The Technical Efficiency of Islamic Banks in Indonesia in 2011-2015

Rizka Arsy Haqqi, Agus Rahayu, and Firmansyah Firmansyah

Universitas Pendidikan Indonesia, Kota Bandung, Indonesia rizka.arsy.haqqi@student.upi.edu, {agusrahayu, firmansyah}@upi.edu

Keywords: Efficiency, Indonesia Islamic Bank, Data Envelopment Analysis (DEA).

Abstract: This study aimed to know the efficiency of Islamic banks in 2011-2015 and to know the factors that cause inefficiency. Background of this study is phenomenon of the sharia banks which grown up slowly in 2015 caused by efficiency. The method which used in this study is descriptive method which uses secondary data taken from nine Indonesian Islamic banks which are used as sample. The data analysis used in this study is Data Envelopment Analysis (DEA). Variabels input that will be used in this study are total assets, total deposits and labor costs. While the variabels output will be used are total operating income and financing. Based on the results of research is known that (2) In 2011-2015, the condition of Indonesian Islamic banks have not efficient. Score efficiency of Indonesian Islamic banks only 97,69%. There are five banks which not efficient, which is Bank BRI Sharia, Bank BNI Sharia, Bank Bukopin Sharia, Bank BCA Sharia and Bank Victoria Sharia. (2) The cause of inefficiency in the banks are the high cost of labor and low income operation obtained.

1 INTRODUCTION

The existence of sharia banking in Indonesia has experienced rapid growth from year to year. It can not be separated from support of the community that help Islamic bank to develop. In the year of 2013, the number of sharia banking customer increased to 13.9% and the number of workers in this industry reached 42 thousand workers, up 33.2% from a year before (Bank Indonesia, 2013). In addition, the development of sharia banks can also be shown from the asset side of Sharia Commercial Bank (BUS) which increased from the Year 2008-2014 as Figure 1 below:



Source: (Otoritas Jasa Keuangan, 2014).

Figure 1: Development of BUS Assets in Indonesia Year 2008-2014.

However, from January 2015, the development of sharia bank performance started slowly. The Board of Commissioners of OJK Mulya E. Siregar also said that the slowing performance growth was marked by decline in asset growth, growth in financing and third Party Funds (DPK), while in February 2015, the Non Performing Financing (NPF) has increased even exceed 5% BI stipulation (Sugiarti, 2015).

According to Syafrida and Aminah (2015: 12), the slow growth of Islamic banks is caused by external and internal factors. The external factors is global economic growth, including Indonesia economic growth recently, which impact to sharia banking performance. Then the internal factors is the segmentation of sharia financing dominated by the retail sector, especially UMKM. The financing is dominated by murabaha contracts, that caused lack of variation finance product and inefficiency.

The level of efficiency of sharia banking still lower than conventional banking. Based from Hidayat (2014: 54) research, the level of operational efficiency in sharia banking are determined by the cost and initial investment is still very high. This affects the low profits distributed to depositors. In addition, the equivalent rate of sharia bank financing is relatively higher compared to conventional bank loans. This can lead to a decline in interest in

240

Haqqi, R., Rahayu, A. and Firmansyah, F.

The Technical Efficiency of Islamic Banks in Indonesia in 2011-2015

In Proceedings of the 1st International Conference on Islamic Economics, Business, and Philanthropy (ICIEBP 2017) - Transforming Islamic Economy and Societies, pages 240-244 ISBN: 978-989-758-315-5

Copyright © 2018 by SCITEPRESS - Science and Technology Publications, Lda. All rights reserved

financing customers in sharia banks (Syafrida & Aminah, 2015: 13).

Previous research revealed that the average efficiency of sharia banking can not reach 100% although some of sharia bank reached 100% efficient (Amrillah, 2014: 144). These results contrast to Cahya's research (2015: 251) which shows that in 2010-2012, the majority of BUS has been 100% efficient. Hosen & Rahmawati (2014) also examines the efficiency level of sharia banks in the period 2010-2013. Based on that research, it is known that sharia bank with the highest level of efficiency is Bank Mega Syariah, while the sharia bank with the lowest level of efficiency is Bank BRI Syariah.

Based on the problems and the results of previous research, the authors will conduct research about "Technical Efficiency of Sharia Commercial Banks in Indonesia Period 2011-2015". The aim for this research is as a reference level of efficiency among BUS in Indonesia so that for BUS that has not been efficient can improve its performance by imitating the performance of other banks which has better level of efficiency.

