

# Sharia Risk of Government-Owned Islamic Rural Banks during COVID-19 in Indonesia

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## Abstract

This study examines the effect of government ownership on the sharia risk of Islamic rural banks using all publicly available data of 156 BPRSs from 23 provinces in Indonesia. This research uses a quantitative method with secondary data obtained from the Financial Services Authority (OJK). Regressions using panel data regressions are employed to analyze the relationship between government ownership and sharia risk. Non-halal income is employed to measure the sharia risk between 2019 Q4 and 2020 Q3, representing the timeline before and during COVID-19. In all models and periods, the results found a significant positive effect of government ownership variables on non-halal income. However, the degree decreases during the COVID-19 pandemic. It reveals that government-owned Islamic rural banks are found to have lower non-halal income during the pandemic. We also find that more significant firms with higher leverage tend to have higher non-halal income. This study is expected to contribute to the still thin literature on sharia risk, especially in the context of Islamic rural banks in Indonesia. Results will have implications to the regulator to assure the sharia compliance of the Islamic finance industry. This is essential to gain trust from the Islamic society, which is concerned about the observance of Islamic banks.

**Keywords:** Islamic Banking; Islamic Rural Bank; Non-halal Income; Ownership Structure; Sharia Performance; Sharia Risk

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## 1. INTRODUCTION

The growth and development of a country cannot be separated from the role of financial institutions. According to Law Number 14 of 1967 concerning Banking Principles, financial institutions are all entities that carry out activities in the financial sector that withdraw money from the public and channel the funds back to the community. Financial institutions are grouped into two forms, namely banks and non-banks. Bank financial institutions, or what we call banks, are financial institutions that provide complete financial services. Financial institutions in Indonesia include Commercial Banks, Rural Banks (BPR), Sharia Commercial Banks, and Sharia BPRs (BPRS) (Harahap & Saraswati, 2020).

The bank is a financial institution whose main purpose is to provide credit and services in payment traffic and money circulation (Law Number 14 of 1967 concerning Banking Principles). According to Law Number 10 of 1998, banks are divided into commercial banks and rural banks. According to their operational activities, banks are also categorized to conventional and sharia/Islamic banks. A rural bank, or known as Bank Perkreditan Rakyat (BPR) in Indonesia, is a bank that carries out its business activities conventionally or based on sharia principles without providing services in payment transferring (Law Number 7 of 1992 concerning Banking). BPR's activities are much narrower than commercial banks because BPR prohibits demand deposits, foreign exchange business, and insurance. BPR activities are collecting funds in Savings and Time Deposits and distributing funds in the form of Investment Loans, Working Capital Loans, and Trade Loans (Harahap & Saraswati, 2020).

The Indonesian rural bank (BPR) was first founded in 1989 through the President's Decision No. 38, National Act No.7/1992, and National Act No. 10/1998 (Ahmed, 2013). Then, it was followed by the establishment of BPRS two years later (Seibel and Agung, 2006; Seibel, 2008). Islamic Rural Bank, after this referred to as BPRS (*Bank Pembiayaan Rakyat Syariah*), as referred to in Law Number 21 of 2008 concerning Islamic Banking, is an Islamic Bank that in its activities do not provide services in payment traffic. Islamic Rural Banks also cannot be converted into Rural Banks. A BPRS shall observe the prudential principles and Sharia Principles when entering into a Financing contract with a Customer Recipient of Facility (Bank Indonesia Regulation Number 13/5/PBI/2011).

COVID-19 was first confirmed in Indonesia on March 2, 2020, with two positive cases. The COVID-19 pandemic has negatively impacted a health crisis and the financial industry, providing another threat to financial ability to provide an alternative and long-term financing solution following the global financial crisis. In the third quarter of 2020, due to the Covid-19 pandemic, the largest economy in Southeast Asia saw its growth slow by 3.49 percent compared to the same period last year. In addition, Indonesia has entered a recession due to a 5.32 percent drop in the second quarter of 2020. The last time something like this happened was during the Asian financial crisis in 1998. According to Indonesian authorities, the coronavirus might cause 3.5 million individuals to lose their jobs. According to the Indonesian government, the coronavirus outbreak might result in the loss of 3.5 million jobs. As the coronavirus pandemic continues to take its toll, Indonesia has faced its first recession in 22 years. This condition has surely impacted the banks in Indonesia.

According to the Financial Services Authority (2020), until December 2020, the number of BPR and BPRS in Indonesia was 1,505 banks and 164 banks, respectively. However, as stated by the Indonesian Deposit Insurance Corporation (*Lembaga Penjamin Simpanan*), nine BPR and BPRS would undergo liquidation from March 2020 to February 2021. Although Islamic banking already has rules and systems that are separated from conventional banks, Islamic banks may not comply with sharia law. This condition may also worsen when a crisis happens, though Islamic banks are often safer than conventional banks. In the last global financial crisis (2007-2009), Islamic banks were more secure than conventional banks. The financial crisis did not significantly affect Islamic banks' financial performance, but it impacted the performance after it happened (Hidayat and Abduh, 2012). The COVID-19 pandemic may make Islamic banks take additional installments to cover the losses to comply with the IFRS 9 reporting while incompliant with sharia law (Shaharuddin, 2020).

