Competition and profitability of Sharia rural banks in Indonesia

Mutia Pamikatsih[1]*, Purwanto[2]
[1]Universitas Nahdlatul Ulama Al Ghazali Cilacap, Cilacap, Indonesia
[2]Institut Agama Islam Syubbanul Wathon Magelang, Indonesia
*Corresponding authors: mutiacilacap4560@gmail.com

ARTICLE INFO	ABSTRACT
	The purpose of this study is to analyze the influence of market forces, measured by the Lerner Index, on the profitability (ROA) of Sharia Rural Banks (SRBs) in Indonesia, as well as to test the validity of the Structure–Conduct–Performance (SCP) Hypothesis and the Efficient Structure Hypothesis (ESH). Using Fixed Effect Model (FE) panel data regression, this study involved all SRBs and analyzed SRBs separately based on asset size (large vs. small). The estimated results show that overall, market forces have a positive and significant influence on ROA, providing strong support for the SCP Hypothesis. The heterogeneity analysis revealed a crucial finding: the influence of market forces is much more dominant on Small SRBs, which shows a greater ability to exploit the concentration of local markets. On the other hand, the profitability of Large SRBs is also driven by internal efficiency (supporting ESH), and has proven to be more resistant to external shocks (COVID-19) than Small SRBs. Financing risk factors (NPF) and capital adequacy (CAR) are the pressures of profitability in all segments. These findings imply that the SCP/ESH debate depends on the scale of SRB, thus demanding the need for differentiated oversight policies to improve SRB's resilience and efficiency.

Introduction

Profit is a key indicator of the health and sustainability of financial institutions, including Islamic banks. In the context of Sharia Rural Banks (SRBs), profitability has a broader meaning than just the achievement of financial profits. SRB plays a dual role — as an Islamic financial institution that aims to obtain halal profits and as a driving force for the economy of small communities through micro and small sector financing. Therefore, understanding the factors that affect the profitability of SRB, particularly those derived from market structure and level of competition, is essential to ensure a balance between its efficiency, stability, and social functioning.

One relevant approach to measuring market strength and the level of competition in the banking industry is the Lerner Index. This index reflects a bank's ability to determine a price markup on its marginal costs — the higher the value of the index, the greater the market power the bank has to set profit margins. In the context of industrial economic theory, the relationship between market power and profitability has long been a classic debate, which can be explained through two main approaches: the Structure–Conduct–Performance (SCP) and the Efficient Structure Hypothesis (ESH) (Huang, Liu, & Kumbhakar, 2018).

According to the SCP approach, the concentrated market structure—characterized by the high Lerner Index—provides an opportunity for banks to increase profits through greater market forces. In other words, the lower the level of competition, the greater the bank's ability to set high profit margins (Berger & Hannan, 1992). However, this theory is often criticized for not taking into account the internal efficiency of banks. In this case, the Efficient Structure Hypothesis argues that high profitability is not a result of market forces, but rather a result of better efficiency (Trinh, Elnahass, Salama, & Izzeldin, 2020). Efficient banks can keep costs down, generate larger margins, and ultimately strengthen their market position — not the other way around (Berger, 1995).

In the context of SRB in Indonesia, the relationship between profitability and the Lerner Index is becoming increasingly interesting and complex. First, SRB operates in a highly localized and segmented market, with different customer characteristics than commercial banks. The level of competition faced by SRB does not only come from fellow SRBs, but also from Sharia Commercial Banks, Sharia Business Units, and even non-bank microfinance institutions such as Sharia cooperatives or Sharia-based fintech. Intense competition can squeeze profit margins, but on the other hand, it can encourage SRB to improve efficiency and service innovation to remain competitive.

Second, the small-scale and region-based nature of SRB operations makes the relationship between market forces and profits heterogeneous between regions. In areas with low SRB penetration, for example, banks can have greater market power so that they are able to set higher financing margins. Conversely, in areas with many Sharia competitors, market forces are weakening and pressures on profitability are increasing. Therefore, the influence of the Lerner Index on SRB profits is likely to be non-linear and may be influenced by other factors such as operational efficiency, financing risk, and regional economic conditions.

The empirical literature linking the Lerner Index and profitability in Islamic banks is still limited, especially at the SRB level. Most previous studies have focused on Islamic commercial banks or conventional banks, where the market structure is broader, and the data is more complete. For example, research on conventional banks found that an increase in the Lerner Index generally increased profitability, supporting the SCP hypothesis (Budagaga, 2020; Coccorese & Girardone, 2021). Meanwhile, in the context of Islamic banks, several studies Cardillo et al. (2024), Rumler & Waschiczek (2016) and Putri & Misbah (2025) suggest that this relationship can be different: high market forces are not always followed by increased profitability because Islamic banks are constrained by the principles of fairness and the need to share risk.

However, in SRB, this relationship is still rarely explored empirically. Several factors distinguish SRB from other bank institutions: (1) small scale of assets and capital; (2) focus on financing in the micro and informal sectors; (3) geographical and social proximity to local communities; and (4) relatively loose supervision compared to BUS. These characteristics can cause the transmission mechanisms of market power to profit to run differently — for example, SRB with high market power in remote areas may not necessarily be more profitable if efficiency is low or financing risk is high.

In addition, the COVID-19 pandemic period added to the complexity of this relationship. In times of crisis, banks' ability to leverage market forces to increase margins can be reduced due to increased risk of non-performing financing. In such a situation, SRB may lower profit margins to maintain customer loyalty and financing stability. Thus, the relationship between the Lerner Index and profitability may change during the pandemic period, depending on the financial resilience and business strategy of each SRB.