2 LITERATUR REVIEW

The concept of efficiency was first introduced by Farrell in 1957. According to Farrell, efficiency in a company is related to how to generate maximum output level with a certain amount of input (Firdaus & Hosen, 2013: 170). Simple efficiency measures can be formulated as follows (Tanjung and Devi, 2014: 321):

Efficiency =
$$\frac{o}{ii}$$

The meaning of efficiency can simply be interpreted as doing things in a good and proper way and not excessively or mubadzir. The economic perspective of Islam sees that the concept of efficiency is in line with one of the goals of the maqashid of sharia, named maintenance of charity. Allah SWT is very fond of efficient and efficient attitude, as its shown in QS. Al Israa verses 26-27:

"And grant to the close of the families of their right, to the poor and to those who travel, and do not waste your wealth extravagantly. Lo! These wicked are the brothers of Shaytan and Shaytan is very disobedient to his Lord. "(Al-Israa: 26-27).

Based on the meaning, Allah SWT forbid us to do excessive behaviour in any way. It not only applies to consumption behavior, but applies also to all human behavior including production behavior. Based on the explanation, the concept of efficiency in sharia banking operations is directed to bank management in order to manage banking input and manage expenditures for the required costs in an appropriate, efficient, feasible and reasonable way (Sari, 2015: 677).

From the point of view of sharia banking, efficiency is known to be three kinds, namely technical efficiency, allocative efficiency and economic efficiency. Technical efficiency describes a company's ability to achieve maximum output with a certain number of inputs. Allocative efficiency describes a company's ability to maximize the use of its inputs with its price structure and technology. Economic efficiency is a combination of technical efficiency and allocative efficiency.

There are three approaches that define the relationship of input and output in a financial activity, namely asset approach, intermediation approach and production approach. According to OJK (2013: 16) the intermediation approach will demonstrate the operational mechanisms of sharia banks in managing their human resources and capital to convert deposits into financing and other placements.

One of the analytical tools to measure the level of efficiency is Data Envelopment Analysis (DEA), which is one of the analytical tools that can measure the efficiency of both profit-oriented organizations and nonprofit - oriented organizations where operations using a number of inputs to produce some output. The DEA technique creates an efficient banking frontier set and compares it with other inefficient banks, this is done to create a score or efficiency score (Hidayat, 2014: 99). Furthermore, bank efficiency scores are limited between 0 and 1, most efficient banks have a score of 1 while the most inefficient bank scores are 0.

3 METHODOLOGY

The method used in this research is comparative method. The object of this research is the efficiency level of syariah banking, while the sample is nine BUS. Data collection techniques in this study are questionnaires and literature studies. The data used is secondary data with data collection techniques documentation, with literature study and the collection of information derived from the financial statements of banks in the period 2011 to 2015. Variables used in this study are input variables consisting of total assets, DPK and energy costs work as well as variable output consisting of operating income and financing.

Data analysis technique used in this research is Data Envelopment Analysis (DEA). DEA is a nonparametric approach based on linear programming that calculates the ratio of inputs (Total Assets, Third Party Funds and Labor Costs) and outputs (Operating and Financing Revenue) to all units studied, and then comparisons between units within a population.

4 **RESULTS**

Based on the calculation results, the following research results are known:

Bank's Name	Year					A
	2011	2012	2013	2014	2015	Ave-rage
Bank Syariah Mandiri	100%	100%	100%	100%	100%	100%
Bank Muamalat Indonesia	100%	100%	100%	100%	100%	100%
Bank BRI Syariah	100%	99,79%	100%	100%	94,47%	98,85%
Bank BNI Syariah	100%	89,53%	97,44%	100%	100%	97,39%
Bank Panin Dubai Syariah	100%	100%	100%	100%	100%	100%
Bank Syariah Bukopin	98,46%	96,04%	100%	99,17%	95,41%	97,82%
Bank Mega Syariah	100%	100%	100%	100%	100%	100%
Bank BCA Syariah	78,21%	95,95%	98,60%	96,80%	96,12%	93,12%
Bank Victoria Syariah	100%	77,75%	82,43%	100%	100%	92,04%
Average overall BUS efficiency rating						97,69%

 Table 1: BUS Efficiency Level 2011-2015 Period.

Source: Data treated with Banxia Frontier Analyist (2017).

Based on the calculation that has been done, in the period 2011-2015 known there are four BUS with 100% efficiency level. The four BUSs are Bank Syariah Mandiri, Bank Muamalat Indonesia, Bank Mega Syariah and Panin Bank Syariah Bank. BUSs capable of achieving 100% efficiency levels indicate that their operational management is better than inefficient BUSs.

