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**Jurnal Ilmiah Ekonomi Islam, 8(02), 2022, 1577-1583**

# Cross Province Analysis of Indonesian Islamic Banking Financing

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***Abstract***

*Banking plays a role in carrying out its function as an intermediary financial institution for people needing economic development. Islamic banking needs to carry out a provincial financing portfolio to facilitate the process of distributing financing to each province. Islamic banks must create a financing portfolio to effectively and efficiently consider the influential variables. This study aims to analyze the factors that influence Islamic bank financing in the province of Java. This study uses a fixed-effect model and annual data from 2010 to 2021. The study results found that total assets, liquidity, and exchange rates affected Islamic banking financing in Java, while the province's economic growth had no effect.*

***Keywords****: Financing, total assets, liquidity, exchange rate, economic growth*

**Citation suggestions**: Mubarok, F., & Rusdianto. (2022). Cross Province Analysis of Indonesian Islamic Banking Financing. *Jurnal Ilmiah Ekonomi Islam, 8*(02), 1577-1583. doi: http://dx.doi.org/10.29040/jiei.v8i2.4514

**DOI:** http://dx.doi.org/10.29040/jiei.v8i2.4514

## 1. INTRODUCTION

Economic development is the result of the role of the banking sector in carrying out its function as an intermediary financial institution for people in need (Gazdar & Cherif, 2015; Léon & Weill, 2018; Muye & Muye, 2017). Financing disbursed by Islamic banks is crucial in increasing productivity (Nahar & Sarker, 2016; Šeho et al., 2020). Increased productivity will improve the business and investment environment, which will increase national income (Ahmed, 2010; Tan, 2016).

Islamic banks in Indonesia have developed quite rapidly. The Financial Services Authority (OJK) noted that within 13 years, the total assets owned by Islamic banks in 2008 amounted to 49.5 trillion rupiahs, increasing to 593.9 trillion rupiahs at the end of 2020, an increase of 10.1 percent. Islamic banks have a role as an intermediary institutions. This role lies in the ability of Islamic banks to channel Third Party Funds (DPK) through financing. Total Islamic bank financing successfully disbursed in 2008 was 38.1 trillion rupiahs, increasing to 383.9 trillion rupiahs at the end of 2020, an increase of 11.88 percent. Public funds collected by Islamic banks also experienced a remarkable increase in 2008 of 36.85 trillion rupiahs, increasing to 465.97 trillion rupiahs at the end of 2020, an increase of 9.6 percent.

Of course, this good performance of Islamic banks must be maintained so customer trust is not lost. Although the performance of Islamic banks has been good, there is still much homework to be done. Currently, the amount of financing is only around 3-5% of the loan amount. The amount of financing shows that the share of Islamic bank financing is still minimal compared to conventional commercial bank credit. The high demand for liquidity of Islamic banks is not accompanied by high growth in deposits. Third-Party Funds show Islamic banks' performance in collecting funds from the public. This ability will undoubtedly affect the financing ability of Islamic banks in distributing them (Trimulato, 2019).

The financing offered to customers does not always run smoothly. Some factors affect financing. The factors that influence the financing of Islamic banks are divided into two, namely internal and external factors (Nasution & Ahmed, 2015). Internal factors affect the disbursed financing. Financial ratios can assess the company's internal conditions, including the Financing to Deposit Ratio (FDR), an internal factor representing the liquidity ratio, and total assets representing the activity ratio. External

factors include third-party funds and Non-Performing Financing (NPF) related to non-performing financing, inflation, and economic growth.

As an archipelagic country, Indonesia's geographical shape is dominated by waters. With this condition, it becomes a challenge for Islamic banks to reach and serve customers who live throughout the Indonesian archipelago. Funding sources for formal institutions that are preferred and close to communities in rural areas are essential. So far, there are informal financial institutions that are generally easy to access by anyone who needs, quickly, in a short distance, with the time and size of the loan as needed, with simple procedures and without collateral, but with a higher interest rate. Such loan relationships are based more on trust than collateral than commercial financing institutions. Supposedly, banks can play more roles through traditional banks than informal sources of financing because banks have precise regulations in conducting financing.