Based on this background, this research has several main objectives. First, it analyzes the influence of the Lerner Index on SRB profits in Indonesia as a measure of market strength. Second, it assesses whether the relationship between market forces and profitability reflects the Structure–Conduct–Performance theory or the Efficient Structure Hypothesis in the context of micro-Islamic banking. Third, it identifies the extent to which control variables such as operational efficiency (CIR), financing risk (NPF), capital adequacy (CAR), and macroeconomic conditions (GDP and COVID) moderate the relationship.

This research makes a new contribution (novelty) in several aspects. First, it presents the first empirical analysis that specifically examines the relationship between the Lerner Index and the profitability of SRB in Indonesia, taking into account the unique characteristics of micro-Islamic banks. Second, combining the market structure approach with micro and macro variables simultaneously, to capture the interaction between market forces, efficiency, risks, and regional economic conditions. Third, it includes the time dimension of the COVID-19 crisis, so that it is able to identify how external shocks affect the relationship between competition and profitability.

Literature Review

Profitability of Sharia Rural Banks

Profitability is a vital indicator for the health and sustainability of any financial institution, including Sharia Banks. In the context of Sharia Rural Banks (SRBs), profitability has a broader meaning than just

financial profits, because SRBs play a dual role, namely as a sharia institution that seeks halal profits and as an economic driving force for small communities through micro and small sector financing (Rizvi et al., 2020). Therefore, it is important to strike a balance between its efficiency, stability, and social functioning. In this study, profitability was measured using the Return on Assets (ROA) ratio. The analysis is directed at three categories of ROA determinants in SRB, namely Market Structure (measured by the Lerner Index), Bank Fundamentals (including Assets, CAR, FDR, CIR, and NPF), and Macroeconomic Variables (GDP and COVID-19 dummy variables). This variable framework was chosen to provide a comprehensive analysis of how internal and external performance simultaneously affects SRB profitability.

Previous research on profitability in Islamic banks has identified several key factors. Consistently, various studies have found that financing risk (NPF) has a negative correlation with profitability (Sutrisno & Widarjono, 2018), confirming that asset quality is the foundation of the profitability of Islamic banks. In addition, operational efficiency (CIR) is also often the main determinant, where more efficient Islamic banks tend to be more profitable (Yanikkaya et al., 2018; Coccorese & Girardone, 2021). However, the main focus of previous research was more on Sharia Commercial Banks. Studies that specifically examine the relationship between market forces and profitability at the SRB level and compare them based on bank size are still very limited. The limitations of this literature underscore the urgency of this study to fill this gap by exploring in depth how market forces affect profitability in Indonesia's sharia micro banking segment.

The Market Power vs. Markets Efficiency

The relationship between market power and profitability is a classic debate explained through two main hypotheses. First, the Structure–Conduct–Performance (SCP) Hypothesis argues that a concentrated market structure, which is characterized by a high Lerner Index, provides an opportunity for banks to increase profits through greater market forces (Maghfuriyah et al., 2019; Suroso & Mala, 2024; Widarjono et al., 2020). This means that low competition encourages high profits. Second, the Efficient Structure Hypothesis (ESH) argues that high profitability is the result of better internal efficiency, where efficient banks reduce costs and, as a result, strengthen their market position (Eggoh et al., 2021; Kozak & Wierzbowska, 2021; Trinh et al., 2020).

Previous empirical studies have shown that the validity of SCP and ESH is highly dependent on the regulatory environment and the type of bank. For example, research on conventional banks often finds that, along with market liberalization, efficiency (ESH) becomes more dominant than market power (SCP), especially in countries with mature financial markets (Homma et al., 2014). However, in the context of Islamic banking, some studies show mixed findings where some support SCP, but many actually find that efficiency and risk factors, not just market structure, are the main determinants of profitability (Widarjono, 2025; Muttaqin, 2025). Therefore, it is this complexity that must be tested specifically in the context of SRB, given that SRB operates in a segmented market and faces unique competition, so empirical findings are needed to identify which hypotheses are dominant.

Heterogeneity and Size

Analysis of the relationship between competition and profitability often ignores the significant heterogeneity in the banking industry. In the context of SRB, the division by size (Large SRB vs. Small SRB) is important to consider. Small SRB tend to operate in highly localized and segmented markets, which can provide significant market strength in the context of specific regions (in favor of SCPs). On the other hand, Large SRB, despite its relatively small scale, may operate in more competitive regions and have stronger risk and capital management (CAR) (supporting ESH) (Aziz et al., 2024; James et al., 2020).

Previous studies have long suggested that the size effect modifies the SCP/ESH relationship. Banks with larger assets are generally able to achieve economies of scale, which makes them superior in efficiency (ESH) and more resilient to macroeconomic shocks (Blatter & Fuster, 2022;Beliel, 2025). In contrast, smaller banks tend to have more flexibility in serving local niches, allowing them to gain high market power (price markup) despite facing limited capital and resources (Cardillo et al., 2024). However, the empirical literature that specifically examines SRB and separates the influence of competition based on the size of these banks is still very limited. Therefore, separate testing based on

bank size is needed to identify which hypothesis (SCP or ESH) is more dominant influencing profitability in each SRB market segment, while also measuring the extent to which Small SRB is more vulnerable to financing risk (NPF) and macroeconomic shocks (COVID-19) than larger SRB.

