# Non-Risk-Sharing Financing in Indonesian Islamic Banks: The Role of Market Power

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## ABSTRACT

Most Islamic banks provide more non-risk-sharing financing, which is nothing but debt financing like the loan of conventional banks. They favor this financing due to low-risk financing. Our study investigated the determining factor of non-risk-sharing financing in Indonesian Islamic banks using panel regression with unbalanced data, consisting of 31 banks and employing data from 2015:Q1-2020:Q4. The findings indicated that market power strengthens non-risk-sharing financing. This finding indicated that the more uncompetitive the market is, the more Islamic banks tend to favor non-risk-sharing financing. However, bank stability reduces non-risk-sharing financing, indicating that more stable banks prefer risk-sharing financing. This reason is reinforced by the reverse relationship between non-risk-sharing financing and bank size. Furthermore, this study documented that the impact of market power on non-risk-sharing financing diminishes as high stability holds. Evidence also highlighted that the effect of market power and stability on non-risk-sharing financing was more prominent for Islamic bank windows than full-fledged Islamic banks.

**Keywords**: Islamic banks, Non-risk-sharing financing, Market power, Bank fundamentals, Indonesia

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## INTRODUCTION

An Islamic bank (IB) is fundamentally different from a conventional bank (CB). Islamic banks do not use interest rates as the price of borrowed funds. Instead, Islamic banks use Sharia-based financing, namely risk-sharing and non-risk-sharing financing (Čihák & Hesse, 2010). The risk-sharing financing consists of Mudharaba and Musyaraka, which are based on a risk-sharing financing scheme. By contrast, non-risk-sharing contracts comprise a margin scheme (Murabaha), manufacturing contract (Istisna), leasing scheme (Ijarah), forward contract (Salam), and benevolence scheme (Qardh). Therefore, non-risk-sharing financing is similar to debt-based financing.

Risk-sharing financing in Islamic banks, encompassing Musyaraka and Mudharaba, is the financing core. The practice of Islamic banking is almost half a century old, but risk-sharing financing as its core business has not yet become the financing core for its financing portfolio (Sutrisno & Widarjono, 2022). Islamic banks worldwide prefer to provide more non-risk-sharing financing than risk-sharing financing due to low-risk (Hassan & Aliyu, 2018; Ibrahim et al., 2022).

Indonesia began practicing Islamic banking in 1992, along with conventional banks. As for a country with a dual banking environment, Islamic bank customers in Indonesia have been accustomed to conventional bank services for a long time. Accordingly, customers prefer to finance contracts that are similar to products of conventional banks, such as the Murabaha contract (Widarjono et al., 2022; Sutrisno et al., 2023). Figure 1 presents the risk-sharing and non-risk-sharing financing in the Indonesian banking industry. Islamic banks distribute less risk-sharing financing but more non-risk-sharing financing. The average risk-sharing financing and non-risk-sharing financing were 36.41% and 63.59% of total financing during 2010-2020, respectively.

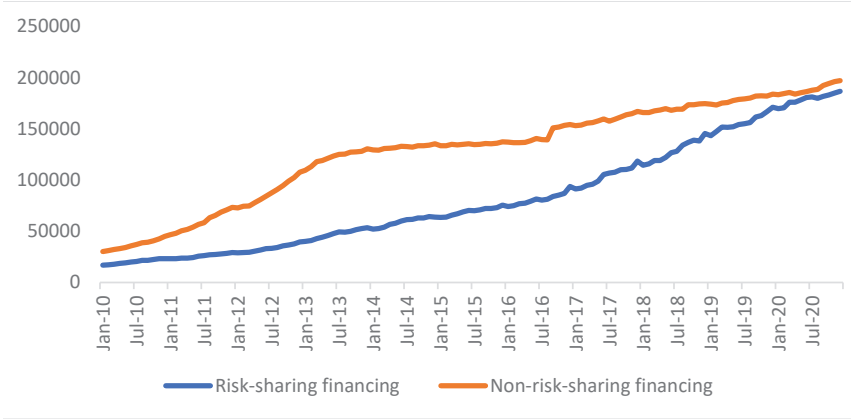


**Figure 1: Type Of Islamic Bank Financings In Indonesia, 2010-2020**

Islamic banks prefer to disburse non-risk-sharing financing because risk-sharing financing is high risk because of the presence of moral hazard as well as asymmetric information (Ibrahim & Alam, 2018; Widarjono et al., 2023). Therefore, they tend to avoid risk-sharing financing (Silvia et al., 2024). We believed that competition negatively affects non-equity financing. If competition is low, they are more likely to disburse their funds in non-risk-sharing financing. On the other hand, if market competition is tight, Islamic banks tend to disburse it in the form of risk-sharing financing because they want to attract customers by not charging fixed costs such as fixed interest but based on profit-sharing financing according to the business conditions of their customers (Risfandy et al., 2020).