Bilgin et al. (2020) discuss the impact of economic uncertainty on credit growth in Islamic and conventional banks. Grassa et al. (2020) investigated whether banks with higher credit risk disclosures benefited from lower credit risk disclosures. Sobarsyah et al. (2020) assessed the effect of loan growth and capitalization on credit risk in Islamic banks. Smaoui et al. (2020) analyzed the impact of funding liquidity risk on risk-taking behavior in Islamic and conventional banks. Caporale et al. (2020) discuss the bank lending channel from monetary transmission in Malaysia, a country with a dual banking system including Islamic and conventional banks.

Hassan et al. (2019) provide a comprehensive assessment of the liquidity risk of Islamic banks compared to conventional banks. Bitar and Tarazi (2019) analyze more substantial creditor rights related to the capital adequacy ratio for conventional banks than for Islamic banks. Gozgor et al. (2019) analyzed the effect of uncertainty on domestic credit levels in 139 countries from 1996 to 2017. Ibrahim and Rizvi (2018) analyze whether Islamic banks can maintain the supply of financing and whether their growth is higher than conventional bank loans during a crisis.

Hernandez and Vadlamannati (2017) investigated whether loans by Islamic banks reflect Saudi Arabia's political interests based on religious affiliation. Karim et al. (2014) analyzed and compared the capital adequacy and loan growth of Islamic and conventional banks in 14 countries of the Organization of the Islamic Conference (OIC) from 1999 to 2009. Shaban et al. (2016) explained that information asymmetry is a common feature that hinders lending to small and medium enterprises (SMEs).

This study continues from research that has been done related to Islamic banking financing, which specifically discusses the factors that affect Islamic bank financing in each province, especially in Java. Java is an island with the highest development progress level in Indonesia. Economic activity in Indonesia is concentrated in this region. The wealth of natural resources, young age workforce, and a vast domestic market that is overgrowing, combined with complete facilities and infrastructure, make Java Island superior. Therefore, it is interesting to study the role of Islamic banking in channeling its financing, the influencing factors, and what strategies need to be carried out by Islamic banking.

This study contributes to some of the literature. First, this study explores what influences Islamic banking financing in each province. Second, the findings of this study provide a new paradigm for Islamic banking in Indonesia in channeling its financing to every provincial sector so that a priority scale needs to be made in carrying out its financing. Third, this study also takes the latest contribution by including monetary policy tools.

## 2. RESEARCH METHOD

Data from Bank Indonesia Economic and Financial Statistics (SEKI-BI), Islamic Bank Statistics (SPS), Financial Services Authority (OJK), and Central Statistics Agency (BPS). Islamic bank data includes financing for Islamic commercial banks and Islamic business units to provinces in Java islands (Banten, West Java, Central Java, Yogyakarta, East Java, and Jakarta), total asset (TAG), Islamic bank liquidity (FDR), exchange rates (EXC), and regional economic growth (PDRB). The data used in this study are time series and cross-sections with annual data from 2010 to 2021. The data processing in this research uses a panel data model to determine the effect of the variables to be tested.

$$\mathbf{FIN_{it} = \alpha + \beta_1 TAG_{it} + \beta_2 FDR_{it} + + \beta_3 EXC_{it} + \beta_4 PDRB_{it} + e_{it}}$$

Where i is the province, t is the annual observation, $\alpha$ is intercept, $\beta_i$ is the regression

coefficient of the independent variable (slope), $FIN_{it}$ is Islamic bank financing for province i in annual t, $TAG_{it}$ is total asset province i annual t, $FDR_{it}$ is financing to deposit ratio of province i annual to t, $EXC_{it}$ is exchange rates province i annual t, and $PDRB_{it}$ is regional economic growth i in annual t. Regression analysis in this study must meet the assumptions and tests consisting of a normality test to test whether the data used are normal or not. A heteroscedasticity test tests whether there is an error inequality from the residual in one observation to another observation or not in a regression model—an autocorrelation test to test whether consecutive observations over time are related or not—moreover, a multicollinearity test to find out whether there is a correlation between the independent or dependent variables.