Methods

Empirical Method

This study analyzes the influence of market competition on the profits of SRB in Indonesia. This study also included control variables, namely, fundamental banks and macroeconomic conditions. Profit is measured by return on asset (ROA). Market competition is measured by the index. The bank's fundamentals consist of assets, capital adequacy ratio (CAR), Financing deposit ratio (FDR), cost-to-income ratio (CIR), and Non-performing financing (NPF). The empirical model in this study is developed based on the framework of Olszak & Kowalska (2023) and Hosen & Rahmawati (2017), who investigated the relationship between market power (Lerner Index) and bank performance. Following Preechalert et al. (2025), we include bank-specific determinants (Asset, CAR, FDR, CIR, and NPF) and macroeconomic indicators (GRDP and COVID-19 dummy) to control for internal and external factors that may influence profitability (ROA). The panel data regression analysis method can be written in the following equations:

$$ROA_{it} = \beta_0 + \beta_1 Lerner_{it} + \beta_2 Asset_{it} + \beta_3 CAR_{it} + \beta_4 FDR_{it} + \beta_4 CIR_{it} + \beta_4 NPF_{it} + \beta_4 PDRB_{it} + \beta_4 Covid_{it} + e_{it} \tag{1}$$

The small size of SRB affects the profitability of SRB (Hendri, Wulandari, & Sollehudin Shuib, 2025). This research then divides SRB into two groups, namely large SRB and small SRB, based on the assets owned. If the average SRB assets are above the average of all SRB assets, then they are grouped into large SRB. On the other hand, if the average SRB assets are below the average assets of all SRB, then they are grouped into small SRB

Operational Variables

The dependent variable is ROA. ROA is net income divided by total assets (Biasmara & Srijayanti, 2021). The Lerner index is a price set by SRB with costs (Widarjono *et al.,* (2025). The formula for calculating the Lerner index is as follows

$$Lerner = \frac{(Price - Marginal\ Cost)}{Price} \tag{2}$$

The output price is operating income divided by total assets. Marginal Cost (MC) is calculated through the translog cost function approach with two inputs. The translog cost function with two inputs is as follows:

$$LTC_{it} = \theta_0 + \sum_{m=1}^{2} \theta_1\ Lw_{m,it} + 0.5 \sum_{m=1}^{2} \sum_{n=1}^{2} \rho_{mn}\ Lw_{m,it}Lw_{n,it} + \pi_1 LTA_{it} + 0.5\pi_2 (LTA_{it})^2 + \sum_{m=1}^{2} \pi_{2m} LTA_{it}\ LV_{m,it} + \varepsilon_{it} \tag{3}$$

Total cost (TC) is the total cost. W1 is the deposit payment divided by total deposits. W2 is other costs divided by fixed assets. TA is the total assets. L Show the natural logarithm. Taking partial derivatives of the total assets from equation (3) to find MC as follows:

$$MC_{it} = \left(\pi_1 + \pi_2 LAsset_{it} + \sum_{k=1}^{2} \pi_{2k} Lv_{k,it}\right) \frac{TC_{it}}{LAsset_{it}} \tag{4}$$

A near-zero Lerner value indicates a competitive market, while a higher value indicates greater market strength

Assets are total assets. Capital adequacy ratio (CAR) is the ratio of capital to total assets that measures the amount of capital (Widarjono et al., 2023). Financing Deposit ratio (FDR) is the ratio of Financing divided by total deposits that measures liquidity risk (Smaoui, Mimouni, Miniaoui, & Temimi, 2020). Cost income ratio (CIR) is the ratio of total costs to total revenue that measures operational efficiency (Widarjono et al., 2025). Non-Performing financing (NPF) is a ratio of non-performing financing to total financing that measures financing risk (Purwanto, Fitriyani, & Lidasan, 2021). GRDP is gross regional domestic product. COVID is a COVID pandemic and is a dummy variable. COVID is one from the second quarter of 2020 to the fourth quarter of 2021.

Data and Sources

This study uses secondary data. This study uses two secondary data sources. First, SRB's financial data is obtained from the balance sheet, profit and loss ratio report compiled by the OJK (www.ojk.go.id). Second, gross regional domestic product data is sourced from BPS (www.bps.go.id). The data in this study is panel data, which is a combination of cross-section and time series. There are 154 SRB in Indonesia out of 175. A sample of 154 SRB was selected by considering the completeness of the data used in this study. The research time period is 9 years, from 2015 – 2023, with quarterly data. The total data of this study is 5492 with unbalanced panel data.

Estimation method

There are three methods of estimating data panel regression, namely the common effect method, the fixed effect method, and the random effect method. Common effect models that combine time series data with cross-section data without considering the scope of variation between time or between individuals are one of the most basic models of panel data estimation. This means that the cross-section data behaves consistently all the time. The fixed effect model, which can be referred to as the Least Dummy Variables (LSDV) technique, assumes that there is an intercept difference in the equation while the slope is fixed. Using dummy variables, this model determines that dummy variables k-1 are required. When a problem or disturbance arises that may be related, such as individuals and time, the random effects model is a panel data estimation technique. In addition, this technique is used to reduce the consequences of degrees of freedom, which can reduce the efficiency of the parameters.

Common effect model, fixed effect model, and random effect model are three methods that can be used for panel data regression analysis. The purpose of these three methods is to identify the most correct way to explain the correlation between independent and dependent variables during this study. The regression of the panel data was tested in two steps to identify the appropriate way for this study. First, the fixed effect model and the common effect model were compared using the Chow test to determine which one was more correct. Second, Bruesch-Pagan is used to compare common effect and random effect models. Third, the Hausman test was then used to compare the fixed effect model with the random effect model.