Pandemic gives banks more challenges to generate profit because people tend not to save their funds to the banks. Many reasons can cause it. For example, in the financial crisis caused by COVID-19, many people lost their job. Therefore, they can no longer make money, and they tend to spend their savings. In another condition, customers cannot invest or deposit their money because of the decreased yield and interest rate. Another challenge faced by banks is that many debtors cannot fulfill their obligations to pay the installments on time. However, it creates another income for the bank, such as fines. Therefore, the non-performing loan may reduce the liquidity of Islamic banks while creating non-halal income from the fines.

Many aspects can influence the sharia compliance of Islamic banks. Besides the condition of economic and financial, the ownership structure of banks can affect it. Previous research proves that ownership structure and concentration can affect banks' performance, profitability, and efficiency (Abbas et al., 2009; Haw et al., 2010; Cornett et al., 2010; Li et al., 2014; Zouari and Taktak, 2014; Doan et al., 2017; Haque and Brown, 2017; Mateev and Bachvarov, 2020; Santoso and Santasyacitta, 2020). The effect of sharia compliance is diverse regarding its locations or countries. In Muslim countries, sharia compliance has a positive impact because of religious beliefs. Otherwise, in non-muslim countries such as the U.S., due to the negative impression of Islam and the negative perspective of the limitations connected with Sharia compliance, sharia compliance has negative effects (Jaballah et al., 2018).

This research examines the impact of government ownership on the sharia risk of Islamic rural banks. The government, as the regulator, has an essential role in ensuring the sharia compliance of Islamic banks because the regulators are committed to developing the Sharia or Islamic regulation and guarantee that Islamic Banks' products, services, and operations that offered follow Islamic principles and jurisprudence (Fatmawati et al., 2020). This study on the risk of Islamic banks is different from previous empirical research. First, this research will focus on the sharia risk of Islamic banks measured by the non-halal income (*NHI*). Non-halal income is used because it can depict the sharia non-compliance, which is different from another measurement, such as Islamic Performance Index (Haq, 2015; Sebtianita, 2015; Mutia et al., 2018; and Badri, 2019). Second, the analysis period is between 2019Q4 and 2020Q3, representing the timeline before and during COVID-19. The result of this study is expected to portray the difference in sharia risk levels in normal and crisis periods. This study is also expected to contribute to the literature on sharia risk and performance of Islamic rural banks, a context that is still not much revealed. Finally, this is the first study that shows the role of the government as the owner and how they may affect the sharia risk of Islamic rural banks.

The results supported our hypothesis that bigger and government-owned Islamic rural banks tend to have higher sharia risk. These findings are robust in all models and periods. Bank growth also affects sharia risk positively in the period before COVID-19 and all periods model. COVID-19 pandemic has a negative effect on *NHI*, suggesting pandemic condition decreased sharia risk. Our results have several important implications. First, ownership structures, especially government-owned banks, play essential roles in defining sharia risk and performance. Second, banks with a larger size and bigger growth will have poor sharia risk. Lastly, pandemics' condition or crisis will reduce the risk related to sharia compliance.

This study begins with the hypothesis developed in the following Section 2. Section 3 explains the method and variables employed in this study. We discuss the empirical findings and analysis in Section 4 and the conclusion in Section 5.

## **2. HYPOTHESES DEVELOPMENT**

According to Law Number 10 of 1998, banks are business entities that collect funds from the public in the form of savings and distribute them to the public in the form of credit and other forms to improve the people's standard of living. Islamic banks are banks that perform all conventional banking operations by complying with Islamic law. Interest-free Islamic financing is developed from two axioms, mutual fairness in transactions and reflection of actual reality. Rather than offer interest, Islamic banks give a return based on profit-sharing (Kahf, 1999).

Banks also have to generate profit and good financial performance besides their main business to give credit and other services in payment traffic and money circulation (Law Number 14 of 1967 Article 1 about Banking Principle). Many methods are used to measure banks' performance. Previous researches measured the performance of banks by measuring several variables affected to banks' performance, such as ownership structure, bank size, and efficiency (Abbas et al., 2009; Haw et al., 2010; Cornett et al., 2010; Li et al., 2014; Zouari and Taktak, 2014; Doan et al., 2017; Haque and Brown, 2017; Huang, 2020; Widarjono, 2018; Santoso and Santasyacitta, 2020).

Ownership structures have various impacts on Islamic Banks. The study of Abbas et al. (2009) found that government, family, and institutional ownership of Islamic financial institutions (IFIs) in Malaysia had a significant positive influence on the financial performance of Islamic financial institutions. Li et al. (2014), Zouari and Taktak (2014), and Haque and Brown (2017) found that government ownership had a positive influence on financial performance and efficiency in Islamic Banks. The other ownership structure, such as ownership of a director and institutional ownership, negatively impacts the financial performance of Islamic banks (Li et al., 2014).