## 3. RESULT AND DISCUSSION

Table 1 presents descriptive statistics of each tested variable. As reflected by the FIN symbol, data on financing disbursed to each province shows an average of 12.6 trillion rupiahs, with the highest financing of 41.4 trillion rupiahs to West Java and the lowest of 629 billion rupiahs to the province of Yogyakarta.

Total banking assets of each province symbolized by TGA have an average of 19.6 trillion rupiahs, with the largest asset of 71.2 trillion rupiahs in West Java and the smallest of 1.7 billion rupiahs in Yogyakarta. The Financing to Deposit Ratio, as reflected by the FDR symbol, is the ratio used to measure bank liquidity in repaying withdrawals made by depositors by relying on financing provided as a source of liquidity.

**Table 1. Summary Statistics**

| | FIN | TAG | FDR | EXRATE | PDRB |
|---|---|---|---|---|---|
| Mean | 1.26E+13 | 1.96E+13 | 0.907780 | 12095.92 | 0.082533 |
| Median | 9.08E+12 | 1.45E+13 | 0.914350 | 12914.65 | 0.086250 |
| Maximum | 4.14E+13 | 7.12E+13 | 1.300500 | 14492.50 | 0.148200 |
| Minimum | 6.29E+11 | 1.70E+12 | 0.612400 | 9024.700 | 0.008700 |
| Std. Dev. | 1.06E+13 | 1.62E+13 | 0.160742 | 2105.855 | 0.052893 |
| Skewness | 0.880490 | 1.044372 | 0.455076 | -0.462544 | -0.144119 |

The average FDR was 90.77 percent, with the highest score at 30.05 percent in the province of Central Java and the lowest at 61.24 percent in the province of Yogyakarta. The rupiah exchange rate against the United States dollar, as reflected by the EXC symbol, was on average at 12,095.92 rupiahs per dollar, with the most significant exchange rate reaching 14,492.5 and the lowest being 9,024.7. Economic conditions in an area in a certain period are symbolized by GRDP, which has an average of 8.25 percent, with the most considerable growth of 14.8 percent in West Java and the most minor 0.87 in Yogyakarta. In general, the value of the standard deviation of each variable shows that the data has a value close to the mean, and the distribution of the data tends to be skewed to the right and the left.

The first step in this research is to test the classical assumptions, consisting of a data normality test, heteroscedasticity test, autocorrelation test, and multicollinearity test. In principle, classical assumption testing aims to produce a model that meets the best linear, unbiased, and estimator (BLUE) criteria so that the model can be trusted and reliable. The normality test aims to test whether the data used in the study is normal or not. Good data is normal data. This study uses the probability of Jarque-bera, where the value is 0.4106, which is greater than the significant value of 0.05, so the data is normal.

The heteroscedasticity test aims to test whether it uses data that has the same diversity of errors or not. Good data has the same diversity of errors (homoscedasticity). Heteroscedasticity testing uses the probability value of Breusch Pagan Godfrey, which obtains a value of 0.0905, more significant than the significance value of 0.05, so that the data does not contain heteroscedasticity. The autocorrelation test checks whether the research data has an error correlation between one observation and another. Good data is data that has no correlation error.

The autocorrelation test uses the Lagrange-Multiplier probability, whose result is 0.1801, which is greater than the significance value of 0.05, so the data does not have an autocorrelation problem. The multicollinearity test serves to determine whether each research variable uses data that are linearly related or not. Data that is free from multicollinearity

problems do not have a linear relationship. This study uses the Variance Inflation Factor (VIF) test, where the result is less than 0.85, which means that the data for each variable is not linearly related.

**Table 2. Diagnostic test**

| Diagnostic | Indicator | Value | Prob. |
|---|---|---|---|
| Data Normality | Jarque-Bera | 1.7799 | 0.4106 |
| Heteroskedasticity | Breusch Pagan Godfrey | 2.8661 | 0.0905 |
| Autocorrelation | Lagrange-Multiplier | 0.1527 | 0.1801 |
| Multicollinearity | VIF | < 0.85 | |

The second step is to test the best model. In the panel data, three models must be chosen, one of which uses three tests, namely the Chow test (common effect model vs. fixed effect model), Hausman test (fixed effect model vs. random effect model), and the Lagrange multiplier test (random effect model vs. common effects models). Table 3 is the result of 3 tests where the final result is the best model of this study using the fixed effect model.

