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KRUSKAL WALLIS ANALYSIS OF INDONESIA SHARIA BANKING POST-MERGER

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ABSTRACT

In 2020, the Ministry of BUMN decided to merge three Sharia banks in Indonesia, namely Bank Syariah Mandiri (BSM), BNI Syariah and BRI Syariah with the aim of contributing to the economy, increasing market share, as well as the aim of efficiency and increasing income from financing products. Since this phenomenon occurred, a lot of research has been carried out, one of which is examining the performance of Bank Syariah Indonesia after the merger process was carried out.
This research aims to examine differences in the performance of Indonesian Sharia Banks in terms of efficiency and income aspects using the Kruskal Wallis method. It is hoped that this research can become a reference, knowledge and provide an overview for academics, the general public, customers and potential investors to assess whether the BUMN Ministry's decision to merge these three banks is considered effective and has had a positive impact on stakeholders and the banks themselves. The results of this study show that efficiency measured by EFF shows a difference, while P/L does not. Revenue as measured by ROA showed no difference, while NPM experienced changes after the merger.

Keywords: merger, islamic banking, efficiency, income

Introduction

The sharia system is an alternative for Indonesian society with a majority Muslim population. It was recorded that in December 2020 Indonesia had 20 sharia business units, 14 sharia banks and 163 sharia financing banks. In this way, the availability of financial and business institutions that comply with sharia can answer the needs of the Indonesian population, the majority of whom are Muslim. However, data recorded in December 2020 shows that the market share of sharia banking is quite lagging behind compared to conventional banking. Islamic banks show a figure of 6.51%, while conventional banks show a market share of 93.49% (Ramadhan et al., 2022) Therefore, efforts are needed to improve and manage sharia banking to increase its market share.

The Ministry of State-Owned Enterprises (BUMN) decided to merge the three Sharia Banks in Indonesia, namely BNI Syariah, Bank Mandiri Syariah (BSM) and BRI Syariah on February 1 2021. The merger of these three banks is expected to make a significant contribution to the economy (Yuniarti & Setiawan, 2022), increasing market share and business opportunities (Yunistiyani & Harto, 2022), as well as increasing the competitiveness of sharia banking to attract foreign investors (Burhanuddin & Amran, 2021).

After the BRIS, BSM and BNIS merger process was carried out, several impacts were seen on increasing the number of assets, the amount of investment by third parties, financing and even profits (Cahya & Anggraini, 2022). Apart from these positive impacts, there are negative assumptions when a merger is carried out, including the potential for monopoly. This concern arises because banks with strong market shares, larger assets and more complete customer service facilities have the potential to attract customers in other sharia banking to move to BSI (Rahmani, 2020). However, according to Cahya & Anggraini (2022), the current conditions, BSI, which is the result of a merger, cannot necessarily monopolize market share because it faces several big challenges, namely superior customer service facilities & products, human resource input, and public literacy regarding banking. sharia that still needs to be improved.

In the merger process to increase efficiency and income, there are inconsistencies in research results. (Abbas et al., 2014) revealed that there is positive banking performance measured by productivity, profitability and shareholder value. This is in line with research by Daniya et al (2016) which found that after mergers and acquisitions there was an increase in financial performance which led to increased efficiency in banking in Nigeria. Apart from that, Okpanachi (2014) revealed that post-merger financial conditions were more efficient compared to the period before the merger.

Likewise, using data from Malaysian banks, Sufian & Habibullah (2014) found that acquiring banks were relatively more productive. With regard to the timing of joint performance announcements adjusted for the size of the bidder and the objectives of the merger, Cybo-Ottone & Murgia (2000) found that these factors are important in merger deals and are economically relevant. They argue that only the combined value of domestic deals creates shareholder value, while cross-border deals do not capture positive expectations from the market.

In fact, several studies reveal that merger agreements have a less important impact on bank performance.Kandil & Chowdhury (2014) and Gattoufi et al (2014) shows that merger activity does not have a significant impact on the operational performance of the banks involved. In a similar vein, Goyal & Joshi (2011) argue that acquisitions often have a negative impact on employee behavior resulting in counterproductive practices, absenteeism, low morale, and job dissatisfaction. It seems that an important factor influencing the success of acquisition outcomes is the ability of top management to gain employee trust (Amihud et al., 2002). Explaining this, Sufian et al. (2012) have explored and investigated interesting results in their analysis. This shows that bank revenue efficiency has increased significantly during the post-merger compared to the pre-merger period.

From this background, the aim of this research is to determine the differences in efficiency and income between before and after the merger. The benefits of this research are for investors and stakeholders in understanding the results of the merger and its impact on the bank's performance and business strategy. For bank management: research can help bank management understand the consequences of mergers and make better choices about strategy, operations and risk management. The results of this research can also help policy makers create appropriate regulations to manage risk and increase stability in the banking industry, especially in terms of merger and consolidation processes.

