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Analysis of Efficiency Between Islamic Commercial Bank and Islamic Business Unit in Indonesia

Roikhan Mochamad Aziz*, Dita Nur Amanda
Master of Islamic Banking Program, Faculty of Economics and Business, UIN Syarif Hidayatullah, Indonesia
*corresponding author e-mail: roikhan.ma@uinjkt.ac.id

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Abstract

The purpose of this study is to compare the efficiency of and Islamic Commercial Bank (ICB) and Islamic Business Unit (IBU) in Indonesia. The study uses 3 Islamic Commercial Banks (ICB) and 7 Islamic Business Unit (IBU) chosen by purposive sampling. The envelopment Analysis method is used in efficiency measurement. To determine differences in efficiency between Islamic Commercial Bank (ICB) and Islamic Bussines Unit (IBU), a different test parametric and independent sample t-test is used. **Findings**. The result showed no significant difference between the Islamic Commercial Bank (ICB) and the Islamic Bussines Unit (IBU).

1. Introduction

As financial intermediaries, banks require additional funds that can be sourced from various parties, including the deposits made by the public (third parties fund), other agencies (second parties funds), and their capital (Harjito & Martono, 2010). The banking intermediation function increases funds collected and distributed to the public through productive activities that improve output and generate employment. This leads to an increase in the income and welfare of the community (Nugroho, 2011). Measuring performance, competition, improving efficiency through cost reduction, and increasing revenue are essential aspects of the banking sector. The level of efficiency shows the quality of performance in the banking sector. In case of a rapid change in the financial structure, identifying the cost efficiencies and revenue is essential. A bank with a high-efficiency level is expected to have optimal benefit, more loans, and offer quality services.

An assessment of efficiency helps determine a company's performance and other aspects that should be considered rationally to minimize operations risks. Furthermore, the collection and distribution of expansive financing affects profitability (Muharam, 2007). Banks with good internal efficiency can survive and continue operating despite high levels of competition. The increasing number of Islamic and conventional banks with Islamic business units in Indonesia may impact society. Banks with poor internal efficiency may exit the market due to the increasing competition. The most critical aspects that might affect them include price and the quality of products and services, lowering customer loyalty (Endri, 2010).

One indicator of efficiency is the ratio of operating expenses to income (ROA) and Non-Performing Financing (NPF). The lower the ROA, the more efficientan institution is in operation (Hadad, et al, 2003). The largest ROA ratio that can be tolerated by Bank Indonesia (BI) is 93.52%. Suppose the ratio is above 90 % and nearly 100%, there is a low level of efficiency. In case the ROA is low and close to 75 %, the degree of efficiency is high (Ghaith & Khalid, 2019).

Banking performance can be efficient, suppose the ratio of ROA and NPF is decreased. Furthermore, efficiency can also be determined by observing the growth rate of performance indicators, such as the number of deposits, financing, and total assets. The greater the number of deposits, financing, and total assets, the better and productive the bank is in its operations.

This study measures Islamic banks' and business units' efficiency in Indonesia using the non-parametric Data Envelopment Analysis (DEA) method. This method can deal with input variables beyond management control and facilitate comparisons of efficiency using uniform criteria. It uses the shape ratio, which easily determines an organization's efficiency, including banking institutions (Putri & Lukviarman, 2008).

1.1. Sharia Banking/Islamic Banking

An Islamic Bank is a financial institution that provides credit and other payment traffic and money circulation services adjusted with sharia operating principles (Sudarsono, 2004). The bank operates without relying on interest and solely operates based on Islamic law principles (Sukarno & Syaichu, 2013).

In Indonesia, this banking system started in 1992 to build an economy of Muslim society that had long been marginalized. For this reason, most people suspect that the Islamic banks are only for Muslims, even though they are commercial banks, serving anyone and can be implemented by anyone, irrespective of religious affiliation. In general, Islamic banking is a concrete example of the universality of Islam as rahmatanlil'alamin. The difference between them and conventional banks is that they do not use the interest system and refers to it as riba (Salman & Nawaz, 2018). Islamic Bank operates based on Islamic Sharia principles and procedures for the operation, relying on the provisions of the Qur'an and Hadith. All operations follow Islamic law provisions, especially regarding muamalah (communication) procedures in Islam.