Meanwhile, according to Mateev and Bachvarov (2020), ownership structure had an insignificant influence on the financial performance of Islamic banks in the MENA (the Middle East and North Africa) region. The foreign ownership effect was negative but insignificant, while the government ownership effect is only marginally significant and negative to the financial performance. In Indonesia, government ownership also has a negative effect on a bank's financial performance (Santoso and Santasyacitta, 2020). Haw et al. (2010), Cornett et al. (2010), and Doan et al. (2017) also found that state-owned banks were less efficient and less profitable than privately owned banks because banks with government control can cause greater agency conflicts, especially in developing economies or countries with weak legal and regulatory institutions and political corruption in the banking system.

According to Ullah and Khanam (2018), some factors could impact an Islamic bank's financial performance. However, sharia compliance is the essential aspect in gaining a competitive advantage. Superior sharia compliance provides internal strengths and other external opportunities, allowing Islamic banks to improve their financial performance. Sharia compliance level is different among Islamic banks. Sharia violation is high in investing activities because of lack of knowledge, lack of sincerity in complying with sharia rules, poor attention in sharia audit and sharia research, and lack of strong sharia

supervisory board comprising full-time skillful members (Ullah, 2014). Similar to Basiruddin and Ahmed (2020), the sharia non-compliant risk (SNCR) could be diminished due to financial competence and more frequent sharia committee meetings. The findings also revealed that banks with good corporate governance have lower SNCR. The Islamic banking and financial industry exist because of sharia compliance. An excellent sharia governance framework can help banks achieve strong sharia compliance (Kasri, 2019). On the other hand, according to Ayedh and Echchabi (2015), Islamic banking still lacks regulations and standards. As a result, Islamic banks only refer to minimum requirements and implement the compulsory standards. The other issue is also that the disclosure level of overall sharia audit reporting practices by Islamic Banks is quite low compared to the stakeholder expectations (Aribi et al., 2019).

Islamic finance also measures sharia performance because Islamic banks still have non-halal or non-compliant products and income. Islamic banks differ from conventional banks in that they are only responsible for meeting the financial needs of their customers. Therefore, Islamic banks must do business following sharia rules. According to Bedoui and Mansour (2013), the Islamic view of performance is not only related to ethics and the financial dimension but includes additional dimensions that make the company not owner-oriented, but also for all stakeholders and society as a whole, this is important in performance based on the concept of the Islamicity performance index. An Islamicity performance index is a tool that can express the materialistic, spiritual, and social values contained in Islamic banks (Bedoui and Mansour, 2013; Haq, 2015). Therefore, we can conclude that sharia performance is an evaluation and process method for measuring the performance of Islamic financial institutions that comply with sharia rules.

Risk is an element of financial transactions in Islamic financial institutions. As a result, it should be taken into account. Risks in Islamic financial institutions differ from those in conventional financial institutions. In conducting the business, Islamic financial institutions are exposed to two categories of risk. First, Islamic financial institutions have risks that are comparable to those encountered by conventional financial institutions. Second, they are exposed to particular and specific risks. The second form of risk derives from contract design that must adhere to sharia principles and laws (Noor et al., 2018).

The Islamic Financial Services Board (IFSB) defines sharia non-compliance risk (SNCR) is that the risk that arises from the failure of institutions offering Islamic financial (IIFS to comply with the sharia rules and principles determined by the sharia Board (S.B.) of the IIFS or other parts in the jurisdiction in which the IIFS operate (Oz et al., 2016). Credit risk, equity investment risk, market risk, liquidity risk, rate of return risk, and operational risk are the six categories of risks faced by Islamic financial institutions, according to the Islamic Financial Services Board (IFSB). The operational risk is where the sharia non-compliance risk is highlighted. Sharia non-compliance risk is the risk that appears because Islamic financial institutions fail to comply with the Sharia rules and principles. Sharia rules are highly maintained in the Islamic bank operation. Failure to comply with sharia rules may expose the Islamic banks to high financial risk due to the invalidity of the transactions (Lahsasna, 2014).

Islamic banks also clearly and accurately disclose their sharia non-compliant income (Puneri et al., 2020). According to Yunus et al. (2017), sharia non-compliant products, unlawful deposits from depositors, defective documents, shariah non-compliant business operations, and interest received from conventional banks are five primary sources of non-

halal income. The study of Ginena (2014) also mentions that Islamic banks and their stakeholders face a genuine threat from Sharia risk, an operational risk. Higher expenses, financial losses, liquidity issues, bank runs, bank collapse, industry damage, and financial instability are all possible results of sharia non-compliance.

Sutrisno (2017) measured the sharia performance of 13 Islamic banks in Indonesia. This study used *maqasiq* performance to know Islamic banking performance using the sharia compliance and performance model approach by employing education and training grants, profit sharing ratio, zakah ratio, and Islamic investments ratio. As a result, Bank Muamalat Indonesia (BMI), the first private-Islamic bank in Indonesia, had the highest sharia performance ranking, but it had low financial performance.

