

The Productivity of Pre-Merger State-Owned Islamic Banks in Indonesia

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Recently, the Ministry of State-Owned Enterprises (BUMN) has decided to merge Bank BRI Syariah (BRIS), Bank Syariah Mandiri (BSM), and Bank BNI Syariah to improve the development of the Islamic economy in Indonesia. This merger plan is implemented to increase the share of the Islamic banking market so that it can compete with conventional banking. To be able to compete with conventional banking, Islamic banks must be able to have high productivity performance. Therefore, this study will analyze and compare the productivity of the performance of BRIS, BSM, and BNIS with the productivity of the performance of 10 conventional banks for the period 2016-2019. The method used is the Malmquist Productivity Index (MPI) with 5 analysis models to obtain various considerations in preparing the merger plan. The estimation results show that if the three banks are merged, they will have a performance productivity level of 1.196. On the other hand, if only two Islamic banks are merged, the merger that will result in a high productivity level of performance will only occur in the merger of BNIS and BRIS with a productivity level of 1.097

Keywords: BUMN Sharia Bank, MPI, Productivity, Merger

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INTRODUCTION

The development of the Islamic economy in Indonesia in general is marked by the existence and growth of the Islamic banking industry as the main indicator (Badruzaman, 2020). The Islamic banking industry in Indonesia has shown relatively good development, although it seems slow (Rusydziana et al., 2019). According to data from the Financial Services Authority (2018), the number of Islamic banks has reached 13 Islamic Commercial Banks, 21 Sharia Business Units, and 168 Islamic People's Financing Banks with a total office network of 2,460 offices throughout Indonesia. Meanwhile, according to the Global Islamic Finance Report (2017) states that the Indonesian Islamic finance industry index score is 24.21 on a scale of 100 and is ranked 7th in the world after Malaysia, Iran, Saudi Arabia, UAE, Kuwait, and Pakistan.

Apart from the growth of Islamic banking, Bank Indonesia has targeted the Islamic banking market share in 2016 to reach 5%. However, this target has not been achieved because the overall performance of Islamic banks has not been satisfactory. In addition, Islamic banks have also not been able to increase their productivity in managing finances due to their inability to respond to technological developments (Nurfikasari et al. 2019). This makes Islamic banks unable to compete with conventional banking, where the market share of Islamic banking until December 2018 reached 5.92% of total national banking assets which are still very small even though Islamic banking has experienced positive growth in terms of total assets, third party funds (DPK) and financing (OJK, 2018).

As an effort to increase the growth of Islamic banks in Indonesia, the government has issued various regulations such as the enactment of a spin-off policy and one that has just been drafted, namely the merger of three state-owned Islamic banks. The three Islamic banks are Bank BRI Syariah, Bank BNI Syariah, and Bank Mandiri Syariah. The plan for the merger was ratified with the signing of the Condition Merger Agreement (CMA) for the three Islamic banks which was carried out on October 12, 2020. The plan for this merger will be implemented no later than 2021.

To realize success in the establishment of the largest Islamic bank in Indonesia with a state-owned enterprise (BUMN) syariah bank merger scheme consisting of BRI Syariah, Bank BNI Syariah, and Bank Mandiri Syariah, the three Islamic banks must be able to have high-performance productivity. The productivity of an entity's performance is important because it is a factor that is taken into account in decision making (Basalamah, 2014). Productivity is also one of the main indicators in assessing competitive ability (Pambuko, 2019). Therefore, this study will analyze the comparison of the productivity level of the performance of the three Islamic banks that will be

merged with the performance of 10 conventional banks using 5 analysis models for the 2016-2019 period.

LITERATURE REVIEW

Productivity

In measuring the level of performance of an entity, efficiency is closely related to productivity, where efficiency and productivity illustrate the comparison between input and output (Rusydziana 2018). Productivity measurement can be used to measure company performance and is useful for policymakers (Alviya, 2011). According to the National Productivity Dewam states that productivity is a comparison between the results achieved (output) and the overall resources used (input), where the productivity criteria are related to the added value of output (Wahyudi, 2012).