A wide variety of empirical studies have analyzed Islamic bank financing. Empirical literature focused on the total financing of Islamic banks using bank data aggregate, such as Ibrahim and Sufian (2014), Akhatova et al., (2016), Rashid et al. (2020), and Caporale et al., (2020). Some studies have also been concerned with risk-sharing financing products based on ex-post returns as a product that is apparently different from conventional banks, such as Alam and Parinduri (2017), Risfandy et al. (2020), Meslier et al. (2020), Muhammad and Nugraheni (2021), and Ibrahim et al. (2022). Meanwhile, analysis of non-risk-sharing financing is rare. Šeho et al. (2020) explored bank fundamentals and macroeconomic variables that influence lease-based and sale-based contracts. The results indicated that bank size was the only bank fundamentals that have a positive effect on non-risk-sharing

financing. Sifa and Wiryono (2024) documented that the Salam contract increased farmers' income to improve their welfare.

This study examined the effect of competition and bank fundamentals on non-risk-sharing financing in Indonesian Islamic banks. This study concentrated on specific Islamic financing instead of aggregate financing, with the objective of broadening the empirical literature and examining how competition and Islamic bank fundamentals influence their types of financing. Our study contributes to the existing literature in some ways. First, few empirical literatures have addressed this issue of non-risk-sharing financing. Second, to the best of our knowledge, previous studies have not addressed the impact of market power on non-risk-sharing financing. Third, this study also intended to analyze the effect of bank stability on market power by interacting between stability and market power in influencing non-risk-sharing financing. Fourth, this study differentiated the behavior of non-risk-sharing financing between full-fledged Islamic banks and conventional banks that had business lines in Islamic banks (Islamic bank windows).

## LITERATURE REVIEW

An Islamic bank, like a conventional bank, is a financial intermediary whose function is to collect and distribute funds from one party to another. The maximum bank profit model proposed by Stein (1998) is a basic model commonly used to explain the theory of bank financing as an intermediary financial institution. Bank financing depends on the bank's balance sheet. This theory explains that the determinant of bank financing depends on bank-specific variables such as size, capitalization, and liquidity and macroeconomic conditions such as inflation and domestic output. Accordingly, Islamic bank financing in a dual banking system relies on market structure, bank fundamentals, and macroeconomic variables.

Islamic banking emerged because conventional banking based on interest rates could not fulfill the need for Islamic instruments and products that comply with Sharia law. Islamic banking theory that started in the 1970s has developed a banking system according to risk-sharing contracts rather than debt contracts based on interest rates (Abedifar et al., 2013). However, Islamic banking practitioners, most of whom come from conventional

banking practitioners, have not been able to carry out financing based on risk-sharing contracts. As an alternative, they create instruments and products that prevented the emergence of interest-based financing contracts (Widarjono & Rafik, 2023). Accordingly, Islamic banking products and instruments were replications of conventional banking products adapted to Sharia principles (Šeho et al., 2020). Consequently, practitioners focus on creating debt-based Islamic banking products such as the Murabaha contract.

Given the striking differences between theory and practice in Islamic banking products, it is not surprising that Islamic banks and customers are not familiar with risk-based financing products. On the one hand, financing based on risk sharing requires expertise and monitoring costs. This type of financing will pose a high financing risk if experts are not available and without close and tight monitoring. Financing based on risk-sharing contracts also raises adverse selection and moral hazard problems compared to debt-based contracts. On the other hand, the debt-based contract is easy to manage, provides faster returns, and is less risky (Azmat et al., 2015). As a result, Islamic bank financing contracts are constructed in such a way that Islamic banks prefer debt-based contracts to risk-sharing contracts. Hence, the debt-based contract is a completely rational choice for Islamic banks to maximize returns through debt-based contracts rather than risk-sharing contracts (Aggarwal & Yousef, 2000).

Ibrahim (2016) examined total financing and validated whether Islamic banks were responsive to the business cycle in the dual banking environment in Malaysia. His study utilizes macroeconomic conditions such as inflation and GDP and bank-specific variables such as assets, the ratio of risk-sharing to total assets, and the ratio of deposit to total liabilities ratio, where the former variable checked bank lending procyclical. The findings showed that aggregate loans were affected by the business cycle. However, by segregating the lending behavior of Islamic and conventional banks, Islamic bank lending was less procyclical than conventional banks. Several studies also showed that GDP positively affected financing, such as Abduh and Azmi Omar (2012), Caporale et al. (2020), and Rashid et al. (2020).

Several studies investigated Islamic bank financing based on bank fundamentals. Total assets and deposits positively influence Islamic bank financing (Zulkhibri & Sukmana, 2017; Rashid et al., 2020). Nevertheless, bank size was more important than funding since total assets had a greater

impact than total deposits when linked to their contribution to aggregate financing (Zulkhibri & Sukmana, 2017).

Some research also utilized Islamic bank financing rates known as Islamic financing rates (IFR) as the price of financing products of Islamic banks. IFR is like interest rates in conventional banks, and the difference is that interest rates are ex-ante schemes, while IFR is ex-post schemes. The higher the IFR, the more expensive Islamic bank financing is, so Islamic bank financing also decreases. Zulkhibri and Sukmana (2017) documented that if the IFR increased, the amount of Islamic bank financing decreased for Islamic banks in Indonesia.

Risk-sharing financing, as one of the main characteristics of Islamic bank financing, which is very different from conventional banks, also attracts researchers to analyze the factors that influence this type of financing. Risfandy et al. (2020) pointed out that Islamic banks disburse more risk-sharing financing if the market for Islamic banks was more competitive. In addition, assets and deposits had a positive effect on risk-sharing financing and bank stability (z-score) had a negative effect on risk-sharing financing. Indeed, Mudharaba financing was positively related to bank age, indicating that the high risk of Mudharaba financing could be minimized due to the effective internal control system and experience of managers (Muhammad & Nugraheni, 2021). Research conducted by Ibrahim et al. (2022) also showed that risk-sharing financing was positively associated with total assets and deposits.