Islamic Performance Index had been used as sharia performance measurement by Haq (2015), Sebtianita (2015), Mutia et al. (2018), and Badri (2019). The Islamic Performance Index consists of five ratios: profit-sharing ratio, zakat performance ratio, equitable distribution ratio, directors-employees welfare ratio, and Islamic income vs. non-Islamic income. Based on the analysis result, the best profit-sharing ratio and directors-employees welfare ratio were Bank Muamalat Indonesia (BMI) (Mutia et al., 2018). Haq (2015) compared sharia performance Bank Muamalat Indonesia and Bank Syariah Mandiri (BSM). This study concluded that BMI performance was better than BSM. In line with Sebtianita (2015), BMI had the best profit-sharing ratio, zakat performance ratio, and equitable distribution. Other Islamic banks such as BSM and BRI Syariah were the best in directors-employees welfare ratio and Islamic income vs. non-Islamic income, respectively. Otherwise, according to Badri (2019), sharia performance of BSM was better than BMI. BSM had higher Islamic income vs. non-Islamic income, equitable distribution ratio, and directors-employees welfare ratio, while zakat performance ratio had the same percentage.

Abbas and Mahenthiran (2009), Huang (2020), and Santoso and Santasyacitta (2020) found that ownership concentration has a positive impact on financial performance and profitability, while the study of Li et al. (2014) discovered the otherwise. Government ownership has a negative relationship to banks' performance, profitability, and efficiency. In this study, government ownership is also expected to have a negative effect on sharia performance or a positive effect on sharia risk. Government control may tend to focus on political interests more than improving performance (Santoso and Santasyacitta, 2020) or reducing sharia risk.

According to Haw et al. (2010), government control would lead to more agency conflicts in countries with weak legal and regulatory systems. Similarly, government ownership causes problems due to conflicts between social and political agendas, bureaucracy and corruption, and interest group politics (Shleifer et al., 1997). According to Ehsan and Javid (2018), the issue of government ownership in banking is derived from a development perspective and a political perspective. According to the development perspective, government-owned banks have distinct economic and financial development goals than private banks. They give a platform for government initiatives to be funded, regardless of risk or return (Gerschenkron, 1962 in Ehsan and Javid, 2018). According to Shleifer and Vishny (1994) in Ehsan and Javid (2018), the political perspective is that the government is interested in allocating resources through government-owned banks for political objectives. Government ownership also has a positive impact on bank risk-taking (Ehsan and Javid, 2018).

According to those findings, Islamic banks with government ownership are also more likely to have poor performance because government-owned banks tend to operate banks and make decisions based on personal or political interest rather than complying with sharia. However, this condition has a role in the market structure changes on bank risk-taking and stability when the crisis happens. Greater countries' condition of banks decreases banks' risk-taking and increases their stability because lower bank competition maintains the stability (Saif-Alyousfi, 2020). Therefore, we expect:

**H1.** Government ownership is positively associated with the sharia risk of Islamic rural banks.

**H1a.** Government ownership is less positively associated with the sharia risk of Islamic rural banks during the Covid-19 pandemic.

### **3. METHOD, DATA, AND ANALYSIS**

#### **Data and Sample**

This study used secondary data from the Financial Services Authority of the Republic of Indonesia. The Financial Services Authority (OJK) provides complete published reports of Financial Statements, Income Statements, Commitment and Contingency, Financial Ratios, Sources and Distribution of Zakat and Waqf Funds, the Sources and Use of the Virtue Fund, Profit Sharing Distribution, and Earning Asset Quality. According to these datasets, Indonesia has 164 BPRSs from 23 provinces. Nevertheless, from these data, we obtained 157 BPRSs with the complete dataset. The research periods of this study are 2019Q2 up to 2020Q1 represented before the COVID-19 period and 2020 Q2 up to 2020 Q3 represented during COVID-19. The COVID-19 period was chosen started from 2020Q2 because, as of March 2020, the Indonesian government confirmed the first case of COVID-19. Data for the complete year of 2019 and 2020 was not available. The Statistic of Islamic Rural Banks in Indonesia is shown in Table 1. According to the table, 63.69% of Islamic rural banks in Indonesia are located in Java Islands. West Java province has the highest number of BPRSs, followed by East Java and Central Java province. Furthermore, the highest amount of non-halal income is owned by BPRS in Central Java, while in the total amount of *NHI*, Lampung province has the highest total amount.

Ownership structures of Islamic Rural Banks in Indonesia are divided into three categories. There are government-owned, institution-owned, and individual-owned. Even though there are BPRS that are owned by two categories, the ownership structure status is grouped by the highest percentage of ownership or main shareholder. Government-owned BPRSs are owned by local governments, such as provincial government, city, or district government. While institutional-owned BPRSs can be owned by a local foundation, regional development banks (BPD), and other institutions or companies. Banks' shareholders and local officials usually own Individual-owned BPRSs. For the government ownership percentage in each province, 13 provinces have Islamic rural banks not owned by the government. On the other hand, Bangka Belitung only has one BPRS, and it is government-owned.

