

# Diversification, Bank Risk, and Efficiency on Sharia Banking in Indonesia

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**ABSTRACT:** The study aims to analyze the effect of asset diversification, bank risk, and bank size moderated by the ownership structure and board of Commissioners on the level of efficiency in Sharia banking in Indonesia. The study was conducted on 13 Sharia banks with the observation period in 2010-2017. The results of this study found that diversification moderated by ownership structures and the diversification moderated by Shariah Supervisory Boards had no significant influence on bank efficiency, while bank risk measured with NPF ratio (non-performing Finance) had a significant negative influence on the bank's level of efficiency, and the bank's total size of the asset had a significant positive influence on the efficiency rate of Sharia banking in Indonesia. R-Square, with a value of 28.65 percent signifies that dependent variables in the study contributed to the efficiency of the bank by 28.65 percent.

*Keywords:* Efficiency, non-performing finance, diversification, bank risk

## 1 INTRODUCTION

The issue of efficiency has received serious attention, especially by bank managers, for enhancing the development of the Sharia banking industry. By being efficient, the banks are expected to produce the best performance, high competitiveness in the national banking industry, and expand market share (Endri, 2010). A robust banking system is essential for any country, especially in developing countries, to achieve sustainable economic growth (Nguyen 2018). Empirical studies of the performance of sharia banking efficiency in banks in Indonesia are still relatively limited (Endri 2010). The objective of this study is to see whether the development of Sharia banking in Indonesia today is far from expectations. For example, it is considered a large market when looking at Indonesia that has the largest population of Muslims in the world. Nevertheless, it does not guarantee the rapid development rate of Sharia banking. At present, the sharia banking market share has reached 8.26 percent, which was previously only 5.44 percent (OJK 2017).

Return on assets (ROA) of Sharia banking continues to decline. In 2012, the ROA position of Sharia banking was still at 2.14 percent, but the follow-

ing year, it declined and continued to decline until its peak in 2014 with ROA of only 0.79 percent. In 2017, the Sharia banking ROA reached 1.17 percent. In terms of quality, Sharia banking has not improved yet. The financing problems are still a major one (Mongid 2015).

In recent years, the number of Sharia banking has increased rapidly. However, the net profit of these banks decreased significantly in 2014 (Effendi 2016). Therefore, this study was motivated by the condition that the researchers try to provide inputs to regulators, banks, and stakeholders.

One way to achieve efficiency is to diversify. Diversification is an activity or action to make something more diverse or not just one type. Portfolio theory states that diversification will provide risk reduction benefits, especially company-specific risks. This encourages bank managers to diversify, by not only focusing on financing activities but also expanding their activities to business lines, and investing in securities and others. By doing so, bank income increases where the proportion of non-interest income is higher than the income derived from lending (Sianipar 2015). In addition to diversifying banks, banks must also ensure that the financing provided is of good quality and can be collected.

The amount of uncollectible financing can be seen from the high ratio of NPF (non-performing finance). Kaparkis' study found a positive relationship between bank inefficiency and the ratio of non-performing loans towards total loans (Kaparakis et al. 1994; Anggraeni 2016). Likewise, research conducted by Batir et al. (2017) on Banks in Turkey, found that total loans have a significant positive relationship on efficiency over the 2005-2013 period.

The Sharia Supervisory Board (SSB) is a mandatory component of every sharia financial institution. The National Sharia Board in Sharia Financial Institutions has an important and strategic role in sharia supervision. They have existed in sharia banking and are responsible for ensuring all sharia bank products. The procedures are following sharia principles. The role of SSB in Sharia banking must also be truly optimized, including its qualification. The SSB must be tightened and the formalization of its role must be realized in Sharia banking (Bagya & Jamal 2017). A study conducted by Yulianti (2009) and Bagya & Jamal. (2017) concluded that the functions and roles of SSB have a strong relationship with sharia banking risk management, namely reputation risk, which in turn, affects other risks such as liquidity risk.

Bonin et al. (2005) analyzed the effect of the relationship between bank ownership and bank performance as measured by cost efficiency and profit efficiency. The results showed that banks with foreign ownership have higher cost efficiency and profit efficiency scores. Furthermore, research conducted by Altunbas (2001) that compared banks with foreign ownership and domestic ownership indicated that banks with foreign ownership status have a significant positive relationship on the level of cost-efficiency. The size of the bank (size) is proxied by the size of the assets owned. In this case, the size of the asset is significant in the banking world in meeting financial needs to carry out its intermediation activities and providing guarantees. Besides, it also conducts other trade transactions such as foreign exchange transactions and other financial services (Salvatore 2004).

