

The Determinants of Sharia Net Intermediation Margin: Evidence from Indonesia

Rika Lisnawati¹, Ira Novianty²
{rika.lisnawati.kps19@polban.ac.id¹}

Politeknik Negeri Bandung, Indonesia^{1,2}

Abstract. Islamic Banks in Indonesia have a high intermediation margin. This indicates an inefficient financial intermediary. This is an essential and special concern to stimulate efficiency and encourage growth in distributing Islamic banking financing. The research was intended to investigate the determinants of intermediation margin in Islamic banks in Indonesia. This research employed panel data of 10 Islamic banks that utilized a dual banking system in Indonesia from 2015 to 2019. Data analysis technique used Structural Equation Model - Partial Least Square (SEM-PLS) with Warp-PLS 7.0. The results revealed that the capital adequacy ratio (CAR) had a positive and significant effect on the net intermediation margin (NIM), and Bank Size had a positive and significant effect on the net intermediation margin (NIM). This research did not significantly affect non-performing Financing (NPF), operating expenses and operating revenue on the net intermediation margin (NIM) in Islamic Banks. Academically, this research implied an expansion of knowledge of the Net Intermediation Margin of Islamic Banks. In practical terms, this research contributed to the Islamic Banking industry in formulating strategies to reduce net intermediation margin.

Keywords: CAR, NPF, Operating Expenses and Operating Revenue, Bank Size, Net Intermediation Margin

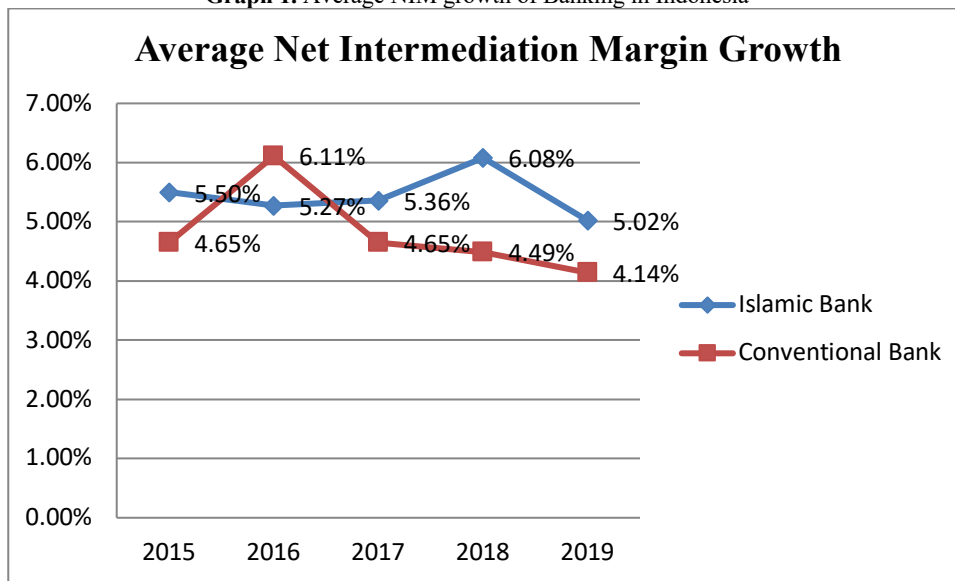
1 Introduction

Banking has an essential role in economic growth [1]. In Southeast Asia, banking is the primary source of Financing, and banks can channel funds from lenders to borrowers (intermediation) [2]. Financial intermediation plays a very important role in influencing bank-based economic conditions. In 2018 the Financial Services Authority and DBS Singapore researched the net intermediation margin in various countries in Southeast Asia and revealed that Indonesia still has a high net intermediation margin compared to other Southeast Asian countries. The high level of net intermediation margin in the banking industry indicates inefficient financial intermediaries [3]. Indonesia has two banks, namely Islamic Banks and Conventional Banks. Margin intermediation costs at Islamic banks can be calculated using the Net Intermediation Margin (NIM). Based on Islamic principles, margin intermediation in Islamic banking must be based on Islamic principles [4]. Bank margin intermediation work needs to be carried out at the lowest possible cost to achieve the welfare of the wider community [5].