Resource Efficiency and Dependency Theory

Especially in the banking sector, many studies use efficiency theory and resource dependency theory. According to efficiency theory, this indicates that a merger is planned and occurs when it is expected to produce enough realizable synergies to make the deal profitable for the parties, bidder and target. Likewise, several studies namely, Daniya et al. (2016), Wadhwa & Syamala (2015) and Weitzel & McCarthy (2011) state that the main motive for mergers is to obtain synergies (operational and financial synergies). This synergy can be in the form of reducing costs or increasing revenue. The profit expectation motive is the aim of carrying out the merger. If the profit value of the target is not positive, it is recommended that the owner of the target company does not sell or propose an acquisition. Likewise, if profits are negative for the bidder, the bidder will not complete the deal (Ullah & Abu Seman, 2018).

Resource dependency theory is defined as an explanation of how external resources such as, skilled workers, money, technology and raw materials, and other resources of an organization influence the behavior of that organization. Nair et al. (2008) claim that a company's resources consist of tangible assets, people and other intangible assets that are used to produce production.

Likewise, Morris (2004)stated that resource dependency theory can explain the impact of social action and organizational change on an organization. RDT offers an externally focused perspective on why an organization may acquire or merge with another organization.

Conceptual Framework and Hypotheses

The merger of the three sharia banks, namely BNIS, BRIS and BSM, is a breakthrough for the government to boost the national economy and is expected to provide options for the Indonesian people, whose majority population is Muslim, to be able to use financial services that comply with sharia. The objectives of this banking merger include efficiency in terms of operational costs, financing, spending as well as increasing market share, optimizing sharia economic and financial potential, and strengthening the halal industrial ecosystem. (Siregar, 2020; Ramadhan et al., 2022). The merger concept applied is in accordance with the efficiency theory that has been put forward. When efficiency has been achieved, it is hoped that revenue and net profit will be greater.

Previous research found that there were inconsistencies in research results, including Sucipto (2022) who stated that ROA, ROE and Gross NPF had no differences, while net NPF, NOM and BOPO were proven to have differences & showed positive results. This is different from research by (Wardana & Nurita (2022) which shows that the financial performance of Bank Syariah Indonesia as measured by liquidity, profitability, solvency and activity ratios has increased after the merger.

Based on the theory and previous research put forward, the research conceptual framework in this research can be shown in Figure 1.

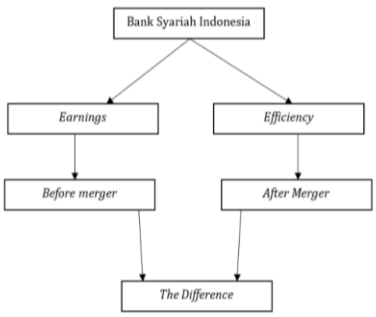

Figure 1
Research Concepntual Framework
Source: Author's Preparation

To prove and understand the performance of Bank Syariah Indonesia after the merger, researchers used two indicators, namely earnings (earnings) measured using the EFF and P/L indicators. Meanwhile, to measure efficiency using ROA and NPM indicators.

To measure differences in efficiency, the hypothesis formulation is as follows:

H 1 : there is a difference in EFF after the merger

H 2 : there is a difference in P/L after the merger

As for measuring differences in the earnings or income aspect, two hypotheses are used as follows:

H 3 : there is a difference in ROA after the merger

H 4 : there is a difference in NPM after the merger

Research Method

Operational Definition of Variables

Efficiency Aspects

a. EFF

Efficiency measurement uses the EFF index which is obtained from operational costs in year t (OE_t) divided by gross operating profit/loss (GOP_t) (Ramadhan et al., 2022). The smaller the percentage obtained by the bank, the more efficient it can be said because the profit is considered to be able to cover its operational costs. EEF is calculated as shown in equation 1.

$$EEF = \frac{OE_t}{GOP_t} \qquad (1)$$

b. P/L (Profit/loss per employee)

P/L is obtained from profit/loss before tax (PBT) divided by the number of workers in year-t (Krismaya, 2021). The greater the index, the higher the productivity and vice versa. P/L is calculated as shown in equation 2.

$$PL = \frac{PBT}{(L_t - L_{t-1})} \quad (2)$$

Earnings Aspect

The Earnings aspect aims to measure bank profitability and efficiency. Bank profitability is measured using:

a. Return On Assets (ROA), namely the ratio of net profit to assets (Burhanuddin & Amran, 2021). Return on Assets (ROA) is calculated as shown in equation 3.

$$ROA = \frac{net\ income}{assets} \quad (3)$$

b. Net Profit Margin
This ratio is used to determine the percentage of net profit obtained after deducting tax (Krismaya, 2021). As shown in equation 4.

$$NPM = \frac{EAT}{net\ sales} \quad (4)$$

Research Design

If the sample is normally distributed, then the different test that will be used in this research is the paired sample t-test as a parametric test. However, if the data is not normally distributed, the Kruskal Wallis test will be used , which is a non-parametric statistical test, to determine whether there is a significant difference between the group of independent variables and the dependent variable.

