



Performance Measurement of Islamic Bank in Indonesia, is Merger Necessary?

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Abstract

In 2021, Indonesia's administration decides to conduct a merger among Islamic government bank. The emerge of syariah financial market is the reason of this policy. This study analyzes Islamic banks merger policy by assessing their financial performance. The purpose of this study is to analyze financial efficiency of Islamic Banks and Conventional Banks in Indonesia based on the 2019 financial reports by using the Data Envelopment Analysis (DEA) method. Practical contributions of this study for the banking industry was as a guidance for the management in measuring banking activities by analysing the efficiency level so that it can be used to compile business strategies. Basically, financial performance analysis is the result of evaluation of past performance. In this study, we use different analyses in order to obtain a company's financial position that represents the company's reality and potential for continuous performance. Business performance represents effectiveness and the efficiency of an organization or company. Company or organization assess their performance to understand their achievement and evaluate their business plans. In this study we developed business performance measurement based on input and output of Islamic and conventional banks in Indonesia. We employ Data Envelopment Analysis which calculate the ratio between output and input. In this study, we use deposits, fixed assets and labor costs as input, while credit or financing and operating income as output variables. In this study, we find that there are several conventional and Islamic banks that suffers inefficiency. This inefficiency occurs due to the ratio of inputs and outputs in conventional and Islamic banks are not optimum.

Keywords: Performance; Efficiency; Input; Output; DEA

JEL Classifications: G21; O16

Introduction

Bank plays a strategic role in the economy of a country. Those institutions act as intermediaries that help developing the economy by connecting surplus in the financial sector and deficit in the real sector. Act no. 7 of 1992 concerning banking as amended by Act no. 10 of 1998 as stated in Article 1 paragraph (2) defines bank as a corporate entity with a certain function to mobilize funds from the public in the form of deposits and distribute them to the public in the form of credit and/or other forms in order to improve welfare for the society. There are two types of banks in Indonesia (Rindawati, 2007), first, a bank that conducts its business conventionally, and second is a bank that conducts its business according to the principles of Islamic law. The difference between these banks based on their business concept, for example in terms of interest payment and/or profit sharing.

In 2021, several state-owned (national) Islamic banks join a merger. BNI Syariah, BRI Syariah and Bank Mandiri Syariah join through a merger to become Bank Syariah Indonesia (BSI) efforts made by national banks cannot be separated from the needs of the environment of bank business. National banks are not only required to be able to compete with local banks but also with foreign banks. This is as a result of economic globalization. Therefore, to anticipate intense competition on market openness, Islamic and Conventional Banks, which are already national banks, are necessary to increase the efficiency. Merger is one among a lot of strategies to increase efficiency in state owned (national) Islamic banks.

The approach used in this study is DEA, which is considered to have several advantages, one of which is that DEA does not require a certain functional relationship between inputs and outputs or the assumption of an error distribution, and is able to handle multiple outputs simultaneously.

This study aims to measure the efficiency of Islamic and Conventional Banks in Indonesia. We employ Data Envelopment Analysis methods to measure their financial efficiency. Banking industry could gain benefit by efficiency assessment. The result of the assessment could be guidance in formulating business strategies.

Theoretical Framework

Banking Performance

Financial performance analysis is an evaluation of past performance. It contains of different analyses to obtain information about company's financial position. This information also represents the company's real condition and potential for continuous excellent performance. And by looking at past performance evaluations, predictions of the company's future performance can be made, so business evaluation can be conducted on various investment decisions (including credit) that are currently being carried out (Pappas et al., 2017).

Performance is a measurement that shows the efficiency and effectiveness of an organization or company in order to achieve its goals. Performance is an assessment that shows the effectiveness and efficiency of an organization or company policies and strategies to achieve its goals.

Mergers in Banks

Merger is an act of two or more organizations constitute one organization as a legal entity (Malik et al., 2014). Motives of mergers among banks is to increase business performance. Gattoufi et al., (2014) found that in several studies mergers in banking result a conflicting finding. Healy et al., (1992) found that merger decision in banking result better performance. On the other hand, Rhoades (1994) has found that mergers did not always result an increasing banking business performance.

