The Impact of Mergers on the Performance of Conventional Banks in Indonesia

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ABSTRACT

Merger is one of the efforts to increase the company's growth non-organically which requires large costs and better management capabilities. This study aimed to determine the impact of mergers on bank performance, which indirectly affects the bank health level. The subjects of this research were 12 conventional banks in Indonesia which have merged horizontally from 2007 to 2019. The variables in this study are those related to bank performance improvement, such as risk-based bank-rating ratio. The results show that there is no difference between bank performance, credit level, operational level, and capital level between before and after the merger. By conducting the merger, it turns out that the average bank performance does not have a positive impact, and this is related to the increase in credit level, operational level, and liquidity level, which are not aligned with an increase in market risk and bank capital level.

Keywords: Merger, bank performance, bank health level

1. INTRODUCTION

In line with economic, social, and political changes in Indonesia, the banking world has also undergone significant changes. Especially during the COVID-19 pandemic, many companies experienced financial difficulties which impacted the bank business. Banking included in the financial sector becomes the center of the economy. The core business of a bank is collecting the fund from customers, managing the fund, and providing the loan to businessman.

Saeed*, et al.* [1] found that the ratios contained in the measurement of bank soundness have a significant effect on bank performance. The soundness of a bank is an important aspect that must be known by stakeholders and gives a signal to shareholders in making investment decisions.

In order to improve the performance among banks, one of the efforts made is to conduct the consolidation. Especially with the proliferation of digital-based fintech, the business competition for banks is getting tougher. This is what causes banks to merge as a step to increase their competitiveness.

With the merger, it turns out that the average bank performance does not have a positive impact, and this is also related to the average market risk and bank capital, which after the merger, decreased. Meanwhile, the bank credit, liquidity, and operational level after the merger, have increased.

According to Gumilarsjah [2], merger is one way to increase the company growth inorganically through merging two or more companies, with the aim of getting more products and customers. The advantages of merging are increasing revenue, expanding assets, adding expertise to business

personnel, and being present in new markets quickly. Owners don't need to grow a company that takes a long time bearing the risks of failure, because it's simpler to buy a company that is already big and running well. However, companies should also consider that increasing their growth inorganically through mergers requires greater costs and better management capabilities.

The results of research by Al-Hroot, et al. [3], showed that the merger between banks resulted in an increase in the performance of bidder bank and target bank. Through a merger, it can increase the value of company which causes an increase in welfare for the company shareholders.

Chen & Vashishtha [4] found that bank will inform the results of merger to its shareholders as stated in the financial statements. Chen et al. [5] suggested that CEO incentives are correlated with merger growth. Patel [6] found the impact of banks after merger, namely an increase in bank assets, capital, and investment.

Based on the statement above, the limitations of problem scope in this study are as follows:
1. Are there any differences in bank performance before and after the merger?
2. Does the banks' merger have a positive impact on their performance?

1.1. Hypothesis

The results of Ekadjaja's research [7] show that an increase in bank performance in Indonesia occurs if there is good bank governance, higher market-risk and bank liquidity-risk, as well as the ability of banks to reduce credit risk and

operational risk. A bank is considered to be healthy, if it has good performance. One of the bank's efforts in keeping its health level by reducing the costs and having the ability to compete in the new normal era, is through mergers.

According to Pandjaitan et al. [8], there is a difference between the performance of banks in Indonesia before and after the merger. Rashid & Naeem [9] found that the merger has an effect on the target company's quick ratio and has no impact on the company's profit, liquidity, and leverage. Meanwhile, Sentosa [10] found that there was no difference between the performance of banks before and after the merger among banks in Indonesia as research subjects, and the merger had an impact on reducing credit risk and bank capital risk.

Based on the statement above, the hypotheses in this study are as follows:

H_1: The difference of performance level (ROA) between pre and post-merger are significant.

H_2: The difference of credit level (NPL) between pre and post-merger are significant.

H_3: The difference of liquidity level (LDR) between pre and post-merger are significant.

H_4: The difference of market level (NIM) between pre and post-merger are significant.

H_5: The difference of operational level (BOPO) between pre and post-merger are significant.

H_6: The difference of bank capital level (CAR) between pre and post-merger are significant.

1.2. Our Contribution

In realizing a healthy bank, banks are required to have the capability to manage the risks that can affect bank performance, such as: liquidity, market, credit, operational, and bank capital level. The aim of this research was to comprehend the impact of merger on banks' main performance.

1.3. Paper Structure

This paper consists of two sections, which can be seen in Section 2. The first discussion is about the analysis of test-of-difference to determine the differences in bank performance before and after the merger. The second discussion is about the analysis of the impact of merger activities on bank performance improvement.

1.4. Methodology

This study used secondary data taken from the Financial Services Authority (FSA) website regarding the financial statements of banking industry with conventional principles and mergers during 2007 - 2019.

