Debt and Equity-Based Financing, Size and Islamic Banks Profitability: Empirical Evidence from Indonesia

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Abstract

Islamic Banking as a financial institution functions to collect and distribute funds to the public. To carry out these functions, the capital structure scheme uses debt and equity-based financing. In addition, the implementation is also influenced by the size which ultimately affect the performance of Islamic banking. This study aims to examine debt and equity-based financing, size and Islamic banks profitability: empirical evidence from Indonesia. The research method used is model estimation test of Moderated Regression Analysis (MRA) to see size as moderation variable. Banks profitability is represented by ROA and ROE. This study uses Islamic bank panel data from financial reports published during the sample period covering 2008-2017. The empirical findings show that debt and equity-based financing affect banks profitability. Furthermore, bank size does not moderate the debt and equity-based financing relationship to Islamic banks profitability.

Keywords: Debt and equity-based financing, Size and islamic banks profitability

INTRODUCTION

In recent years, financial institutions have faced a dynamic, competitive, and fast-paced situation at the national and international levels. One such financial institution is Islamic banking that attracts the attention of Islamic and Conventional economists. Today Islamic banks operate in all regions of the world and emerge as a practical and feasible alternative system, which has a lot to offer (Akhtar, Ali, & Sadaqat, 2011).

As with conventional banks, Islamic banks are intermediaries and guardians of other people’s money by the difference that they share profit and loss with their depositors (Dar & Presley, 2000). As a financial intermediary, the capital structure for Islamic banking lending is built by debt and equity financing-based. It’s just that in practice debt-based financing is still very dominating compared with equity financing (Sadique, 2015), (Razak, 2015), and (Mujibatun, 2013), although basically according to Ahmed (2005) in Jarhi (1999) there is a desire to balance the composition between debt financing and equity financing. And this is not easy because, according to (Awunyo-Vitor & Badu, 2012) the decision of managers to choose the capital structure will affect the profitability and market value of the company. Financing in sharia banking is divided into four categories based on the type of contract, namely equity financing with mudharabah and musharaka, debt financing with murabaha, istishna’ and qardh contract, financing with ijarah contract and the last one is financing by greeting contract (UU No. 21 tahun 2008). Equity financing is a type of sharia financing product in which financing is based on the principle of profit-sharing, which includes mudharaba financing and musharaka financing. In general, this type of financing is used for investment or working capital (Effendi, Kamilia, Sabiti, & Nursyamsiah, 2018).

The concept of financing with equity financing is the profit that Islamic banking will receive as much as the customer’s business profit in accordance with the agreed ratio. This financing will provide a high profit when the customer's business profit is high, but this financing also has a high risk when the customer loses. This happens because this type of financing does not provide certainty of income (return) either in terms of amount (amount) or timing (timing) such as mudharaba and musharaka. In contrast to the concept of debt financing with a contract that provides certainty of payment, both in terms of amount (amount), as well as time (timing) such as murabaha, salam, istishna, ijarah, and ijarah muntahia bittamlik (Adiwarman, 2007).

In addition, internal factors such as firm size also affect bank profitability. According to (Sugiharto dan Henny, 2016) bank size is used to see how the size of a small bank participates in bank profitability because in each country, banks have different assets. Even in Indonesia, according to Bank Indonesia’s Banking Statistics, 10 banks with the largest assets in Indonesia control 63.3% of total banking assets in Indonesia, while the total equity is used to see how the strength of capital owned by banks to support in obtaining profitability.
According to (Sugiharto dan Henny, 2016), Menicucci & Paolucci (2016) said that bank size is the size or size of a bank. Bank size can be seen from total assets at the end of the year. Petria, Capraru, & Ihnatov (2015), bank size is the number of assets owned by the bank. Banks will be able to achieve a better cost structure based on size, as it can improve production efficiency. Al-Omar & Al-Mutairi (2008) defines the size of bank size is the assessment of total assets owned by a bank. Large banks will be more profitable than small banks because large banks have a high degree of efficiency in achieving profit (Kosmidou, 2008).

