution to the literature and become a reference for future researchers.

## LITERATURE REVIEW

The relationship between government sukuk emissions and Islamic banking activities is rooted in the principles of Islamic finance and the broader economic dynamics of financial markets. Sukuk, often referred to as Islamic bonds, represent ownership in underlying assets and comply with Sharia principles, making them a crucial instrument in Islamic finance (Hassan et al., 2019). As governments



increasingly turn to sukuk for financing, their emissions can significantly influence the operational landscape of Islamic banks. This influence stems from the interconnectedness of government finances, capital markets, and banking sector activities within the Islamic financial ecosystem (Jufri & Sakinah, 2022).

The theoretical underpinning of this research draws upon the concept of financial intermediation in Islamic economics and the role of government sukuk as a monetary policy tool. Islamic banks, operating as intermediaries between surplus and deficit units in the economy, are sensitive to changes in government sukuk emissions due to their impact on liquidity, investment opportunities, and risk management strategies (Azmat et al., 2017). The issuance of government sukuk can affect Islamic banks' asset allocation, profitability, and overall financial stability. Moreover, sukuk emissions may influence the banks' ability to comply with regulatory requirements, such as capital adequacy and liquidity ratios, potentially altering their operational strategies and risk appetite (Bhuiyan et al., 2021).

Furthermore, the theoretical framework incorporates the concept of crowding out and its unique manifestation in Islamic finance. As governments increase sukuk emissions, they may compete with Islamic banks for Sharia-compliant investment opportunities and funds from the same pool of investors (Roslen et al., 2024). This competition could potentially impact Islamic banks' deposit mobilization, financing activities, and overall market share. Conversely, government sukuk can also serve as a benchmark for pricing other Islamic financial products and provide a risk-free investment avenue for Islamic banks, potentially enhancing their liquidity management and portfolio diversification (Mimouni et al., 2019). The complex interplay of these factors necessitates a comprehensive examination of the impact of government sukuk emissions on various aspects of Islamic banking activities (Arif et al., 2024).

To test the crowding out effect or the relationship between the growth of outstanding government sukuk and Islamic banking activities, we use monthly data from all Islamic commercial banks in Indonesia from January 2008 to December 2023. We consider monthly data because the government issues sukuk every month, so the effect arising from banking activities tends to occur in the short term.

The total number of Islamic commercial banks that we observed was 17



banks, but this number was unbalanced in each observation period. This is because several banks have not yet been established; for example, in 2008, there were only 3 Islamic commercial banks, namely Bank Muamalat Indonesia, Bank Syariah Mandiri, and Bank Mega Syariah. Meanwhile, in 2010, the number of Islamic commercial banks increased from 3 to 11. Meanwhile, in 2019, the number of banks decreased because several banks merged (BNI Syariah, Bank Syariah Mandiri, and BRI Syariah merged to become Bank Syariah Indonesia). Table 1 presents the number of banks and data availability.

**Table 1** *List of Banks and Data Availability*

Bank Name	Data Availability
Bank Muamalat Indonesia	Jan 2010 – Dec 2023
Bank Syariah Mandiri <sup>a)</sup>	Jan 2010 – Dec 2022
Bank Mega Syariah	Jan 2010 – Dec 2023
Bank BRI Syariah <sup>a)</sup>	Jan 2009 – Dec 2020
Bank Syariah Bukopin	Jan 2009 – Dec 2023
Panin Bank Syariah <sup>b)</sup>	Jan 2009 – Dec 2016
Bank Panin Dubai Syariah	Jan 2017 – Dec 2022
Bank Victoria Syariah	Apr 2010 – Dec 2023
BCA Syariah	Apr 2010 – Dec 2023
Bank BJB Syariah	Jan 2010 – Dec 2023
Bank BNI Syariah <sup>a)</sup>	Jan 2010 – Dec 2020
Maybank Indonesia Syariah	Jan 2010 – Dec 2019
Bank Aceh Syariah	Oct 2016 – Dec 2023
Bank Riau Kepri Syariah	Aug 2022 – Dec 2023
BPD NTB Syariah	Oct 2016 – Dec 2023
Bank Syariah Indonesia	Jan 2021 – Dec 2023
BTPN Syariah	Jul 2014 – Dec 2023
Bank Aladin Syariah	Jan 2020 – Dec 2023

Notes: <sup>a)</sup> merger to become Bank Syariah Indonesia; <sup>b)</sup> changed its name to Bank Panin Dubai Syariah.