According to Yuniarsih and Suwanto (2009), work productivity describes the concrete results (products) produced by an entity during a certain time unit in a work process. In this case, the higher the product produced in a shorter time, it can be said that the level of productivity has a high value. According to Sedarmayanti (2004), productivity consists of two aspects, among others:

1. Efficiency

Efficiency is a measure of effectiveness without wasting time, effort, and using minimum skills. The term efficiency is different from effectiveness, but both are used to describe the performance of an entity. Efficiency is focused on using minimum inputs to produce optimum output (Jaouadi and Zorgui 2014). Efficiency will be optimal if the company can maximize output by using fixed inputs or by minimizing the use of inputs to achieve the same level of output (Karim 2007).

In measuring the level of efficiency it is influenced by: (a) Timeless, which is a measurement of the extent to which an activity can be completed in the desired time, (b) Cost-effectiveness, measuring the extent to which the use of resources (financial, material, human, and technology) in optimizing the output.

2. Effectiveness

Effectiveness is a measure that shows the extent to which the company's targets can be achieved properly with the quality and time that has been planned. Effectiveness is influenced by quality and quantity. Quality describes the extent to which the results of implementing operational activities can approach perfection in achieving goals, while quantity describes how many results are obtained.

Productivity Measurement

Productivity is the relationship between output and input used in the production process. In measuring productivity, it can be done partially or totally. Partial productivity is the relationship between output and one input, while total productivity is the relationship between output and input together (Rusydziana 2018). According to Coelli et. al (2005), the relationship between output and input can be expressed in the ratio of the output index to the input index.

The measurement of the productivity of an entity can be done using the Total Factor Productivity (TFP) method. This method uses index numbers to measure changes in price and quantity, as well as comparisons and differences between entities. The advantage of this method is that it can overcome the weaknesses of calculating the efficiency of more than one input and one output. In this study, to calculate the level of productivity (TFP) using the Malmquist Index.

The Malmquist index is a bilateral index used to compare the production technology of two economic elements (Cooper et. al 1999). This index was first created by Sten Malmquist in 1953, then introduced by Caves et.al (1982). In carrying out its measurements, the Malmquist Index can produce a catch-up effect and a frontier shift effect. The catch-up effect can measure the rate of change in efficiency from period one to period two, while the frontier shift effect can measure the level of technological change from a combination of input and output from period one to period two.

In the measurement process, the Malmquist Index is based on the concept of a production function that is able to measure the maximum production function with a predetermined input limit. The results of this index consist of efficiency change, technological change, pure efficiency change, economic scale change, and TFP change. Measurement using the Malmquist Index has several conveniences such as a non-parametric method that does not require a specification of the form of production, does not require assumptions about the economic behavior of the production unit, the calculation of the index does not require data on prices that are often not available, and can be broken down into changes in efficiency and changes in technology. However, making measurements using this method requires a balanced panel data (balance panel) so that it cannot be done for time series data (Avenzora and Jossy 2008).

Several types of research analyses related to productivity in Islamic banking have been conducted by Rusydziana (2018), Raphael (2013), and Yildirim (2015). Rusydziana (2018) in the research analyzed the level of efficiency and productivity of Islamic banks in Indonesia for the 2012-2016 period. The results of this study indicate that 8 out of 11 Islamic banks have experienced an increase in productivity in the 2012-2016 period.

Meanwhile, Raphael (2013) tried to measure changes in the productivity of commercial banks in

Tazmania for 7 years. The results of the study stated that commercial banks in Tazmania experienced an increase in productivity of EFFCH by 67 percent, TECH by 83 percent, PECH by 67 percent, and SECH by 50 percent. From these results, Raphael (2013) recommends small banks to invest in IT to increase their level of efficiency and productivity.

In a study with other subjects, Yildirim (2015) has conducted a productivity analysis on 4 Islamic banks operating in Turkey and 13 Islamic banks operating in Malaysia. The results of this study found that changes in the technical efficiency (EFFCH) of the Islamic banks of the two countries never reached above the value of one in the study period. This means that the Islamic banks in the two countries have not reached their maximum productivity limit.

RESEARCH METHOD

This study analyzes the productivity of 3 Islamic banking companies, namely BRI Syariah, BNI Syariah, and Bank Syariah Mandiri, which is compared with the productivity of 10 conventional banks. The data used is secondary data taken from the annual financial statements of each company for the 2016-2019 period with 3 inputs and 2 outputs. The inputs used in this research are deposits, general and administrative costs, and personnel costs. While the output variables used are financing and operating income.