**Table 1.** Statistic of Islamic Rural Banks in Indonesia

No	Province	Total				Dependent Variable: NHI (in thousand Rp)			Ownership Structure Percentage in each Province		
		2019	2020	Sample	%	Max.	Min.	Total	Gov (%)	Ins (%)	Indv (%)
1	West Java	28	27	27	17.20%	57879	0	176312	11.11%	29.63%	59.26%
2	Banten	8	8	8	5.10%	49149	0	108243	12.50%	12.50%	75.00%
3	DKI Jakarta	1	1	1	0.64%	7	6	13	0.00%	0.00%	100.00%
4	Yogyakarta	12	12	12	7.64%	10529	0	18846	0.00%	25.00%	75.00%
5	Central Java	26	26	25	15.92%	61278	0	156410	8.00%	20.00%	72.00%
6	East Java	28	27	27	17.20%	42730	0	103324	18.52%	14.81%	66.67%
7	Bengkulu	2	3	2	1.27%	0	0	0	0.00%	0.00%	100.00%
8	Jambi	0	0	0	0.00%						
9	Aceh	10	10	10	6.37%	1309	0	2303	20.00%	10.00%	70.00%
10	North Sumatra	8	8	4	2.55%	0	0	0	0.00%	25.00%	75.00%
11	West Sumatra	7	7	7	4.46%	1562	0	2451	0.00%	14.29%	85.71%
12	Riau	2	2	1	0.64%	0	0	0	0.00%	100.00%	0.00%
13	South Sumatra	1	1	1	0.64%	0	0	0	0.00%	100.00%	0.00%
14	Bangka Belitung	1	1	1	0.64%	41368	15814	57182	100.00%	0.00%	0.00%
15	Riau Islands	2	2	2	1.27%	0	0	0	0.00%	0.00%	100.00%
16	Lampung	11	11	11	7.01%	48063	0	249931	72.73%	0.00%	27.27%
17	South Kalimantan	1	1	1	0.64%	0	0	0	0.00%	0.00%	100.00%
18	West Kalimantan	0	0	0	0.00%						
19	East Kalimantan	1	1	1	0.64%	0	0	0	0.00%	0.00%	100.00%
20	Central Kalimantan	1	1	1	0.64%	0	0	0	0.00%	0.00%	100.00%
21	Central Sulawesi	0	0	0	0.00%						
22	South Sulawesi	7	7	7	4.46%	55752	0	60656	14.29%	0.00%	85.71%
23	North Sulawesi	0	0	0	0.00%						



No	Province	Total				Dependent Variable: NHI (in thousand Rp)			Ownership Structure Percentage in each Province		
		2019	2020	Sample	%	Max.	Min.	Total	Gov (%)	Ins (%)	Indv (%)
24	Gorontalo	0	0	0	0.00%						
25	West Sulawesi	1	1	1	0.64%	0	0	0	0.00%	0.00%	100.00%
26	Southeast Sulawesi	0	0	0	0.00%						
27	West Nusa Tenggara	3	3	3	1.91%	0	0	0	0.00%	33.33%	66.67%
28	Bali	1	1	1	0.64%	0	0	0	0.00%	0.00%	100.00%
29	East Nusa Tenggara	0	0	0	0.00%						
30	Maluku	0	0	0	0.00%						
31	North Maluku	3	3	3	1.91%	0	0	0	66.67%	33.33%	0.00%
32	Papua	0	0	0	0.00%						
33	Papua Barat	0	0	0	0.00%						
Total		165	164	157	100%						

Source: The Financial Services Authority (OJK)

### Methodology and Variable Explanation

This research analyses the sharia risk of Islamic rural banks in Indonesia. Various Sharia contracts (*'uqūd*) control the operations of Islamic banks. The underlying contracts are used to identify Sharia non-compliance risks or events in Islamic banks that are possibly sharia non-compliant. Despite the fact that Sharia non-compliance can occur at any time and in any form (Oz et al., 2016). This research uses non-halal income as sharia risk measurement because *NHI* is one of sharia non-compliance risks events. This income can be sourced from invalid transactions (Lahsasna, 2014). In Islamic finance, the application of Sharia principles leads with a concept in which a person is potentially involved with the contract risk that is Sharia risk. The risk exists if the change of circumstances deviates from the compliance requirement (Noor et al. (, 2018).

The analysis tool used in this research is the Random Effect Model (REM) analysis method as a result of Chow Test, Hausman Test, and Lagrange Multiplier Test. Regression using strongly balanced panel data regressions are employed to analyze the relationship between the government ownership and sharia risk for both periods, before and during COVID-19 happen. Non-halal income (*NHI*) represents the sharia risk which has a negative correlation with sharia performance. The existence of *NHI* in Islamic banks' reports indicates that the banks have sharia risk and have less sharia performance or shariah compliance. The higher the *NHI*, the higher the sharia risk and the lower the sharia performance of the Islamic banks. The *NHI* of Islamic rural banks is obtained from the Sources and Use of the Virtue Fund Reports (*Laporan Sumber dan Penggunaan Dana Kebajikan*).

The independent variable of this study is bank ownership. The ownership structure is obtained from the main shareholder data of each bank. This research employs dummy variables to categorize the ownership structure of a bank. This research takes the value 1 to indicate the presence of government ownership and takes the value 0 to mean the other. This study also uses ownership percentage of main shareholders, bank size, growth, and efficiency as control variables.