This research tries to explore capital structure, debt, and equity financing-based on profitability in the Indonesian Islamic banking period 2005-2015 using bank size as a moderating variable. Previous studies of bank size were made a determinant of performance. This study will place the size of the bank as a moderating variable. Bank size is tested to see whether it will play a role in moderating debt relations and equity financing-based with profitability. It is based on the fact that Bank Indonesia’s business activities in Indonesia are grouped according to their core capital. So the amount of capital owned by the bank allegedly affect profitability. Besides, this research explores equity financing-based as a product of Indonesian Islamic banking based on the concept of Profit and Loss Sharing (PLS), which should have better profitability compared to debt financing-based.

LITERATURE REVIEW

Researchers have examined the debt and equity-based financing and profitability of Islamic banking (Ulfah Luthfi Latifah, 2018), (Amanda Maulidiyah Firdaus and Ari Prasetyo, 2016), (Forindah Mita Hapsari, 2014), (Mulwa, 2013), and (Suryani, 2011). Another study conducted (Mariam Nanden, S. et all 2017) examined whether debt and equity-based financing have an impact on the profitability of Islamic banking in Indonesia. The results show that debt-based financing contributes more to profitability than equity-based financing. Zafar, et all (2016) found that there was a positive relationship between the determinants of capital structure and the performance of the banking industry in Pakistan. Meero (2015) found that ROA and ROE have a positive relationship with the performance of conventional banks and sharia banks.

The size of the bank or commonly called firm size is an illustration that shows the scale of a company. The bigger a company then reflects, the company has a large fund. In a banking company, large funds will certainly affect the level of credit to be distributed (Adnan, Ridwan dan Fildzah, 2016).
Research on firm size with profitability has been done a lot. A positive relationship between company size and profitability is observed for the Greek banking industry (Panayiotis, et al., 2018). Anbar dan Alper (2011) asset size and non-interest income have a positive and significant influence on the profitability of Turkish banking. Flamini, et al. (2009) found that, regardless of credit risk, the return on higher assets was associated with a larger size of the bank. In contrast to Naeem and Baloch (2017) the size of the bank is not a positive relationship between firm size and profitability observed in the banking industry of Pakistan.

According to (Kaźmierska-Jóźwiak, Bogna, Jakub Marszałek, 2015) mentioned some studies that have been done by Rajan and Zingales (1995) shows that the debt of UK firms is positively correlated with their size. A positive correlation between a company’s size and debt is also confirmed Bevan and Danbolt (2002) however, observes that the relationship is very specific and depends on its nature (type) of debt. Results obtained by Barclay and Smith (1996), Demirguc-Kunt and Maksimovic (1999) confirmed that debt maturity is positively correlated with firm size. There is no evidence for the impact of firm size detected by Remmers et al. (1974). Kester (1986) shows a statistically non-significant negative relationship between debt and firm size.

Based on the theory building and results studies, the framework of this research as follows:

![Diagram of research method]

**RESEARCH METHOD**

This study takes the population of panel data from 13 Sharia Commercial Banks; Bank Aceh Syariah (BAS), Bank Muamalat Indonesia (BMI), Bank Victoria Syariah (BVS), Bank Rakyat Indonesia Syariah (BRIS), Bank Jabar Banten Syariah (BJBS), BNI Syariah Bank (BNIS), Bank Syariah Mandiri
Debt and Equity-Based Financing

The sample period covers from 2008-2017. To our knowledge, there is no research for a long time. During this period, Indonesia was and was affected by the global economic crisis. However, of the 13 Sharia Commercial Banks, there are 7 (Bank Aceh Syariah, Bank Victoria Syariah, BCA Syariah, Bank Panin Dubai Syariah, Bank Syariah Bukopin, BCA Syariah, National Sharia Savings Bank and Maybank Syariah Indonesia and Maybank Syariah Indonesia) because the data has not been available in the study period. All secondary data is obtained from the OJK and the sample bank annual report.

