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The Efficiency of Islamic Banks: Empirical Evidence from Indonesia

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Abstract

Conventional banks are often considered more efficient than Islamic banks because they have been operating for decades, but Islamic banks have shown rapid development recently. Therefore, this study mainly aims to compare the level of efficiency of conventional banks and Islamic banks and which ones have the best level of efficiency. This study employs panel data using Stochastic Frontier Analysis (SFA) as the data analysis technique. The data used is annual data from 13 conventional banks and 13 Islamic banks in Indonesia during the 2014–2019 period. The result shows no significant difference in the efficiency of conventional banks and Islamic banks. This result is presumably influenced by the small size of the bank and the total number of banks used in the study. The data used in the study is limited to the period from 2014 to 2019. The variables utilized are also limited to the availability of financial report data which is publicly published. This study provides additional empirical evidence regarding conventional banks' and Islamic banks' efficiency in Indonesian banking by using the latest data. While theoretically, Islamic banks are expected to be more efficient than conventional banks, this study did not find any strong support for the case in Indonesia during the observation period.

Keywords: Financing, Credit Growth, Asset Growth, Deposit Growth, Labor Cost

JEL Classification Code: C14, G20, G21

1. Introduction

Since 2010, national banks have grown rapidly that the Government has paid special attention to the formation of the Financial Services Authority (OJK) as the institution with authority regarding regulations of national banks and financial institutions to achieve the expected growth rate. Based on the data available on the OJK website, the following information describes the growth of Conventional Banks and Islamic Banks in Indonesia from 2012–2019.

Indonesian conventional banks has experienced positive growth each year even though in 2015–2016 Indonesia's economic growth was slowing down, but it did not bring any significant impact on conventional banks (see Figure 1). Different things happened with Islamic banks in Indonesia which had experienced negative growth in 2015–2016; however, Islamic banks were able to rise again (see Figure 2) and experience fluctuating growth every year. This is in line with what was stated by (Kamarudin et al., 2019). The Islamic finance industry worldwide has experienced significant growth since 25 years ago, where the average asset growth per year was 10–12% and grew 6% faster than conventional banking (Bitar et al., 2017).

The problem faced by Indonesia and other countries in the ASEAN is the presence of integration in the financial and banking sector in 2020. Banks with certain qualifications (Qualified ASEAN Banks/QAB) are free to operate in ASEAN and the banking market will lead to a single market such as the single European market. This integration will make foreign banks to open branches in destination countries easier, including Indonesia. The emergence of foreign banks will increase competitiveness of the banking market and the resilience of domestic banks will be tested.

The efficiency level of conventional banks is higher than Islamic banks (Alqahtani et al., 2017; Azad et al., 2017; Chaffai, 2011; Satria & Permata, 2016). The estimation of the banks using the Stochastic Frontier Analysis (SFA) is shown in Table 1 as follows.

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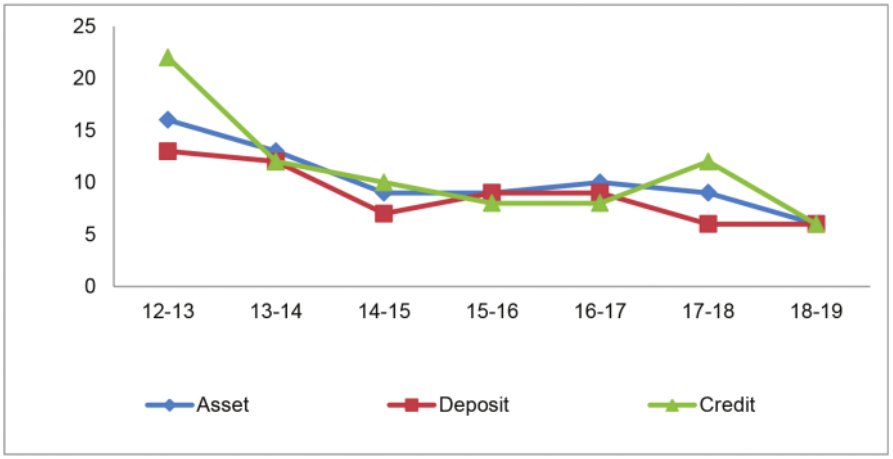

Figure 1: Growth of Assets, Deposits, and Credit for Conventional Banks in Indonesia 2012–2019