Based on the arguments above, it can be judged that, if the banks intend to achieve efficiency, they must have an extensive business (asset) and capital. Most studies on banking efficiency include the bank size, as a variable that affects efficiency, but the results of the study showed a different result about the effect of bank size on efficiency. Other studies (Cebenoyan et al. 1993); (Berger & Mester 1997) found that it has no significant results. Again, another study by Muazaroh et al. (2012) found that bank size has a significant effect on the profit efficiency of banks in Indonesia.

## 2 RESEARCH METHODS

The study was conducted on Sharia banking in Indonesia over the 2010 – 2017 period. Based on the type of data, this study is categorized as quantitative research and the hypothesis was tested using multiple linear regression analysis with the help of Eviews 9. The secondary data were obtained from bank publication reports from the Bank Indonesia website (BI) and the Financial Services Authority (OJK). The 11 selected banks included Muamalat Indonesia Bank, Mandiri Sharia Bank, Mega Sharia Bank, BNI Sharia Bank, Indonesian Sharia Bank, Bukopin Sharia Bank, Victoria Sharia Bank, Sharia BCA Bank, BJB Sharia Bank, Panin Sharia Bank, and BRI Sharia Bank. The variables consist of the dependent and independent variables, moderator variables and control variables.

The dependent variable used was the efficiency score obtained from the SFA method by Aigner et al.,1977. The independent variables used in this study were diversification, which is calculated using the calculation results from HHI, and Bank Risk, measured by using NPF proxy, which is total non-performing financing divided by the total financing disbursed. Moderating variables were ownership structure and SSB. A dummy is equal to one if a bank is a group of foreign or mixed banks and a dummy is zero if the bank is a bank that is not included in the category of a foreign bank or joint venture bank. On the contrary, the SSB can be seen from the comparison between the numbers of SSB to the total number of the board of commissioners. It also uses a control variable, namely: Bank Size, which is Ln (total assets).

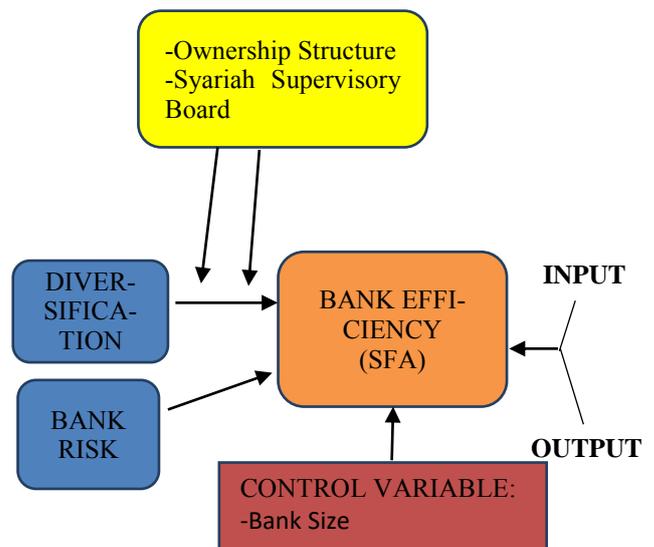


Figure 1. Research Model

### 3 RESULTS AND DISCUSSIONS

#### 3.1 Descriptive Statistics

Diversification is an effort to minimize bank risk. This research used diversification, which can be used to see how far the bank is able to diversify its productive assets into various forms of assets. These assets are expected to generate profits, such as financing customers, placements with other banks, securities, and other forms of assets. If the value of diversification increases, the earning assets will become more diversified. If the value of diversification is getting smaller, the earning assets are increasingly concentrated into one form of asset. The average value of diversification of Sharia banking assets throughout the study can be seen in Table 1, which is only 25.80 percent.

Foreign ownership of banks has better management and this has a positive impact on bank efficiency. Sharia banking with the highest share ownership by foreigners is Bank Muamalat and Maybank Syariah Indonesia. Subsequent analysis for these two banks is given a dummy code.

Table 1. Descriptive Statistics of Sharia Bank in Indonesia, 2010-2017

| Names of the Banks  | Mean | Maximum | Minimum | Std. Dev. |
|---------------------|------|---------|---------|-----------|
| Efficiency          | 0.68 | 0.79    | 0.50    | 0.10      |
| Diversification     | 0.26 | 0,42    | 0,19    | 0,10      |
| Diversification*SSB | 0,90 | 1,00    | 0,00    | 0,00      |
| Bank Risk (NPF)     | 4,42 | 11.42   | 1.28    | 3,56      |

Source: Output of Eviews 9

SSB is a comparison between the numbers of SSB and the total number of boards of commissioners. The SSB proportion values can be seen in Table 3.1, with an average of 0.909 percent.

