

Spin-off and Social Funds' Productivity of Islamic Banking Industry in Indonesia

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Abstract-Islamic banking Act in Indonesia requires to manage the financial funds and social funds simultaneously. In the case of spin-off Islamic Banks, the fund manager is separate from the parent company, including in managing social funds, e.g. zakah, infaq, and sadaqah. This study is going to investigate the spin-off's impact on the social funds' productivity in spin-off Islamic Banks. The method used in this paper is the Malmquist Productivity Index (MPI) test for annual data from the period 2005 to 2017. The samples used is two spin-off Islamic banks as the rest are established with conversion or acquisition models. The results show that productivity changes increased after the spin-off decision and was influenced by technological changes. However, the spin-off decision hasn't a significant impact on social funds' productivity in Islamic banks. It implies that independence in managing resources supports the Islamic banks' performance, especially for social funds.

Keywords—Islamic Bank, Social Fund, Spin-off, Productivity

I. INTRODUCTION

Islamic banking industry experiences rapid growth worldwide, including Indonesia. It is inseparable from regulators support. Since 2008, the act of 21 the year 2008 concerning Islamic banking was established. There are several important issues of the act. First, the obligation for Islamic business unit (UUS) to separate (spin-off) if they had reached 50% of the parent's asset or 15 years after the establishment of this act. Second, the obligation for Islamic banking institutions to carry out the function of intermediation in collecting and distributing public funds and can carry out social services in the form of Baitul Mal institutions [1]. These things are a unique and special case in Indonesia.

The regulation had some reason, such as (a) to accelerate the growth of the Islamic banking industry, (b) to increase the performance of Islamic banks, (c) to increase the independence of Islamic banks, and (d) the Sharia compliance. However, none of the Islamic business units has reached 50% of the parents' asset. Al-Arif has evaluated and forecasted that the banks cannot meet the criteria in 2023 or 15 years after the establishment of the act, but this should be done in time [2]– [4].

As an infant industry, the Indonesian Islamic banking industry has enjoyed rapid growth since 21 years later. The

bright future of the industry can be seen from the potential number of Muslim population in Indonesia [5]. After implementation of the act, 10 Islamic business units have done the spin-off, either by pure spin-off scenario or convention and acquisition. It can be seen that before 2008 there are only 3 Islamic commercial banks, 26 Islamic business units, and 114 Islamic rural banks. Nowadays in November 2018, there are 14 Islamic commercial banks, 20 Islamic business units, and 168 Islamic rural banks [6].

Table I also shows the performance of Islamic banking industry in Indonesia. The data show that the growth of asset, deposit, and financing are above 20% from 2007 to 2013. However, since 2014 to 2018 the Islamic banking industry experiences the deterioration in the term of the asset, deposit, and financing which the growth is below 20%. Especially in 2015, the growth was meagre, below 10%. It indicates that spin-off policy hasn't a practical impact on the growth of the Indonesian Islamic banking industry.

The spin-off of Islamic banks first practised in Indonesia, and there had been some research associated with spin-off studies. Some researchers found that Islamic banks are less efficient after spin-off decision [7], [8]. Spin-off also hasn't a significant impact on asset, profitability, and financing growth [2], [9]–[12]. However, the spin-off can accelerate the deposit funds [13], [14]. In the field of social funds, Islamic banks experienced the progress on social funds' productivity [15]. The productivity of social funds influence by ROA, the ownership of independent LAZ and CAR [16]. Therefore, the spin-off policy should be evaluated, especially on its impact on social funds as important as financial funds.

The study is going to investigate the spin-off's impact on the social funds' productivity in spin-off Islamic Banks. The result of this study is expected to be a consideration for the policymaker. Thus, policy-makers can develop an appropriate policy to support the role of Islamic banks in realizing welfare.

II. RESEARCH METHODS

This study conducts productivity analysis with Malmquist productivity index (MPI). The data used are annual data from 2005 to 2017, by including two spinoff's Islamic banks, such as Bank of BNI Sharia and Bank of BJB Sharia. The reason of it is (1) these two banks are quite long enough as Islamic business unit; (2) these banks are only the pure Islamic banks' spin-off while the rest had done by conversion or acquisition model before spin-off; and (3) the availability of data. This study does not include all Islamic banks because of the focus of this research only on pure spin-offs banks. Statistical data

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comes from the Islamic commercial bank's financial statements results of the spin-off, which is the object of research.