During the last two years in 2018-2019, the trend of financing in Islamic banks has decreased, this has caused the Bank to experience difficulties in competing in the banking industry, one of the consequences is the net intermediation margin which tends to be higher

than conventional banks. Therefore, the Financial Services Authority has made a policy to distribute incentives to banks that can seek intermediation margins below 4.5% and do not interfere with the bank's activities. The net intermediation margin of sharia banking needs to be lowered by the limits set by the Financial Services Authority, to stimulate banking efficiency as a financial intermediary institution. The following is the average net intermediation margin development for Islamic and Conventional Banks in Indonesia in 2015-2019.

Graph 1. Average NIM growth of Banking in Indonesia



(Financial Report, personal preparation 2020)

The picture above shows that Islamic banks have not been able to reduce the net intermediation margin below 4.5% as expected by the Financial Services Authority. This makes it difficult for Islamic banks to compete in the banking industry, due to the net intermediation margin which tends to be higher than conventional banks, resulting in a lack of public attractiveness to finance Islamic banks, resulting in bank growth slowing down. The still high net intermediation margin in Islamic Banks is a special and urgent concern because it is important to do so to stimulate bank efficiency in supporting the expansion of Islamic Bank financing distribution.

Understanding how important it is to control the level of net intermediation margin, several studies have tested several factors that affect the net intermediation margin in Islamic banks. According to Saunders et al. [6] and Talbi and Bougatef [4], reveal that the capital adequacy ratio (CAR) influences increasing the net intermediation margin. On the other hand, non-performing financing (NPF), bank size, and operating expenses affect reducing net intermediation margin [3][7][8]. Some of these studies are not in line with the research reviewed by Hamadi and Awdeh [9] and Raharjo et al. [10] which state that the capital adequacy ratio can reduce the net intermediation margin. On the other hand, the net intermediation margin will increase due to non-performing financing (NPF), bank size, and operating expenses for operating income [11][12].

In general, research on this topic focuses on countries in the MENA Region, Vietnam, Australia, the United States, and Europe which generally uses multiple regression analysis

methods. However, this study uses the structural equation model-partial least square (SEM-PLS) to analyze the net intermediation margin in banking in Indonesia, especially Islamic banks. Based on the research gap, this research aims to identify the determinants of the net intermediation margin of Islamic banks in Indonesia. The research was conducted in Indonesia because the country has the largest Muslim population in the world and has the potential to advance the sharia economy and Indonesia has a high net intermediation margin compared to other ASEAN countries.

2 Literature Review

2.1 Net Intermediation Margin

The model proposed Ho and Saunders [13], is the primary model used in identifying the elements that affect the intermediation margin and serves as a reference for determining aspects that affect bank margins [14]. Islamic banks collect funds by investing for profit sharing with mudharabah as the contract, therefore banks cannot mobilize deposit funds through fixed interest rates [15][16]. This, Islamic banks are required to set prices that can compete with conventional banks in reducing the capacity of withdrawing funds by depositors [17]. According to Zhou and Wong [18] the net intermediation margin in Islamic banks is the difference between funding receipts and funding projects in the returns distributed to past depositors compared to earning assets.

2.2 Capital Adequacy Ratio (CAR)

Capital Adequacy Ratio is a ratio used to see Bank assets that hold risk (securities, investments) financed from funds originating from independent capital and other parties outside the Bank [19]. CAR is a vital variable for the Bank because high capital adequacy indicates high flexibility in managing its funds for profitable activities. The urgency of CAR for Islamic Banks is even greater than that of Conventional Banks [20]. Sufficient capital can support the Bank in developing loans and deposits, as a result the Bank can accept business, so that the higher the chance of achieving profitability. Considering that capital is an important aspect in the Bank in growing its business activities, the Financial Services Authority stipulates each Bank to keep a minimum capital of 8% of Risk Weighted Assets.

2.3 Non-performing financing (NPF)

Banks will offer with risk when distributing financing or credit. NPF is a risk for Islamic banks, NPF describes the degree of financing risk faced by banks. Financing risk is a comparison of the Bank's capability to manage financing problems that are directed at the Bank [21]. According to the Financial Services Authority, the maximum NPF limit is 5% of the total financing provided. Non-performing financing is calculated from the comparison of non-performing financing with the amount of financing or loans granted. Banks will tend to be efficient when the NPF ratio is low, whereas banks are inefficient when the NPF ratio is high.