Results and Discussion

Summary of Statistics

This unbalanced panel data includes 5492 observations from 154 SRB during the 2015-2023 quarterly period. On average, SRB profitability, measured by ROA, is at a positive value of 0.0121 (or 1.21%), but has a high variance (Std. dev. 0.1035), with extreme values ranging from -1.5734 to 4.6766. The level of market strength, measured by the Lerner Index, shows a positive average of 0.4113, indicating that SRB generally has the ability to set markups above its marginal costs. The average capital adequacy ratio (CAR) is 0.1834 (18.34%), while the average financing risk (NPF) is quite high, which is 0.0972 (9.72%). In terms of efficiency, the average CIR is 0.3583. As for the macroeconomic variables, the average GDP was at 192.9516, and the COVID dummy variable had an average of 0.0856, which shows that about 8.56% of the total observations of the panel's data fell during the pandemic period. The data can be seen in Table 1.

Table 1. Summary Statistics

Variable	Mean	Std. dev.	Min	Max
ROA	0.0121	0.1035	-1.5734	4.6766
Lerner	0.4113	1.1644	-16.8034	23.2649
Asset	84.5070	151.2329	0.9546	1911.0000
CAR	0.1834	0.2070	0.0178	6.1038
CIR	0.3583	0.4303	0.0003	25.9377
FDR	0.9518	0.5192	0.0000	9.9999
NPF	0.0972	0.1011	0.0000	1.0409
GRDP	192.9516	152.3525	4.9223	524.6860
COVID	0.0856	0.2798	0.0000	1.0000

Source: Processed by Researcher (2025)

The results of the correlation test in Table 2 show that the absolute value of the correlation coefficient among all independent variables is consistently below the threshold limit of ± 0.60 (Widarjono et al., 2025). The highest correlation coefficient was observed between CAR and Asset (-0.592), which is still below the recommended threshold for multicollinearity tests. By all absolute correlation coefficients being below the limit, the results of this test provide a strong indication that the research model does not have serious multicollinearity problems. The absence of multicollinearity guarantees that each independent variable brings unique and independent information into the model, which in turn is critical to improving the validity and reliability of regression estimates, as well as allowing for a more accurate interpretation of the causal relationship between the independent variables and the profitability (ROA) of SRB.

Table 2. Correlation

	ROA	Lerner	Asset	CAR	CIR	FDR	NPF	GRDP
ROA	1							
Lerner	0.1637	1						
Asset	0.0869	-0.1593	1					
CAR	-0.1511	0.1812	-0.4961	1				
CIR	0.1136	-0.1112	0.0907	-0.0172	1			
FDR	-0.0117	-0.0001	-0.0124	0.0594	0.0111	1		
NPF	-0.1542	0.0199	-0.2367	0.2835	0.0735	0.0649	1	
GRDP	0.0355	-0.0063	0.1350	-0.0996	0.0009	-0.0616	-0.0409	1
COVID	-0.0143	-0.0020	0.0332	-0.0213	0.0370	0.0191	-0.0455	0.0038

Source: Processed by Researcher (2025)

Results: All SRBs

Table 3 presents the estimation of all SRBs using static panel regression, consisting of Common effect, fixed effect and random effects. The bottom part of this table shows the statistical test used to determine which estimator is the best estimator of this static panel regression model.

Table 3. All SRBs

	CE		FE		RE	
Variable	Coefficient	Prob	Coefficient	Prob	Coefficient	Prob
Lerner	0.0186***	0.0000	0.0237***	0.0000	0.0218***	0.0000
Asset	0.0002	0.8960	-0.0078*	0.0620	-0.0011	0.5850
CAR	-0.0744***	0.0000	-0.1233***	0.0000	-0.0971***	0.0000
FDR	0.0011	0.6780	-0.0048*	0.0980	-0.0022	0.4250
CIR	0.0348***	0.0000	0.0403***	0.0000	0.0382***	0.0000
NPF	-0.1304***	0.0000	-0.1433***	0.0000	-0.1367***	0.0000
GRDP	0.0015	0.1940	0.0369**	0.0410	0.0015	0.4580
COVID	-0.0105**	0.0270	-0.0103**	0.0260	-0.0107**	0.0210
Cons.	-0.0024	0.9290	-0.2639	0.1120	0.0252	0.5220
R-squared	0.094		0.1097		0.0883	
Banks	154		154		154	
Obs.	5491		5491		5491	
F	3.78***					
BG	406.16***					
Hausman	49.33***					

Description: *, ** and *** are significant at 10%, 5% and 1%
Source: Processed by Researcher (2025)

Based on the tests in Table 3, including the F, Breusch-Pagan (LM), and Hausman tests, Fixed Effect (FE) was selected as the best estimation model for all SRB samples in Indonesia. The regression results of the FE model showed that the Lerner variable had a positive and significant influence on profitability (ROA) with a coefficient of 0.0237 (p<0.01). These findings unequivocally support the Structure–Conduct–Performance (SCP) hypothesis, which indicates that greater market power in SRB translates directly into higher profit margins. In line with the theory, financing risk (NPF) and capital adequacy (CAR) show a negative and very significant influence on ROA (-0.1433 and -0.1233), confirming the important role of risk management. Meanwhile, the macroeconomic variable GDP had

a positive and significant effect (0.0369, p<0.05), and the COVID-19 period had a negative and significant effect (-0.0103, p<0.05), indicating the vulnerability of SRB to external shocks. Furthermore, the control variables Asset and FDR also show a negative and significant influence on ROA at the 10% level (-0.0078 and -0.0048, respectively). The negative impact of Asset size suggests that larger SRBs might face diseconomies of scale or higher operational complexity that slightly offset their profitability. Meanwhile, the negative effect of FDR indicates that an excessively high financing-to-deposit ratio may increase liquidity risk and funding costs, which in turn pressures the profit margins of these institutions. Uniquely, CIR (cost-to-revenue ratio) shows a significant positive relationship, which may reflect the existence of investment costs that have not fully generated profits in the same period.