Islamic Bank, in its calculations, has two options. First, use a profit-sharing basis, where a great and little revenue is received by the customer depending on profits. Second, it uses the basic calculation of revenue sharing, where a great and little revenue received by the customer depends on the bank's gross revenue. In Indonesia, they apply a revenue-sharing system that can reduce customer losses. The relationship between customers, including creditors, depositors, borrowers, or employers with the bank, differs from the existing relations in conventional banks, which are mutual exploitation. In Islamic banks, there is a contractual agreement on productive business and the mutual investment relationship. They act as "Shohibulmaal" with "mudhorib" or managers and investors as "Shohibulmaal" with the bank with a parallel relationship as a business in conventional banks (Rachman & Siswantoro, 2017). The principle of Islamic banking is expressly stated in the law. No. 10 of 1998, which was amended by Law 23 of 1999 in Bank Indonesia and law 3 of 2004. Its development started in 1992 by establishing Muamalah Bank Indonesia (BMI), the first institution to use Islamic principles in Indonesia.

Characteristics of Islamic banks are based on the principle of sharing, giving the aspect of justice for banks and customers. The principle of profit-sharing based on honesty and partnership provides an attractive and alternative solution for people to be able to invest in Islamic banks and may be used by the whole society. The main principles used in Islamic banking activities are, (a)

Prohibition of interest in various forms of transactions; (b) Undertake business activities based gains were legitimate and; (c) Give alms.

1.2. Philosophy Approach

Each concept has a consistent rationale. In knowledge, consistent concepts will be universally understood as a form of basic values. For instance, the Ontology of true universal concept is derived from "The One" Allah. The Creator gives a signal that the universal form of the universe can be named Islam. Furthermore, the system is part of the real world, consisting of various elements on a place and time limit. Components and processes that interact are designed based on the concept developed from the desired objectives (Aziz, 2017).

The human life system in the neighborhood and the universe is an Islamic concept of Islam. This means the concept of creation is the beginning of Islam. In ontology, the creation of the universe is a basic system called Islam. The sub-system that exists in the universe would be consistent with the basic system. Through the elements of the system is not all about the creation of human beings.

Islam is defined as a system that is holistic, comprehensive, or thorough. The epistemology of the concept of the tree that is being developed is Kaffah. The word Islam has the root word of three letters. The first letter is “a” or alif, then “s” or sin, “l” or lam, and “m” or mim. There is a verse that supports the ontological meaning of Islam in the Qur'an. (Ali Imran [3]: 19):

إِنَّ ٱلدِّينَ عِندَ ٱللَّهِ ٱلْإِسْلَٰمُ

Meaning:
“Surely Din Allah is Islam. Allah exists in every single system where the system is Islam.”

Development of epistemology in Islamic economics Kaffah presents a new terminology into a KaffahSinlammim approach. This involves the Koran contents that read "silmiKaffah," explaining that the word "silmi” is a derivation of the letter lam mim sin. Epistemology is supported by the Koran Surah al - Baqarah [2] paragraph 208, which reads:

يَٰٓأَيُّهَا ٱلَّذِينَ ءَامَنُواْ ٱدْخُلُواْ فِى ٱلسِّلْمِ كَآفَّةً ﴿٢٠٨﴾

Meaning:
“for who believe, you go into Islam kaffah (complete).”

This is analogous to two different things, including words of joy and warning referred to in the Koran. QS: Saba [34] Paragraph 28, which states two things, including the bearer of glad tidings and a warner.

Starting from the ontology form of Islam as the reason for including economic life, the epistemology used Kaffah as a system in a tree and the axiology simpler form of the application in the development of a tree, which is the balance of two things. There are always 2 things that constitute the relationship between the horizontal and vertical structure function in this axiology.

1.3. Efficiency Concept

Efficiency is defined as the ratio between output and input, or the amount generated from one input used. A company is efficient when using fewer input units than other companies to produce the same output or use the same unit input to produce a greater output (Iswardono & Darmawan, 2000). Bank efficiency is one of the essential indicators used to analyze a bank's performance and enhance the effectiveness of the monetary policy. Efficiency can be in two forms, including cost and profit. Profit efficiency is divided into Standard Alternative and profit efficiency (Gumilar & Komariah, 2011).