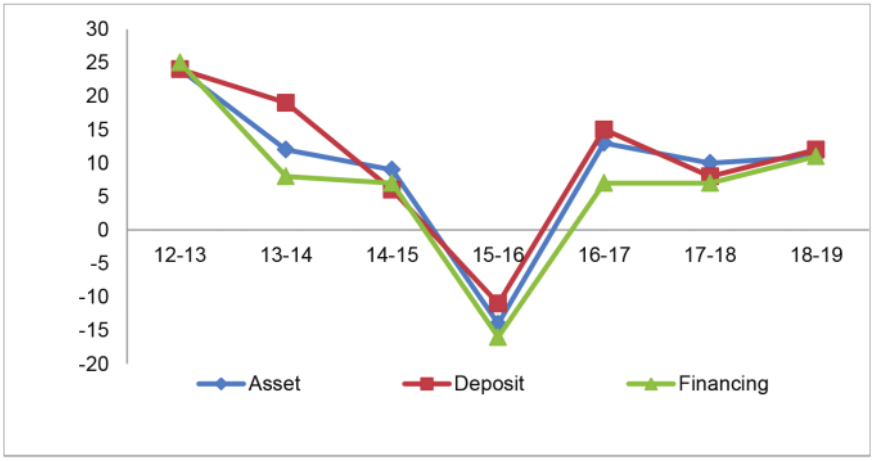

Figure 2: Growth of Assets, Deposits, and Financing for Islamic Bank in Indonesia 2012–2019

The technical efficiency of Islamic Banks is in the highly efficient category (see Table 1). Business or production activities efficiency scores are - high efficiency (ET > 0.80), moderate (0.60 < ET < 0.80), low (0.40 < ET < 0.59), and inefficient (ET < 0.40). The average technical efficiency of Islamic Banks is 0.99981822 and this value is not far from the Conventional Banks which is 0.99997606 in the high-efficiency category. Therefore, for Islamic Banks to be able to compete with other banks and to achieve maximum profit and productivity, Islamic Banks are required to operate more efficiently.

Data obtained from 16 banks and 27 conventional banks between 1994 and 2014 was used and found that

Table 1: Technical Efficiency of Banks 2014–2018

Bank Group	Average Level of Efficiency 2014–2018
Conventional Bank	0.99997606
Islamic Bank	0.99981822

Islamic banks had a higher efficiency value (Khalib et al., 2016). Then, the level of capitalization, asset quality, inflation, and dummy variables after the recession are the factors that have a negative impact on the performance of conventional and Islamic banks (Nosheen & Rashid,

2019). In the meantime, GDP, non-interest income and dummy pre-crisis variables are the indicators that have a favorable impact on the effectiveness of conventional and Islamic banks.

Despite the global financial crisis, Islamic banks were more efficient than conventional banks (Alqahtani et al., 2017). Meanwhile, the performance of Islamic banks increased more than conventional banks after the global financial crisis occurred.

The formulation of the problem in this report based on the context explanation above, includes 1) what is the efficiency level of Conventional Banks and Islamic Banks in Indonesia during 2014–2019?; 2) Are there any differences in the level of efficiency between the 2014–2019 Conventional Banks and Indonesian Islamic Banks?

2. Literature Review

2.1. Concept of Efficiency

Michael James Farrel first put forth the principle of efficiency in 1957, which was a follow-up to Debreu and Koopmans' findings (Farrel, 1976). The development principle that describes the relationship between input and output starts with this efficiency theory. The production function defines the relationship between input and output and commonly relates to a continuous relationship.

Efficiency is one of the parameters for measuring theoretical performance that underlies all operational performance by appealing to the theory that a measure of anticipated performance is the capacity to achieve maximum production with current inputs (Octrina & Mariam, 2021). Efficiency is often known as the ratio of output to input or the quantity produced by the input used (Kao, 2017). Proper of management can be increase credit growth which leads to economics development in the banking sector efficiency that it defend well the global financial crisis. (Kamarudin et al., 2019).

Performance represents the level of production from a general point of view to achieve goals with minimal committed resources: the boundary between efficiency and effectiveness is formed with the notion of resource non-idleness and non-wastefulness. In other words, productivity includes the implementation of aims. Efficiency is the ratio of the actual output produced to the standard output, that should have been produced, at a given amount of time with fewer resources.

Before the 1950s, economists thought that, in accordance with their mission of making a profit, companies have already used their resources efficiently and effectively. Efficiency in the system is an idea that emerged after the 1950s. It involves the usage of capital by output maximization. In particular, a system must satisfy three criteria to be economically efficient. 1) The output method must be in equilibrium with Pareto, which means when an economy has its resources and goods allocated to the maximum level of efficiency, and no change can be made without making someone worse off. 2) Without a corresponding rise in output, no input can be added. 3) Finally, at a low unit expense, production must be carried out.

Economic performance is described in most economic or financial dictionaries as the state of the economy that, with limited resources, obtains optimum production, taking into account the costs and benefits resulting from different decisions (Alothman & Al-mahish, 2020). This is a definition involving allocative efficiency and technical efficiency.