Our main variables are government sukuk emissions (independent variable) and banking activities (dependent variable). Government sukuk emissions are measured by monthly outstanding growth. Data related to this was obtained from the Ministry of Finance of the Republic of Indonesia. Banking activities refer to the funding and lending activities of each bank. Funding activity is measured by monthly deposit growth while lending activity is measured by monthly financing growth. Data related to banking activities is obtained from each bank's monthly financial reports.

Banking activity may be affected by the crisis (Reinhart & Rogoff, 2009). Throughout our observation period, at least three major crises have occurred, namely the global financial crisis in 2008-2009 and the COVID-19 pandemic in 2020-2023. For this reason, we will carry out several treatments in the robustness test process. In addition, banking activities are always influenced by macroeconomic factors, such as inflation and interest rates. In addition, bank-specific factors, such as size, past performance, financing problems, and solvency, can also influence banking activities. Therefore, we also use these factors as control variables. Monthly inflation data was obtained from the Central Bureau of Statistics, reference interest rate data was obtained from Bank Indonesia, and bank-specific data was obtained from each bank's monthly financial reports.

## RESEARCH METHOD

Data analysis uses autoregressive distributed lag (ARDL) modeling. This model was chosen because it allows us to examine the short-term (equation 1) and long-term (equation 2) effects of the independent variables on the dependent variable. Systematically, the model we developed for this research is:

$$Y_{it} = \alpha - (1 - \alpha) + \sum_{t=-2}^k \beta_{xn} X_{it-n} + \sum_{t=-2}^k \beta_{cn} C_{it-n} + \varepsilon_{it} \quad (1)$$

$$Y_{it} = \alpha + \sum_{t=-2}^k \beta_{xn} X_{it-n} + \sum_{t=-2}^k \beta_{cn} C_{it-n} + \varepsilon_{it} \quad (2)$$

where:  $y_{it}$  is the dependent variable, namely the growth of deposits and financing of bank  $i$  in period  $t$ ;  $\alpha$  is a constant;  $\beta$  is slope;  $X_{it}$  is an independent



variable, namely the outstanding value of government sukuk, maturity, and coupon rate for bank  $i$  in period  $t$ ;  $C$  are control variables for bank  $i$  in period  $t$ ;  $\varepsilon$  is the residual error;  $t$  is the current period;  $t-n$  is the period before the current period.

## RESULTS AND DISCUSSION

### Results

The results show that during our observation period, government sukuk emissions tend to increase over time. The average outstanding growth reached 3.00% per month, with the lowest growth being -17.10% and the highest reaching 52.96% (see Table 2). Specifically, Islamic T-Bills (Indonesian: Surat Perbendaharaan Negara Syariah or SPN Syariah) have the highest average growth rate compared to the others. The average growth rate of Islamic T-Bills reaches 13.08% per month, with the lowest growth being -85.49% and the highest reaching 612.56%. The Fixed Rate Sukuk is an instrument with the lowest average growth rate compared to the others. The average growth rate for Fixed Rate Sukuk is only 2.33% monthly. However, based on the outstanding value, Fixed Rate Sukuk has the largest outstanding value of all, averaging IDR429.82 trillion, followed by Retail Sukuk of around IDR50.15 trillion. The Islamic T-Bills and Sukuk Savings have the smallest outstanding value, IDR12.79 trillion and IDR7.52 trillion, respectively.