Large vs Small SRBs

Based on the F, LM and Hausman tests, the best method is fixed effect (FE) for large SRB and small SRB. The Lerner variable, which had a positive and very significant effect on ROA in both groups, supported the SCP hypothesis. However, the coefficient of influence is much greater in Small SRB (0.0279) than in Large SRB (0.0117). This implies that Small SRB, which operate in more fragmented and local markets, have a stronger ability to translate market forces into higher profitability than their larger counterparts.

Table 4. Large SRBs.

	CE		FE		RE	
Variable	Coefficient	Prob	Coefficient	Prob	Coefficient	Prob
Lerner	0.0070***	0.0000	0.0117***	0.0000	0.0079***	0.0000
Asset	0.0013	0.3080	-0.0085**	0.0230	0.0008	0.5880
CAR	-0.0550***	0.0000	-0.1680***	0.0000	-0.0642***	0.0000
FDR	0.0042	0.1010	0.0019	0.5280	0.0041*	0.0625
CIR	-0.0319***	0.0000	-0.0091*	0.0585	-0.0281***	0.0000
NPF	-0.1599***	0.0000	-0.1680***	0.0000	-0.1604***	0.0000
GRDP	-0.0005	0.5530	0.0067	0.6570	-0.0005	0.6370
COVID	-0.0046	0.2280	-0.0039	0.3040	-0.0044	0.2390
Cons.	0.0251	0.2920	0.1250	0.3560	0.0337	0.2070
R-squared	0.1272		0.109		0.4463	
Banks	77		77		77	
Obs.	2753		2753		2753	
F	2.35***					
BG	21.78***					
Hausman	70.33***					

Description: *, ** and *** are significant at 10%, 5% and 1%
Source: Processed by Researcher (2025)

Table 5. Small SRBs

	CE		FE		RE	
Variable	Coefficient	Prob	Coefficient	Prob	Coefficient	Prob
Lerner	0.0218***	0.0000	0.0279***	0.0000	0.0255***	0.0000
Asset	0.0076**	0.0340	-0.0091	0.2230	0.0058	0.1990
CAR	-0.0753***	0.0000	-0.1240***	0.0000	-0.0968***	0.0000
FDR	-0.0018	0.6660	-0.0091**	0.0440	-0.0058	0.1770
CIR	0.0445***	0.0000	0.0451***	0.0000	0.0448***	0.0000
NPF	-0.0870***	0.0000	-0.1128***	0.0000	-0.1013***	0.0000
GRDP	0.0030	0.1610	0.0853***	0.0090	0.0028	0.4410
COVID	-0.0160*	0.0650	-0.0151**	0.0365	-0.0163*	0.0530
Cons.	-0.1480	0.0250	-0.8064***	0.0080	-0.1063	0.2110
R-squared	0.1078		0.1227		0.1072	
Banks	77		77		77	
Obs.	2738		2738		2738	
F	3.70***					
BG	179.07***					
Hausman	26.69***					

Description: *, ** and *** are significant at 10%, 5% and 1%
Source: Processed by Researcher (2025)

The main differences are seen in the variables of efficiency and risk vulnerability. In Large SRB, CIR (cost efficiency) has a negative and significant effect (-0.0091, p<0.1), which is in accordance with the theory of the Efficient Structure Hypothesis (ESH)—the more efficient the large banks, the more profitable. In contrast, Small SRB still showed a positive influence of CIR (0.0451, p<0.01), indicating that cost efficiency (CIR) has not yet been the main determinant of their profitability. In addition, the external shocks of COVID-19 were only significantly negative in Small SRB (-0.0151, p<0.05), underscoring the vulnerability of Small SRB to macroeconomic crises, which was not proven to be significant in Large SRB.

Discussion

The results of the regression estimation of panel data for all SRB, show that the Lerner Index has a positive and significant influence on ROA. These findings expressly support the SCP Hypothesis in the context of SRB banking in Indonesia. The applicability of this SCP hypothesis indicates that SRB is able to take advantage of market concentration or its local monopoly/oligopoly power to set a higher margin of financing prices above its marginal costs. This is natural given the highly localized nature of SRB' operations and serving a distance-sensitive micro-market segment, creating geographical barriers that reduce the intensity of competition from larger financial institutions. These results are consistent with studies on conventional banks in developing countries, where market forces are often the main determinant of profitability (Torre-Olmo et al., 2021;Zarrouk et al., 2016; Godspower-Akpomiemie & Ojah, 2021).

An analysis that divided the sample into Large SRB and Small SRB (Tables 4 and 5) revealed an important heterogeneity. The Lerner coefficient in Small SRB (0.0279) is twice as large as in Large SRB (0.0117). This phenomenon confirms that market forces have a much stronger impact on increasing profitability in SRB operating on a micro and local scale. Small SRBs, which may be the only or one of the few Islamic financial service providers in a particular market niche, are better able to exploit the power of this market (Kim, Park, & Song, 2016). In contrast, large SRBs, which generally compete in denser areas and are more open to competition from Islamic Commercial Banks (BUS) and non-bank institutions, have a more limited ability to convert market forces into substantial profits. This shows that the SCP Hypothesis is most dominant in the Small SRB segment (Kutlu et al., 2022;Huang et al. 2018).