**Table 3. Best Model**

| Test | Model | Prob. | Resolve |
|---|---|---|---|
| Chow | Common effect Model Vs Fixed effect model | 0.0084 | Fixed Effect Model |
| Hausmann | Random Effect Mode Vs Fixed Effect Model | 0.0408 | Fixed Effect Model |

Table 4 shows the best model, namely the fixed effect model. The study found that total assets, liquidity, and exchange rates affected the distribution of Islamic banking financing, while regional economic growth had no effect. The main contributor to the growth of Islamic banking assets is the distribution of Islamic banking financing and third-party funds (Abusharbeh, 2020). The distribution of Islamic banking assets is still concentrated in Java at 77.06 percent, financing at 71.19 percent, and third-party funds at 74.70 percent (Islamic Bank Statistics, 2021). Islamic banking financing, which is not yet extensive, is also influenced by competition between Islamic banking, which provides extraordinary profit sharing to boost financing growth (Belkhaoui et al., 2020; Salman & Nawaz, 2018).

In addition, there are internal problems in maintaining non-performing financing and financing restructuring and competition by applying financial technology to provide fast and practical financing. Islamic banking is already big in theory benefits because it can provide high profit sharing to attract customers and save money. After all, they have large enough funding and financing supported by solid capital (Noor et al., 2018). In addition, it has technological capabilities spread across several branches, making it easier to acquire and maintain public trust. Large Islamic banks also can provide attractive products accompanied by ease of service.

**Table 4. Fixed Effect Model Results**

| Variable | t-Statistic | Prob. |
|---|---|---|
| TAG | 37.49 | 0.0000* |
| FDR | 7.29 | 0.0000* |
| EXRATE | 2.685 | 0.0097* |
| PDRB | -0.207 | 0.8364 |

In maintaining liquidity, Islamic banks can also become securities anytime if they convert to financing payments. Liquidity will decrease as the number of financing disbursements increases in line with the improving economy. Increasing demand for financing is also one of the strategies for managing the liquidity of Islamic banks so that expenses are maintained (Salman & Nawaz, 2018).

Improving economic conditions will have an impact on increasing demand for financing. Therefore, Islamic banking must prepare all branch offices to increase the financing portfolio. Islamic banking also needs to restrain the growth rate of third-party funds so that the burden of profit sharing does not increase. Islamic banking needs to maintain the financing deposit ratio (FDR) of 85 percent to 90 percent.

A country that adopts an open economic system must consider the exchange rate of its currency in analyzing the macroeconomic conditions of the country concerned (Caporale et al., 2019; Lin et al., 2018; Zeev, 2019). The weakening of the rupiah exchange rate can affect each Islamic bank's debt in foreign currency and portfolios—the financing in

foreign currency denominations. If the currency appreciates or depreciates, it will impact the profitability of Islamic banks sourced from financing (Razak et al., 2019; Shen et al., 2018).

A high exchange rate will reduce the profitability of Islamic banks. Foreign exchange deposit funds decreased every time the exchange rate between the two currencies decreased. Financing in a foreign currency will become less desirable with an increase in the risk of foreign exchange mismatch, which impacts the cost of borrowing from the bank (Álvarez-Díez et al., 2016; Guniarti, 2015; Mahapatra & Bhaduri, 2019).

The role of the exchange rate in any economy is very significant because it, directly and indirectly, affects the domestic price level, profitability of traded goods and services, allocation of resources, and investment decisions. Exchange rate fluctuations have two directions known as appreciation and depreciation. The exchange rate depreciation will affect income banks through foreign exchange transactions that charge fees and foreign exchange differences (Hossain, 2016; Nahar & Sarker, 2016).

## 4. CONCLUSION

This study aims to analyze the factors that influence the distribution of Islamic banking financing in Java. This study found that total assets, liquidity, and exchange rates affect Islamic banking financing distribution on Java island.

These results can also advise policymakers to carry out quantitative easing to burden-sharing financing, injection of liquidity into banks, and efforts to stabilize the rupiah exchange rate so that Islamic banking does not put too much liquidity in securities.

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