2.2. Banking Efficiency Theory

Efficiency in banking is the same as in a company which is an indicator in measuring bank performance, where efficiency is an answer to difficulties in calculating performance measures such as allocation levels, technicality, and total efficiency. Efficiency for a bank or the banking industry as a whole is the most important aspect to be paid attention to create a healthy and sustainable financial performance.

Banking efficiency is a metric of success that defines banks' ability to control their inputs to achieve outputs (Isnurhadi et al., 2021; Octrina & Mariam, 2021). Banks will face the conditions on how to get optimum output with current inputs in the process of calculating performance. To measure efficiency, there are three principles, which are technical efficiency, cost-effectiveness, and allocative efficiency. The ratio of the inputs used to get a given output is technical efficiency. If the output does not increase without additional input, the development process will be technically successful. This will assess banks' financial efficiency. Cost efficiency is the use of the input pricing concept.

The Decision-Making Unit (DMU) is called technically efficient if it generates the maximum possible output from the set of inputs it has, or if it requires a smaller number of inputs to generate a given number of outputs. The calculation of the performance level of the DMU thus makes it possible to decide if it is capable of increasing its output without requiring additional resources, or at least of minimizing the use of one supply while sustaining the same production level (Abidin et al., 2021).

Technical efficiency is divided into pure technical efficiency and technical efficiency of scale (Abidin et al., 2021). The way that resources of the production unit are controlled is expressed by pure technical efficiency because the technical efficiency of the scale determines whether or not the production unit is working at an optimum scale. Technical efficiency gives set of input that is used to produce an effective output. A firm technically efficient want to

produce the maximum output from the minimum quantity such as labor, capital, and technology.

According to two primary methods, technological performance may be considered. First, the efficiency of the production unit to obtain high production is measured by a given combination of input and production technology: that is the concept of "output focused" which addresses the question: "as to how much can we modify the units of products without multiplying the quantity of input used". Second, it evaluates the ability to reach a certain level of efficiency with the minimum possible number of inputs: namely the "input-oriented" concept, addressing the question: "about what the amount of input can be proportionally reduced, without a difference in the quantity of production achieved".

2.3. The Ultimate Grading Technique

2.3.1. Parametric Approach

The parametric approach proposes an estimate of the effective production function with a known a priori functional type. That is, independently of the data, the mathematical equation gives the type to the efficacy frontier. Therefore, it is possible to define and further evaluate the algebraic range of these functions more conveniently. They can be stochastic or deterministic. Where any variance from the frontier is due to inefficiency, it is deterministic. Where the variance from the frontier is the consequence of inefficiency, risk, and standard errors it is stochastic (Horrace & Wright, 2020).

There are some related shortcomings in the parametric and deterministic methods, in particular with a high sensitivity to the maximum of findings and the restrictive character of functional types associated with frontier functions.

The stochastic parametric approach modifies some of the limitations of the mathematical model, especially by placing the source of the variance from the effective frontier into perspective. Thus, this method postulates that two independent components consist of the term error. 1) Two-sided error term, occurs in either relationship, and from either side of the frontier of output, it is distributed. 2) One-sided error term, describes technical efficiency and in one side of the frontier of output, it is distributed.

In both cases, the parametric approach has the disadvantage of requiring to write down the costs or benefits of the firm function under investigation. But for all types of organizations, this is may not be practical or realistic. Therefore, to respond to this problem, a non-parametric approach exists.

2.3.2. Non-parametric Approach

This can be used as a tool to study the variations in the efficiency scores of a DMU over a period. This technique examines a DMU over different periods as separate units for analyzing the scores. It provides a comparison of similar DMU across different periods. Each DMU with multiple inputs and outputs across different years is considered as a distinct individual DMU. A researcher can contrast the efficiency scores of banks across different periods through a sequence of windows that overlap each other for a given period (Kumar et al., 2020).

An example of a non-parametric technique is the DEA (Liao, 2020; Noor et al., 2020). Data envelopment analysis (DEA) is a nonparametric method in operations research and economics for the estimation of production frontiers. It is used to empirically measure the productive efficiency of decision-making units (DMUs) Although DEA has a strong link to production theory in economics, the tool is also used for benchmarking in operations management, where a set of measures is selected to benchmark the performance of manufacturing and service operations. In benchmarking, the efficient DMUs, as defined by DEA, may not necessarily form a "production frontier", but rather lead to a "best-practice frontier". DEA, as one of the most commonly used non-parametric methods, owes its name to its enveloping property of the dataset's efficient DMUs, where the empirically observed, most efficient DMUs constitute the production frontier against which all DMUs are compared.