According to OJK (2013), long-standing banks will have a good level of efficiency as long-established banks have better management. This is supported by the results of research conducted by Wahab, Hosen and Muhari (2014) stating that banks that have been previously operated will have a better efficiency level because it has experienced. This is evident from the results of research that has been done because three of the four efficient BUS is a BUS that has long been operating. Bank Muamalat Indonesia was the first Syariah bank to operate in 1992, Bank Syariah Mandiri operated since 1999 and Bank Mega Syariah operated in 2004.

4.1 Bank BRI Syariah

Overall, using the orientation of output can be seen that in 2012 and 2015, Bank BRI Syariah experienced inefficiency caused by financing factors, operating income, DPK and total employment. According to BRI Syariah annual report (2015: 59), it is known that in 2015, consumer financing of BRI Syariah is mostly supported by mortgage financing (KPR), Qardh Beragun Emas and Multi Guna Ownership (KMG), therefore BRI Syariah is expected to expand the market share other financing products of Bank BRI Syariah, so that the financing support of Bank BRI Syariah is not only fixated on the three products.

What can be done by Bank BRI Syariah to continuously improve its efficiency value, among others, Bank BRI Syariah should place its funds in the more profitable sectors so that the profit generated can be more increased. In addition, Bank BRI Sharia should pay attention to labor costs incurred so as not excessive and management of DPK to be utilized with more optimal.

4.2 Bank Syariah Bukopin

Bank Syariah Bukopin has inefficiency during 2011-2015. Contrast from 2013, Bank Syariah Bukopin has efficient 100% and the average of efficiency was 97,82%. According to Hosen and Rahmawati (2014) research, Bank Syariah Bukopin has ineffiency during 2010-2013. The most common factor causing inefficiency is operational income which still not

optimal. The bank still not capable to manage their own funds to produce optimal income. Therefore, Bank Syariah Bukopin should make appropriate policies about funding to gain profits for the organization.

4.3 Bank BNI Syariah

During 2012 and 2013, inefficiency that occurs in BNI caused by the use of asset, lack of DPK, lack of financing program for parties in need, and also lack of operating income. Furthermore, BNI also spent too much for their own labor. The cost of labor actually inefficient to produce any output for bank. Therefore, BNI Syariah should pay attention about the accordance of labor cost and output achieved by the organization.

4.4 Bank BCA Syariah

During 2011-2015, Bank BCA Syariah experienced inefficiency. The causes of inefficiency of BCA Syariah Bank from year to year vary. The first cause of inefficiency is less optimal use of assets and deposits. This indicates that Bank BCA Syariah is still not efficient or mubadzir use of assets and DPK it. The second factor is the high cost of labor. In 2011-2012, labor costs incurred by Bank Syariah BCA are too high from the target set. High labor costs are used for the recruitment of human resources, improving the quality of human resources by conducting skillssupport training. The last factor is the distribution of financing and operating income that is still below target. Financing of Bank BCA Syariah is based on commercial segment. To increase revenue, BCA Syariah Bank can develop other financing products so that financing does not only rely on one segment only. In addition, as a newly operated BUS, Bank BCA Syariah must further expand the network by opening a service office so that it is easily recognized and accessible to the public.

4.5 Bank Victoria Sharia

Bank Victoria Syariah experienced inefficiency in 2012 and 2013. Causes of inefficiency include due to the use of assets that are not optimal, labor costs are too high, the lack of operating income and financing disbursements that are still below the target figure. In subsequent years, Bank Victoria Syariah experienced a stable efficient level. This shows that the policies implemented by Bank Victoria Syariah are much better than before. As a new BUS operating in Year 2010, Bank Victoria Shariah have much to learn from BUS who has had experience because it first stands.

4.5 Causes of Inefficiency in BUS in Indonesia

Factors that cause inefficiency are divided into two, there were input and output factors as follows:

- 1. The factor of labor cost becomes the dominant input factor causing inefficiency. Labor cost inefficiency occurs because the realization rate is higher than the target number specified. This can happen because the high number of workers in Islamic banks are not balanced with sufficient skills and knowledge of human resources so that Islamic banks should provide additional funding for human resources education. The high number of workers without adequate skills and knowledge reduce the productivity of banks will (Sutawaijaya & Lestari, 2009: 61). This condition is in accordance with the law of diminishing marginal return, where increasing labor causes a marginal decrease in labor. Excess labor causes excess labor costs to be incurred.
- 2. The ouput factor causing inefficiency is the factor of operating income and financing. The achievement of operating income is still below the target number determined. The operational income of syaiah bank is related to the distribution of its financing. The distribution of Islamic bank financing is still below the specified target. There are several issues concerning financing in sharia banking, which are financing which is dominated by murabahah and lack of innovation in sharia bank financing product (Syafrida & Aminah, 2015: 13). Issues concerning the financing of sharia banks are also caused by two parties, namely the business or customers and the bank itself. Based on the business side, macro conditions that are less stable in the Year 2015, causing the attitude of wait and see attitude from the business to avoid rising business risk. This resulted in the low growth of sharia bank financing in 2015 (Bank Victoria Sharia, 2015: 40). Meanwhile, inefficient financing also occurs because Islamic banks apply the principle of caution. If this principle is too over applied then it will ultimately hinder the process of financing and achievement of the target of sharia banks themselves (Cahya, 2015: 253)