Efficiency can also be interpreted as the ratio of output to input. Three factors lead to efficiency, including (1) when the same input can produce greater output, (2) a smaller input producing the same output, and (3) greater input producing greater output (Ghofur, 2003). From an economic theory perspective, there are two aspects of efficiency, including technical and economic. In general, economic efficiency has a macro point of view with a broader scope than technical. The efficiency measurement techniques are often limited to technical and operational relationships in converting inputs into outputs. As a result, efforts to improve the micro policy's efficiency require only internal aspects, such as control and optimal resource allocation (Suseno, 2008).

According to Endri (2010), efficiency is one of the performance parameters that theoretically underlie the entire organization's performance based on the philosophy of "the ability to produce the optimum output with its input existing, which is a measure of the expected performance." When talking about better utilization of all the resources given is the basic efficiency concept (Shahid et al., 2010). There are three approaches to the basic concept of financial sector efficiency models (Gumilar & Komariah, 2011), including the banking industry, where (a) cost efficiency measures the level of a bank's cost compared with banks that have operating profits (best practice bank) in the sample. This model is often associated with a perfectly competitive market where inputs and outputs determine the market prices. This means none of the banks could determine the price of input and output prices, hence acted as a price-taking agent. (b) Alternative Profit Efficiency is often associated with an imperfectly competitive market condition (imperfect market competition), in which the bank is assumed to have market power in setting the price of output but not at the inputs. Due to different types of markets, the most notable difference between the two models (standard profit efficiency and alternative profit efficiency) in determining the exogenous variables in achieving maximum profit is the level of output.

2. Research Method

This study used both input and output variables. Specifically, the input variable consists of total deposits, assets, and labor costs, while the output includes financing and income. Inputs variable used in this study include total deposits (I_1), assets (I_2), and labor costs (I_3), explained as follows. Deposits (I_1) is fund entrusted by the public to banks in the form of demand and time deposits and certificates of deposit or savings that can be equalized (Tuti, et al, 2020). Total deposits collected from public funds is divided into current accounts sharia, sharia deposits, and savings sharia. According to Nugroho (2011) deposits have a positive relationship with total financing. The greater the number of deposits increases banks' ability to bring out financing activities of society through various products. Apart from collecting and distributing funds, banks also serve as part of the payment system. They earn income from payments for services provided. Therefore, other operating income (income other than interest income on loans) is also considered output (Kurnia, 2004).

Asset (I_2) is the bank's entire property, including cash, demand deposits with Bank Indonesia, placements with other banks, securities held, financing or credit, and fixed assets. According to (Hanafi, et al, 2007) assets are economic benefits to be received in the future or controlled by the bank due to a transaction or event (Anwar & Murwaningsar, 2017), there is a positive and significant influence between assets and the number of credits. With high asset value, the bank will improve the capital structure to warrant the risk of placement of productive assets, including credit/financing, to make a profit from the investment activities (Purwanto, 2011). Labor is a physical or mental effort incurred by employees to process the product. Labor cost is the price charged for the use of human labor. High labor costs will lead to increased operating expenses, reducing the bank's ability to generate financing products to the public (Mulyadi, 2014).

Output variables used in this study include financing (O_1) and revenue (O_2), explained as follows. Financing is a major product of banks as intermediary institutions that connect between surplus and deficit units. Total financing is used to measure management banks' ability in primary products, such as financing, to increase profits (operating profit). The selection of this financing variable as output due to funding distribution is the main activity banks use to gain profits. In this study, Ijarah financing, qardh, Murabaha, mudaraba, and istishna were included (Maflachatun & Pujiyono, 2010).

Revenue (O_2) is the income generated from operations, and bank operations are classified as non-Islamic banks. According to Samuelson (1993), revenues are inflows or other enhancements of assets of an entity or settlement of liabilities (or a combination of both) during the period of delivery or production of goods, services, or other activities that constitute the main operation or a central entity ongoing. Baridwan (2009) explains that income is cash inflows or an increase in other assets of an entity or settlement of debt (or a combination) for a period derived from the delivery or manufacture of goods and services.