In contrast to the growth in government sukuk outstanding, the main activity of Islamic banking tends to decline over time. In terms of funding activity, the average deposit growth is only around 1.78% per month, with the lowest growth rate reaching -3.26% and the highest 10.06%. Meanwhile, lending activity also tends to slow down. The average financing growth is only 1.67%, with the lowest rate of 3.37% and the highest of 7.57%. From these two main activities, it is clear that lending activities tend to be lower than funding activities. This, of course, will have an impact on industrial productivity, especially in Islamic-based industries.

**Table 2** *Summary Statistics*

	N	Min	Max	Mean	SD
<b>Outstanding Growth</b>					
Total Sukuk (%)	151	-17.10	52.96	3.00	7.89
Fixed Rate Sukuk (%)	78	-9.16	15.59	2.33	3.50
Retail Sukuk (%)	151	-26.61	144.60	3.07	18.54
Islamic T-bills (%)	131	-85.49	612.56	13.08	73.90
Saving Sukuk (%)	62	-35.08	95.95	3.67	19.31
<b>Banking Activities</b>					
Deposits Growth (%)	1,748	-3.26	10.06	1.78	2.19
Financing Growth (%)	1,748	-3.37	7.57	1.67	1.84
<b>Control Variables</b>					
Inflation (%)	180	1.32	12.14	4.74	2.44
Interest Rate (%)	180	3.50	6.00	4.58	.82
Size (Log_Assets)	1,748	1.20	2.61	4.37	.12
ROA (%)	1,748	.16	2.15	1.29	.54
NPF (%)	1,748	.64	4.00	2.31	.97
Leverage (%)	1,748	68.98	95.21	81.22	6.09

There is a negative and significant correlation between the growth of government sukuk and the growth of deposits and financing from Islamic banking (see Table 3). This shows that there was a crowding-out effect from the emission of government sukuk during our observation period. Meanwhile, deposit growth and financing growth also had a positive and significant relationship. This indicates a causal relationship between the growth in government sukuk outstanding and the growth in deposits, as well as the growth in Islamic banking financing. The high growth of outstanding sukuk tends to slow down or even reduce the growth of deposits at Islamic banks, thus having a negative impact on the growth of their financing. Deposits that should be used for financing tend to shift to government sukuk.





**Table 3** *Correlation Matrix*

	1	2	3	4	5	6	7	8
1. Total Sukuk	1.00							
2. Deposits Growth	-.16 *	1.00						
3. Financing Growth	-.18 **	.32 ***	1.00					
4. Inflation	.21 **	-.21 **	-.21 **	1.00				
5. Interest Rate	.27 ***	-.20 **	-.16 *	.53 ***	1.00			
6. Size	-.05	.12	-.13	-.82 ***	-.49 ***	1.00		
7. ROA	-.04	-.11	-.16 *	-.55 ***	-.18 **	.85 ***	1.00	
8. NPF	.05	-.15	.15	.78 ***	.37 ***	-.92 ***	-.81 ***	1.00
9. Leverage	.09	.15	.17 *	.56 ***	.40 ***	-.86 ***	-.74 ***	.75 ***

During our observation period, fundamental macroeconomic factors (such as inflation and interest rates) and bank-specific factors tended to be stable. The average inflation is at the level of 4.74%, and the average interest rate is 4.58% per month (see Table 2). These two factors have a positive and significant relationship with the growth of government bonds outstanding (see Table 3). This finding also indicates a causal relationship. On the one hand, the increasing growth in outstanding sukuk tends to increase inflation and interest rates, while, higher inflation and interest rates will encourage the government to issue more sukuk. In line with that, Islamic banking deposits and financing growth also have a negative and significant relationship with inflation and interest rates. Conversely, rising inflation and interest rates will reduce deposits and hinder financing. Slowing deposit and financing growth will push inflation and higher interest rates. Meanwhile, bank-specific factors, such as size, performance (ROA), non-performing financing ratio (NPF), and solvency (leverage), do not have a significant correlation with the growth of government bonds outstanding and deposit growth. Performance and solvency are related to credit growth but at a low level of significance.