The data obtained is as follow: Out of 17 horizontally-merged banks, only 12 banks meet the criteria in this study. Data was collected based on the bank performance five years before and five years after the merger.

The dependent variable in this study is bank performance as proxied by the profitability ratio (ROA).

$$ROA = \sum Return : \sum Asset$$

The independent variables in this study consist of:

(1) Credit level as proxied by the ratio of non-performing loans (NPL).

$$NPL = \sum Non\ Performing\ Loan : \sum Loan$$

(2) Liquidity level, which is proxied by the ratio of liquidity-to-total deposit (LDR).

$$LDR = \sum Loan : \sum Deposit$$

(3) Market level as proxied by the ratio of the difference between interest income and interest expense to the average earning-assets (NIM).

$$NIM = (II - IE) : APA$$

Whereas: II = Interest Income
IE = Interest Expense
APA = Average Productive Assets

(4) Operational level, which is proxied by the ratio of total overhead cost to operating income (BOPO).

$$BOPO = \sum OPEX : EBIT$$

(5) Bank capital level as proxied by the bank's capital adequancy ratio (CAR).

$$CAR = \sum Equity : \sum Risk\ Asset$$

The data was processed through a different test analysis, whereas the data is categorized into two treatments, for normally-distributed data using the t-test, and for unnormally-distributed data using the Wilcoxon rank-test.

2. RESULTS

2.1. The Results of Analysis of Bank Performance Tests Before and After the Merger

In non-parametric statistics, the methods used to test the two-paired samples in this study were the Wilcoxon rank-test and the t-test. In the Wilcoxon signed-rank-test, the data was sorted first, while in the paired-sample t-test, the opposite was true, Yulius [11].

Table 1 Kolmogorov-Smirnov Test

Var	Stat	Df	Sig	Distribution	Test
ROA	0.088	45	0.2	Normal	t
NPL	0.149	45	0.014	Unnormal	Wilcoxon
NIM	0.141	45	0.025	Unnormal	Wilcoxon
LDR	0.265	45	0	Unnormal	Wilcoxon
BOPO	0.136	45	0.037	Unnormal	Wilcoxon
CAR	0.134	45	0.041	Unnormal	Wilcoxon

In Table 1, we can see that only the ROA variable data was normally-distributed (asymptotic sig ≥ 0.05), thus the t-test was performed. Meanwhile, the variable data of NPL, NIM, LDR, BOPO, and CAR was not normally-distributed (asymptotic sig ≤ 0.05), so a Wilcoxon rank-test was performed. Basically, the Wilcoxon rank test is the same as the paired-sample t-test, however, it is intended for the distribution of data with unknown statistical parameters, Yulius [11].

Table 2 Different Test Results

Variable	Sig (2-tailed)	Result
ROA	0.918	Same
NPL	0.804	Same
NIM	0.029	Different
LDR	0	Different
BOPO	0.897	Same
CAR	0.068	Same

Statistically, the results of the different tests for each variable are shown in Table 2. The results show that the bank performance as proxied by the ROA variable has a probability level of 0.918. Credit risk as proxied by the NPL variable has a probability level of 0.804, the operational risk as proxied by the BOPO variable has a probability level of 0.897, and the bank adequacy capital as proxied by the CAR variable has a probability level of 0.068.

Meanwhile, the market risk proxied by the NIM variable has a probability level of 0.029 and the liquidity risk proxied by the LDR variable has a probability level of 0.000. After the results appeared from different tests, the next step was to draw conclusions. The basis for drawing conclusions from these statistical results is if the probability is less than α, then the research hypothesis was not rejected, Beverly [12]. This means there is a significant difference between bank performance, credit, market, liquidity, operational, and bank capital level before and after the merger.

Thus, based on these statistical results, it shows that there is no significant difference between the bank profitability on total bank assets, credit, operational, and bank capital level between the five years before and the five years after merger. This is due to the probability level of the variables of ROA, NPL, BOPO, and CAR, which were greater than 0.05.

On the other hand, regarding the market and bank liquidity level, the results show that there is a significant difference between the five years before and the five years after the merger. This is indicated by the probability level of each variable (NIM and LDR), which is smaller than the tolerance limit of 0.05.

2.2. The Impact of Merger on Bank Performance

Table 3 Descriptive Statistics of Research Variables

Value	ROA		NPL		NIM		LDR		BOPO		CAR	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Min	0.07	-2.80	0.10	0.03	1.68	2.42	1.09	46.76	31.07	42.30	10.29	11.54
Max	3.71	2.77	4.29	4.24	13.87	6.92	119.59	295.76	99.42	128.27	50.48	31.30
Mean	1.69	1.17	1.10	1.36	5.82	4.68	76.16	105.77	77.13	83.50	21.23	20.58
STD Dev	0.93	0.99	0.94	1.05	2.58	0.87	25.72	49.11	17.31	16.71	9.12	5.00

Based on the results of descriptive statistics (Table 3), it can be seen that the average bank performance before the merger is better than that after the merger. This proves that the merger does not have a positive impact on the performance of the bank, which is possible because there were not many changes in the policy or strategy of the conventional bank after the merger. This statement is indicated by the minimum value after the merger of -2.80, which means that there was data about the banks that have suffered losses in the 5-year period after the merger.