The first is the ownership percentage obtained from the main shareholder percentage in the Other Information Report (*Laporan Informasi Lainnya*) in each BPRS report. According to Mateev and Bachvarov (2020), ownership concentration negatively influences banks' profitability or financial performance of Islamic banks. According to Haque (2018), bank risk-taking is inversely related to the relationship between ownership concentration and activity limitation. On the other hand, Hammami and Boubaker (2015) found that ownership percentage significantly affects bank risk. It has a positive influence on asset risk while the ownership percentage is over 50%. Second, bank size is measured as the natural logarithm of the value of total assets in thousand rupiahs. Abbas and Mahenthiran (2009) found that bank size negatively impacts bank performance, while other studies (Trinugroho et al., 2017; Widarjono, 2018; Awo and Akotey, 2019; Haddad et al., 2020) found that bank size affected financial performance positively. Third, bank growth is calculated from the growth of the total assets of each bank. According to Jadah et al. (2020), asset growth is positively associated with banks' financial performance. Fourth, the efficiency ratio used in this research is CIR (cost-to-income ratio), measured by the ratio of operating expenses and operating incomes. According to Trinugroho et al. (2017), financial performance was affected by CIR negatively. Mateev and Bachvarov (2020) also found that CIR had a negative impact on Islamic banks' profitability.

We create two models to test the hypothesis that government ownership has a positive impact on sharia risk. The model uses panel data regression to test the hypothesis for each period (before and during the pandemic). The equation (1) can be expressed as following equation 1:

**Model I:**

$$NHI = \alpha + \beta_1GOV + \beta_2OP + \beta_3Size + \beta_4Growth + \beta_5Efficiency + \epsilon \quad (1)$$

We also employ a data panel regression model, which combines both periods, before and during the pandemic, by developing a dummy variable for COVID-19 periods that scores one while otherwise is zero. The equation (2) can be expressed as following equation 2:

**Model II:**

$$NHI = \alpha + \beta_1GOV + \beta_2COVID + \beta_3OP + \beta_4Size + \beta_5Growth + \beta_6Efficiency + \epsilon \quad (2)$$

The variables and variable measurements can be seen in Table 2.

Table 2. Variables and Variable Measurement

Variable	Notation	Measurement	Expected Sign
<b>Dependent Variable</b>			
Non-halal Income	<i>NHI</i>	non-halal income as reported in the bank statement (in 000 IDR)	
<b>Independent Variable</b>			
Government Ownership	<i>GOV</i>	A dummy variable that scores one if the government owns the bank, otherwise zero	+
<b>Control Variable</b>			
COVID	<i>COVID</i>	A dummy variable that scores one during pandemic periods, otherwise zero	-
Ownership Percentage	<i>O.P.</i>	Main Shareholder Percentage	+
Bank Size	<i>SIZE</i>	Ln of Total Asset	+
Bank Growth	<i>GROWTH</i>	Total Asset Growth	-
Cost-to-income Ratio	<i>EFFICIENCY</i>	Operating Expense/ Operating Income	-

#### 4. RESULTS

##### Descriptive statistics

The descriptive statistics for variables are displayed in Tables 3 and 4. Table 3 describes the ownership structure variable. Individual ownership is the highest ownership structure, followed by institution ownership and government ownership. There are 105 banks, or 66.88 percent of the sample, owned by an individual as the main shareholder. The least is government ownership which is only 15.92 percent of BPRS.

Table 3. Descriptive statistics - Ownership Structure

Independent Variable	Freq.	Percent	Cum.
Government Ownership	25	15.92%	15.92%
Institution Ownership	27	17.20%	33.12%
Individual Ownership	105	66.88%	100.00%
<b>Total</b>	157	100%	

**Table 4.** Descriptive statistics

Variable	All Periods				Before COVID-19 Periods				During COVID-19 Periods			
	Mean	Std. Dev.	Min.	Max.	Mean	Std. Dev.	Min.	Max.	Mean	Std. Dev.	Min.	Max.
<b>Dependent Variable</b>												
<i>NHI</i>	3012.373	11275.197	0	111515	3948.955	14055.461	0	111515	2075.790	7439.782	0	57879
<b>Independent Variable</b>												
<i>GOV</i>	0.159	0.366	0	1	0.159	0.366	0	1	0.159	0	0	1
<i>COVID</i>	0.500	0.500	0	1								
<b>Control Variable</b>												
<i>OP</i>	0.607	0.293	0.075	1	0.607	0.293	0.075	1	0.607	0.293	0.075	1
<i>Size</i>	17.553	1.229	9.887	21.061	17.530	1.273	9.887	21.061	17.576	1.184	12.819	20.960
<i>Growth</i>	3.431	56.854	-0.991	1031.515	6.665	80.303	-0.527	1031.515	0.196	2.323	-0.991	41.094
<i>Efficiency</i>	0.674	6.599	-119.610	51.465	0.907	1.604	-21.604	14.383	0.441	9.195	-119.610	51.465

Table 4 presents the average amount, standard deviation, minimum and maximum value of each variable, except the ownership structure variable. The first is the dependent variable of this study, non-halal income (*NHI*), which is stated in thousand rupiahs. The highest *NHI* is Rp 111,515,000 before COVID-19 and Rp 57,879,000 during COVID-19, while the lowest *NHI* is Rp 0 because there are banks in some periods or all periods that do not generate non-halal income. The ownership percentage variable is presented in a percent, while the other control variables are provided in a ratio. The higher main ownership percentage of Islamic rural banks is 100%, while the lowest is 7.52%.