5 CONCLUSION

Based on the results of the research, it can be concluded that in the period 2011-2015, the level of efficiency BUS in Indonesia only reached 97.69% or it can be said not efficient yet. During the period of 2011-2015, there were five BUS experienced inefficiency, namely Bank BRI Syariah, Bank BNI Syariah, Bank Syariah Bukopin, Bank BCA Syariah and Bank Victoria Syariah. The factors causing inefficiency are labor cost is too expensive and lack of financing and operational income obtained by the BUS in Indonesia. The implication from the results of this study is to increase the financing disbursed, because with the amount of high financing disbursement of operational income can increase.

REFERENCES

- Adeyinka, C. 2015. Efficiency Evaluation of European Financial Cooperative Sector. A Data Envelopment Analysis Approach. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, Pp.11-21. [2]. Analysis E. E. (2013).
- Sufian Saeed, Farman Ali, Baber Adeeb & Muhammad Hamid. Global Journal of Management and Business Research Finance, Pp.1-13.
- Antonella Basso¤, S. F. 2010. *Measuring the performance* of ethical mutual funds: a DEA approach. University of Venice.
- Avkiran, H. M. 2015. Selecting Inputs And Outputs In Data Envelopment Analysis By Designing Statistical Experiments. *Journal of the Operations Research Society of Japan*, Pp. 163-173.
- Barbullushi (Sakti), E., D. O. 2016. Albanian Banking Efficiency Analysis: A Production Dea Approach -Comparision Of Crs And Vrs Model. *Regional Science Inquiry*, Pp. 59-68.
- Cullmann, C. v. 2008. A Nonparametric Efficiency Analysis of German Public Transport Companies. Transportation Research B: *Methodological*, Pp.3-33.
- Fotios Pasiouras, E. S. 2007. Estimating and analysing the cost efficiency of Greek cooperative banks: an application of twostage data envelopment analysis. University of Bath, School of Management
- Hafiz Khalil Ahmad, H. G. 2015. An Analysis Of Banks Performance In Pakistan Using Two-Step Double Bootstrap Dea Approach. *Pakistan Economic and Social Review*, Pp. 331-350.
- Haron, I. M. 2008. Technical efficiency of the Malaysian commercial banks: a stochastic frontier approach. *Banks and Bank Systems*, Pp. 65-72.
- Hassan Shirvani, S. T. 2011. A new approach to data envelopment analysis with an application to bank efficiency in Turkey. *Banks and Bank Systems*, Pp.5-11.

- Heinz Herrmann, T. L.-H. 2006. *The cost efficiency of German banks: a comparison of SFA and DEA*. Germany: Deutsche Bundesbank.
- Hossain, S. a. 2016. Application of DEA Methodology in Measuring Efficiency of Some Selected Commercial Banks in Bangladesh. *Journal of Social Scince Jahangirnagar University*, Pp.57-64. [13].
- Hotera, J. M. 2015. Zimbabwe commercials banks efficiency and productivity analysis through DEA Malmquist approach: 2002-2012. Journal of Data Envelopment Analysis and Decision Science, Pp.32-49.
- Izah Mohd Tahir, N. M. 2009. Evaluating Efficiency of Malaysian Banks Using Data Envelopment Analysis. *International Journal of Business and Management*, Pp.96-105.
- Joseph C. Paradi, E. M. 2015. Evaluating Canadian Bank Branch Operational Efficiency from Staff Allocation: A DEA Approach. *Management and Organizational Studies*, Pp.52-65.
- Kai Ji, W. S. 2012. Research on China's Commercial Banks Rating and Ranking Based on DEA. *American Journal* of Operations Research, 122-125.
- Kale, M. H. 2011. Measuring bank branch performance using Data Envelopment Analysis (DEA): The case of Turkish bank branches. *African Journal of Business Management*, Pp. 889-901.
- Tanjung, H., Devi, A. 2013. Metodologi Penelitian Ekonomi Islam. Jakarta: Gramata Publishing.
- Tasman, A., Aima, M. H. 2013. Ekonomi Manajerial dengan Pendekatan Matematis (Edisi Revisi). Jakarta: PT RajaGrafindo Persada.