This research is output-oriented by using the assumption of VRS (Variable Return to Scale). In the productivity analysis, the value of one means that there is no change in productivity or productivity is relatively stagnant, $x > 1$ means that there is an increase in productivity, and $x < 1$ means that there is a decrease in productivity.

The calculation of changes in total productivity starting from the second year, MPI measurements will use DEAP 2.1 software, which will produce five measures of change for each period it measures, namely as follows:

1. EFFCH/Technical Efficiency Change is a change in technical efficiency which is a change in the measure of technical efficiency relative to the CRS assumptions.
2. TECHC/Technological Change is a technological change in the DMU (Decision Making Unit).
3. PECH/Pure Technical Efficiency Change is a change in pure technical efficiency which is a change in the measure of technical efficiency against the VRS assumptions.
4. SECH/Scale Efficiency Change is a change in the efficiency scale that measures the difference in the value of technical efficiency based on CRS and technical efficiency based on VRS

(effch/pech).

- TFPCH/Total Factor Productivity Change is the change in total factor productivity per DMU.

In this study, the measurement of bank performance productivity was carried out using 5 models to obtain various considerations for the merger plan of BUMN Sharia Banks. The five models, namely:

- Comparison of the productivity of the performance of each of the 3 Islamic banks with the productivity of the performance of 10 conventional banks
- Comparison of the productivity of the performance of state-owned Islamic banks (merger of BRI Syariah, BNI Syariah, and Bank Syariah Mandiri) with the productivity of 10 conventional banks
- Comparison of the productivity of the merger performance of 2 Islamic banks (BNIS and BRIS) compared to the productivity of BSM and 10 conventional banks
- Comparison of the productivity of the merger performance of 2 Islamic banks (BSM and BRIS) compared to the productivity of BNIS and 10 conventional banks
- Comparison of the productivity of the merger performance of 2 Islamic banks (BNIS and BSM) compared to the productivity of the performance of BRIS and 10 conventional banks

Rakyat Indonesia Syariah (BRIS), and Bank Negara Indonesia Syariah (BNIS), each with a productivity level will be compared with the productivity level of 10 conventional banks. According to Table 2, it can be seen that in the period 2016-2019, BSM had a productivity level of 0.983, BRIS was 1,861 and BNIS had a productivity level of 1,395. From these results, BRIS and BNIS are considered to have relatively high increases in productivity, but BSM is considered to have decreased productivity. When compared with the level of productivity of conventional banks, BRIS is in 3rd place, BNIS is in 4th place and BSM is in 11th place out of a total of 13 companies. On the other hand, the productivity of the three Islamic banks is much lower than the productivity level of Bank BCA which reached 2,821.

Table 2. Productivity Level of Model-1

DMU	EFFCH	TECH	PECH	ESCH	TFPCH	Rank.
K-Permata	0.899	1.063	1.000	0.899	0.956	12
K-Mega	1.373	1.445	1.346	1.020	1.983	2
K-Danamon	1.000	1.039	1.000	1.000	1.039	9
K-CIMB	1.071	1.275	1.027	1.042	1.365	5
K-Bumi	1.196	1.025	1.436	0.833	1.226	7
Artha	1.108	1.136	1.044	1.061	1.258	6
S-BSM	0.957	1.027	1.000	0.957	0.983	11
S-BRIS	1.820	1.022	1.631	1.116	1.861	3
K-BRI	1.829	0.661	1.725	1.060	1.208	8
S-BNIS	1.306	1.068	1.153	1.132	1.395	4
K-BNI	1.000	0.757	1.000	1.000	0.757	13
K-BCA	1.941	1.454	1.000	1.941	2.821	1
K-Mandiri	1.090	0.922	0.878	1.242	1.005	10

Source: Output DEAP (2020)

RESULT AND DISCUSSION

Definition of Operational Variables

Table 1. Definition of Operational Variables

Variables	Average (in million rupiahs)	Std. dev. (in million rupiahs)	Min. (in million rupiahs)	Max. (in million rupiahs)
Input Variables:				
Deposit	296 022	331 856 725	1 676 397	1 039 166 488
General and Administrative Expenses	6 945 868	15 607 048	16 048	96 922 572
Personnel Expenses	6 049 322	6 955 397	112 349	24 243 276
Output Variables:				
Financing	112 717	136 669 190	4 458 965	539 862 076 400
Income	10 246 487	13 410 039	70 584	43 431 933

Source: Annual financial reports, compiled (2020)