Although SCP is generally applicable, the analysis of control variables provides an image that supports the Efficient Structure Hypothesis (ESH), especially in Large SRB. In Large SRB, the Cost to Income Ratio (CIR) shows a negative and significant influence on ROA, which is a relationship that is in accordance with efficiency theory—the more efficient the bank is in managing costs, the higher the profit. These findings contrast with the results for Small SRB and the entire sample, where CIR has a positive effect. These results imply that Large SRB has successfully implemented better cost management mechanisms, and its profitability is driven by optimal internal efficiency (Assaf et al., 2019). In addition, Non-Performing Financing (NPF), as a proxy for financing risk, has a negative and significant effect on both groups, which is in line with almost all Islamic banking literature, confirming that asset quality is the main foundation of profitability (Naouar et al., 2024). Interestingly, the impact of control variables varies across different bank sizes. For Large SRBs, asset size has a negative effect on ROA, suggesting the presence of diseconomies of scale where increased organizational complexity and higher coordination costs outweigh the benefits of expansion. Conversely, for Small SRBs, a negative relationship is observed between FDR and ROA. This indicates that aggressive financing expansion in smaller institutions may lead to higher liquidity risks and increased funding costs, as these banks often have to offer higher profit-sharing rates to attract deposits, which eventually compresses their profit margins (Beccalli et al., 2015).

The impact of external shocks shows a significant difference. The COVID-19 dummy variable only had a significant negative effect on Small SRB, but not significantly on Large SRB. This underscores the higher vulnerability of Small SRB to macroeconomic crises. Limited capital, liquidity, and more vulnerable customer segments in Small SRB indicate that Small SRB is vulnerable to increased financing risks and decreased financing demand during crises (Vazquez & Federico, 2015). On the other hand, GDP shows a very significant positive influence on Small SRB, but not significant on Large SRB.

These findings suggest that small SRBs are more integrated with and highly dependent on regional economic growth (Xu et al., 2021).

Conclusion

This study confirms that market forces have a crucial role in determining the profitability of Sharia People's Financing Banks (SRB) in Indonesia. In general, these findings provide strong support for the Structure–Conduct–Performance (SCP) hypothesis, which suggests that SRB that have greater market power (the ability to set high price markups) tend to achieve higher levels of profitability. An in-depth analysis based on bank size reveals a significant heterogeneity: the influence of market forces on profits is much more dominant in Small SRB. In contrast, Large SRB exhibit characteristics that are closer to the Efficient Structure (ESH) Hypothesis, where their profitability is more sensitive to internal cost management. In addition, financing risk (NPF) and high capital adequacy (CAR) have proven to be the main depressants of profitability. Macro-wise, Small SRB is more vulnerable to external shocks such as the COVID-19 period, while Large SRB is relatively more stable.

Theoretically, these results underscore the importance of a contingency approach in the study of banking competition in emerging markets, where SCPs and ESHs do not negate each other, but rather apply differently depending on the bank segment and scale (micro vs. large). SCP's dominance in Small SRB reflects the failure of the local market caused by geographical and information barriers. Practically, these results provide input for regulators to implement differentiated supervisory policies. Supervision of Small SRB must focus more on mitigating systemic risks and increasing resilience to crises, as well as encouraging efficiency. Meanwhile, for SRB management, it is important to strike a balance between leveraging the strength of the local market and improving internal efficiency, which has proven effective in sustaining profits at larger-scale banks.

Based on the limitations and findings of this study, suggestions for further research include two aspects. First, it is recommended to test this hypothesis using alternative measures of competition, such as H-Statistic (Panzar-Rosse), to get a more comprehensive picture of the level of competition (competition versus monopoly). Second, further research can expand the focus by analyzing non-financial factors such as governance and the network effects of SRB on profitability, considering the social role and unique characteristics of SRB as a community-based financial institution. This can provide a deeper understanding of the factors driving SRB's profitability beyond fundamental variables and conventional market structures.

References

Assaf, A. G., Berger, A. N., Roman, R. A., & Tsionas, M. G. (2019). Does efficiency help banks survive and thrive during financial crises? *Journal of Banking & Finance*, *106*, 445–470. https://doi.org/10.1016/j.jbankfin.2019.07.013

Aziz, L. H., Siregar, H., Achsani, N. A., & Irawan, T. (2024). The Moderating Impact of Market Power on The Relationship Between Market Share and Banking Profitability. *Journal of Ecohumanism*, *3*(8), 7802 –7830. https://doi.org/10.62754/joe.v3i8.5402

Beccalli, E., Anolli, M., & Borello, G. (2015). Are European banks too big? Evidence on economies of scale. *Journal of Banking & Finance*, *58*, 232–246. https://doi.org/10.1016/j.jbankfin.2015.04.014

Beliel, H. (2025). Do Banks Size matter in Competitive Advantage of UK Banks Sector? *SSRN Electronic Journal*, *13*(1), 1–9. https://doi.org/10.2139/ssrn.5017959

Berger, A. N. (1995). The Profit-Structure Relationship in Banking-Tests of Market-Power and Efficient-Structure Hypotheses. *Journal of Money, Credit and Banking*, *27*(2), 404–431. Retrieved from http://www.jstor.com/stable/2077876%0AJSTOR