The Kruskal Wallis test is used to compare more than two population groups with ranking data. Kruskal Wallis H test or H test is another name for this test. Uses of the Kruskal Wallis Test:

a. Used as a substitute for the one-way ANOVA test if the normality assumption is not met. 2. Used to compare two or more quantitative variables in ranking format, where the samples are independent and the normality assumption is not met.
b. This is a development of the Mann-Whitney test; more than two variables are used in this test.

The decision-making requirements in the Kruskal Wallis test are as follows:

1) If the value of Asymp. Sig. i > 0.05 then H0 is accepted, Ha is rejected
2) If the value of Asymp. Sig. i < 0.05 then H0 is rejected, Ha is accepted.

Results and Discussion

Descriptive Statistics

Descriptive analysis results as shown in Table 1.

Table 1. Descriptive Analysis

Bank name	Amount of data	Year
BNIS	3	2018-2020
BRIS	3	2018-2020
BSM	3	2018-2020
BSI	2	2021-2022

Source: Research data

The tests in this study used data from the annual reports of BNIS, BRIS, BSM, and BSI. The period chosen is three years before the merger and 2 years after the merger. Sample mean value for those banks as shown in Table 2.

Table 2. Sample Mean Value

	Bank Name	N	Mean Rank
NPM	BNIS	3	6.00
	BRIS	3	2.00
	BSM	3	7.00
	BSI	2	10.50
	Total	11	
EFF	BNIS	3	4.00
	BRIS	3	9.67
	BSM	3	7.33

	BSI	2	1.50
	Total	11	
PL	BNIS	3	2.00
	BRIS	3	7.33
	BSM	3	7.67
	BSI	2	7.50
	Total	11	
ROA	BNIS	3	7.00
	BRIS	3	2.00
	BSM	3	6.50
	BSI	2	9.75
	Total	11	

Source: Research data

The average ranking of each bank is displayed in the mean rank value. In this case, the average NPM rank at BSI is higher than the mean rank of other banks before the merger, as is the case with the mean rank of EFF which is much different from other Sharia banks before the merger.

In contrast to the P/L and ROA values at BSI, the mean rank values are not that different at BNIS, BRIS, and BSM. Next, a Kruskall-Wallis test was carried out to determine statistically whether the difference between the average ratings was significant or not.

Kruskal Wallis Test Results and Discussion

The data after being tested was not normally distributed and had more than two unpaired samples, therefore this study used the Kruskal Wallis test as an alternative to the one-way ANOVA test. As shown in Table 3.

Table 3. Efficiency Based n EFF

	EFF
Kruskal-Wallis H	8,924
df	3
Asymp. Sig.	,030

Source: Research data

Asymp value. Sig. 0.03 < 0.05, which means that H_1 is accepted, that there is a difference in the level of efficiency as measured by the EFF in Islamic banking before and after the merger. The use of efficiency ratios using EFF is still relatively new and rarely used as a performance measure(Putri & Lukviarman, 2008). Based on the test results, it can be said that BNIS, BRIS, and BSM have experienced increased efficiency if assessed from profits that can cover their operational costs.

The results of this research support the theory. Synergy Theory states that "synergy" is produced by mergers and acquisitions, which is the reason for this research. Synergy is widely and frequently considered the main reason for mergers and acquisitions, according to Wei et al. (2021), merging two or more companies will produce greater profits than merging one company (Dewi & Widjaja, 2021). The value generated by the synergy of the new company is much greater than the value generated by each company as a whole if the companies operated separately. Synergies broadly include operational, financial, and efficiency synergies. Financial services companies come together to reduce costs, reduce risk, and increase profits.

Synergy occurs when the performance and value of the combined company exceeds the performance and value of the individual companies. According to this theory, a merger will only occur when both companies find a mutually beneficial agreement. The results of this research are viewed from the efficiency aspect using the EFF indicator in line with the theory that mergers can improve business performance (Wei et al., 2021). The P/L indicator shows efficiency as shown in Table 4.

Table 4. Efficiency Based n P/L

	PL
Kruskal-Wallis H	6,015
df	3
Asymp. Sig.	.111

Source: Research data

The P/L indicator shows efficiency as measured by banking productivity. This means that this research measures how efficient banks are in utilizing resources in the form of labor to generate profits after the merger is carried out. In the *Resource Based View* —RBV theory, it is argued that mergers occur when companies want to obtain resources that are not available within their own company. Through mergers, companies can acquire new technology, expertise, or skills, and improve their ability to compete in the marketplace.