Šeho et al. (2020) examined non-risk-sharing contracts, encompassing lease- and sale-based contracts from 77 Islamic banks from 13 nations and covering 2003 to 2017. Their research documented that the interest rate negatively influenced lease- and sale-based financing contracts, but a more developed Islamic banking system experienced more exposure. In addition, bank fundamentals such as assets positively affected non-risk-sharing financing.

## HYPOTHESES DEVELOPMENT

The market structure is the leading element that influences the type of financing from Islamic Banks, including non-risk-sharing financing

(Risfandy et al., 2020). Another important factor is Islamic bank fundamentals (Risfandy et al., 2020). Islamic bank fundamentals are related to the financial performance of Islamic banks corresponding to other Islamic banks. Bank fundamentals encompass asset quality, capital adequacy, management, and liquidity.

## Market Power and Non-Risk-Sharing Financing

The market power is proxied by the Lerner index. A high market power is indicated by a higher Lerner index. Strong market power can determine high pricing above their marginal cost, which is linked to lower market competition (Šeho et al., 2024). Therefore, a higher Lerner index indicates lower competition, and conversely, a low Lerner index suggests tougher competition (Fu et al., 2014). With lower market competition, Islamic banks prefer to disburse their financing with low-risk financing. Non-risk-sharing financing is financing that is less risky because this type of contract is debt-based financing (Widarjono et al., 2020). Islamic banks with higher market competition desire to disburse their financing with risk-sharing financing because this financing is a fair contract, encouraging businessmen to manage their companies well. Consequently, high profits may be anticipated (Risfandy, 2018).

**$H_1$**: The Lerner index positively influences non-risk-sharing financing.

## Stability and Non-Risk-Sharing Financing

Bank stability in banking literature is widely measured by the Z-score. It measures a bank's buffers (return and capitalization) with those returns' volatility. A high Z-score corresponds to stability and a low risk of insolvency (Fakhrunnas et al., 2024).Higher and positive Z-scores indicate a higher likelihood that Islamic banks will survive, but lower and negative Z-scores indicate a higher possibility of bankruptcy. Accordingly, Islamic bank with low Z-scores prefers to use non-risk-sharing contracts because of low risk, but stable Islamic banks with high Z-scores disburse more contracts in terms of risk-sharing contracts (Risfandy et al., 2020).

**$H_2$**: Stability is negatively associated with the non-risk-sharing financing.

## Bank Size and Non-Risk-Sharing Financing

Total assets are a proxy for the size of an Islamic bank. Large Islamic banks can benefit from the financing distribution function due to their good infrastructure and systems (Muhammad & Nugraheni, 2021). Larger Islamic banks might prefer high-risk investments, such as PLS financing, but smaller banks may favor low-risk investments and fee income, such as debt-based financing (Meslier et al., 2020). Consequently, larger Islamic banks can disburse less non-risk-sharing contracts and focus on risk-sharing contracts with high risks, such as Mudharabah and Musyarakah, as part of their financing portfolio.

**$H_3$**: Bank size negatively affects non-risk-sharing financing.

## Risk Aversion and Non-Risk-Sharing Financing

Risk aversion in banking literature is commonly computed by the capital adequacy ratio (CAR) (Sutrisno & Widarjono, 2024). CAR signals the capacity of Islamic banks to maintain their capital. Islamic banks with high CAR denote high-risk aversion. Their risk-averse behavior occurs as banks face high financing risks. Accordingly, banks with high CAR may favor using non-risk-sharing contracts because these contracts are expected to cause low financing risk due to debt-based financing (Danlami et al., 2022; Srairi et al., 2022).

**$H_4$**: The degree of risk aversion positively influences non-risk-sharing financing.

## Efficiency and Non-Risk-Sharing Financing

Banking efficiency can be proxied using operating efficiency. It calculates how much it spends to produce income per unit. The low CIR shows that the cost to produce per unit income is low. Hence, high CIR implies lower efficiency and vice versa (Trinugroho et al., 2014). Therefore, the efficiency of Islamic banks was computed by the cost-to-income ratio (CIR). Banks with high operating efficiency were not willing to use risk-sharing financing since its high-risk embedded may deteriorate their financial performance (Risfandy et al., 2020). Therefore, low-efficiency banks favor non-risk-sharing contracts in distributing their financing portfolio.

**$H_5$**: Operational inefficiency positively affects non-risk-sharing financing.

### Financing Risk and Non-Risk-Sharing Financing

Financing risk is an embedded risk for every financial intermediary, such as an Islamic bank. Financing loss provision (FLP) is widely used to measure banks' risk-taking behavior (Lee & Hsieh, 2013). FLP is commonly measured by financing loss provision divided by total financing. Banks maintain the allowance for loan losses as expected loan defaults. It corresponds to the Islamic banks' asset quality (Delis et al., 2014; Widarjono et al., 2022). Consequently, higher FLP points out that banks encounter more financing defaults. Banks with higher financing risk prefer non-risk-sharing financing (Meslier et al., 2020).