Berger, A. N., & Hannan, T. H. (1992). The Price-Concentration Relationship in Banking: A Reply. *The Review of Economics and Statistics*, *74*(2), 376. https://doi.org/10.2307/2109677

Biasmara, H. A., & Srijayanti, P. M. R. (2021). Mengukur Kinerja Pra Merger Tiga Bank Umum Syariah dan Pengaruhnya Terhadap Return on Asset. *Moneter - Jurnal Akuntansi Dan Keuangan*, *8*(1), 70–78. https://doi.org/10.31294/moneter.v8i1.9977

Blatter, M., & Fuster, A. (2022). Scale effects on efficiency and profitability in the Swiss banking sector. *Swiss Journal of Economics and Statistics*, *158*(1), 12. https://doi.org/10.1186/s41937-022-00091-7

Budagaga, A. R. (2020). Determinants of banks' dividend payment decisions: evidence from MENA countries. *International Journal of Islamic and Middle Eastern Finance and Management*, *13*(5), 847–871. https://doi.org/10.1108/IMEFM-09-2019-0404

Cardillo, G., Cotugno, M., Perdichizzi, S., & Torluccio, G. (2024). Bank market power and supervisory enforcement actions. *International Review of Financial Analysis*, *91*, 103014. https://doi.org/10.1016/j.irfa.2023.103014

Coccorese, P., & Girardone, C. (2021). Bank capital and profitability: evidence from a global sample. *The European Journal of Finance*, *27*(9), 827–856. https://doi.org/10.1080/1351847X.2020.1832902

Eggoh, J., Dannon, H., & Ndiaye, A. (2021). Analysis of the quiet life hypothesis implications in the WAEMU banking sector. *African Development Review*, *33*(3), 533–545. https://doi.org/10.1111/1467-8268.12586

Godspower-Akpomiemie, E., & Ojah, K. (2021). Market discipline, regulation and banking effectiveness: Do measures matter? *Journal of Banking & Finance*, *133*, 106249. https://doi.org/10.1016/j.jbankfin.2021.106249

Hendri, Z., Wulandari, E., & Sollehudin Shuib, M. (2025). Do we need large Islamic rural banks? *Economics, Finance, and Business Review*, *2*(1), 1–11. https://doi.org/10.20885/efbr.vol2.iss1.art1

Homma, T., Tsutsui, Y., & Uchida, H. (2014). Firm growth and efficiency in the banking industry: A new test of the efficient structure hypothesis. *Journal of Banking & Finance*, *40*, 143–153. https://doi.org/10.1016/j.jbankfin.2013.11.031

Hosen, M. N., & Rahmawati, R. (2017). Analysis of the efficiency, profitability and soundness of Islamic banks in Indonesia for the period of 2010-2013. *International Journal of Applied Business and Economic Research*, *15*(6), 173–192. Retrieved from https://www.scopus.com/inward/record.uri?eid=2-s2.0-85019457515&partnerID=40&md5=60204acebf2b6acfafa9eb2465ba66e1

Huang, T.-H., Liu, N.-H., & Kumbhakar, S. C. (2018). Joint estimation of the Lerner index and cost efficiency using copula methods. *Empirical Economics*, *54*(2), 799–822. https://doi.org/10.1007/s00181-016-1216-z

James, C. M., Le, N., Nguyen, D., & Yamada, T. (2020). The Sensitivity of Bank Performance to Local Housing Prices - Evidence from Diversified and Local Banks. *SSRN Electronic Journal*, *12*(2), 1–52. https://doi.org/10.2139/ssrn.3672032

Kim, H., Park, K., & Song, S. (2016). Banking Market Size Structure and Financial Stability: Evidence from Eight Asian Countries. *Emerging Markets Finance and Trade*, *52*(4), 975–990. https://doi.org/10.1080/1540496X.2015.1025653

Kozak, S., & Wierzbowska, A. (2021). Banking Market Concentration and Bank Efficiency. Evidence from Southern, Eastern and Central Europe. *South East European Journal of Economics and Business*, *16*(1), 38–52. https://doi.org/10.2478/jeb-2021-0004

Kutlu, L., Sickles, R. C., Tsionas, M. G., & Mamatzakis, E. (2022). Heterogeneous decision-making and market power: an application to Eurozone banks. *Empirical Economics*, *63*(6), 3061–3092. https://doi.org/10.1007/s00181-022-02239-z

Maghfuriyah, A., Ferdous Azam, S. M., & Shukri, S. (2019). Market structure and islamic banking performance in indonesia: An error correction model. *Management Science Letters*, *9*(9), 1407–1418.

Muttaqin, I. (2025). Unveiling Profitability Drivers in ASEAN Islamic Banking: A Panel Data Analysis. *Maliki Islamic Economics Journal*, *5*(1), 78–94. https://doi.org/10.18860/miec.v5i1.33867

Naouar, A., Boulanouar, Z., & Grassa, R. (2024). Islamic banks and capital buffer behavior: A view from the Gulf cooperation council markets. *Pacific-Basin Finance Journal*, *83*, 102257.

https://doi.org/10.1016/j.pacfin.2024.102257

Nurvazly, D. E., Muharramah, U., Zakaria, L., Chasanah, S. L., & Ferdias, P. (2021). Quantitative Method For Analysis of Non-Performing Financing Return: A Case Study on Assets of PT. BSM. *The 3rd International Conference on Applied Sciences Mathematics and Informatics (ICASMI) 2020 September 3-4, 2020, Bandar Lampung, Indonesia*, *1751*(1), 1–2. Department of Mathematics, Faculty of Mathematics and Natural Sciences, Universitas Lampung, Jl. Sumantri Brojonegoro no 1, Bandar Lampung, Indonesia.