| BLE I. | THE DEVELOPMENT OF INDONESIAN ISLAMIC BANKING INDUSTRY |
|--------|--|
|--------|--|

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Islamic Banking Network | | | | | | | | | | | | |
| Islamic commercial bank | 3 | 5 | 6 | 11 | 11 | 11 | 11 | 12 | 12 | 13 | 13 | 14 |
| Islamic business unit | 26 | 27 | 25 | 23 | 24 | 24 | 23 | 22 | 22 | 21 | 21 | 20 |
| Islamic rural bank | 114 | 131 | 138 | 150 | 155 | 158 | 163 | 163 | 163 | 166 | 167 | 168 |
| Islamic Banking Performance | | | | | | | | | | | | |
| Asset growth (%) | 36.7 | 35.6 | 33.4 | 47.6 | 49.2 | 34.1 | 24.2 | 12.4 | 8.8 | 20.3 | 19.0 | 14.7 |
| Deposit growth (%) | 35.5 | 31.6 | 41.8 | 45.5 | 51.8 | 27.8 | 24.4 | 18.7 | 6.1 | 20.8 | 19.9 | 11.5 |
| Financing growth (%) | 36.7 | 36.7 | 22.7 | 45.4 | 50.6 | 43.7 | 24.8 | 8.7 | 6.9 | 16.4 | 15.2 | 14.0 |
| Market share (%) | 1.7 | 2.1 | 2.6 | 3.2 | 4.0 | 4.6 | 4.9 | 4.9 | 4.9 | 5.3 | 5.7 | 5.7 |

Source: Sharia Banking Statistics November 2018 [6]

Malmquist Productivity Index (MPI) forms a measure of productivity change and efficiency evaluation of a DMU among two periods [17]–[19]. It is based on the output distance function. Implicitly, the assumption built into this comparison is that all DMUs have equal access to production technology. Therefore, this method can be compared among DMUs and estimated with a single production frontier [20].

Based on the literature review, we acquire two output variables and two input variables for measuring the productivity of social funds of spin-off Islamic banks. The outputs are y1: social funds' independent distribution and y2: zakat distribution via third-party organization; while the inputs are: x1: zakat fund and x2: infaq and shadaqa fund. All variables are denoted in a million (IDR).

Malmquist productivity index (MPI) generates primary output called total factor productivity (TFP) as the representation of overall productivity. It can be decomposed into two components, namely efficiency change and technological change. For measuring the productivity, a linear programming model based Data Envelopment Analysis (DEA) with the non-parametric Malmquist productivity index is used [21]. Output-based Malmquist productivity index specifies as follows.

$$m_0(y_{t+1}, x_{t+1}, y_t, x_t) = \left[\frac{d_0^t(x_{t+1}, y_{t+1})}{d_0^t(x_t, y_t)} x \frac{d_0^{t+1}(x_{t+1}, y_{t+1})}{d_0^{t+1}(x_t, y_t)}\right]^{\frac{1}{2}}$$
(1)

It reflects the production point's productivity (x_{t+1}, y_{t+1}) relative to the production point (x_t, y_t) . This index is the geometric mean of two output-based Malmquist index. One index uses period t technology and the other period t+1 technology. The analysis produced five outputs, i.e. total factor productivity change (tfpch), efficiency change (effch), technological change (techch), pure technical efficiency change (pech), and scale efficiency change (sech). An index higher than one represent the positive TFP growth from period t to t+1 [22]. In an output-oriented evaluation, index more than 1 indicates the progress in productivity, while index equal to 1 indicates the status quo and index less than 1 indicates the regress in productivity. For detailed interpretations, please check Worthington work [23].



Fig. 1. The trend of social funds' productivity change over 2005-2017

III. RESULTS AND DISCUSSION

The empirical findings of the study are presented in this section. The analysis begins by examining the productivity changes of social funds in Islamic banks, both, before and after the spin-off. Then, we analyse the spin-off effect on social funds' productivity of Islamic banks.

A. The Outlines of the Social Funds' Productivity

The social funds' productivity analysis in this study divided into two parts, performance before spin-off as well as after spin-off. Fig. 1. presents the productivity changes over the period, before and after spin-off by comparing tfpch, techch, and effch. The results suggest that the social funds' productivity TFPCH has been on fluctuation trend from regressed by 68.4% in the year 2006 but finally progressed by 831.1% in the year 2017. The results also show that TECHCH and TFPCH have identical patterns over the period, while EFFCH has a different pattern. It means that productivity changes are influenced by technological change rather than efficiency change.

As a part of the Islamic banking industry in Indonesia, the productivity of Islamic banks before spin-off decision is regressed by 12.2% on average 2006 - 2009. In the form of Islamic business unit, the first period has experienced the regress in productivity by 31.6%. For the next three years, the better productivity changes are performed, regressed by

30.6% in 2006-2007, progressed by 10.4% and 18.7% in 2007-2008 and 2008-2009, respectively. All changes are influenced by technological change rather than efficiency in management.

After spin-off decision in 2009, the Islamic banks have better performance in productivity than before spin-off. During eight years of observation (2010-2017), the social funds' productivity is progressed by 1.1% on average despite the changes are fluctuated. The productivity increases only in four periods, 2011-2012 by 118%, 2013-2014 by 398.6%, 2015-2016 166%, and 2016-2017 by 731.1% while the rest four periods are regressed. In accordance with before spin-off decision, the social funds' productivity after spin-off decision is also influenced by technological changes. It reflects that productivity changes are depended on computerization and automation of banking transactions, such as mobile banking, internet banking, and automated teller machines [24], [25]. All mentioned technologies are used for social funds' funding.