Novickyte and Pedroja (2015) in their study, found that mergers in banking do not have effect on business performance, but it has increase cost efficiency. Ab Rahim (2015) also strengthen the findings that mergers in banking tends to solve the problem of cost in-efficiency. Indonesian administration decides to encourage national Islamic banks to merge in order to strengthen their competitiveness.

The Concept of Data Envelopment Analysis (DEA)

According to (Siswadi, 2004) DEA is a mathematical programming model to evaluate the relative efficiency in handling the same types of inputs to produce the same types of outputs, in set of a decision-making unit (Decision Making Unit / DMU), where the relationship between the inputs and the outputs of a function is unknown.

DEA was first developed by Farell (1957) which measures the technical efficiency of a single input-output that transforms multiple inputs-outputs. Then, Constant Return to Scale (CRS) method was popularized by Charness, Cooper, and Rhodes (1978), and Variable Return to Scale (VRS) method was further developed by Bunker, Charness, and Cooper (1994). These two methods are popular under the model names CCR and BCC. CCR model was the basic model of DEA, which found in 1978 (Charness, et al, 1978). In the CCR model for each DMU (Decision Making Unit), a virtual input and output is formed whose weighting v_i (input) and v_r (output) have unknown values.

The Relationship between Input and Output in Efficiency Measurement

According to (Hadad et al., 2003), there are three different approaches to define the relationship between input and output in the financial activities of a financial organization. Those approaches include parametric and non-parametric methods. They are:

Asset Approach: The asset approach produces outputs in the form of assets. The production of an asset represents the main function of a financial institution, which is to make loans.

Production Approach: The production approach has a basic assumption that financial institutions as producers of deposit and credit accounts, then output is explained as the quantity of capital expenditures on fixed assets and other materials.

Intermediation Approach: The Intermediation approach consider a bank has function as an intermediary, with several activities includes transferring and converting financial assets from surplus to deficit units. The inputs of the process are labor costs, capital, and interest payments on deposits, then the outputs are loans and financial investments. The Intermediation approach views the main function of a financial institution is to make loans.

Efficiency

Efficiency is an organization's ability to achieve the expected results (outputs) that uses the least number of inputs. Such activity is said to be efficient if the implementation of the activity has achieved the target (output) with a minimum expenditure of (input), so that efficiency can be interpreted as the absence of (Nicholson, 2002). (Mulyadi, 2007) states that efficiency is the accuracy of the way (effort, work) in running something without wasting time, effort, and cost. Efficiency also defines as the ratio between inputs and outputs or costs and profits. According to (Hasibuan, 2005) quoting Emerson's states that efficiency is the best comparison between inputs (inputs) and outputs (results between profits and the sources used), as well as the optimal results achieved with the use of limited resources.

To facilitate the understanding of efficiency, (Sutrisno, 1996) describes effective, efficient, and economical as follows.

- If a goal / objective / program can be achieved within the deadline, regardless of cost, it is said to be effective.
- If with the same cost (input), it could produce a greater result (output), it is said to be efficient.
- If the results (output) can be obtained at a lower cost (input) then it is said to be economical.

Research and Methodology

The researcher conducted an analysis of financial statements to compare the financial performance of commercial banks between Islamic banks and conventional banks in Indonesia in 2019. The data in this study sourced from Islamic and conventional banks financial statements in 2019. This period was chosen because in 2019, Indonesia Ministry of Finance has implement Indonesia's Syariah Financial and Economic Master Plan 2019-2024. In addition, in the 2019 period the Islamic financial market in Indonesia has not been affected by the COVID-19 pandemic, so the characteristics of the data are assumed to be normal. The samples used were 5 Islamic banks and 5 conventional banks that have the highest assets. 5 Islamic banks with the highest assets, namely BSM, BRI Syariah, BNI Syariah, Bank Muamalat and Bank Mega Syariah and 5 Conventional Banks with highest assets including Bank Mandiri, BRI, BNI, BTN and BCA (www.bisnis.com). The data are collected from the website database.