Two major models are included. Both are the model CRS (Constant Return to Scale) model and the model VRS (Variable Return to Scale) (Abidin et al., 2021; Alothman & Al-mahish, 2020; Barros et al., 2005). The envelopment surface will differ depending on the scale assumptions that underpin the model. Two scale assumptions are generally employed: constant returns to scale (CRS), and variable returns to scale (VRS). The latter encompasses both increasing and decreasing returns to scale. CRS reflects the fact that output will change by the same proportion as inputs are changed (e.g. a doubling of all inputs will double output); VRS reflects the fact that production technology may exhibit increasing, constant and decreasing returns to scale. Input- and output-based capacity measures are only equivalent under the assumption of constant returns to scale.

A solid measure of the efficiency of a good scale is the DEA-VRS type. They recommend showing both DEA-CRS and DEA-VRS models in the same database to achieve such a scale. If there is a disparity in the efficacy ratio measured by these 2 ways of DEA for a given organization, this implies that the company is not working on an optimum scale. Thus, the correlation between the technical inefficiency of CRS and the technical inefficiency of VRS then gives the level of the inefficiency. The causes of this level of efficiency/ inefficiency may be examined by observing this pattern. This approach has generalized the analysis of technical efficiency into multi-product and non-constant returns to situations such as in a banking context.

2.4. Stochastic Frontier Analysis Theory

Stochastic Frontier Analysis (SFA) is a technique of measuring the level of efficiency using a parametric approach (Horrace & Wright, 20). The SFA approach is generally used, especially in the United States and other developing countries, to measure the rate of banking effectiveness. The main advantage of using the SFA method is that it can handle problems with statistical noise. In this technique, the inefficiency factor is no longer contaminated because it can be clearly separated and distinguished from the random noise. Furthermore, the SFA method also involves disturbance term which represents disturbance, measurement error, the exogenous shock that is outside the control of the production unit, and environmental variables that are easier to treat.

The Stochastic Frontier technique is also referred to as an econometric analysis that describes the cost-functional form; benefit; or the processing relationship between input, output, and external factors; and enables for error variance. SFA method is a concept of errors in which an asymmetric distribution is required to follow inefficiency and the remainder is half normal, while symmetrical distribution is followed by random errors and is generally standard normal.

2.5. Financing/Credit

Bank credit is the total amount of funds a person or business can borrow from a financial institution. Credit approval is determined by credit rating users, their income, their collateral, their asset, and pre-existing debt. Bank credit may be secured or unsecured. As for financing, it is an activity of Islamic banks in channeling funds to parties other than banks based on sharia principles. This financing/credit provides the greatest return among other fund disbursements made by banks.

Financing/credit growth is used to measure how big is the ability of bank management in maintaining and increasing the success of producing the main product in the form of financing/credit as one way to increase operating profit or profit that has been achieved from one period to the next period. Banks will be considered more efficient if the growth of financing/credit is influenced by a decrease in fixed asset growth, an increase in deposit growth, and a decrease in labor cost growth.

2.6. Fixed Assets

A fixed asset is a long-term tangible piece of property or equipment that a firm owns and uses in its operations to generate income. Fixed assets are expected to be used for more than one time to produce or supply goods and services, for leasing to other parties, or for administrative purposes. The higher value of the bank's held fixed assets, the lower the funneled financing/loan (Ikram et al., 2016).

2.7. Deposits

Deposits are loans from consumers to banks and are then used in various commercial transactions by banks, meaning that the bank returns them completely to the consumer.

The bigger amount of deposits indicates that the bank getting better and more productive in carrying out its operational activities (Horvatova, 2018).

2.8. Labor Costs

Labor is a physical or mental effort spent by employees to process products and labor costs are the price charged for the use of these human labor costs. The components of labor costs are employees' and directors' salaries, employee benefits, the board of commissioners' fees, bonuses, holiday allowances, employee insurance, overtime, and other labor costs. The better the bank can manage labor costs, the more efficient the bank is. That is because it will increase the allocation of operating profit which will be distributed to the public in the form of financing/credit (Alqahtani et al., 2017).

3. Methodology

This research is descriptive and comparative. The population in this study uses 14 Islamic Banks and 96 Conventional Banks that operate nationally and are registered with the Indonesian Bank (BI) and the Financial Services Authority (OJK) in 2014–2019 with an observation period of 5 years so that the population is 550 data financial statements. The sampling in this study used a purposive sampling technique, which is a sampling technique with certain considerations that is part of non-probability sampling. The sample chosen is a sample that according to the author has the necessary information based on considerations (judgment) or criteria such as Islamic Banks and Conventional Banks which operate nationally are registered with Bank Indonesia and the Financial Services Authority in 2014–2019; publishes annual financial reports for 2014–2019 consistently and has also published on their website, and has the data and information needed regarding the measurement of variables used for the 2014–2019 research. Then a sample of 13 Islamic Banks and 13 Conventional Banks was selected so that the comparison is equal.