**$H_6$**: Financing risk positively influences non-risk-sharing financing.

### Covid-19 and Non-Risk-Sharing Financing

The Covid-19 pandemic had a disastrous impact on the economies of many countries. Indonesia's economic growth experienced low growth since the second quarter of 2020. Even though it experienced growth in the following quarter, economic growth was relatively low, below 3%. The economic downturn due to COVID lowers financing activities as main traditional banking activities (Alabbad & Schertler, 2022; Chazi et al., 2024). This COVID negatively affected the performance of Islamic banks, including a decrease in Islamic bank financing.

**$H_7$**: Covid-19 negatively affects non-risk-sharing financing.

## METHODOLOGY

### Sample and Data

Our study examined 31 Islamic banks in Indonesia. Our data set was quarterly data, starting from 2015 to 2020, with unbalanced panel data of 664 observations. Data for each Islamic bank was taken from the Indonesian Financial Services Authority (FSA), and the data was accessible online (www.ojk.go.id).

## Empirical Method

This study employed the panel regression model to explore the influence of market power as well as bank fundamentals on the non-risk-sharing contracts of Islamic banks in Indonesia. The panel regression model was as follows:

$$NRsfin_{it} = \delta_0 + \delta_1 Lerner_{it-1} + \delta_2 Zscore_{it-1} + \delta_3 Lasset_{it-1} + \delta_4 CAR_{it-1} + \delta_5 CIR_{it-1} + + \delta_6 FLP_{it-1} + \delta_7 Covid_{it} + e_{it} \quad (1)$$

Where NRsfin is non-risk-sharing financing, Lerner indicates the market power, Z-score measures stability, assets indicate size, CAR is capital adequacy ratio, CIR is cost-income ratio (CIR), FLP is financing loss provision and covid 19 represents the business cycle.

All independent variables lagged one period to deal with the endogeneity (Ibrahim et al., 2017). Our study did so since market power may be influenced by non-risk-sharing financing, not the reverse condition. Islamic banks charged a low price for non-risk-sharing financing because of low financing risk, which generated lower market power (Trinugroho et al., 2018). Lagging one period for other bank fundamentals was also essential. For example, non-risk-sharing financing strongly affected the stability of Islamic banks, not the inverse relationship. Islamic banks can capitalize on non-risk-sharing financing to generate more profit which then led to high stability due to low non-financing performance (Risfandy et al., 2020). Accordingly, lagging all independent variables was an important way to address the endogeneity problem (Lepetit et al., 2015; Kim & Sohn, 2017).

Non-risk-sharing financing was proxied by debt financing to total financing. The Lerner index was measured as:

$$\text{Lerner} = \left[\frac{\text{Price} - \text{Marinal Cost}}{\text{Price}}\right] \quad (2)$$

Income divided by assets was a proxy of price. The marginal cost was obtained from the trans-log cos function and calculated using the following formula:

$$MC_{it} = \left( \sigma_1 + \sigma_2 Lasset_{it} + \sum_{k=1}^{2} \delta_{2k} LM_{k,it} \right) \frac{TC_{it}}{LAsset_{it}} \quad (3)$$

The trans-log cost function is commonly applied to derive the marginal cost (MC) (Maudos & Solís, 2009; Sun et al., 2017). Our study employed the two-input cost function since this cost function was the more appropriate method to examine cost function in emerging markets such as Indonesia due to the availability of data (Fu et al., 2014). The trans-log cost function with two inputs was as follows:

$$TC_{it} = \delta_0 + \sum_{k=1}^{2} \delta_1 LM_{k,it} + 0.5 \sum_{k=1}^{2} \sum_{l=1}^{2} \sigma_{kl} \, LM_{k,it} LM_{l,it} + \sigma_1 Lasset_{it} + 0.5\delta_2 (Lasset_{it})^2 + \sum_{k=1}^{2} \sigma_{2k} LAsset_{it} \, LM_{k,it} + \varepsilon_{it} \quad (4)$$

Total cost (TC) comprises costs of equity financing and costs of other operational expenses. M1 shows the ratio of the equity financing expense to total deposits. M2 indicates the ratio of other expenses to total fixed assets.

The higher Lerner index indicates low market power and vice versa. Banks could determine high pricing above their marginal cost as their Lerner index is high (Khan et al., 2021). A High Lerner index is linked to low competition in the banking market (Fu et al., 2014).

The Z-score is commonly recognized as bank stability (Čihák & Hesse, 2010). The Z-score was measured as follows

$$Z - score = \frac{ROA + CAR}{SDROA} \quad (5)$$

Where SDROA is the standard deviation of ROA. A bank with a high Z-score corresponds to strong stability and faces a low risk of insolvency (Čihák & Hesse, 2010).

The asset is expressed in logarithm natural (ln). CAR is risk-sharing divided by assets-weighted risk. CIR is operating cost divided by operating income. FLP is financing loss provision divided by total financing.