Before the COVID-19 periods, the largest bank size is Rp 1,402,051,289,000 and the lowest is Rp 41,400,656,000. Then, the highest and the smallest bank size during COVID-19 periods are 1,270,106,600,000 and Rp 369,056,000 each. The greater growth of Islamic rural banks before COVID-19 periods is 1031.51 times while the smallest is -0.527 while during COVID-19 periods are 41.094 times and -0.991, respectively. The highest efficiency score is 14.383 and the lowest -21.60 before COVID-19 periods, while during COVID-19 periods, the scores are 51.46 and -119.61, respectively. When a pandemic happens, Islamic rural banks have poor efficiency.

Before running the regressions, we present the correlation matrix of variables in Tables 5 and 6 divided into two periods, before COVID-19 periods and during COVID-19. The correlation coefficient among variables in Tables 5 and 6 proves no perfect multicollinearity problem because coefficients of correlation between variables are less than 0.8. According to those tables, government ownership (*GOV*) and ownership percentage (*O.P.*) has the highest correlation with a significance level of 1% in both periods. The correlation and significance level of those variables are the same because Islamic Rural Banks tend to have the same main shareholders (government-owned) and the same percentage of main shareholders in all periods. *GOV* also has a significant correlation with bank size at a 1% significance level. At the same time, *O.P.* correlates with bank size at a 5% significance level. The second highest correlation is bank growth and bank size, with a significance level of 1% in both periods. On the contrary, the lowest correlation is bank growth and efficiency in all periods. We treat the possible multicollinearity problem by testing the VIF.

**Table 5.** Correlation matrix - Before COVID-19 Periods 2019 Q4-2020 Q1

	<i>GOV</i>	<i>OP</i>	<i>SIZE</i>	<i>GROWTH</i>	<i>EFFICIENCY</i>
<i>GOV</i>	1				
<i>OP</i>	0.4477***	1			
<i>SIZE</i>	0.1739***	-0.1213**	1		
<i>GROWTH</i>	-0.036	-0.0669	-0.4074***	1	
<i>EFFICIENCY</i>	-0.0161	-0.0478	-0.0503	0.0031	1

\*\*\*, \*\*, and \* indicate statistical significance at 1%, 5%, and 10% levels, respectively

**Table 6.** Correlation matrix - During COVID-19 Periods 2020Q2-2020Q3

	<i>GOV</i>	<i>OP</i>	<i>SIZE</i>	<i>GROWTH</i>	<i>EFFICIENCY</i>
<i>GOV</i>	1				
<i>OP</i>	0.4477***	1			
<i>SIZE</i>	0.1870***	-0.1384**	1		
<i>GROWTH</i>	-0.0279	0.0226	-0.2125***	1	
<i>EFFICIENCY</i>	0.0699	0.0317	0.0625	0.0037	1

\*\*\*, \*\*, and \* indicate statistical significance at 1%, 5%, and 10% levels, respectively

### Results

The results of the regression are exhibited in Table 7. The results are divided by model regressions and periods. The period of 2019Q4 and 2020Q1 is represented before COVID-19, while the period of 2020 Q2 and 2020 Q3 are represented during COVID-19. The panel data regression is run for all periods and models of this study.

Hypothesis 1 expects that government ownership has a positive effect on the sharia risk of Islamic rural banks. According to Table 7, government ownership has a significant positive effect on non-halal income (*NHI*), with a significance level of 1% in all models and periods. It can be concluded that government structure impacts positively significant to sharia risk. The existence of *NHI* in Islamic rural banks' income also indicates that Islamic banks have less sharia performance or sharia compliance. These results indicate that hypothesis (H1) is supported. Bank size also has a significant positive impact on *NHI*. Bank size takes effect in all periods and models with a significance level of 1%. Therefore, it is possible to infer that bank size has a positive impact on sharia risk. Bank growth only takes impact before COVID-19 periods and all periods model (Model II) with a significance level of 5%.

In contrast, other control variables, such as ownership percentage and bank efficiency, positively insignificant impact *NHI*. Table 7 also depicts that all VIF scores are less than ten, concluding that there is no multicollinearity.

A dummy variable of COVID is used to know the effect when a pandemic happens. According to Table 7, this pandemic condition has a significant negative effect on *NHI* at a 1% significance level. We run panel regression for independent variables only and Model II by adding the COVID dummy variable for robustness tests. The government ownership and bank size still have a significant impact on *NHI* on those models. The existence of control variables also attests to an increase in a higher percentage of R-Square if compared with model regression without control variables.

Besides the COVID variable, the overall period sample shows that government ownership and bank size also positively impact *NHI*, with a significant level at 1%. In comparison, bank growth is positively significant at a 5% level of significance.

### Discussion

This study indicated that only government ownership and bank size significantly influence *NHI* in all periods and models, while the bank growth was only significant before COVID-19 happened and Model II. Therefore, government ownership, bank size, and bank

growth affect sharia risk positively or affect sharia performance negatively. Thus, the higher the *NHI* and government ownership level is, the higher the sharia risk is. It is in line with the studies of Haw et al. (2010), Cornett et al. (2010), Doan et al. (2017), Santoso and Santasyacitta (2020) that stated that the government ownership structure of banks influenced profitability, efficiency, and performance negatively. Even though the results also do not significantly differ in both periods, the coefficient levels tend to decline when a pandemic happens. According to Table 7 Model I, the impact of government ownership on *NHI* will decrease from IDR8,556,798 before the COVID-19 period to IDR7,171,236 during the COVID-19 periods.