The name of Islamic Banks are: Aceh Syariah, BNI Syariah, BRI Syariah, Jabar Banten Syariah, Mega Syariah, Muamalat, Panin Dubai Syariah, Syariah Bukopin, Syariah Mandiri, Victoria Syariah, BCA Syariah, Tabungan Pensiunan Nasional Syariah, and Maybank Syariah.

The name of Conventional Banks are: IBK Indonesia, Artha Graha Internasional, BumiArta, Ina Perdana, Jasa Jakarta, Maspion Indonesia, Mayora, Mestika Dharma,

MNC Internasional, National Nobu, Resona Perdania, Victoria International, a[17] Woori Saudara Indonesia 1906.

Through the use of input and output variables based on the intermediation approach, this is the Stochastic Frontier Analysis. The intermediation approach is considered the most suitable approach for evaluating banking[16] an intermediate system in which banks accumulate and channel funds from surplus units to deficit units.[16]

The activity of distributing finance from surplus units to deficit units is financial intermediation. This practice of intermediation is a common activity carried out by both banks, conventional and Islamic. The products sold by Islamic banks are conventional bank products, b[4] they have been modified to Islamic values to conclude that Islamic banking products are more diverse than conventional ones (Azad et al., 2017; Satu[22] & Permata, 2016).

Measurement of the input and output variables in this study. The input variables consist of:

Fixed asset growth

$$= \frac{\text{fixed asset}_t - \text{fixed asset}_{t-1}}{\text{fixed asset}_{t-1}} \times 100\% \quad (1)$$

Deposit growth

$$= \frac{\text{deposit}_t - \text{deposit}_{t-1}}{\text{deposit}_{t-1}} \times 100\% \quad (2)$$

Labor cost

$$= \frac{\text{labor cost}_t - \text{labor cost}_{t-1}}{\text{labor cost}_{t-1}} \times 100\% \quad (3)$$

The output variables:

Financing growth

$$= \frac{\text{financing}_t - \text{financing}_{t-1}}{\text{financing}_{t-1}} \times 100\% \quad (4)$$

Credit growth

$$= \frac{\text{credit}_t - \text{credit}_{t-1}}{\text{credit}_{t-1}} \times 100\% \quad (4)$$

3.1. Stochastic Frontier Analysis (SFA)

The Stochastic Frontier Analysis (SFA) can be used to determine the level of efficiency over time (Octrina & Mariam, 2021). The result of the efficiency level is a score of 0–1. The closer to number 1, the company is more efficient. And the closer to number 0, the company is less efficient.

The Stochastic Frontier Analysis method uses U (controllable error) to obtain this level of efficiency. Analysis using the SFA method was performed using the Cobb-Douglas production function equation by [14] lowing the time-varying model parameterization. The Cobb–Douglas production function has a particular functional form of elasticity coefficient easily, widely used to represent the technological relationship between two or more input and [11] put amount that it can be produced by those input. This Cobb-Douglas production function has the cha[11] teristics of a homogeneous function, making it possible to measure returns to scale and interpret the elasticity coefficient easily. Besides, the simple form of the function makes it easy to calculate and generate statistically significant coefficient estimates, without requiring data with strict accuracy. Using this model, the production efficiency can be known based on the bank and the time so that the development of the efficiency of each bank can be known every year. Data processing with SFA can use the Frontier 4.1 software, with the Maximum Likelihood Estimates (MLE) approach. The standard SFA function with a production function has a general form (log):

$$Ln(Q_1) = \beta_0 + \beta_1 ln(P_1) + \beta_2 ln(P_2) + \beta_3 ln(P_3) + E_n \quad (6)$$

Information:

Q_1 = total financing/credit,

P_1 = total fixed asset,

P_2 = total deposit,

P_3 = total labor cost,

E_n = error term.

3.2. Normality Test (Kolmogorov-Smirnov Test)

The[32] normality test is used to determine whether the variables used are normally distributed or not. This normality test is carried out to avoid bias so that the data used must be normally distributed. This test is used as a prerequisite before testing the different *t*-test and multivariate. This normality test can be performed using the non-parametric Kolmogorov-Smirnov (KS) analysis.