2.1. Data Collection Method

The study used documentation to collect data, collecting information and data through library research, and examining the literature and financial reports published by Bank Indonesia and a relevant Islamic bank. Furthermore, the study used secondary data from the financial statement data of Bank Indonesia. The data specifically related to Islamic and Sharia Business Unit Islamic banks and their financial statements in question during 2008-2013.

2.2. Hahslm Method

The hahslm is a genuine Islam method derived from the Quran Surah Al-Hijr (15): 87, which states that Allah gave seven Koran, translating into factorization 7-2-3-1-9 with H-as-l-m pattern.

$$H = a.h\ (s.l.m)$$

Where :

H = the independent variable

a = variable index (test F)

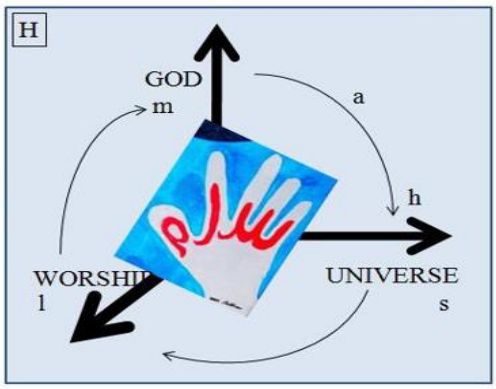
h = variance (+ / -)

s = variable (test T)

l = absolute value (test R)

m = weight

Only recognize the existing economic problems of the material, unlike in the conventional economics. Every economic activity certainly impact other sectors. Furthermore, the three-dimensional economic concepts were derived from Hahslm. Every economic activity should be based on Allah's instructions, and everything carried out needs a value of worship that is always in ridhai Allah.



Source: Aziz, 2016

Figure 1. Hand Causal Dimension

A table test is conducted to determine the legal basis of the revelations about applying existing variables in the test formula. The dependent and independent variables are (H *) and (A, H, S, L, M). These variables are essential in the test table's operation with significant positive or negative results in variable or sub variable and absolute value on weight. The notifications are H= result, A= significance, H= variable or sub variable, L-absolute value, and M= weight.

3. Results and Discussions

The bank's efficiency is calculated using DEA, assuming VRS (Variable Return to Scale)-oriented output. The bank is efficient suppose it has a level 1 or 100% efficiency. In comparison, banks with a level of efficiency of less than 1 or 100% are inefficient. Table 1 describes the calculation of the efficiency of the public Sharia banks and the Syariah business unit. The results of the calculations show that, on average, banks are not efficient. Bank Muamalat Indonesia achieved the value of efficiency of the public Sharia bank in 2008. However, two other banks have not reached a 100% level of efficiency, specifically Islamic Bank Mandiri (93,84 percent) and Bank Syariah Mega Indonesia (81,50 percent). In 2009 and 2010, all Syariah commercial banks, including Bank Muamalat Indonesia (70,63%), Bank Syariah Mandiri (73,17 and 76,98%), and Bank Syariah Mega Indonesia (76,00 and 83,10%) did not reach 100% efficiency level.

In the year 2011, only Bank Muamalat Indonesia reached a level of 100%. Islamic Bank Mandiri (78,76 percent) and Bank Syariah Mega Indonesia (76,09 percent) did not attain efficiency. In 2012 and 2013, all Syariah commercial banks in research, including Bank Muamalat Indonesia, dropped to 78,76 74,77%. Bank Syariah Mandiri (85,40 and 73,06%) and Bank Syariah Mega Indonesia (73,42 and 73,49%) did not attain efficiency.

The Banks have not maximized the input and output that they are holding, which translates to inefficiency. This means the values of input and output achieved by the bank cannot attain the actual target (Muharam, 2007). The use of inefficient deposits occurs on the research inputs about Islamic commercial banks and the Syariah business unit. The amount of input deposit is more than the target, which means that the role of deposits as input cannot generate output. For this reason, there is a need to allocate excess savings input to total assets that are especially productive. This

can be achieved by increasing the number of Islamic banks as financing istishna, mudharabah, and ijarah.