Government ownership affects sharia risk positively, maybe because banks with government control are subject to greater agency conflicts in countries with weak legal and regulatory institutions (Haw et al., 2010). Banks with government ownership are more concerned with political interests rather than improving performance (Santoso and Santasyacitta, 2020).

Bank size has a significant positive influence on *NHI* with coefficient level 3157.9368 and the level decrease to 1271.5364 in a pandemic. Thus, bank size significantly positively impacts sharia risk and has a significantly negative on sharia performance. It is supported by Abbas et al. (2009) and Huang (2020) that bank size could negatively affect bank performance. Sehgal and Agrawal (2017) mentioned that asset size and ownership structure provide useful information for determining the riskiness of banks. Anwer et al. (2021) also found that companies that fulfill sharia-compliant have a lower level of governance, smaller size, and lower profitability compared with sharia non-compliance companies. According to Widarjono (2018), the greater the size of the Islamic bank is, the greater the profitability. Therefore, it might be that Islamic banks with greater size have to generate more profit that tends to be more non-compliant with sharia laws. Ginena (2014) found that higher expenses, financial losses, liquidity issues, bank runs, bank collapse, industry damage, and financial instability are all possible results of sharia non-compliance risk.

Surprisingly, according to Table 7, pandemic COVID-19 can decrease non-halal income to the level of Rp -1,900,277. It means that this condition has a positive impact on sharia compliance and a negative impact on sharia risk. The effect of government ownership and other variables decreases when a pandemic happens, which is consistent with H1a. The reason why this happens can be because, in unstable conditions, people tend not to save their money or to take credit from banks. This condition probably decreases the possibility of the bank generating a higher non-halal income.

Overall, the results also show that government ownership, bank size, and bank growth impact positively significant *NHI* or sharia risk. The increased level of government ownership will increase *NHI* to the level of Rp 7,888,396. At the same time, bank size and bank growth affect *NHI* at the coefficient level of 2166.8417 and 13.067043, with a significant degree at 1% and 5%, respectively.

## **5. CONCLUSION, LIMITATIONS, AND SUGGESTIONS**

This study aims to know the relationship between government ownership and sharia performance of Islamic Rural Banks. The periods taken are 2019Q4 and 2020Q1 representing before COVID-19 periods, then the 2020Q2 and 2020Q3 representing during COVID-19 periods. The regression results show that Islamic Rural Banks that are bigger

and owned by the government tend to have higher sharia compliance risk or lower sharia performance.

The larger bank size and bank growth of Islamic Rural Banks will lead the banks to have higher NHI or sharia risk. The bank growth only had a considerable impact before the pandemic period. If we compare the results between the two periods, there is a decrease in the magnitude. Therefore, it can be concluded that pandemic makes the impact of government ownership on sharia risk decreases. On the other hand, ownership percentage and bank efficiency have no considered impact on sharia risk. The findings contribute to the literature on the government ownership structure of Islamic rural banks and their effect on sharia non-compliance risk. Furthermore, the results also have practical implications that sharia compliance of Islamic banks depends on their ownership and economic stability condition. Government should put greater concerns and stricter monitoring on the sharia compliance level of the Islamic finance industry for the industry's sustainability.

This study uses a quantitative method and secondary data from the Financial Services Authority database. Several data of BPRS are incomplete because some BPRS do not publish their quarterly reports and do not disclose their non-halal income. The research periods taken are also limited because the pandemic was still not recovered when this research was carried out. Future research could measure using other measures of sharia risk during and after the crisis.

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Appendix

Table 7. The Relationship of Non-halal Income and Government Ownership

Variables	Model I						Model II					
	Before COVID-19 Periods				During COVID-19 Periods				All Periods			
	Coef.	VIF	Coef.	VIF	Coef.	VIF	Coef.	VIF	Coef.	VIF	Coef.	VIF
GOV	11222.2***	1.00	8556.7978***	1.46	7951.753***	1.00	7171.2364***	1.47	9586.976***	1.00	7888.3969***	1.46
COVID									-1873.166***	1.00	-1900.2773***	2.01
OP			2570.9333	6.09			154.17683	6.12			1273.5648	6.08
SIZE			3157.9368***	5.57			1271.5364***	5.20			2166.8417***	6.12
GROWTH			19.85194**	1.00			101.97565	1.01			13.067043**	1.01
EFFICIENCY			100.70648	1.31			-14.08837	1.01			-19.20854	1.01
Constant	2161.981**		-54557.61***		809.5871		-21522.083***		2422.367***		-36131.683***	
Observations	314		314		314		314		628		628	
R2	8.56%		15.11%		8.56%		19.13%		10.39%		15.25%	

\*\*\*, \*\*, and \* indicate statistical significance at 1%, 5%, and 10% levels, respectively

Source: Data Analysis