Model 1

In this model, the three Islamic banks that will be merged, namely Bank Syariah Mandiri (BSM), Bank

Model 2

From the analysis in the second model, the treatment is carried out by combining the three Islamic banks into a BUMN Islamic bank in calculating the level of productivity. The productivity level of the BUMN Islamic bank will then be compared with the efficiency scores of 10 other conventional banks. Based on Table 3, it can be seen that when the three Islamic banks were merged, the BUMN Islamic bank had a productivity level of 1.196 and was ranked 5th out of 11 companies. This value indicates that if BSM, BRIS, and BNIS are combined, it will have relatively increased productivity. However, the increase in productivity was much lower than the increase in productivity from its conventional system banks, namely Bank Mega with a productivity level of 1,889 and Bank BCA with a productivity level of 2,827.

Table 3. Productivity Level of Model-2

DMU	EFFCH	TECH	PECH	ESCH	TFPCH	Rank.
K-Permata	0.899	1.125	1.000	0.899	1.012	9
K-Mega	1.373	1.376	1.358	1.011	1.889	2
K-Danamon	1.006	1.110	1.000	1.006	1.117	7
K-CIMB	1.094	1.173	1.088	1.005	1.282	3
K-Bumi	1.196	1.064	1.453	0.823	1.272	4
Artha						
K-BTN	1.105	0.876	1.045	1.057	0.968	10
K-BRI	1.829	0.638	1.725	1.060	1.167	6
K-BNI	1.000	0.862	1.000	1.000	0.862	11
K-BCA	1.934	1.462	0.956	2.022	2.827	8
K-Mandiri	1.090	0.972	0.879	1.240	1.059	1
BANK BUMN	1.000	1.196	1.000	1.000	1.196	5

Source: DEAP Output (2020)

Model 3

Meanwhile, in the 3rd model, the merger of two Islamic banks, namely BNIS and BRIS, is conducted to compare their productivity levels with BSM and 10 other conventional banks. According to Table 4, it can be seen that if only BNIS and BRIS are merged, the productivity level will reach 0.895 and rank 11 out of 12 companies. These results indicate that if BNIS and BRIS are merged, it is likely that productivity will decrease. While the productivity level of BSM reached 1,002 and was ranked 8th, where the productivity level was higher than the productivity level of the combined BNIS and BRIS, however, BSM had relatively constant or stagnant productivity. Meanwhile, the 1st to 7th productivity levels are occupied by conventional banks.

Table 4. Productivity Level of Model-3

DMU	EFFCH	TECH	PECH	ESCH	TFPCH	Rank.
K-Permata	0.899	1.061	1.000	0.899	0.954	10
K-Mega	1.373	1.445	1.346	1.020	1.983	2
K-Danamon	1.000	1.087	1.000	1.000	1.087	7
K-CIMB	1.071	1.275	1.027	1.042	1.365	3
K-Bumi	1.192	1.067	1.445	0.825	1.271	4
Artha						
K-BTN	1.116	1.110	1.044	1.069	1.239	6
S-BSM	0.923	1.085	1.000	0.923	1.002	8
K-BRI	1.830	0.681	1.735	1.055	1.247	5
S- BNIS	1.000	0.895	1.000	1.000	0.895	11
BRIS						
K-BNI	1.000	0.758	1.000	1.000	0.758	12
K-BCA	1.941	1.454	1.000	1.941	2.821	1
K-Mandiri	1.090	0.881	0.878	1.241	0.960	9

Source: DEAP Output (2020)

Model 4

In the fourth model, the merger of two Islamic banks, namely BSM and BRIS, is conducted to compare the productivity levels of BNIS and 10 other conventional banks. Based on Table 5, it can be seen that if only BSM and BRIS are merged, the performance productivity level will reach 0.813, much lower than the

BNIS productivity level which reaches 1.402. On the other hand, the productivity level of BSM and BRIS performance is the second-lowest productivity level, after BNI when compared to the level of productivity of conventional banks. This means that if only the two Islamic banks are combined, it is likely that the two Islamic banks will have low productivity and a relative decrease in performance.