2.4 Operational Expenses and Operational Income

Operational Expenses and Operational Income, namely the comparison of the costs incurred by the Bank when operating its activities to the income received through these activities [22]. The ratio of Operating Expenses and Operating Income can indicate the

capability of the Bank's governance in overcoming the costs of its activities in terms of operating revenues. The level of efficiency can be seen from the low value of Operating Expenses and Operating Income. Small operating costs with large operating revenues, able to control Operating Expenses and Operating Income and bank conditions become efficient, meaning that there is a tendency for banks to overcome these financing problems [23].

2.5 Bank Size

Bank size is the size of a bank as measured by the total assets of a bank [24]. A larger bank size has a better source of willingness in its operations, and of course leads to increased efficiency and lower operating costs [11], Bank size is calculated from the log of the bank's total assets [25]. The larger the size of the bank, the greater the trust between the borrower and the custodian of funds. The high level of customer confidence in large-scale banks will result in the possibility of the bank experiencing a problematic situation that tends to be low.

3 Method

This study uses quantitative methods because the assessment is in the form of numbers and the analysis uses statistics. Based on the level of explanation, this research is included in causal associative research. The research population is all Islamic banks operating from 2015-2019 with a total of 14 banks. Purposive sampling was used in the selection of samples and obtained 10 Islamic banks to be used as research samples.

The collection technique in this study uses electronic documentation. The researcher uses secondary data sourced from the official website of Islamic banks and the website of the Financial Services Authority in the form of annual financial reports from 2015 to 2019. Hypothesis testing and data analysis used the SEM-PLS method. SEM-PLS is a relevant analytical tool to be used for various reasons, namely the use of SEM-PLS does not require a large sample quantity, and there is no requirement for an assumption of normality [26]. WarpPLS 7.0 software was used to measure the SEM-PLS model.

4 Results and Discussion

This research tested the model using WarpPLS 7.0, in Table 1 below showed the test results with all acceptable model criteria.

Table 1. Fit Model

| Information | Results | P-values | Status |
|-------------|---------|----------|--------|
| APC | 0.248 | 0.015 | Fit |
| ARS | 0.677 | <0.001 | Fit |
| AARS | 0.649 | <0.001 | Fit |
| AVIF | 1.925 | - | Fit |
| AFVIF | 1.942 | - | Fit |
| GoF | 0.823 | - | Fit |

| Information | Results | P-values | Status |
|-------------|---------|----------|--------|
| SPR | 1.000 | - | Fit |
| RSCR | 1.000 | - | Fit |
| SSR | 1.000 | - | Fit |
| NLBCDR | 1.000 | - | Fit |

(Results of WarpPLS 7.0. Personal preparation, 2021)

The fit model was obtained by testing on Warp-PLS 7.0, which assesses whether the fit model is appropriate and supported by research data. The measurement evaluation was carried out in the fit model by looking at the significance criteria, namely APC, ARS and, AARS (p-value). The value of the fit model was 0.015, <0.001, and <0.001, the three values were > 0.05, meaning the model was declared fit. Likewise for other indicators, namely AFVIF, AVIF, GoF, SPR, RSCR, SSR, and NLBCDR, each of these indicators completed the measurement criteria, which meant that all models have met the criteria and were declared fit.

Table 2. Outer Model

| Variable | Loadings | Weight | VIF | Sig test |
|-----------|----------|--------|-------|----------|
| CAR | 1.000 | 1 | 0.000 | Sig |
| NPF | 1.000 | 1 | 0.000 | Sig |
| OEOI | 1.000 | 1 | 0.000 | Sig |
| Bank Size | 1.000 | 1 | 0.000 | Sig |
| NIM | 1.000 | 1 | 0.000 | Sig |

(Results of WarpPLS 7.0. Personal preparation, 2021)

The table above showed the measurement of CAR, NPF, OEOI, Bank Size, and NIM. The weight indicator showed the overall measurement variables that have a significant value. This indicated that these variables were significant measures. Then, there was no multicollinearity in this study because it had a VIF value for other variables (<2.5).