3.3. *T*-test

Independent Sample *T*-Test determines whether or not there is a mean difference between two unrelated sample groups. The calculation uses the as follows:

$$t = \frac{\overline{X_1} - \overline{X_2}}{\sqrt{\frac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{n_1+n_2-2}\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}} \quad (7)$$

Information:

$\overline{X_1}, \overline{X_2}$ = Average calculated efficiency of Islamic and conventional banks based on the result analysis using Stochastic Frontier Analysis (SFA)

s^1, s^2 = population variant

n_1, n_2 = number of subjects in Islamic and Conventional Bank groups

Assumptions of the Independent Sample T-Test: Two samples are not paired, the amount of data for each sample is less than 30 pieces, the data used in this test is quantitative data at interval or ratio scales, the data for the two samples are normally distributed, and there is a similarity of variance or homogeneity for the two samples of research data (not an absolute requirement).

4. Results

Based on the output of Frontier, it is known that Islamic Banks have an average level of efficiency of 0.99983370 during the 2014–2019 period. Besides, it is also known that all Islamic Banks that were sampled during 2014–2019 experienced an increase or decrease in efficiency which fluctuated every year. The lowest level of efficiency in 2014–2019 occurred at Victoria Syariah Bank in 2015–2016 which is 0.99983362. While the highest level of efficiency occurred at Panin Dubai Syariah Bank, in 2014–2015 which is 0.99983421.

Based on the output Frontier, it can be seen that Conventional Banks have an average level of efficiency 0.99997606 during the 2014–2019 period. Besides, it can also be seen that all Conventional Banks that were research samples during 2014–2019 had a level of efficiency that remained constant every year. Meanwhile, the level of efficiency of Conventional Banks and Islamic Banks in Indonesia in 2014–2019 is restated in a frontier graph, as can be seen in Figure 3.

The highest level of efficiency is obtained by Conventional Banks, but when viewed from the point of view of growth, Islamic Banks are better (see Figure 3). As for the efficiency level of Islamic Banks in Indonesia, in 2014–2019, Islamic banks experienced a positive growth trend which tends to increase from time to time. Meanwhile, the level of efficiency of Conventional Banks in Indonesia in 2014–2019 experienced a constant trend from year to year. This means that Conventional Banks are good enough in their operational activities but are still unable to manage input-outputs that can increase efficiency levels.

4.1. Normality Test (Kolmogorov-Smirnov Test)

The normality test using the Kolmogorov-Smirnov Test formula on Islamic Banks obtained KS results of 1.258 and Asymp. Sig. 0.084 which is greater than 0.05, which means that the research data is normally distributed. Furthermore, the normality test using the Kolmogorov-Smirnov Test formula at Conventional Banks obtained KS results of 1.127 and Asymp. Sig. 0.157 which is greater than 0.05, which means that the research data is normally distributed.

4.2. T-Test

Based on Table 2, the average efficiency level for Islamic banks is 0.9999833699 and 0.9999976060 for conventional banks; therefore, it can be concluded that the average efficiency level for Islamic banks and conventional banks in

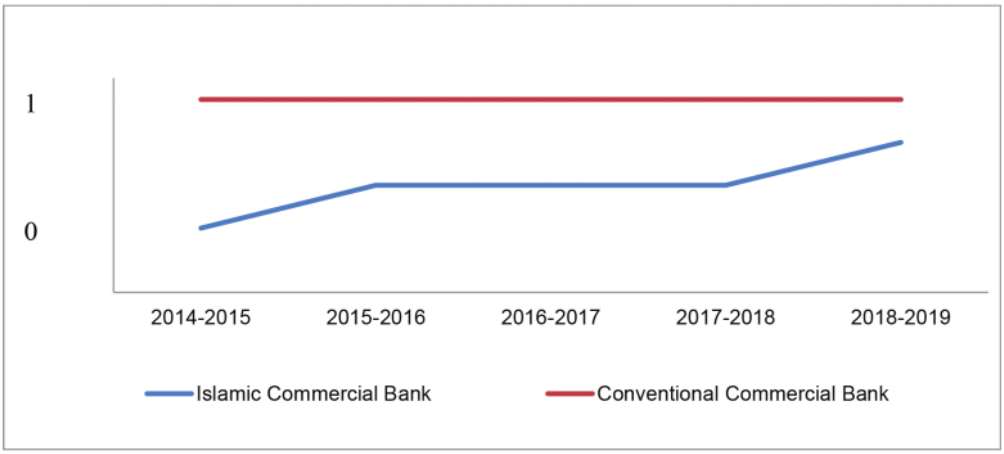

Figure 3: Efficiency Level of Banks 2014–2019

Table 2: Different Test Results of Banks 2014–2019

	Bank Group	Mean	Std. Deviation	Std. Mean Error
Efficiency Level	Islamic Bank	0.999833699	0.0000000687	0.0000000085
	Conventional Bank	0.999976060	0.0000000000	0.0000000000

Table 3: Office Network Growth of Banks 2014–2019

Number of Banks	2014	2015	2016	2017	2018	2019
Islamic Bank	12	12	13	13	14	14
Conventional Bank	107	106	103	102	101	96

2014–2019 is different. The findings of this analysis are in line with studies conducted by (Alqahtani et al., 2017), who observed that the level of efficacy between traditional banks and Islamic banks differs.