Static and dynamic panel data regression is often used to estimate panel data when the number of observations is greater than the number of time periods. The static panel method consists of pooled least squares, fixed effects, and random effects. The pooled least squares (PLS) assume that the behavior of objects is the same, while the fixed effect (FE) and random effect (RE) consider that the behavior of objects is different. The random effect assumes that autocorrelation exists. The dynamic panel regression assumes that the dependent variable is persistent over time, implying that the current dependent variable is strongly influenced by the lag of the dependent variable. The GMM is widely applied to satisfy the exogeneity issue (Arellano & Bond, 1991; Arellano & Bover, 1995). There are two methods used, namely the first difference and system GMM. This dynamic panel method will generate an unbiased and consistent estimator compared to a static panel if the cross-sectional object is very large. The number of objects in this study was 31 Islamic banks. Even though the cross-sectional objects were larger than the time series data, the cross-sectional units were still small, less than 40, so the use of dynamic panel regression methods will produce a biased estimator (Al-muharrami & Murthy, 2016). As a result, the estimation method in this study was the static panel method.

## RESULTS AND DISCUSSION

### Summary Statistics

The summary statistics for each variable are exhibited in Table 1, encompassing the mean, minimum, maximum, and standard deviation. As shown in Table 1, the mean of the non-risk-sharing financing was approximately 0.6508, with a minimum of 0 and a minimum of 1. These two extreme numbers indicated that some Islamic banks disburse their financing in non-risk-sharing financing or their financing in risk-sharing financing. The average Lerner index was 0.2698 with a high standard deviation of 0.6456, indicating that Islamic banks charged their price above the cost of 26.4%. The mean of assets was IDR 14.4 trillion. The average Z-score

was 0.4263, indicating a fairly high level of stability for Indonesian Islamic banks. CAR, on average, was 0.2139, above the limit of 15%. Operating efficiency sounds good with the CIR by 85.51%, which was less than the maximum threshold of 94%. FLP, on average, was 2.15%.

**Table 1: Summary Statistics**

| Variable | Average | Minimum | Maximum | Std. Dev. |
|---|---|---|---|---|
| NRsfin | 0.6508 | 0.0000 | 1.0000 | 0.2719 |
| Lerner | 0.2698 | -2.0828 | 2.3984 | 0.6456 |
| Z-score | 0.4263 | 0.0032 | 3.1640 | 0.4907 |
| Asset | 14.4000 | 0.4989 | 127.0000 | 20.6000 |
| CAR | 0.2123 | 0.1016 | 0.8865 | 0.0645 |
| CIR | 0.8551 | 0.1684 | 2.1740 | 0.1395 |
| FLP | 0.0215 | 0.0000 | 0.1399 | 0.0184 |
| Covid | 0.1401 | 0.0000 | 1.0000 | 0.3473 |

### *Correlation Matrix*

Table 2 exhibits the correlation by employing Pearson's correlation to check the presence of a multicollinearity problem. All correlation coefficients were less than 0.5, implying that the multicollinearity did not exist in our variables and accordingly generated robust estimators.

**Table 2: Correlation Matrix**

| | NRsfin | Lerner | Z-score | Asset | CAR | CIR | FLP |
|---|---|---|---|---|---|---|---|
| NRsfin | 1 | | | | | | |
| Lerner | -0.0585 | 1 | | | | | |
| Z-score | 0.0057 | -0.1435 | 1 | | | | |
| Asset | 0.0213 | 0.1227 | 0.1741 | 1 | | | |
| CAR | 0.0871 | 0.0386 | 0.3029 | -0.2836 | 1 | | |
| CIR | -0.0152 | 0.0390 | 0.0261 | 0.1785 | -0.3791 | 1 | |
| FLP | 0.0843 | -0.0234 | -0.1404 | -0.0127 | -0.1357 | 0.3267 | 1 |
| Covid | -0.0862 | -0.0521 | 0.0157 | 0.0696 | 0.1175 | 0.0069 | -0.0169 |

### *Baseline Regression*

Table 3 presents the findings obtained using the static panel model. Model 1 presents the result without including Covid-19, and Model 2 includes it. The F-statistic suggested that FE was more appropriate than

PLS. Further investigation was conducted between FE and RE. Our results failed to reject the null hypothesis that RE is an appropriate method corresponding to the Hausman test. RE was more applicable than FE for Model 1 and Model 2.

Table 3 presents that the Lerner index was positively linked to non-risk-sharing financing in all models. These findings may imply that less competition fosters Islamic banks to channel more non-risk-sharing contracts, but high competition pushes them to disburse risk-sharing contracts to invite more businessmen. These results supported existing studies where the less competitive market pushes Islamic banks to disburse their financing through non-risk-sharing financing (Risfandy et al., 2020). Our results were supported by the fact that Indonesian Islamic banks disburse their financing mostly to small and medium companies (Shaban et al., 2014). They usually face high risk and volatility of return, so risk-sharing financing can be more desirable for them than non-risk-sharing financing. This financing landscape gave them more flexibility regarding the settlement of the financing.