DEA is quantitative analysis based on linear programming approach which could be solved by using software, such as Banxia Frontier Analysis (BFA), Warwick for Data Envelopment Analysis (WDEA), and Konsi Data Envelopment Analysis (Purwanto, 2011). The program that will be used in this study is WDEA. Because WDEA has several advantages, namely the input and output of the results of the efficiency analysis for each DMU can be efficient, there is no limit on the number of DMUs and the number can be more than eight digits while other softwares can only be used under eight digits.

The input data used in this study were deposits, fixed assets and labor costs. Fixed assets and deposits are the results or transactions or events that can be views in terms of income. Labor costs can be used for efficiency standards, with the number of workers whether to make the company more efficient or make the company inefficient. The outputs used include total credit or financing and operating income. By looking at the operating income, the bank's ability to generate earnings will be seen. Assuming that a bank that has a high operating income is a successful bank.

The variables used in the Data Envelopment Analysis method were input variables and output variables. The input variables in this study include: 1) Deposits are money from customers placed into banks that are used by banks for certain economic activities and banks guarantee that they will return them in full to customers (Science & Indonesia, 2012). The deposits referred to in this study are funds from the public in the form of savings, current accounts, and time deposits. 2) According to (Sufian & Majid, 2009), fixed assets are assets owned by a company that are obtained in a ready-to-use form or have been built beforehand which are used in the company's operations not intended to be sold and have a useful life of more than one year. Fixed assets referred to in this study are fixed assets minus the accumulated depreciation from the fixed assets. 3) Labor Costs are efforts that are expended by employees in the form of physical or mental efforts to bring a product (Mulyadi, 2007). Labor Cost is a price that is issued as a cost or burden for the use of human labor. The labor costs used in this study are in the form of employee salaries.

Output variables used in this study include Total Credit or financing and Operating Income. 1) Total Credit or financing is a bank's main product that connects surplus and deficit units, the bank's function as an intermediary institution. Total Credit or financing is used by Bank Management to measure the Bank's ability to produce the bank's main product in the form of total credit and financing in an effort to increase profits (operating profit). The total credit or financing used in this study is the result of the calculation of the total credit or financing minus the allowance for credit losses which is the bank's credit or net revenue. 2) Operating income, which is the result of operational activities, namely the sale of products, merchandise or services within a certain period of time which is the main goal of the company which is directly related to the main business carried out by the company concerned (H. Kusunadi, 2000). Operating income used in this study is net interest income and other operating income.

Analysis and Discussions

The Results of Calculation and Analysis of the Efficiency Level of 5 Islamic Banks in 2018

Based on the results of the calculation of the DEA method assuming CRS (Constant Return to Scale) using DEA Software, it can be seen that the efficiency level of 5 Islamic banks in Indonesia in table 1. The results obtained describe the achievement of efficiency values in each bank.

Table 1: Actual Value, Target, and Potential Improvement of Input-Output for Inefficient Islamic Banks in 2019

Bank Name	Efficiency Level (in percent)	Actual (in IDR Million)	Target (in IDR million)	Potential Improvement (in percent)
BSM				
Deposit		87.464.524	79.555.428,8	9
Fixed Asset		984.630	895.593,5	9
Labor Cost	90,96	1.805.975	1.642.667,3	9
Financing		65.754.475	65.754.475	0
Reevenue		6.155.934	6.155.934	0
Mega Syariah				
p/Deposit		5.723.205	5.502.678,4	3,9
Fixed Asset		336.923	219.125,7	35
Labor Cost	96.15	147.619	125.997,6	14,6
Financing		5.178.619	5.178.619	0
Revenue		580.182	580.182	0
Muamalat				
Deposit		45.635.573	32.315.446,9	29,2
Fixed Asset		1.314.861	931.078,9	29,2
Labor Cost	70.81	845.632	437.751,3	48,2
Financing		32.990.314	32.990.314	0
Revenue		1.406.372	2.152.984,4	53,1

Source: Processed Data (DEA Output)

An inefficient bank is caused because the bank has not maximized its inputs and outputs. This means that the input and output values achieved by inefficient banks have not been able to achieve the actual target (Shahid et al., 2010). Seen from Table 1, the three banks including BSM, Mega Syariah and Mumalat have not reached their targets, namely the input of Deposits, Fixed Assets and Labor cost, while bank whose output has not reached its target is Muamalat bank, namely the income output.