The decline in ROA is also influenced by a decrease in market risk as proxied by the NIM variable, which can be predicted due to the increase of interest costs, which was greater than it was before the merger. However, when being viewed after the merger, the bank market-risk-level still meets the bank soundness standard, of which averagely after the merger the NIM value was still above 2.3%.

Similarly, bank capital shows that their capital adequacy ratio (CAR) after the merger was smaller than it was before the merger. This shows that after the merger, there was an increase in the bank earning assets. One among the bank productive assets that had increased, is the increase in extended loans. It is proven that after the merger, the bank liquidity risk also increased.

Liquidity risk in this study is proxied through the Loan-to-Deposit Ratio (LDR). Theoretically, LDR has a positive effect on ROA, whereas the results of LDR calculation show the ability of banks to provide liquid assets to fulfil all their obligations, including fulfilling credit requests without suspension so that bank performance can increase, Hasibuan [13].

Based on the research data, it can be seen that the average LDR after merger is 105.77 with the highest value of 295.76. This shows the high loan-disbursement compared

to third-party funds collected considering that the LDR upper-limit set by Bank of Indonesia since 2013, was 92%. However, based on the results of this study, it shows that the bank credit-risk as proxied by the NPL after the merger increased, which indicates that after the merger there were still many non-performing loans (deferred). This has a negative impact on bank performance after the merger.

Similarly, the operational risk of banks has increased after the merger, namely the average BOPO level, after the merger was 83.50%, but still below the BOPO fairness level set by Bank of Indonesia, which was 98%. The increase in bank operational costs compared to the bank operating income after the merger shows that the efficiency level of banks has not increased and their ability to manage the operational activities is still poor.

Table 4 Regression Results of Bank Performance After Merger

Variable	Coeff.	t-Stats	Prob
C	3.063	2.228	0.032
NPL	-0.180	-1.250	0.219
NIM	0.219	1.799	0.080
LDR	0.007	2.342	0.024
BOPO	-0.027	-2.731	0.009
CAR	0.05	1.302	0.201

The relationship between independent variables (NPL, NIM, LDR, BOPO, and CAR) and the dependent variable (ROA) after bank mergers within a period of five years is shown in Table 4. The NPL variable with a coefficient of -0.180 has an insignificant and negative relationship with ROA, because it has the probability value more than the significance level. Meanwhile, the BOPO variable with a coefficient of -0.027 has a significant and negative relationship with ROA, because it has a probability value less than the significance level. The NIM variable has a coefficient of 0.219 with the p-value of 0.08, thus it has an insignificant and positive relationship with ROA. The CAR variable with a coefficient of 0.05 has an insignificant positive relationship with ROA (prob > α), while the LDR variable with a coefficient of 0.007 has a significant and positive relationship with ROA (prob < α).

This indicates that, if after the merger the credit risk as proxied by NPL and operational risk as proxied by BOPO has increased, it will result in a decrease in bank performance as proxied by ROA. On the other hand, market risk as proxied by NIM, liquidity risk as proxied by LDR, and bank capital as proxied by CAR increased after the merger resulting in an increase in bank performance as proxied by ROA.

Based on the regression results, theoretically the NIM increases, the LDR increases, then the bank performance increases. However, based on the data shown in Table 3, the LDR value increased, but the NIM value decreased. This indicates that the bank is less than optimal in channelling its credit due to the high interest-rates on bank loans.

Thus, merger activities which are expected to have a positive impact on bank performance, have not been fully achieved. Within five years after the merger, the increase in the LDR value was not accompanied by an increase in the NIM value, but it was accompanied by an increase in the NPL and BOPO values. On contrast, the value of bank capital adequacy (CAR) decreased after the merger.

3. CONCLUSIONS

Merger is a combination of two or more companies, whereas all the companies are legally no longer operating, and the combined company will be under the original name of the surviving company or form a new name. The managerial decision of a banking company to merge is a complex one.

By conducting a merger, it is hoped that business efficiency will be obtained in order to improve banking performance, which in the end the bank resulting from the merger can be categorized as a healthy bank in accordance with the provisions issued by Bank of Indonesia. However, it is unavoidable that problems can hinder the performance of the bank, even though the bank has merged.

The purpose of this study was to determine the impact of mergers carried out by several conventional banks that conducted horizontal mergers from 2007 to 2019 on bank performance in the five years after the merger.