**Dependent Variable: Profitability**

**Return on Assets (ROA)**

ROA is calculated by dividing net income on total assets that give the ratio of income generated from invested capital. The higher the ROA, the more profitable the bank is like (Javaid & Alalawi, 2018), (Ch, 2017), (Nahar & Prawoto, 2017), (Chou & Buchdadi, 2016), (Banks, Karim, Musa, & Jaafar, 2018).

This ratio is widely used as a proxy for profitability. This measure was chosen because it has been widely used in measuring banking performance (Nebert Mandala, E. Kaijage, PhD, J. Aduda, PhD and C. Iraya, 2018). Furthermore, Return on Asset (ROA) is one of the most important and useful indicators of bank profitability (Nguyen, Huyen Thanh Ta, & Nguyen, 2018).

**Return on Equity (ROE)**

In most studies on the profitability of commercial banks worldwide, proxies for the profitability of commercial banks often use such ROE (Nguyen et al., 2018) and (Mansour, Alkhazaleh and Al-Dwiy, Muhammad 2018). ROE is calculated by dividing net income after tax over total equity (Loay Saleh Jarbou, 2018).

**Independent Variable**

**Debt and Equity Based Financing**

Debt financing based instruments are murabah and ijara. This measure is calculated from the total murabaha and ijara financing during the study period.

Equity financing instruments based on profit and loss sharing (PLS) mudharaba and musharaka. This measure is calculated from total mudharaba and musharaka financing during the study period.
Moderating Variabel
Bank Size

So far, bank size has become a determinant of performance. This study will place the size of the bank as a moderating variable. Bank size is tested to see whether it will play a role in moderating debt relations and equity financing-based with profitability.

It is based on the fact that Bank Indonesia’s business activities in Indonesia are grouped according to their core capital. So the amount of capital owned by the bank allegedly affect profitability. Bank size is measured by Total Assets (Al-tamimi, 2010) dan (Javaid & Alalawi, 2018).

Model Analisis Data

The analysis method used is panel data regression with Moderated Regression Analysis (MRA) model estimation with Eviews Ver statistic tool. 9.0. To determine the model of panel data to be used Ordinary Least Square (OLS) model, fixed effect model, and random effect model, the authors perform the test Chow Test, Hausman Test and Lagrange Multiplier Test as other studies conducted (Suteja dan Abas, 2018), (Amertha, 2016), (Suastini, Purbawangsa, & Rahyuda, 2016) and (Satya & Amertha, 2013).

The proposed statistical model for this study is as follows:

\[ Y = \alpha + b_1X_1 + b_2X_2 + b_3 X_1X_2 + e \]

Y: Profitability
A: Constanta
X1: Debt and Equity Based Financing
X2: Bank size
b (1…2): Koefisien regresi masing-masing variabel independen
E: Error term
T: Time
I: Banks

RESULT AND DISCUSSION

The results of debt-based and equity-based financial analysis of the profitability of sharia banking in the period 2008-2017 earnings results as follows:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LN_DEBT</td>
<td>-22.1794</td>
<td>9.5315</td>
<td>-2.3270</td>
<td>0.0247</td>
</tr>
<tr>
<td>LN_EQUITY</td>
<td>7.9212</td>
<td>9.3870</td>
<td>0.8438</td>
<td>0.4034</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.2795</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Debt and Equity Based Financing and ROA
Based on the above table, it is known that the type of financing that has a significant impact on profitability calculated by using ROA is debt financing. It can be seen from the value of debt financing significance of 0.02 is smaller than the level of significance of 5%.

The negative debt value variable coefficient value indicates that when there is an increase in the amount of debt financing, there will be a decrease in Islamic banking profitability as measured by ROA. Conversely, when there is a decrease in debt financing, there will be an increase in profitability as measured by ROA.