**Table 3: Baseline Regression Results**

| Variable | Model 1 | | Model 2 | |
|---|---|---|---|---|
| | FE | RE | FE | RE |
| Market variable | | | | |
| $Lerner_{t-1}$ | 0.0122** | 0.0122** | 0.0112** | 0.0111** |
| | (0.0066) | (0.0066) | (0.0066) | (0.0066) |
| Bank Fundamentals | | | | |
| $Zscore_{t-1}$ | -0.0685** | -0.0554** | -0.0652** | -0.0512* |
| | (0.0346) | (0.0333) | (0.0345) | (0.0331) |
| $Lasset_{t-1}$ | -0.1197*** | -0.1143*** | -0.1115*** | -0.1051*** |
| | (0.0096) | (0.0093) | (0.0102) | (0.0099) |
| $CAR_{t-1}$ | 0.2330** | 0.1996** | 0.2337*** | 0.1995** |
| | (0.0996) | (0.0979) | (0.0992) | (0.0976) |
| $CIR_{t-1}$ | 0.1073*** | 0.1042*** | 0.1104*** | 0.1075*** |
| | (0.0372) | (0.0371) | (0.0371) | (0.0371) |
| $FLP_{t-1}$ | 0.2600 | 0.2891 | 0.2574 | 0.2878 |
| | (0.2434) | (0.2432) | (0.2425) | (0.2429) |

| External shock | | | | |
|---|---|---|---|---|
| *Covid-19* | - | - | -0.0201** | -0.0221*** |
| | - | - | (0.0088) | (0.0088) |
| *Cons* | 2.4002*** | 2.3057*** | 2.2719*** | 2.1626*** |
| | (0.1478) | (0.1528) | (0.1577) | (0.1600) |
| $R^2$ | 0.2416 | 0.2414 | 0.2482 | 0.2479 |
| No. of banks | 31 | 31 | 31 | 31 |
| No. of observations. | 664 | 664 | 664 | 664 |
| Diagnostic test | | | | |
| F test | 267.76*** | | 267.24*** | |
| BG test | 4502.28*** | | 4524.04*** | |
| Hausman test | 2.87 | | 5.58 | |

Parentheses symbolize standard error. * p > 10%, **p> 5%, and ***p>1%.

Variables associated with bank-fundamental conditions also reinforced the findings that Islamic banks commonly employed non-risk-sharing financing. First, our study discovered that Islamic bank stability (Z-score) negatively affected non-risk-sharing financing, suggesting that highly stable Islamic banks were more likely to disburse more risk-sharing contracts and fewer non-risk-sharing contracts. Risk-sharing contracts were the core contracts of Islamic banks. First, risk-sharing contracts generated complicated procedures since Islamic banks have to recognize customer characteristics in detail (Abedifar et al., 2013). Second, Islamic banks must conduct proper control and monitoring to reduce financing risk, so risk-sharing contracts also generate extra transaction costs (Louhichi & Boujelbene, 2016). Lastly, production-sharing contracts posed a high risk because of asymmetric information, agency problems, and moral hazard (Beck et al., 2013). Yet, risk-sharing financing could be high if Islamic banks were more stable.

Third, assets that measure bank size negatively influenced non-risk-sharing financing. This finding may suggest that larger Islamic banks disbursed more commonly risk-sharing financing than smaller Islamic banks. Our findings confirmed the findings of Čihák and Hesse (2010). Smaller banks concentrated on fee-based income and low-risk investments, while larger banks could disburse their financing in different financing portfolios. Small Islamic banks were unwilling to participate in risk-sharing financing activity since it led to high financing risk.

Fourth, CAR was positively linked to non-risk-sharing financing. CAR denotes the ability of banks to preserve their capital adequacy. Keeping a high CAR reveals high risk-averse behavior. High-risk aversion appears since risk-sharing contracts are likely to create high defaults because of asymmetric information and moral hazards (Azmat et al., 2015). Consequently, the high CAR caused Islamic banks to use more non-risk-sharing financing.

Fifth, this study also revealed negative signs for operating efficiency (CIR). Islamic bans with high CIR represent low efficiency and vice versa. Islamic banks with low operating efficiency have a higher ratio of non-risk-sharing contracts. Islamic banks with lower efficiency are willing to use non-risk-sharing contracts because these types of contracts generate low risk. They do not favor risk-sharing financing since it could harm their current performance because of high financing defaults.

COVID-19 negatively influenced non-risk-sharing contracts. Covid 19 caused an economic contraction. This economic downturn has caused business activities to decline. As a result, Islamic bank financing had also decreased, including non-risk-sharing financing. The findings showed that non-risk-sharing contracts as debt-based contracts were procyclical, supporting the existing empirical studies (Rashid et al., 2020);

### *Competition and Bank Fundamentals*

Our findings showed that Islamic banks' non-risk-sharing financing activities obviously relied on the market competition environment and bank fundamentals. Islamic banks were eager to disburse more financing in terms of non-risk-sharing financing in an imperfect market than in a competitive market. Accordingly, Islamic banks with strong financial performance tended to use less risk-sharing financing than banks with weak bank fundamentals. Hence, this study explored the possibility of interaction between bank fundamentals and market competition utilizing the interactions between Lerner and Z-score (LernerZscore).

Table 4 exhibits the effect of the interaction between the Lerner index and stability (Lernerzscore). Models 3 and 4 exhibited that this interaction variable had a negative effect. These findings showed that the impact of competition on non-risk-sharing contracts was changed by bank stability.

Particularly, the positive influence of imperfect competition concerning the risk-taking behavior of Islamic banks may be diminished when they had strong financial performance or stability. Islamic banks can participate in less non-risk-sharing contracts when they have strong stability, meaning that Islamic banks will distribute more risk-sharing contracts due to strong stability (Kasri et al., 2024) . This finding reinforced the existing study. As Islamic banks have better stability, they could distribute more financing through risk-sharing financing (Risfandy et al., 2020).