Table 3. Inner Model

| Information | CAR | NPF | OEOI | Bank size | NIM |
|-------------------|-------|-------|-------|-----------|-------|
| R- Squared | | | | | 0.677 |
| Adj R-Squared | | | | | 0.649 |
| Composite Reliab. | 1 | 1 | 1 | 1 | 1 |
| Cronbach' Alpha | 1 | 1 | 1 | 1 | 1 |
| Avg. Var. Extrac. | 1 | 1 | 1 | 1 | 1 |
| Full Collin.VIF | 2.677 | 1.688 | 1.703 | 2.028 | 2.251 |
| Q-Square | | | | | 0.660 |

(Results of WarpPLS 7.0. Personal preparation, 2021)

R-squared was worth 0.677, which meant the ability of the independent variables to describe variations in changes in the dependent variable was 67.7%, and the remaining 32.3% was explained by other aspects outside the model described above.

Table 4. Hypothesis Results

| Independent | Dependent | Path Coeff | P-Value | Results |
|-----------------------------|-----------|------------|---------|---------------|
| CAR (X ₁) | NIM (Y) | 0.371 | 0.002 | Significant |
| NPF (X ₂) | NIM (Y) | -0.076 | 0.291 | Insignificant |
| OEOI (X ₃) | NIM (Y) | 0.199 | 0.068 | Insignificant |
| Bank Size (X ₄) | NIM (Y) | 0.344 | 0.004 | Significant |

(Results of WarpPLS 7.0. Personal preparation, 2021)

The results of the complete hypothesis were displayed in the form of Fig. 1:

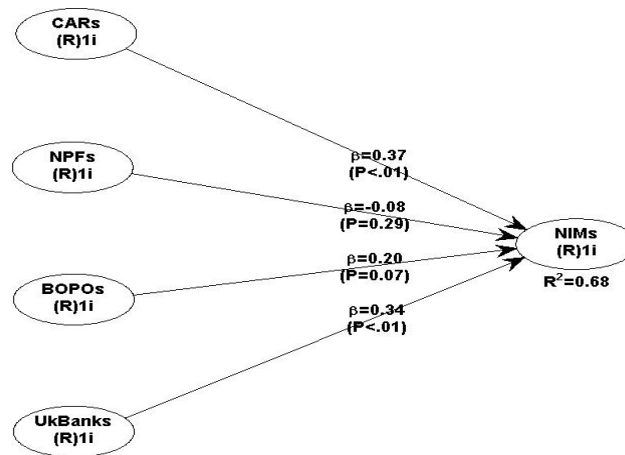


Fig. 1. Analysis Model

- Hypothesis 1 stated that the CAR had a significant negative effect on the net intermediation margin. The test results showed that the capital adequacy ratio (CAR) had a positive and significant effect on net intermediation margin, meaning that H1 is rejected.
- Hypothesis 2 stated that the NPF had a significant positive effect on the net intermediation margin. The test results showed that the non-performing financing (NPF) had a negative and insignificant effect on net intermediation margin, meaning that H2 is rejected.
- Hypothesis 3 stated that the Operational Expenses and Operational Income had a significant positive effect on the net intermediation margin. The test results showed that the Operational Expenses and Operational Income had a positive and insignificant effect on net intermediation margin, meaning that H3 is rejected.
- Hypothesis 4 stated that the bank size had a significant positive effect on the net intermediation margin. The test results showed that the bank size had a positive and significant effect on net intermediation margin, meaning that H4 is accepted.

5 Discussion

5.1 The Effect of Capital Adequacy Ratio (CAR) on Net Intermediation Margin of Islamic Banks

This research is from previous researchers Hoang and Dan [3] and Nasserinia et al. [27], which revealed that CAR results had a significant positive effect on NIM. A positive relationship indicates that the greater the ratio of the capital deposited by the Bank makes the NIM of Islamic Banking increase. In addition, the positive relationship between CAR and NIM due to the high level of capital of a bank causes banks to lower the profit-sharing ratio. This is because banks with large capital have external resources that have an impact on increasing bank margins. According to Zulkifli and Eliza [28], the positive effect of the capital ratio variable on NIM on the Bank is risk-averse and requires a larger margin because it requires greater costs from equity financing compared to external financing. This research also agrees with the research conducted [29][30], which states that the capital ratio (CAR) has a significant positive effect on banking NIM.