Table 2: Debt and Equity Based Financing and ROE

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>10078.9000</td>
<td>4655.1180</td>
<td>2.1651</td>
<td>0.0360</td>
</tr>
<tr>
<td>LN_DEBT</td>
<td>-498.7969</td>
<td>209.9112</td>
<td>-2.3762</td>
<td>0.0220</td>
</tr>
<tr>
<td>LN_EQUITY</td>
<td>170.8818</td>
<td>206.7286</td>
<td>0.8266</td>
<td>0.4130</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.2899</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.1909</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>2.9264</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.0175</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Furthermore, based on table 2 above, also known that only financing variables that are debt financing that have a significant impact on profitability measured by using ROE. These results are known based on the value of debt financing significance of 0.02 is smaller than the level of significance of 5%. The negative debt value variable coefficient value indicates that when there is an increase in the amount of debt financing, there will be a decrease in Islamic banking profitability as measured by ROE. Conversely, when there is a decrease in debt financing, there will be an increase in profitability as measured by ROE.

In order to know whether variable size banking is able to moderate the relationship between debt and equity-based financing on profitability, it can be seen in table 3 and table 4 below:
Table 3: Moderation Size on the Influence of Debt and Equity-Based Financing on ROA

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-6704.2050</td>
<td>3141.4940</td>
<td>-2.1341</td>
<td>0.0390</td>
</tr>
<tr>
<td>LN_DEBT</td>
<td>314.5702</td>
<td>209.2202</td>
<td>1.5035</td>
<td>0.1406</td>
</tr>
<tr>
<td>LN_EQUITY</td>
<td>-104.4448</td>
<td>257.8601</td>
<td>-0.4050</td>
<td>0.6876</td>
</tr>
<tr>
<td>LN_SIZE</td>
<td>255.6886</td>
<td>102.3700</td>
<td>2.4977</td>
<td>0.0167</td>
</tr>
<tr>
<td>LN_DEBT*SIZE</td>
<td>-11.7471</td>
<td>7.0362</td>
<td>-1.6695</td>
<td>0.1028</td>
</tr>
<tr>
<td>LN_EQUITY*SIZE</td>
<td>3.6784</td>
<td>8.6153</td>
<td>0.4270</td>
<td>0.6717</td>
</tr>
<tr>
<td>R-squared</td>
<td></td>
<td></td>
<td></td>
<td>0.4243</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td></td>
<td></td>
<td></td>
<td>0.2948</td>
</tr>
<tr>
<td>F-statistic</td>
<td></td>
<td></td>
<td></td>
<td>3.2763</td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td></td>
<td></td>
<td></td>
<td>0.0045</td>
</tr>
</tbody>
</table>

Table 4: Moderation Size on the Influence of Debt and Equity-Based Financing on ROE

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-149452.4000</td>
<td>69110.9000</td>
<td>-2.1625</td>
<td>0.0366</td>
</tr>
<tr>
<td>LN_DEBT</td>
<td>7051.7950</td>
<td>4602.7140</td>
<td>1.5321</td>
<td>0.1334</td>
</tr>
<tr>
<td>LN_EQUITY</td>
<td>-2278.4020</td>
<td>5672.7620</td>
<td>-0.4016</td>
<td>0.6901</td>
</tr>
<tr>
<td>LN_SIZE</td>
<td>5637.4450</td>
<td>2252.0760</td>
<td>2.5032</td>
<td>0.0165</td>
</tr>
<tr>
<td>LN_DEBT*SIZE</td>
<td>-261.1461</td>
<td>154.7909</td>
<td>-1.6871</td>
<td>0.0994</td>
</tr>
<tr>
<td>LN_EQUITY*SIZE</td>
<td>80.4397</td>
<td>189.5303</td>
<td>0.4244</td>
<td>0.6735</td>
</tr>
<tr>
<td>R-squared</td>
<td></td>
<td></td>
<td></td>
<td>0.4339</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td></td>
<td></td>
<td></td>
<td>0.3066</td>
</tr>
<tr>
<td>F-statistic</td>
<td></td>
<td></td>
<td></td>
<td>3.4068</td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td></td>
<td></td>
<td></td>
<td>0.0034</td>
</tr>
</tbody>
</table>

Based on these two tables, it is known that the size variable is not able to moderate the debt and equity-based financing relationship to bank profitability as measured by ROA and ROE. It is seen from the value of significance of each variable that has a value greater than the level of significance of 5%.