**Table 4** *Output ARDL*

	Deposits Growth		Financing Growth	
	Model 1	Model 2	Model 3	Model 4
Panel A. Short Run Equation				
Total Sukuk	-.22 **		-.27 ***	
Fixed Rate Sukuk		-.42 ***		-.38 ****
Retail Sukuk		-.21 **		-.18 *
Islamic T-bills		-.16 *		.13
Saving Sukuk		-.21 **		-.20 **
Data Variabel Kontrol				
Inflation	.08	.12	.13	.16 *
Interest Rate	.18 **	.10	.23 **	.14
Size (Log_Assets)	.47 ***	.36 ***	.30 ***	.23 **
ROA	.12	.10	.13	.12
NPF	.20 **	.14	.18 *	.06
Leverage	.13	.11	.11	.12
Constant	-2.02 ***	-3.23 ***	-3.22 ***	-3.11 ***
Cointeq01	-.15 *	-.15 *	-.18 **	-.19 **
Panel B. Long Run Equation				
Total Sukuk	.20 **		.14	
Fixed Rate Sukuk		.25 **		.14
Retail Sukuk		.12		.12
Islamic T-bills		.13		.10
Saving Sukuk		.13		.12
Data Variabel Kontrol				
Inflation	.13	-.19 **	-.11	-.15 *
Interest Rate	-.18 **	-.18 *	-.16 *	.10
Size (Log_Assets)	-.43 ***	-.39 ***	-.23 **	-.17 *
ROA	-.34 ***	-.15 *	-.18 *	-.13



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NPF	-.34	***	-.18	*	-.18	*	.36	***
Leverage	-.48	***	-.41	***	-.27	***	-.22	**
Memo Item								
R-squared	.54		.59		.65		.66	
Adj. R <sup>2</sup>	.53		.57		.59		.62	
F-statistic	16.41	***	17.25	***	18.22	***	21.12	***

The results of data analysis using autoregressive distributed lag (ARDL) show that, in general, the growth in outstanding government sukuk has a negative and significant impact on Islamic banking activities, especially in the short term (see Table 4, Panel A and Panel B). In the short term, the growth in outstanding government sukuk is negatively and significantly related to deposit growth (see Table 4, Model 1) and financing growth (see Table 4, Model 3). This again confirms that there has been a crowding-out effect from the government's sukuk issuance. The growth of outstanding sukuk will reduce the growth of deposits and financing of Islamic banks, respectively, around 22% and 27%. Specifically, the most significant crowding out effect occurs when the government issues Fixed Rate Sukuk (see Table 4, Model 2 and Model 4). Fixed Rate Sukuk issuance will reduce deposit growth by up to 42%, which will further reduce financing growth by up to 38%.

In the long term, growth in outstanding government sukuk tends to have a positive and significant impact on deposit growth. The maturity of government sukuk will encourage deposit growth, but unfortunately, this will not significantly impact their financing. There is a tendency for funds originating from these maturities to be re-absorbed into sukuk issuance in subsequent periods. As a result, the funds are stuck in deposits and are not used for financing. Specifically, only fixed rate sukuk has a positive and significant impact on deposit growth. This is because the outstanding value of this instrument is the largest compared to other instruments.



**Table 5** *Robustness Check*

	Deposits Growth		Financing Growth	
	Model 1	Model 2	Model 3	Model 4
Panel A. Normal				
Short Run Equation				
Total Sukuk	-.19 **		-.26 ***	
Fixed Rate Sukuk		-.49 ***		-.45 ***
Retail Sukuk		-.18 *		-.17 *
Islamic T-bills		-.14		-.19 **
Saving Sukuk		-.10		-.12
Constant	1.29 ***	-1.91 ***	-2.08 ***	-.57 ***
Cointeq01	.11	-.20 **	-2.52 ***	-.40 ***
Control Variables	Yes	Yes	Yes	Yes
Long Run Equation				
Total Sukuk	.36 ***		.33 ***	
Fixed Rate Sukuk		.34 ***		.34 ***
Retail Sukuk		.21 **		.17 *
Islamic T-bills		.20 **		.22 **
Saving Sukuk		.40 ***		.31 ***
Control Variables	Yes	Yes	Yes	Yes
Memo Item				
R-squared	.54	.60	.54	.62
Adj. R <sup>2</sup>	.44	.55	.47	.58
F-statistic	21.08 ***	26.86 ***	25.47 ***	33.77 ***
Panel B. Turbulence				
Short Run Equation				
Total Sukuk	-.08		-.07	