Olszak, M., & Kowalska, I. (2023). Do competition and market structure affect sensitivity of bank profitability to the business cycle? *Pacific-Basin Finance Journal*, *80*, 102098. https://doi.org/10.1016/j.pacfin.2023.102098

Preechalert, S., Poommipanit, V., Sirichantranon, W., & Sutthiphisal, D. (2025). Effects of Central Bank Support Measures in COVID-19 on Commercial Banks' Performance: Evidence from Thailand. *ABAC Journal*, *45*(3), 168–181. https://doi.org/10.59865/abacj.2025.21

Purwanto, P., Fitriyani, Y., & Lidasan, D. M. S. (2021). Financing of the medium, small and micro enterprises sector by sharia banking: positive effects on economic growth and negative effects on income inequality. *Ikonomika: Jurnal Ekonomi Dan Bisnis Islam*, *6*(2), 97–122. https://doi.org/ttps://doi.org/10.24042/febi.v6i1.9439

Putri, D. W. E. P., & Misbah, H. (2025). The impact of funding risk on the stability of Islamic rural banks in Indonesia. *Economics, Finance, and Business Review*, *2*(1), 12–21. https://doi.org/https://doi.org/10.20885/efbr.vol2.iss1.art2

Rizvi, S. A. R., Narayan, P. K., Sakti, A., & Syarifuddin, F. (2020). Role of Islamic banks in Indonesian banking industry: an empirical exploration. *Pacific Basin Finance Journal*, *62*, 101117. https://doi.org/10.1016/j.pacfin.2019.02.002

Rumler, F., & Waschiczek, W. (2016). Have changes in the financial structure affected bank profitability? Evidence for Austria. *The European Journal of Finance*, *22*(10), 803–824. https://doi.org/10.1080/1351847X.2014.984815

Smaoui, H., Mimouni, K., Miniaoui, H., & Temimi, A. (2020). Funding liquidity risk and banks' risk-taking: Evidence from Islamic and conventional banks. *Pacific Basin Finance Journal*, *64*, 101436. https://doi.org/10.1016/j.pacfin.2020.101436

Suroso, S., & Mala, C. M. F. (2024). The strength of competition and market efficiency in determining bank profits. *Risk Governance and Control: Financial Markets and Institutions*, *14*(3), 8–17. https://doi.org/10.22495/rgcv14i3p1

Sutrisno, & Widarjono, A. (2018). Maqasid sharia index, banking risk and performance cases in Indonesian islamic banks. *Asian Economic and Financial Review*, *8*(9), 1175–1184.

Torre-Olmo, B., Cantero-Saiz, M., & Sanfilippo-Azofra, S. (2021). Sustainable Banking, Market Power, and Efficiency: Effects on Banks' Profitability and Risk. *Sustainability*, *13*(3), 1298. https://doi.org/10.3390/su13031298

Trinh, V. Q., Elnahass, M., Salama, A., & Izzeldin, M. (2020). Board busyness, performance and financial stability: does bank type matter? *European Journal of Finance*, *26*(7–8), 774–801.

Vazquez, F., & Federico, P. (2015). Bank funding structures and risk: Evidence from the global financial crisis. *Journal of Banking & Finance*, *61*, 1–14. https://doi.org/10.1016/j.jbankfin.2015.08.023

Widarjono, A, Mifrahi, M. N., & Perdana, A. R. A. (2020). Determinants of Indonesian Islamic Rural Banks' Profitability: Collusive or Non-Collusive Behavior? *Journal of Asian Finance, Economics and Business*, *7*(11), 657–668. https://doi.org/10.13106/jafeb.2020.vol7.no11.657

Widarjono, Agus. (2025). Determinant of sharia rural bank profitability: Do size and location matter? *Muqtasid: Jurnal Ekonomi Dan Perbankan Syariah*, *15*(2), 139–154. https://doi.org/10.18326/muqtasid.v15i2.139-154

Widarjono, Agus, Alam, M. M., Rafik, A., Afandi, A., & Sidiq, S. (2025). Nexus between competition,

concentration and bank risk-taking in Indonesian Islamic banking. *International Journal of Islamic and Middle Eastern Finance and Management, 18*(3), 672–690. https://doi.org/10.1108/IMEFM-02-2024-0099

Widarjono, Agus, Suseno, P., Utami Rika Safitri, D., Yaseen, A., Azra, K., & Nur Hidayah, I. (2023). Islamic bank margins in Indonesia: The role of market power and bank-specific variables. *Cogent Business & Management, 10*(2). https://doi.org/10.1080/23311975.2023.2202028

Xu, B., Yu, H., & Li, L. (2021). The impact of entrepreneurship on regional economic growth: a perspective of spatial heterogeneity. *Entrepreneurship & Regional Development, 33*(3–4), 309–331. https://doi.org/10.1080/08985626.2021.1872940

Yanikkaya, H., Gümüş, N., & Pabuçcu, Y. U. (2018). How profitability differs between conventional and Islamic banks: A dynamic panel data approach. *Pacific Basin Finance Journal, 48*, 99–111.

Zarrouk, H., Ben Jedidia, K., & Moualhi, M. (2016). Is Islamic bank profitability driven by same forces as conventional banks? *International Journal of Islamic and Middle Eastern Finance and Management, 9*(1), 46–66.