The Effect of Debt and Equity-Based Financing on the Profitability of Islamic Banking

Based on the results of the study, it can be concluded that debt financing based financing, has a negative and significant impact on profitability measured by using ROA and ROE. This means that when there is an increase in the amount of debt financing, then there will be a decline in bank profitability as measured by ROA and ROE. Conversely, when there is a decrease in debt
financing, there will be an increase in profitability as measured by ROA and ROE.

The significant effect of debt financing on profitability is in line with research conducted by (Mariam Nanden, S., *et al.*, 2017), which shows that debt-based financing contributes more to profitability than equity-based financing. The negative impact of debt financing on profitability is because the financing is more channeled for consumptive purposes such as the purchase of vehicles, electronics, houses, or for the purchase of building materials and the cost of home renovation workers. Debt financing, not all running smoothly, because the funds disbursed to settle into goods and not managed properly by the customer and cause some bad credit or problem financing. This is what makes financing debt financing has no effect on profitability. This means that the increase in debt financing is not followed by an increase in Islamic bank profitability.

Furthermore, this study also found that financing based on equity financing does not have a significant impact on profitability measured by ROA and ROE. According to Adiwarman Karim (2007), the concept of financing with equity financing is the profit that Islamic banking will receive as much as the customer's business profit in accordance with the agreed ratio. This financing will provide a high profit when the customer's business profit is high, but this financing also has a high risk when the customer loses. This happens because this type of financing does not provide certainty of income (return) either in terms of amount (amount) or timing (timing) such as mudaraba and musharaka. In contrast to the concept of debt financing with a contract that provides certainty of payment, both in terms of amount (amount), as well as time (timing) such as murabahah, salam, istishna, ijarah, and ijarah muntahia bittamlık (Adiwarman, 2007).

**Moderation Size On The Effect Of Debt and Equity-Based Financing on Islamic Banking Profitability**

The results of the study found that the size variable was not able to moderate the relationship between debt and equity-based financing on bank profitability as measured by using ROA and ROE. The size of the bank or commonly called firm size is an illustration that shows the scale of a company. The bigger a company then reflects, the company has a large fund. In banking companies, large funds will certainly affect the level of credit to be distributed (Adnan, Ridwan, and Fildzah, 2016).
Research on firm size with profitability has been done a lot. A positive relationship between firm size and profitability is observed for the Greek banking industry (Panayiotis, et al., 2018). Anbar and Alper (2011) asset size and non-interest income have a positive and significant influence on the profitability of Turkish banking. Flamini et al. (2009) found that, regardless of credit risk, higher return on assets was associated with larger bank sizes. In contrast to Naeem and Baloch (2017), the size of banks is not a positive relationship between firm size and profitability observed in the banking industry of Pakistan.

CONCLUSION

This study uses panel data regression with the Moderated Regression Analysis (MRA) estimation model to determine the relationship between debt and financing based on equity, size, and profitability of Islamic banks. ROA and ROE represent the dependent variable, and the independent variable is represented by Debt financing based (DFB) and Equity financing based (EFB) and size as a moderating variable. This study uses Islamic bank panel data from financial statements published in the 2008-2017 period.

The findings show that Debt-based financing (DFB) has a negative and significant impact on profitability that is measured using ROA and ROE. Equity-based financing (EFB) has no significant impact on profitability, as measured by ROA and ROE. Variable size cannot moderate the relationship between debt and equity-based financing for bank profitability, which is measured using ROA and ROE. Bank size, or commonly called company size, is a picture that shows the scale of a company. The larger a company reflects that the company has large funds. In banking companies, significant funds will undoubtedly affect the level of credit to be channeled.

Future studies expand the dependent and independent variables or by comparing the performance of Islamic banking in other countries to get more representative findings.

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