**Table 4: Market Power, Stability, and Non-Risk-Sharing Financing**

| Variable | Model 3 | | Model 4 | |
|---|---|---|---|---|
| | Fixed effect | Random effect | Fixed effect | Random effect |
| Market Variable | | | | |
| $Lerner_{t-1}$ | 0.0233*** | 0.0238*** | 0.0217*** | 0.0219*** |
| | (0.0090) | (0.0090) | (0.0090) | (0.0090) |
| Bank Fundamentals | | | | |
| $Zscore_{t-1}$ | -0.0777** | -0.0648** | -0.0740** | -0.0599** |
| | (0.0349) | (0.0336) | (0.0349) | (0.0334) |
| $LernerZscore_{t-1}$ | -0.0332** | -0.0345** | -0.0311** | -0.0322** |
| | (0.0185) | (0.0185) | (0.0185) | (0.0185) |
| $Lasset_{t-1}$ | -0.1142*** | -0.1089*** | -0.1067*** | -0.1004*** |
| | (0.0100) | (0.0098) | (0.0106) | (0.0102) |
| $CAR_{t-1}$ | 0.2299** | 0.1969** | 0.2308** | 0.1963** |
| | (0.0994) | (0.0977) | (0.0991) | (0.0975) |
| $CIR_{t-1}$ | 0.0950** | 0.0914*** | 0.0988*** | 0.0954** |
| | (0.0377) | (0.0377) | (0.0377) | (0.0377) |
| $FLP_{t-1}$ | 0.2885 | 0.3177* | 0.2842 | 0.3150* |
| | (0.2435) | (0.2431) | (0.2427) | (0.2430) |
| External shock | | | | |
| *Covid-19* | - | - | -0.0193** | -0.0213*** |
| | - | - | (0.0088) | (0.0088) |
| *Cons* | 2.3284*** | 2.2363 | 2.2095*** | 2.1020*** |
| | (0.1529 | (0.1574) | (0.1617) | (0.1636) |
| $R^2$ | 0.2457 | 0.2455 | 0.2518 | 0.2514 |
| No. of banks | 31 | 31 | 31 | 31 |

| Variable | Model 3 | | Model 4 | |
|---|---|---|---|---|
| | Fixed effect | Random effect | Fixed effect | Random effect |
| No. of observations | 664 | 664 | 664 | 664 |
| Diagnostic test | | | | |
| F test | 268.86*** | | 268.13*** | |
| BG test | 4504.08*** | | 4516.12*** | |
| Hausman test | 6.55 | | 5.13 | |

Parentheses symbolize standard error. * p > 10%, **p> 5%, and ***p>1%.

### *Full-Fledged IBs vs. IB Windows*

According to Islamic banking law No 23/2008, Islamic banks in Indonesia consist of full-fledged IBs, Islamic windows of a conventional bank, and Islamic rural banks. As of 2020, the Islamic banking industry comprised 14 full-fledged Islamic banks and 20 Islamic banks windows. Although the number of Islamic bank windows was greater, full-fledged Islamic banks overlooked the Islamic banking industry. The total assets of full-fledged Islamic banks were IDR 443,380, or 67% of the total assets of Indonesian Islamic banking. Full-fledged Islamic banks had 2034 offices while the offices of Islamic bank windows were 392. The dominance of Islamic full-fledged banks implied that the ability to disburse funds to consumers was also different between the two banks. Consequently, it was noteworthy to analyze the influence of competition, bank fundamentals, and Covid-19 on the non-risk-sharing financing of these two types of banks.

Table 5 presents the results. Based on the Hausman test, the best model for full-fledged Islamic banks and Islamic bank windows was the fixed effect. The Lerner index was positively related to non-risk-sharing contracts, but the coefficient of Lerner was larger for full-fledged Islamic banks compared to Islamic banks windows. Stability negatively affected risk-sharing contracts, but the impact was greater on Islamic bank windows. The asset also negatively influenced non-risk-sharing financing, but the effect was more pronounced for full-fledged Islamic banks. CAR was positively associated with non-risk-sharing contracts. However, Islamic bank windows had a greater degree of risk aversion than their counterparts. Operational efficiency positively affected the case of Islamic banks windows. Financing risk encouraged non-risk-sharing financing while the business cycle through COVID-19 reduced non-risk-sharing financing for full-fledged Islamic banks.