Fixed Rate Sukuk			.19	**		.14	
Retail Sukuk			-.08			-.10	
Islamic T-bills			-.18	**		-.16	
Saving Sukuk			.23	**		-.17	*
Constant	.25	**	.16		2.78	2.39	***
Cointeq01	.28	***	-.12		.19	-.30	***
Control Variables	Yes		Yes		Yes	Yes	
Long Run Equation							
Total Sukuk	.13				.30		***
Fixed Rate Sukuk			-.09			.27	***
Retail Sukuk			.12			.08	
Islamic T-bills			.17	*		.26	***
Saving Sukuk			-.13			.44	***
Control Variables	Yes		Yes		Yes	Yes	
Memo Item							
R-squared	.50		.63		.50	.66	
Adj. R <sup>2</sup>	.45		.54		.47	.64	
F-statistic	39.08	***	38.82	***	42.64	46.52	***

Table 5 displays the robustness check results. We divide the data into two groups: the data group during the normal period and the turbulence period. In this context, data from the global financial crisis (2008-2009) and the COVID-19 pandemic (2020-2022) is classified into the turbulence group, while other data is classified into the normal group.

The analysis results show that during the normal period and in the short term, the growth in outstanding government sukuk has a negative and significant impact on Islamic bank deposits and financing (see Table 5, Panel A). Meanwhile, in the long term (during normal periods), the growth in outstanding government sukuk is positively and significantly related to the growth in deposits and financing. The results of this analysis are in line with the results of research from Khanalizadeh et al. (2024), Boukhatem (2023), and Billah et al. (2023), which indicate that in the long term, there is a positive and significant influence from

sukuk spending on a country's economic growth. Therefore, it would be very wise if sukuk issuance is implemented within a minimum period of 2 to 5 years. So, the impact on the economy will be even greater and more significant (Billah et al., 2023; Boukhatem, 2023; Khanalizadeh et al., 2024). These findings are consistent with our main findings.

During periods of turbulence (see Panel B), the results of the data analysis also support our main findings. Growth in outstanding sukuk, in general, is also negatively and significantly related to growth in deposits, especially in the short term (see Model 2), while in the long term, it tends to be insignificant. Likewise, the growth in outstanding sukuk also tends to be negatively related to financing growth in the short term. However, in the long term, outstanding growth has a positive impact on financing growth.

These results confirm the other research, such as research conducted by Hanafi et al. (2023), Yildirim et al. (2020), and Jatmiko et al. (2023), which stated that sukuk issuance could have a negative effect on bank funding. This is due to the existence of choices for investors in investing their funds, and in this case, the profit-sharing ratio or margin from sukuk is slightly more attractive than the profit sharing from deposits in Islamic banks in general (Hanafi et al., 2023; Jatmiko et al., 2023; Yildirim et al., 2020).

## CONCLUSION

Does the government's sukuk issuance have an impact on Islamic banking activities? Our exploration results show that the emission of sukuk has an impact on the activities of Islamic banks. Growth in outstanding sukuk has a negative and significant relationship with growth in deposits and financing, especially in the short term. This proves that the government's issuance of sukuk has led to a crowding-out effect. Deposit funds that should have been used for financing were actually absorbed into government sukuk. As a result, financing growth tends to slow down, even significantly decrease. In the long term, maturing sukuk will not have a significant impact on banking activities but will be absorbed into sukuk issued in the future. Therefore, it is hoped that the government will need to re-evaluate its debt policy through Sukuk. The issuance of government bonds has directly hampered the Islamic economy and banking development. This contradicts the government's campaign and ambition to become the center of



world Islamic economics and banking. The government needs to limit Islamic banks' buying of Sukuk. Sukuk issuance should focus on non-Islamic banks or foreign currency denominations.

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