Based on the research findings on the efficiency level of Islamic banks in 2018, there were three banks that experienced inefficiency, namely BSM, Bank Muamalat and Bank Mega Syariah. Table 1 shows the inputs and outputs that cause inefficiency in each Islamic bank. The table shows the actual value, target, and potential improvement. The actual value is the input-output value used, the target is the expected achievement to achieve the relative efficiency level, and the potential improvement is the percentage of the expected increase.

The Results of Calculation and Analysis of the Efficiency Level of 5 Conventional Banks in 2019

Based on the results of calculations using the DEA method, the efficiency level of 5 conventional banks in Indonesia can be seen in table 1. The results obtained describe the level of achievement of efficiency values in each bank.

Table 2: The Efficiency Level of 5 Conventional Banks in Indonesia in 2019 (in percent)

Bank Name	Efficiency
Mandiri	100
BRI	100
BCA	100
BNI	93.95
BTN	100

Source: Processed Data (DEA)

Table 3: Actual Value, Target and Potential Improvement of Input-Output for Inefficient Conventional Banks in 2018

Bank Name	Efficiency Level (in percent)	Actual (in IDR Million)	Target (in IDR million)	Potential Improvement (in percent)
BNI				
Deposit		552.172.202	518.768.441,1	6
Fixed Asset		26.126.508	17.847.048,8	31.7
Labor Cost	93,95	9.518.738	8.942.900,2	6
Financing		497.886.888	497.886.888	0
Revenue		44.499.427	44.499.427	0

Source: processed data (DEA Output)

Table 3 shows that Bank Negara Indonesia (BNI) has not been able to produce inputs optimally which includes Deposit, Fixed Assets and Labor cost. The total input for deposits is 552,172,202 million and Fixed Assets is 26,126,508 million even though the target to be achieved is 518,768 .441.1 million (Deposits) and 17,847,048.8 million (Fixed Assets). Thus, the improvement of input efficiency that must be done is 6 percent for deposits and 31.7 percent for fixed assets. While the number of BNI inputs is 9,518,738 million for Labor cost, even though the input target is 8,942,900.2. Thus, the input efficiency improvement that must be done is 6 percent for labor cost input.

Discussion

The research findings show that there are inefficiency in several conventional and Islamic banks. This condition occurs due to the less-than-optimal use of inputs and outputs by both conventional and Islamic banks. Inefficiency occurs in the input variables (deposits, fixed assets, and labor costs) and the output variables (credit or financing and operating income).

Sutawijaya, A. And Lestari, (2009) states that the measurement of technical efficiency tends to be limited only to technical and operational relationships in the process of converting inputs to outputs. This means that to improve technical efficiency, it is only necessary to use internal micro policies, namely by controlling and allocating resources optimally.

First, inefficiency that occurs in the use of deposit inputs by Islamic banks and conventional banks is seen from the number of deposits that are greater than the target. This shows that its role as input is not optimal to produce output. This method is done by increasing the amount of lending or financing, for example productive credit and trade credit for conventional banks as well as mudharabah, ijarah and istishna financing for Islamic banks. Another way is to increase administrative costs on deposit funds, such as deposits and time deposits so that the bank's income will be better. The increase in administrative costs must be followed by an increase in the quality of bank services to customers so that banks remain competitive.

Second, inefficiency of fixed asset input occurs because the number of fixed assets exceeds the predetermined target. Fixed assets are assets owned by a company that are obtained in a ready-to-use form or have been built beforehand which are used in the company's operations not intended to be sold and have a useful life of more than one year. Purchases of fixed assets must be in accordance with their needs and can be used optimally in order to make a positive contribution to bank income.