The Kruskal Wallis test results in this study show the Asymp value. Sig. 0.111 > 0.05, which means that H $_2$ is rejected and that there is no difference in the level of efficiency as measured by P/L in Islamic banking before and after the merger.

OJK data (2023) shows that human resource problems in Islamic banks need to be addressed. One of the problems with human resources in Islamic banks is the imbalance in the composition of their human resources. 90% of Sharia bank employees do not have economics or Sharia banking education. Islamic banks will face challenges in development as a result. The increase in the sharia financial and banking industry was not accompanied by the availability of sufficient labor in this field so even though the merger was carried out, there was no change in the level of efficiency as measured by P/L.

The result of ROA as shown in Table 5.

Table 5. Revenue based on ROA

	Return On Assets
Kruskal-Wallis H	7,295
df	3
Asymp. Sig.	,063

Source: Research data

Asymp value. Sig. 0.063 > 0.05, which means that H $_3$ is rejected and that there is no difference in the level of income as measured by ROA in Islamic banking before and after the merger.

The results of this research contradict the research of Ramadhan et al. (2022), (Yunistiyani & Harto (2022)which found that there was a difference in net asset value (ROA) before and after the merger. Asset value (ROA) shows that a higher asset value will increase the bank's corporate value. It can also show how effectively a bank manages and uses its assets to generate profits.

There is no significant difference between Sharia banking before and after the merger of three Sharia commercial banks, according to the results of the Kruskal Wallis test on ROA. The results of this research contradict the synergy theory which states that merging companies will improve their performance. Because the difference in the increase in the asset value ratio (ROA) before and after the merger is very small, Sucipto's research (2022) supports this idea. In other words, for businesses to generate profits from the full potential of their assets, they need a higher ratio value. Banks cannot increase profits by leveraging all their assets with merger efforts.

Net Profit Margin (NPM) is calculated as shown in Table 6.

Table 6. Income based on NPM

	NPM
Kruskal-Wallis H	8,318
df	3

Asymp. Sig.	,040

Source: Research data

Net Profit Margin (NPM) is a ratio to measure a bank's ability to generate net profits from its main operating activities. This is also known as the level of profit-making ability of a company. NPM shows the extent of a company's ability to generate net profits at a certain level of revenue or sales. This ratio can also be interpreted as a company's ability to reduce costs over a certain period.

A bank's ability to generate net income from its main operational activities is measured by the NPM ratio. NPM refers to operational income from providing credit (problem and bad loans), foreign exchange rates (if credit is provided in foreign currency), etc. The higher the NPM level of the bank in question, the better the results. On the other hand, the same applies to the bank in question.

In table 5.5 you can see the Asymp value. Sig. $0.03 < 0.05$, which means that H_4 is accepted and that there is a difference in the level of income as measured by NPM in Islamic banking before and after the merger. The results of this research are supported by previous research by Sucipto (2022), Krismaya, (2021) which shows differences in performance after the merger is carried out.

Moin (2003) states that in principle, businesses carry out mergers and acquisitions for economic reasons. From a financial management perspective, economic motives are how much a company can create value for shareholders and the company itself. Therefore, all company actions and decisions should be focused on achieving this goal. Economic motivations include time, cost, and risk of failure in entering new markets, reducing competition, accelerating growth, and maintaining stable cash flow and profits.

Conclusion

The research aims to determine differences in the level of efficiency and income of Islamic banking in Indonesia after the merger. Based on the analysis, this research has several conclusions, efficiency measured based on the EFF indicator shows differences before and after the merger. This means that after the merger, Islamic banking is considered capable of covering its operational expenses.

Efficiency as measured by P/L, namely the use of labor as a resource in generating profits, turns out to be no different before and after the merger. This is because the problem is that the composition of human resources in Sharia banking does not have an educational background in the field of Sharia economics or Sharia banking, so even if a merger is carried out there is no difference.

Income measured from the ROA ratio shows no differences before and after the merger. Then, income measured from NPM shows differences after the merger. The results of this research confirm the merger theory which has economic motives, one of which is accelerating growth, and cost efficiency so that profits are greater.

Limitations and Recommendations

Bank Syariah Indonesia (BSI), which is the result of the merger of BNIS, BRIS,

and BSM, has just merged in 2021, so to see how efficient the merger is, it should be measured over a longer period. 2 years after the merger, of course, time still needs to be adjusted in terms of methods, processes, and systems.
In addition, the variables in this research focus on aspects of income and efficiency, making it possible for further research to measure Sharia banking performance after the merger through measures of company-added value or other financial ratio measures.

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