Table 5. Productivity Level of Model-4

DMU	EFFCH	TECH	PECH	ESCH	TFPCH	Rank.
K-Permata	0.899	1.063	1.000	0.899	0.956	9
K-Mega	1.373	1.439	1.348	1.018	1.976	2
K-Danamon	1.000	1.094	1.000	1.000	1.094	8
K-CIMB	1.071	1.275	1.039	1.031	1.365	5
K-Bumi	1.196	1.156	1.436	0.833	1.382	4
Artha						
K-BTN	1.108	1.102	1.044	1.061	1.220	7
S-BSM	0.882	0.921	0.952	0.927	0.813	11
BRIS						
K-BRI	1.829	0.688	1.725	1.060	1.258	6
S- BNIS	1.306	1.073	1.153	1.132	1.402	3
K-BNI	1.000	0.755	1.000	1.000	0.755	12
K-BCA	1.970	1.443	1.000	1.970	2.843	1
K-Mandiri	1.090	0.862	0.878	1.242	0.940	10

Source: DEAP Output (2020)

Model 5

The analysis in the fifth model is carried out by combining two Islamic banks, namely BNIS and BSM, to be compared with the productivity level of the performance of BRIS and 10 other conventional banks. Based on Table 6, it can be seen that if only BNIS and BSM are merged, the productivity level of their performance will reach 1,097 and rank 9 out of 12 companies. This means that if only the two Islamic banks are combined, the two Islamic banks may have relatively increased performance productivity although not significantly. However, this productivity level is relatively lower when compared to the productivity level of BRIS which reached 1,861 and was ranked 2nd out of 12 companies under BCA Bank when compared to 10 conventional banks.

Table 6. Productivity Level of Model-5

DMU	EFFCH	TECH	PECH	ESCH	TFPCH	Rank.
K-Permata	0.899	1.082	1.000	0.899	0.973	11
K-Mega	1.373	1.270	1.346	1.020	1.743	3
K-Danamon	1.019	1.115	1.008	1.010	1.135	8
K-CIMB	1.081	1.209	1.039	1.041	1.307	4
K-Bumi	1.186	1.083	1.442	0.822	1.284	5
Artha						
K-BTN	1.108	1.068	1.044	1.061	1.183	7
S-BSM	1.000	1.097	1.000	1.000	1.097	9
BNIS						
S- BRIS	1.793	1.038	1.631	1.099	1.861	2
K- BRI	1.829	0.662	1.725	1.060	1.210	6
K-BNI	1.000	0.755	1.000	1.000	0.755	12
K-BCA	2.022	1.267	1.000	2.022	2.561	1

K-Mandiri	1.089	0.925	0.878	1.240	1.007	10
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Source: DEAP Output (2020)

FINDINGS

The merger of state-owned sharia banks aims to increase the level of efficiency and productivity of Islamic banking in Indonesia. This is in line with the results of research from [Ismail and Rahim \(2009\)](#) which states that banks experience an increase in efficiency and higher productivity after the merger, where the syariah banking merger business will encourage technical changes or innovations to strengthen the Islamic economic order.

On the other hand, the merger policy does not always have an impact on improving performance efficiency and productivity. In an empirical study conducted by [Rashid and Naeem \(2016\)](#), it is stated that acquisition and bank merger policies in Pakistan do not have a significant effect on profitability, leverage, and company position, even the merger agreement has a negative impact on company performance.

The empirical results in this study state that there is a significant relationship between the valuation of Islamic banks and the existence of a merger policy which is a business model to strengthen the capital of Islamic banks. This finding is reinforced by the results of the analysis of Miftah and [Wibowo \(2017\)](#) which states that the merger of BNIS and BTNS will be optimal because the merger considers the valuation between the two banks to strengthen their capital. However, it is different from the estimation results in this study that the optimal merger is the merger between BRIS and BNIS.

CONCLUSION

Based on the research results above, it can be seen that BRIS has the highest level of productivity and performance than BNIS and BSM. Meanwhile, if the three Islamic banks are combined into a state-owned sharia bank, it will have a productivity level of 1.196. The results of the productivity level indicate that if the three Islamic banks are merged, there is a possibility that productivity will increase, although not significantly. Therefore, state-owned sharia banks must increase their productivity to be able to compete in the national banking industry. On the other hand, if only two Islamic banks are merged, namely BNIS and BRIS, it will result in a performance productivity level of 0.895. Meanwhile, if the merger of BSM and BRIS will result in a performance productivity level of 0.813, and if BNIS and BSM are combined it will produce a performance

productivity level of 1.097. Of the three merger results, only for the two banks, the most likely merger to achieve a perfect efficiency score was the merger between BNIS and BRIS banks.

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