B. Productivity of Islamic Banks before Spin-off

Panel 1 on Table II. shows mean changes before spin-off decision in TECHCH, EFFCH, and TFPCH over time. Overall, Islamic banks' productivity regress by 11.2% from 2006 to 2009. It is affected by the deterioration of the technological change of 11.2% while the operation is efficient. In individual banking analysis, BJB Sharia is better than BNI Sharia in productivity level. BJB Sharia experiences the progress in productivity by 23.9% before spin-off decision while BNI Sharia experiences the regress in productivity by 11.2%. In line with the banking industry analysis, productivity changes are affected by technological changes.

BJB Sharia begins their progress in productivity on 2007-2008 by 282.2%. The big leap is presented as the two previous periods are regressed in productivity. For the last year before spin-off decision in 2008-2009, BJB Sharia also experiences the progress in productivity by 4.5%. All progress are affected by technological change. The different condition is presented by BNI Sharia which only experiences the progress in 2008-2009 by 34.8%. However, its progress cannot salvage the overall productivity change of BNI Sharia to be better.

C. Productivity of Islamic Banks after Spin-off

Panel 2 on Table II. shows mean changes after spin-off decision in TECHCH, EFFCH, and TFPCH over time. Overall, Islamic banks' productivity progress by 1.1% from 2010 to 2017. Productivity change is affected by technological change rather than efficiency change. The operation of Islamic banks in managing social funds is efficient (EFFCH = 1). Therefore the change in technologies usage more influence on productivity change. It supports the finding from Ramadhan et al. [15] and Julia et al. [16] who state that Islamic banks experience the progress in social funds' productivity and influenced by technological change.



Fig. 2. Islamic banks' productivity before spin-off decision

In the case of BJB Sharia, the productivity mean progress by 1.8% despite the performance is fluctuated. The progress of productivity is also lower than before spin-off decision (1.8% < 23.9%). Fig. 3 shows that BJB Sharia experiences the increase in productivity in four periods, e.g. 2011-2012 (307.2%), 2013-2014 (774.1%), 2015-2016 (588.7%), and 2016-2017 (6637.5%). The year of 2016-2017 is extraordinarily period for BJB Sharia as they experience the highest level of social funds' productivity.

BNI Sharia as the second pure spin-off Islamic bank in Indonesia also experiences the progress in productivity by 0.4%. it is lower than BJB Sharia but their progress in productivity are experienced in five periods, e.g. 2010-2011 (2.8%), 2011-2012 (16.6%), 2013-2014 (184.4%), 2015-2016 (2.7%), and 2016-2017 (2.5%). The result also shows that BNI Sharia can fix the productivity level after spin-off decision. It becomes a good policy decision, especially in managing social funds.

D. Comparative Analysis

After examining the results derived from the Malmquist-DEA method, the issue of interest now is whether the difference in the TFPCH of before and after spin-off decision is statistically significant. We use the difference test with Ztest Wilcoxon signed ranks test. Table III suggests that statistically there isn't significantly different at 5% between before and after the spin-off. It can be seen from asymp. Sig. Z score that higher than 5% (0.273 > 0.05). However, the negative sign (-1.095) suggests that the productivity changes after spin-off are higher than before the spin-off decision.



Fig. 3. Islamic banks' productivity after spin-off decision

Based on the result presented in Table III, this study concludes that there isn't a difference in productivity before and after spin-off since the test shows the productivity isn't significant at 5%. It supports the findings from Al Arif et al. [7] and Hilman [8] that Islamic banks were less efficient after the spin-off decision. As efficiency and productivity analysis is different, but the suggestion is that the spin-off decision doesn't affect the Islamic banks' performance.

TABLE II. THE DIFFERENCES TEST

| Test Statistics | |
|-------------------------------|---------------------|
| | after spin-off - |
| | before spin-off |
| Z | -1.095 ^b |
| Asymp. Sig. (2-tailed) | .273 |
| a. Wilcoxon Signed Ranks Test | |
| b. Based on negative ranks. | |

IV. CONCLUSION

The investigation of the spin-off's impact on the social funds' productivity in spin-off Islamic Banks in 13 years span between 2005 - 2017 using Malmquist productivity index and difference test. The results show that social funds' productivity changes are increased after the spin-off decision. The change in technological usage on banking transactions is the most influencing variable for productivity changes. However, the result from difference analysis shows that the spin-off decision hasn't a significant impact on social funds' productivity in Islamic banks.

These results have several implications. First, independence in managing resources through spin-off policy supports the Islamic banks' performance, especially for social funds. Second, Islamic banks should improve technological usage to serve customers. Third, the regulator should make a specific strategy for accelerating social funds in Islamic banks.

The study is limited to two pure spin-off Islamic banks, and the findings are indicative. We have seen many spin-off Islamic banks in the last ten years with various methods; therefore the comprehensive studies are needed to investigate their productivity in managing social funds.

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