Table 1. The Efficiency Level of Islamic Banks and Sharia Business Unit The year 2008-2013 (Percent)

Name of Bank	Year					
	2008	2009	2010	2011	2012	2013
Bank Muamalat Indonesia	100	70,63	84,34	100	78,76	74,77
Bank Syariah Mandiri	93,84	73,17	76,98	78,76	85,40	73,06
Bank Syariah Mega Indonesia	81,50	76,00	83,10	76,09	73,49	73,42
BNI Syariah	94,66	70,97	96,11	99,61	100	100
BRI Syariah	100	100	100	100	100	93,95
BTN Syariah	100	100	100	100	96,78	100
Bukopin Syariah	55,21	70,95	85,70	77,51	80,71	85,61
CIMB Niaga Syariah	100	100	73,33	72,02	100	86,12
Danamon Syariah	94,88	92,90	100	100	100	100
Permata Syariah	100	100	100	100	100	100

Source: Result of Analysis (DEAWIN)

The cost of funds on deposit administration, such as savings, can also be raised for the bank's income to be better in the future. Increased service quality banks should follow the increase in administration costs to compete. Furthermore, the deficiency of assets input occurs because of the number of assets exceeding the needed targets. The asset refers to the bank's entire estate, including cash, checking account at Bank Indonesia, placements with other banks, securities, financing or credit, and fixed assets.

The increasing amount of financing facilitates intermediation in Islamic banks and can also supplement the operating income that is mainly derived from channeling funds. However, the fixed assets should be used to the maximum to avoid bank inefficiency. Third, the input cost of labor inefficiency occurs because labor costs exceed the needed amount. The magnitude of the labor costs depends on the number of labor used. In public Islamic banks and Syariah business units, the increasing number of labor is often not in balance with their capability, decreasing productivity (Sutawijaya & Lestari, 2009).

These conditions are based on the theory of the law of diminishing marginal return, where the addition of labor will lead to a decrease in the marginal labor. Therefore, banks need internal rules to use the system contract for officers (Sutawijaya & Lestari, 2009). The bank can efficiently use the workforce by defining the working relationship with employees. The deficiency of output happens in financing and income. In many cases, the amount of financing is smaller than the specified target. This is due to the principle of prudence applied by the bank before providing financing. However, they should be careful not to inhibit the target set. In this regard, there is a need to keep carrying out the principle of prudence without inhibiting the target set and supervises strictly after providing financing.

The amount of revenue does not meet expectations. Improvements can be made in several ways, including increased financing through innovative products and the costs of services associated with the input savings, the allocation of total assets should be used optimally to increase banks' operating income. There is a need to improve the quality of Human Resources (HR) to

increase operating income because it relates to employees' work productivity and creativity to produce the maximum output.

The Data Envelopment Analysis (DEA) was conducted in the general Islamic Bank (ICB) from 2008 to 2013. The results show that Bank Muamalat Indonesia (BMI) was more efficient among Islamic banks. In Sharia (IBU) bank, Bank Permata Syariah was more efficient. At commercial banks in Sharia (ICB), Bank Muamalat Indonesia (BMI) was efficient in 2008 and 2011. However, Bank Muamalat Indonesia (BMI) was more efficient than Islamic banks. Other institutions always experienced inefficiencies during the study period. In Islamic Business Unit (IBU), Bank Permata Syariah always achieved efficiency levels of 100% during the study period.

In the Islamic Banks (ICB), only Bank Muamalat Indonesia reached the level of 100% efficiency in 2008 and 2011. In the Islamic Business Unit (IBU) in 2008, Bank Rakyat Indonesia Syariah, State Savings Bank Syariah, Bank CIMB Niaga Syariah, and Bank Permata Syariah reached 100% efficiency. In 2009, Bank Rakyat Indonesia Syariah, Islamic State Savings Bank, Bank CIMB Niaga Syariah, and Bank Permata Syariah reached a level of 100% efficiency. In 2010, Bank Rakyat Indonesia Syariah, Islamic State Savings Bank, Bank Danamon Syariah, and Bank Permata Syariah reached a level of 100%. Bank Rakyat Indonesia Syariah, Islamic State Savings Bank, Bank Danamon Syariah, and Bank Permata Syariah reached a level of 100% efficiency in 2011. In 2012, Islamic Bank Negara Indonesia, Bank Rakyat Indonesia Syariah, Bank CIMB Niaga Syariah, Bank Danamon Syariah, and Bank Permata Syariah reached a level of 100% efficiency. Lastly, Bank Negara Indonesia Sharia, Islamic State Savings Bank, Bank Danamon Syariah, and Bank Permata Syariah reached a level of 100% efficiency in 2013.