**Table 5: Full-fledged IBs and IB Windows**

| Variable | Model 5: Full-fledged IBs | | Model 6: IB windows | |
|---|---|---|---|---|
| | FE | RE | FE | RE |
| Market variable | | | | |
| $Lerner_{t-1}$ | 0.0155*** | 0.0123** | 0.0173** | 0.0105 |
| | (0.0054) | (0.0056) | (0.0103) | (0.0104) |
| Bank Fundamental | | | | |
| $Zscore_{t-1}$ | -0.0501*** | -0.0406** | -1.5897*** | -0.8575*** |
| | (0.0185) | (0.0180) | (0.2683) | (0.2086) |
| $Lasset_{t-1}$ | -0.1117*** | -0.0893*** | -0.1025*** | -0.1205*** |
| | (0.0120) | (0.0115) | (0.0210) | (0.0201) |
| $CAR_{t-1}$ | 0.3497*** | 0.2784*** | 1.1709*** | 0.7417*** |
| | (0.0760) | (0.0752) | (0.2127) | (0.1889) |
| $CIR_{t-1}$ | -0.0166 | -0.0139 | 0.2819*** | 0.3103*** |
| | (0.0218) | (0.0228) | (0.0799) | (0.0809) |
| $FLP_{t-1}$ | 0.4440*** | 0.4351*** | -0.3430 | -0.0873 |
| | (0.1328) | (0.1390) | (0.5652) | (0.5667) |
| External variable | | | | |
| *Covid-19* | -0.0388*** | -0.0443*** | -0.0035 | -0.0063 |
| | (0.0065) | (0.0067) | (0.0144) | (0.0145) |
| *Cons* | 2.5510*** | 2.1926*** | 2.1473*** | 2.2516*** |
| | (0.1968) | (0.1916) | (0.3009) | (0.2995) |
| $R^2$ | 0.4774 | 0.4722 | 0.2734 | 0.2585 |
| No. of banks | 13 | 13 | 19 | 19 |
| No. of observations | 281 | 281 | 315 | 351 |
| Diagnostic test | | | | |
| F-test | 257.60*** | | 151.50*** | |
| LM- test | 1406.65*** | | 2322.10*** | |
| Hausman-test | 92.52*** | | 19.26*** | |

Parentheses symbolize standard error. * p > 10%, **p> 5%, and ***p>1%.

## *Robustness Test*

In the robustness check section, to check the robustness results, our study employed the dynamic panel data regression. The two-step difference GMM was utilized in this study (Arellano & Bond, 1991). The results of the GMM method are presented in Table 6. Diagnostic tests of GMM based

on the AR (2) test indicated that our model was absent of second-order autocorrelation and there was evidence of instrument validity and consistent GMM according to the Hansen test. The results documented that the Lerner index, CAR, and CIR positively affected non-risk-sharing financing, while Z-score and assets negatively influence non-risk-sharing financing. These findings confirmed the results in the baseline regression.

**Table 6: Dynamic Panel Regression: GMM**

| Variable | Model 1 | Model 2 |
|---|---|---|
| $NRsfin_{t-1}$ | 0.8046*** | 0.7435*** |
| | (0.2013) | (0.1858) |
| Market variable | | |
| $Lerner_{t-1}$ | 0.0215** | 0.0224** |
| | (0.0123) | (0.0122) |
| Bank fundamental | | |
| $Zscore_{t-1}$ | -0.1662*** | -0.1372*** |
| | (0.0592) | (0.0542) |
| $Lasset_{t-1}$ | -0.0579** | -0.0607** |
| | (0.0277) | (0.0272) |
| $CAR_{t-1}$ | 0.6459*** | 0.6334*** |
| | (0.1770) | (0.1612) |
| $CIR_{t-1}$ | 0.1154* | 0.1184** |
| | (0.0691) | (0.0663) |
| $FLP_{t-1}$ | -0.0971 | -0.1169 |
| | (0.3919) | (0.4158) |
| External variable | | |
| *Covid-19* | - | -0.0031 |
| | - | (0.0040) |
| Diagnostic tests | | |
| No. of banks | 31 | 31 |
| No. of Observations | 664 | 664 |
| No. of Instruments | 22 | 22 |
| AR (1) p-value | 0.011 | 0.014 |
| AR (2) p-value | 0.108 | 0.113 |
| Hansen p-value | 0.344 | 0.260 |

Parentheses symbolize standard error. * p > 10%, **p> 5%, and ***p>1%.

## CONCLUSIONS

The findings displayed that market structure influenced the type of financing that will be disbursed by Islamic banks. An imperfect market causes Islamic banks to distribute more of their financing in the form of non-risk-sharing contracts. Some fundamental variables also affected non-risk-sharing contracts. Stable Islamic banks and large Islamic banks will reduce non-risk-sharing contracts. Moreover, the risk-averse behavior and inefficiencies of Islamic bank operations had caused banks to prefer disbursing their financing in the form of non-risk-sharing financing, which generated low financing risk. Our results indicate that the impact of market power on non-risk-sharing contracts weakened as Islamic banks became more stable.

The findings of this research have important implications for Islamic banks and Financial Service Authorities as policymakers in Indonesia. Islamic banks have not disbursed their financing according to the core business of Islamic banks to which their contracts should be more on risk-sharing contracts such as Musyaraka and Mudharaba. Risk-sharing contracts can be increased if the size of Islamic banks is increased, where the current average is only IDR 21.31 trillion. Furthermore, Islamic banks with stronger stability can disburse more risk-sharing financing. Previous research has documented that the bank size obviously affected stability (Čihák & Hesse, 2010; Ibrahim et al., 2017). Larger Islamic banks can further increase risk-sharing financing as the main contracts of Islamic banks. Moreover, Musyaraka financing can lower financing defaults as it reaches the threshold level so that it can boost the stability of IBs (Warninda et al., 2019).

The limitations are the following. First, our research did not involve recent data that represented the latest condition of Indonesian Islamic banking. Future studies must consider the latest data to get better findings. Second, our findings can not be applied to other countries which have different business and regulatory environments. Of course, to get general findings, the next study should use panel data.

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