Third, inefficiency of input labor costs occurs because the labor costs incurred are greater than required. The amount of labor costs incurred is due to the large number of workers used. Islamic banks and conventional banks have the same problem in terms of employment, namely the increase in the number of workers is not balanced with adequate skills, causing bank productivity to decrease (Sutawijaya, A. Dan Lestari, 2009). This condition is in line with the theory of law of diminishing marginal return, namely that an increase in labor actually causes a marginal decrease in labor. The suggested policy is the existence of internal bank control system using the contract system for its employees (Sutawijaya, A. Dan Lestari, 2009). The Bank can reduce its workforce if the Bank feels that the employee does not have adequate skills by terminating the employees. The other way that can be done is by collaborating with universities to be able to provide quality human resources. Cooperation with universities should be carried out optimally and supported by the number of human resources who understand banking.

Inefficiencies that occur in output include credit or financing and operating income. First, inefficiency occurs because the amount of credit or financing is smaller than the predetermined target. This inefficiency occurs because the bank applies the principle of prudence in making decisions before providing credit or financing. However, it is good that the bank's prudential principle does not hinder the predetermined target. Effort is being made to increase efficiency by maintaining the principle of prudence in making decisions without affecting the predetermined targets by means of escorting and supervising the provision of credit or financing. Another effort conducted is by lowering credit interest rates for productive loans with the aim of increasing the number of applications for credit or financing by the public, either individuals or business entities, so that credit or financing targets are met and can contribute to economic development.

Inefficiency that occurs in the second output is operating income. This occurs because the amount of operating income has not been met the specified target. Improvement efforts that can be made in several ways including, first, by increasing credit or financing, product innovation, increasing service costs related to deposit inputs, including e-channels, administration fees, safe deposit boxes and others. These efforts are expected to increase interest income/profit sharing and operating income. Second, the use of fixed assets is expected to be used optimally so that the bank's operating income is also expected to increase. Third, improvement in the quality of human resources is carried out to increase operating income, this is related to work productivity to produce maximum output.

In this study, conventional banks are still dominant compared to Islamic banks, seen from the number of deposits, fixed assets and labor costs which are higher than Islamic banks. With the better performance of Islamic banks, it will affect public trust and it is expected to increase the number of deposits and assets owned, so that Islamic banks are able to compete with conventional banks that existed first. This findings strengthen the decision of mergers among national or state owned Islamic banks in Indonesia.

Conclusions

The research findings show that there are several conventional banks and Islamic banks that experience inefficiency. This inefficiency is due to the less than optimal use of inputs and outputs by both conventional and Islamic banks. Inefficiency occurs in the input variables (deposits, fixed assets, and labor costs) and the output variables (credit or financing and operating income).

10 banks that became the research sample (5 conventional banks and 5 Islamic banks), there were only three banks that always achieved a 100% technical efficiency level during 2019, consisting of one conventional bank and three Islamic banks, namely Bank BNI for conventional banks, and Bank Muamalat, Bank Mega Syariah and BSM for Islamic banks. Meanwhile, 6 other banks experienced efficiency conditions, namely Bank Mandiri, Bank Rakyat Indonesia (BRI), Bank Central Asia (BCA), Bank Tabungan Negara, BRI Syariah, and BNI Syariah.

The inefficiency of the 4 banks occurs in all input variables (deposits, assets, and labor costs) and output variables (financing and revenue). Almost every bank experienced the inefficiency of deposit input. Meanwhile, the input of assets and labor costs was only experienced by a few banks. This indicates the use of excessive input and is not on target. On the output side, financing and revenue inefficiencies occur in several banks that experience inefficiency every year. This indicates that the output produced is still not optimal and has not reached the predetermined target.

Banking efficiency is an important indicator to measure the performance of the bank. The more efficient a bank is, the better the bank will be in managing inputs optimally and producing maximum output. It is expected that parties related to conventional banks and Islamic banks will continue to improve their efficiency in order to be able to compete in the rapidly growing national banking world.

This study gives insight to policy maker in Indonesia, that state owned or national Islamic banks in Indonesia is still suffers in-inefficiency in their operations. One of the bank that included in merger, Bank Syariah Mandiri could not reach its actual target, while the other two BNI Syariah and BRI Syariah are efficient. Based on this result, state owned or national Islamic banks mergers to become Bank Syariah Indonesia is a right and strategic decision.

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