The Levene's test for similarity of manner obtained sig F of 0.442 (sig> 0.05 α). Therefore, the two populations in this study came from the same variety. Since both of them had some variety, the t-test was on the first line. Magnitude t obtained amounted to -0.429 while the value t table with $\alpha = 0.05$ and df = 58 in May 2002 figures. Since t <t table, H0 is accepted. The obtained probability value is 0.00. Since the probability $\alpha < 0.05$, H0 is accepted. By looking at the ratio of t and the probability value ratio, there is no difference between Islamic Banks and Sharia Business Unit during 2008-2013.

Since there is no difference in the efficiency between Islamic banks and Islamic business units based on test results, a consideration or input in establishing and implementing appropriate control strategies can be used. The efficiency can be increased to survive or win the competition in the banking sector, which is increasingly stringent. There is also a need to find the causes of inefficiency in the bank for effective policy-making corrections and improve performance.

4. Conclusions

The result shows that from the 10 banks in the study sample (3 Islamic Banks and 7 Sharia), only Bank Permata Syariah always achieved a technical efficiency level of 100 % during the study period. Bank Muamalat Indonesia, Bank Syariah Mandiri, Bank Syariah Mega Indonesia, Bank Negara Indonesia Syariah, Bank Rakyat Indonesia Syariah, State Savings Bank Syariah Bukopin Syariah, Bank CIMB Niaga Syariah, and Bank Danamon Syariah had fluctuations inefficiency. The average achievement of better efficiency Islamic Banks and the Sharia Business Unit fluctuated during 2008-2013 with an average efficiency of commercial banks amounting to 80.74%. Islamic Sharia Business Unit had an average efficiency level of 93.50%.

The inefficiencies occur at all input (deposits, assets, and labor costs) and output variables (financing and income) in the 9 banks. Inefficiency in savings, assets, and labor costs was experienced by almost every bank. This indicates excessive use of inputs without focusing on the

target. In terms of the output side, only a few banks experienced the inefficiency of financing and income. This indicates that the output produced cannot achieve the target set.

Based on the different tests' results using parametric independent sample t-test, there is no difference between the efficiency of Islamic Banks and Sharia Business Unit during the observation period 2008-2013 (H_1 rejected). The lack of difference in efficiency between Islamic Banks and Sharia Business Unit shows that the 10 banks examined function well as intermediaries, though they have not been at the level of 100% efficiency.

The efficiency tests were also conducted using Data Envelopment Analysis (DEA) in the general Islamic Bank (ICB) during the observation period 2008-2013. The results showed that Bank Muamalat Indonesia (BMI) is more efficient. In Sharia (IBU) is said to be a more efficient bank, Bank Permata Syariah. Bank Muamalat Indonesia and Bank Permata Syariah were more efficient compared to other banks. This indicates that the bank can maximize the use of inputs and outputs to attain efficiency levels of 100%.

This study analyzed the input variables, including deposits, assets, labor costs, and financing and income as outputs with inefficient results. These variables should be tailored to the target set to optimize banking operations for effectiveness and efficiency. With the difference in value between the efficiency of Islamic banks and Islamic business units based on test results, input materials can be used to establish and implement appropriate control strategies to improve efficiency to survive the competition in the sector. The causes of inefficiency in the bank can also be used for policy-making corrections to improve Islamic banking performance.

Future study should examine the DEA efficiency analysis assuming a Variable Return to Scale (VRS) for the entire unit. This will help determine whether technology and scale of production affect the level of efficiency. It is also recommended to use more samples and years of observation longer for more comprehensive results.

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