The variables used in this study are related to factors that affect bank performance (ROA) such as: credit risk as proxied by NPL variable, market risk as proxied by NIM variable, liquidity risk as proxied by LDR variable, operational risk as proxied by the BOPO variable, and bank capital as proxied by the CAR variable.

The results of the Wilcoxon signed-rank test and paired sample t-test showed that there is no difference in bank performance, credit risk, operational risk, and bank capital between before and after the merger. On the other hand, for market risk and liquidity risk, there is a difference between before and after the merger.

The regression results show that after the merger, if there is an increase in NIM, LDR, and CAR variables, it causes an increase in ROA variable. On the other hand, an increase in NPL and BOPO variables after the merger will actually result in a decrease in ROA variable.

The implication of this study is that the implementation of mergers theoretically aims to improve bank performance, but the results of this study indicate that the expected merger activities will not generate a positive impact on bank performance within 5 years after the merger, as can be seen from the increase in the LDR value, which is not accompanied by an increase in the values of NIM, NPL and BOPO, but accompanied by a decrease in bank capital adequacy ratio (CAR).

As a suggestion, further studies can be carried out to be more focused on the objectives of banks in conducting mergers.

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REFERENCES

[1] Gumilarsjah, Jeami. M & A Playbook: *Penjelasan Lengkap Merger dan Akuisisi*. 2016. PPM, Jakarta.

[2] Saeed, H., Shahid, A., & Tirmizi, S. M. A. An empirical investigation of banking sector performance of Pakistan and Sri Lanka by using CAMELS ratio of framework. *Journal of Sustainable Finance and Investment*. 10(3), (2020), pp: 247-268. DOI: https://doi.org/10.1080/20430795.2019.1673140

[3] Al-Hroot,Yusuf Ali, Al-Qudah, Lait Akram, & Faris Irsheid Alkharabsha.The impact of horizontal mergers on the performance of the Jordanian banking sector. *Journal of Asian Finance, Economics, and Business*. 7(7), (2020), pp: 49-58. DOI: https://doi.org/10.13106/jafeb.2020.vol7.no7.049

[4] Chen, Q., & Vashishtha, R. The effects of bank mergers on corporate information disclosure. *Journal of Accounting and Economics*. 64(1), (2017), pp: 56-77. DOI: https://doi.org/10.1016/j.jacceco.2017.05.003.

[5] Chen, Z., Hung, W. Y., Li, D., & Xing, L. The impact of bank merger growth on CEO compensation. *Journal of Business Finance and Accounting*, 44(9–10) , (2017), pp: 1398-1442. DOI: https://doi.org/10.1111/jbfa.12263.

[6] Patel, R. Pre & Post-Merger Financial Performance: An Indian Perspective. *Journal of Central Banking Theory and Practice*. 7(3), (2018), pp: 181-200. DOI: https://doi.org/10.2478/jcbtp-2018-0029

[7] Ekadjaja, A. E. Tata Kelola Perusahaan, Risiko Keuangan, dan Kinerja Perbankan di Indonesia. *Jurnal Ekonomi*. 25(3), (2020), pp: 391-412. DOI: https://doi.org/10.24912/je.v25i3.687

[8] Pandjaitan, F. L., Wahyudi, & Soedharto, J. Analisis Kinerja Keuangan Pada Bank CIMB Niaga Setelah dan Sebelum Merger. *Diponegoro Journal of Management*. *5(4)*, (2016), pp: 93-107. DOI: http://ejournal-s1.undip.ac.id/index.php/dbr

[9] Rashid, Abdul & Nazia Naeem. Effects of mergers on corporate performance: An empirical evaluation using OLS and the empirical Bayesian methods. *Borsa Istanbul Review*. 17(1), (2017), pp: 10-24. DOI: https://doi.org/10.1016/j.bir.2016.09.004

[10] Sentosa, Mia. (2015). Analisis Perbandingan Kinerja Keuangan Perusahaan Sebelum dan Setelah Merger pada Perusahaan Perbankan yang Terdaftar di Bursa Efek Indonesia. *Jurnal Ilmiah Universitas Bakrie Indonesia*. 3(2).

[11] Yulius, Oscar. (2010). *Smarter & Faster mengerjakan STATISTIKA SPSS 18*. Panser Pustaka, Jakarta.

[12] Beverly, Cicilia, Silvia Sutejo, B., & R. Murhadi, W. (2019). *Company performance before and after a merger*, Proceedings of the 16th International Symposium on Management (INSYMA 2019). Advances in Social Science, Education and Humanities Research, 308. Atlantis Press, 2019, pp: 28-31. https://doi.org/10.2991/insyma-19.2019.8.

[13] Hasibuan, H. Malayu S. P. (2017). Dasar-Dasar Perbankan. PT. Bumi Aksara, Jakarta.