5.2 The Effect of Non-Performing Financing (NPF) on the Net Intermediation Margin of Islamic Banks

The test results found that non-performing financing had a negative and insignificant effect on net intermediation margin. Non-performing financing has an insignificant negative impact, this indicated the greater the non-performing financing value, the net intermediation margin is decreasing. The negative result indicated that the higher the non-performing financing, the Bank's income will decrease because of the tendency of the debtor to fail to pay off his responsibilities so that the amount of profit earned by the Bank will decrease. The decrease in the margin obtained by the Bank has an impact on the decline in the net intermediation margin of a Bank, on the other hand, if the non-performing financing is smaller, the net intermediation margin will be greater due to small non-performing financing, the margin gain will be greater. The results of this study also indicate that the Bank may prefer to profit with a smaller margin when the financial situation of businesses and individuals deteriorates. This research aligned with Williams' research which found that the risk of non-performing Financing had negative effect on bank margins in Australia [31].

5.3 The Effect of Operating Expenses on Operating Income on the Net Intermediation Margin of Islamic Banks

This positive direction indicated the higher the operational costs and operating income, the greater the net intermediation margin owned by the Bank. The higher the operating expenses and operating income, the operational costs generated by the Bank are increasingly inefficient so that the Bank has the opportunity to experience higher problematic conditions. When a bank bears a larger operating cost, it is rational to set a high margin size as well, because a high margin requires the bank to cover operating costs. According to Lee and Isa [11] in the absence of market power and all risks, a bank needs to cover operational costs and is a function of deposits taken and loans granted. Therefore, banks operating at higher levels of operating expenses and operating income need to charge a higher net intermediation margin as well. This research agrees with the research conducted Iloska [32] which explains that Operating Expenses on Operating Income have a positive and insignificant effect.

5.4 The Effect of Bank Size on the Net Intermediation Margin of Islamic Banks

In addition, the variable bank size showed positive and significant results on net intermediation margin. The positive direction indicated that the larger the size of the bank will increase net intermediation margin because there is a much more diverse product diversification compared to small-scale banks. The research results are in line with the study Dewi and Triaryati [33], which revealed that bank size has a positive and significant effect on Islamic banks. Similar to the findings of Shawtari et al. [30], which states that large bank sizes indicate a dominant position in the market, Therefore, a large bank size indicates a higher monopoly ability. The higher the level of dominance will have an impact on increasing the cost burden. Therefore, the bank's margin will increase to reduce or cover the possibility of larger costs. positive on bank size indicates that the higher the level of the company size, the higher the net intermediation margin, this is due to various product diversification. Large bank sizes have the opportunity to bring greater profits, due to their ability to expand market share to invest. The research results are in line with research by Ayuni and Rani [34], which argues that a bank size has a significant positive relationship with net intermediation margin.

6 Conclusion

This research identified the factors that drive the increase in the net intermediation margin of Islamic banks in Indonesia using the SEM-PLS model. The results showed that two variables have a significant effect on the increase in bank intermediation margins, namely the capital adequacy ratio and bank size. This indicated that the higher the capital ratio, the NIM has increased. Furthermore, non-performing financing variable and operating income operating expenses have no significant effect on the net intermediation margin of Islamic banks. This indicates that the capital adequacy ratio and bank size are important factors in causing the increase in net intermediation margin.

The implication of this research is as input for Islamic banks to determine the determinants of the increase in net intermediation margin by looking at the variables that have a significant influence on the net intermediation margin in Islamic banks and as an effort for Islamic banks to overcome the increase in net intermediation margins. This finding had limitations, although it presented some critical research. Thus, it was suggested that further researchers can add other factors that can affect the NIM level, such as inflation, financing deposit ratio (FDR), and market share, and increase the number of samples or compare the determinants of the intermediation margin between Islamic banks and conventional banks.

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