The Sig. Levene's Test for Equal Variances of 0.001 < 0.05 means that the data variance between Islamic Banks and Conventional Banks is not homogeneous. Therefore, decision making based on the value contained in Equal Variances does not Assume with the Sig. (2-tailed) of 0.000 < 0.05 so that H_0 is rejected and H_a is accepted, which means that there is a significant difference between the level of efficiency of Islamic Banks and Conventional Banks in Indonesia in 2014–2019.

5. Discussion

The results of this study also show that Conventional Banks, which are included in the large bank group, have a good level of efficiency with a trend that tends to be flat (sideways), while Islamic Banks which are classified as small-capacity banks, actually have an increase in efficiency every year. This is because the scale of the bank's business is able to determine the level of efficiency of a bank (Thi My Phan et al., 20 The following is the growth data for the office network of Islamic Banks and Conventional Banks in Indonesia in 2014–2019 which can be seen in Table 3.

The number of Conventional Banks in Indonesia has decreased every year (see Table 6) because of which the level of efficiency of Conventional Banks did not experience growth. In contrast, Islamic Banks have experienced a growth in the number of banks from year to year, so that the level of efficiency of Islamic Banks has grown every year. The growth in the number of Islamic Banks has succeeded in making Indonesia rank first on the Islamic Finance Country Index in the 2019 Global Islamic Financial Market with a score of 81.93.

6. Conclusion

Based on the results of research and analysis, it can be concluded that the level of efficiency of Islamic Banks and Conventional Banks in Indonesia during 2014–2019 is in the high-efficiency category, where the highest level of efficiency is obtained by Conventional Banks, but when viewed from the point of view of growth, Islamic Banks are better. And there is a difference in the level of efficiency between Conventional Banks and Islamic Banks in Indonesia in 2014–2019 which indicates that the intermediation function of Islamic Banks is not good enough and has not been able to maximize input and output management as is done by Conventional Banks so that the average level of efficiency of Islamic Banks is lower than Conventional Banks.

Some recommendations that the author can convey based on the research that has been done are 1) For banks; It is hoped that this research can be taken into consideration for management of Conventional Banks and Islamic Banks in making regulations for the measurement of their quality as well as material for evaluation to continue to improve their efficiency, maintain their performance, and improve service quality and quality of the information provided to the public to be able to compete in the world of national banking which is growing rapidly; 2) For policymakers, it is hoped that it can support the development of Islamic Banks through its authority and policies, where this support can be done by improving regulations, socializing the public, as well as controlling economic conditions in Indonesia so that the Islamic banking industry is no longer seen as an alternative 3) For the public, customers, and investors who will invest their funds, it is hoped that this research can bring consideration and accurate information in finding a bank that has optimal efficiency so that wise investment decisions can be taken 4) For further researchers, it is hoped to expand the research sample so that the research results are wider

and more accurate and to use other approaches or input and output variables.

References

Abidin, Z., Prabantarikso, R. M., Wardhani, R. A., & Endri, E. (2021). Analysis of Bank Efficiency Between Conventional Banks and Regional Development Banks in Indonesia. *Journal of Asian Finance, Economics and Business*, *8*(1), 741–750. https://doi.org/10.13106/jafeb.2021.vol8.no1.741

Alothman, S., & Al-mahish, M. (2020). How Banks ' Resources at the Retail Level Affect Their Output ? *Journal of Asian Finance, Economics and Business*, *7*(12), 853–861. https://doi.org/10.13106/jafeb.2020.vol7.no12.853

Alqahtani, F., Mayes, D. G., & Brown, K. (2017). Islamic bank efficiency compared to conventional banks during the global crisis in the GCC region. *Journal of International Financial Markets, Institutions and Money*, *51*, 58–74. https://doi.org/10.1016/j.intfin.2017.08.010

Azad, A. K., Kian-Teng, K., & Talib, M. A. (2017). Unveiling black-box of bank efficiency: An adaptive network data envelopment analysis approach. *International Journal of Islamic and Middle Eastern Finance and Management*, *10*(2), 149–169. https://doi.org/10.1108/IMEFM-12-2016-0184

Barros, C. P., Barroso, N., & Borges, M. R. (2005). Evaluating the Efficiency and Productivity of Insurance Companies with a Malmquist Index: A Case Study for Portugal. *The Geneva Papers on Risk and Insurance - Issues and Practice*, *30*(2), 244–267. https://doi.org/10.1057/palgrave.gpp.2510029