Bank risk, which is proxided by NPF, reflects the bankruptcy risk of banks originating from financing activities. Each bank tries to minimize the value of the NPF. The average NPF condition of Sharia banking in Indonesia throughout the study was 4.424%.

#### 3.2 Data Panel Regression Results

Based on Table 2, diversification was not proven to affect the efficiency of Sharia banking in Indonesia. Diversification moderated by foreign ownership is neither proved to affect the efficiency of Sharia banking in Indonesia. Additionally, diversification

moderated by SSB is neither proved to affect the efficiency of Sharia banking in Indonesia.

NPF was proven to affect the level of efficiency of Islamic banking in Indonesia. The smaller the level of NPF, the higher the level of efficiency of Sharia banking. The size of the company, which is a control variable, was proven to have a significant effect on the level of efficiency of Sharia banking in Indonesia. The higher the size of the Sharia banking, the more efficient the operational condition of the Sharia banking.

The contribution of all research variables to the efficiency of Sharia banking was 28.65 percent. Therefore, the increase or decrease in the efficiency level of Sharia banking 28.65 percent is due to a contribution from the increase or decrease in diversification, diversification moderated by foreign ownership and diversification moderated by SSB, NPF and bank's size.

Table 2. Results of Regression of Panel Data

| No           | Independent variables | Coefficient | t-statistic | Prob.    |
|--------------|-----------------------|-------------|-------------|----------|
| 1.           | Constant +Ci          | 0.0961      | 0.3938      | 0.6947   |
| 2.           | Diversification       | -0.0177     | -0.0798     | 0.9366   |
| 3.           | Diversification*OWN   | 0.2415      | 1.2276      | 0.2231   |
| 4.           | Diversification*SSB   | -0.2279     | -0.7521     | 0.4541   |
| 5.           | NPF                   | -0.0092     | -4.4097     | 0.0000*  |
| 6.           | LnTA                  | 0.0415      | 2.8038      | 0.0063*  |
| F-statistics |                       | 6.5863      | Prob.       | 0.000034 |
| R-square     |                       | 0.2865      |             |          |

Source: Output of Eviews 9

#### 3.3 Discussion of Research Results

Diversification is an activity of channeling productive assets not only in lending, but also securities, placements with other banks, and so on. Diversification aims to minimize the risk of failure to channel funds. In this research, diversification was not proven to affect the level of bank efficiency. Previous research conducted by Maulida (2018) found that financial diversification does not affect the ROA of Sharia banking. Diversification cannot be used as an effort to increase profitability. Similar to the results of this study, diversification cannot be used as an effort to improve the efficiency of Sharia banking. However, Nguyen (2018) found that diversification affects bank efficiency.

The descriptive statistics show that foreign ownership of banks tends to have a relatively high level of efficiency. Nevertheless, diversification moderated by foreign ownership was not proven to affect the level of efficiency of Sharia banking in Indonesia. Fries and Taci (2004) found that foreign-owned

banks have the highest level of efficiency (most efficient), then followed by domestic private ownership banks, and the least efficient state-owned banks with the lowest cost efficiency scores. Besides, Sharia banking that has a high enough proportion of SSB does not necessarily have a high level of efficiency. Diversification moderated by SSB was proven to have no significant effect on the level of efficiency of Sharia banking in Indonesia.

Bank risk, NPF, is a risk arising from the distribution of financing to customers. The results of this study indicated that NPF was proven to significantly influence the level of efficiency of Sharia banking in Indonesia. The smaller the NPF, the more efficient the bank's condition. Conversely, the higher the NPF, the more inefficient the bank's condition.

Therefore, bank management needs to control the NPF value. The larger the scale of the bank's business, the more efficient it tends to be. This study proves that company size has a significant effect on the level of efficiency of Sharia banking. The larger the scale of the bank's business (the greater the total assets), the more efficient the operational conditions.

#### 4 CONCLUSIONS

Based on the analysis and discussion, it can be concluded that diversification moderated by foreign ownership and diversification moderated by SSB had no effect on the efficiency of Sharia banking in Indonesia. However, NPF and bank size (LnTA) had a significant effect on the level of efficiency of Sharia banking in Indonesia

It is suggested that the management of Sharia banking continues to monitor bank risks or NPF value. This is evidence that NPF has a significant effect on the level of efficiency of Sharia banking. For further research, it is recommended to add other variables that are expected to affect the level of efficiency of Sharia banking in Indonesia.

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