Bitar, M., Hassan, M. K., & Walker, T. (2017). Political systems and the financial soundness of Islamic banks. *Journal of Financial Stability*, *31*, 18–44. https://doi.org/10.1016/j.jfs.2017.06.002

Chaffai, M. (2019). Hyperbolic distance function, technical efficiency and stability to shocks: A comparison between Islamic banks and conventional banks in MENA region. *Global Finance Journal*, *46*, 100485. https://doi.org/10.1016/j.gfj.2019.100485

Fisher, M. R. (1976). The Economic Contribution of Michael James Farrell. *The Review of Economic Studies*, *43*(3), 371–382. https://doi.org/10.2307/2297214

Horrace, W. C., & Wright, I. A. (2020). Stationary Points for Parametric Stochastic Frontier Models. *Journal of Business & Economic Statistics*, *38*(3), 516–526. https://doi.org/10.1080/07350015.2018.1526088

Horvatova, E. (2018). Technical Efficiency of Banks in Central and Eastern Europe. *International Journal of Financial Studies*, *6*(3), 66. https://doi.org/10.3390/ijfs6030066

Ikram, A., Su, Q., & Asif Sadiq, M. (2016). Technical efficiency and its determinants: An empirical study of surgical instruments cluster of Pakistan. *Journal of Applied Business Research*, *32*(2), 647–660. https://doi.org/10.19030/jabr.v32i2.9601

Isnurhadi, I., Adam, M., Sulastri, S., Andriana, I., & Muizzuddin, M. (2021). Bank Capital, Efficiency and Risk: Evidence from Islamic Banks. *Journal of Asian Finance, Economics and Business*, *8*(1), 841–850. https://doi.org/10.13106/jafeb.2021.vol8.no1.841

Kamarudin, F., Sufian, F., Nassir, A. M., Anwar, N. A. M., & Hussain, H. I. (2019). Bank Efficiency in Malaysia a DEA Approach. *Journal of Central Banking Theory and Practice*, *8*(1), 133–162. https://doi.org/10.2478/jcbtp-2019-0007

Kao, C. (2017). Network Data Envelopment Analysis. *European Journal of Operational Research*, *240*(1), 19–41. https://doi.org/10.1007/978-3-319-31718-2

Khalib, M., Abdul-Rahman, A., & Janor, H. (2016). The Impact of Cost Efficiency on Liquidity Risk in Malaysian Banking Institutions. *Jurnal Pengurusan*, *47*, 67–79. https://doi.org/10.17576/pengurusan-2016-47-06

Kumar, A., Anand, N., & Batra, V. (2020). Trends in Indian Private Sector Bank Efficiency: Non-Stochastic Frontier DEA Window Analysis Approach. *The Journal of Asian Finance, Economics and Business*, *7*(10), 729–740. https://doi.org/10.13106/jafeb.2020.vol7.n10.729

Liao, C. S. (2020). Evaluation and Comparison of Bank Efficiency in Cross-Strait after ECFA. *Journal of Asian Finance, Economics and Business*, *7*(10), 783–793. https://doi.org/10.13106/jafeb.2020.vol7.no10.783

Noor, N. H. H. M., Bakri, M. H., Yusof, W. Y. R. W., Noor, N. R. A. M., & Abdullah, H. (2020). The Determinants of Bank Regulations and Supervision on the Efficiency of Islamic Banks in MENA Regions*. *Journal of Asian Finance, Economics and Business*, *7*(12), 245–254. https://doi.org/10.13106/JAFEB.2020.VOL7.NO12.245

Nosheen, & Rashid, A. (2019). Business orientation, efficiency, and credit quality across business cycle: Islamic versus conventional banking. Are there any lessons for Europe and Baltic States? *Baltic Journal of Economics*, *19*(1), 105–135. https://doi.org/10.1080/1406099X.2018.1560947

Octrina, F., & Mariam, A. G. S. (2021). Islamic Bank Efficiency in Indonesia: Stochastic Frontier Analysis. *Journal of Asian Finance, Economics and Business*, *08*(01), 751–758. https://doi.org/10.13106/jafeb.2021.vol8.no1.751

Satria, H. D., & Permata, W. (2016). Islamic bank vs conventional bank: intermediation, fee based service activity and efficiency. *International Journal of Islamic and Middle Eastern Finance and Management*, *9*(2), 296–311. https://doi.org/10.1108/IMEFM-01-2015-0003

Thi My Phan, H., Daly, K., & Akhter, S. (2016). Bank efficiency in emerging Asian countries. *Research in International Business and Finance*, *38*, 517–530. https://doi.org/10.1016/j.ribaf.2016.07.012

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