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Comparative Analysis of Financial Performances on Banking Companies in ASEAN-5 Countries before and during the Covid-19 Pandemic

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ABSTRACT
The Covid-19 pandemic had a very bad impact on the world economy, which caused global economic growth to experience a decline of 3%, while developing countries were the hardest hit, with an average economic decline of 4%, some even more than 6.5 %. This study aims to analyze the financial performance of banks in ASEAN-5 countries between before and during the Covid-19 Pandemic. The method of comparing banking financial performance is by using the CAMEL method with a research sample of banking sub-sector companies listed on the stock exchange in each ASEAN-5 country. The results showed that there were significant differences in banking performance in ASEAN-5 countries, where two variables, namely the non-performing loan and operational efficiency ratio variable as a proxy for Assets and Earnings respectively did not have a significant difference. In general, the difference in bank health performance was due to the Covid-19 pandemic; many banks implemented policies that were adaptive to developments in the Covid-19 case, such as credit restructuring. For further study is suggested to measure the firm performance with another current methods.

KEYWORDS
Firm performance; Covid-19; ASEAN-5 Countries; Banking

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Introduction

At the end of 2019, the world was shocked by the spread of the Covid – 19 which quickly became a pandemic that spread to almost all countries. The spread of the Covid-19 pandemic has had a very bad impact on the world economy (Demirguc-Kunt et al., 2020). The Covid-19 pandemic has not only adversely affected human health but has also hampered the global economy (Yasin & Fisabilillah, 2021). Mou (2020) in his study found that global economic growth has decreased by 3%, while developing countries have been the hardest hit, with an average decline in GDP of 4%, some even more than 6.5%.

Furthermore , the Covid-19 Pandemic has had a major impact on every country in all sectors including the banking sector (Wardhani et al., 2021). The economic downturn that occurred during this pandemic will certainly reduce public consumption and decrease people's purchasing power (OECD, 2020). Given the role of banks as intermediary institutions, of course this incident greatly affects banking because if people's economy declines, they tend to reduce spending, avoid investing, or even often withdraw money from the bank (Ilhami & Thamrin, 2021). Not only that, another problem is when the community's economy declines, customers will have difficulty paying off loan loans (Jalih & Rani, 2020). Therefore, the results of the study (Demirgüç-Kunt et al., 2021) found that during the Covid-19 pandemic, the financial sector, especially banking, was expected to be able to play an important role in reducing shock by providing important credit to the corporate and household sectors.

The impact of the Covid-19 pandemic on banking can be seen in banking performance during a pandemic where the decline in performance will affect the soundness of the bank (Demirguc-Kunt et al., 2020). Banking performance in July 2020 in the five major ASEAN countries, namely Indonesia, Singapore, Malaysia, the Philippines and Thailand, was shown through the Capital Adequacy Ratio (CAR), in which in Indonesia it reached 23.1% in July 2020, while Malaysia was 18.06%, Philippines 16.07%, Thailand 19.05%, and Singapore 17.1%.

To determine the impact of the Covid-19 pandemic on the level of bank soundness, objective and precise benchmarks are needed. This objectivity can be measured by comparing how the level of banking soundness in a country was under normal environmental conditions, namely before the Covid-19 pandemic hit, to the level of banking soundness at the time of the pandemic (Tiono & Djaddang, 2021).

Analysis of pre-crisis and post-crisis banking performance itself was carried out during the global crisis and financial crisis in 1997-1998, caused by the subprime mortgage crisis that hit the US real estate industry. This crisis spread to global financial markets, including Asian countries and financial markets in developing countries. This condition had an impact on the global financial system which experienced a decline accompanied by pressure on funding and asset liquidity. This crisis highlighted the need for monitoring of banking performance, because the

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results of research conducted were important for policy making, and based on bank performance assessments, would be able to determine the future of the banking sector in a country (Sullivan & Widoatmodjo, 2021) .

Therefore, the performance of banking companies before and during the pandemic can be measured using financial indicators, namely capital adequacy, asset quality, management competency, earnings quality, liquidity and sensitivity (CAMEL). The CAMEL framework was developed by the US central bank in the early 1970s to assist in the structure of bank audit processes. Since then, the use of the CAMEL factor to evaluate the financial health of banks has become widespread among regulators (Nguyen et al., 2020). Therefore, the benchmarks used refer to regulations issued by Bank Indonesia (BI) No.13/1/PBI/2011, No.6/10/PBI/2004 on 12 April 2004 concerning the soundness rating system for commercial banks. and Bank Indonesia circular letter No.6/23/DPNP on 31 May 2004 concerning procedures for examining the soundness level of commercial banks. This study thus aims to analyze the financial performance of banks in ASEAN-5 countries between before and during the Covid-19 pandemic using the CAMEL method.

Literature review

Management of the capital aspect is very important in managing a bank's business, because the capital owned by a bank can be used to develop its business. In terms of capital management, banks use a capital adequacy ratio (CAR). CAR is a ratio that shows a bank's ability to maintain existing capital to cover possible losses in credit, equity, securities and claims on other banks. For this reason, CAR is an indicator of the soundness of capital in a bank. The strength of banks in dealing with the crisis and the Covid-19 pandemic depends on their capital adequacy as an effort to anticipate credit risk during a pandemic. With a decrease in income, as well as an increase in reserves from credit risk, banking CAR will decrease. A study by (Sullivan & Widoatmodjo, 2021) showed that there are significant differences in bank performance, as measured by CAR between before and during the pandemic, thus first hypothesis can be built as:

H1: There is a difference in the soundness of banks as measured by the capital adequacy ratio (CAR) between before and during Covid-19 pandemic in ASEAN 5 countries.

The ratio of asset quality uses the Non-Performing Loan (NPL) ratio which describes how much financing or credit has failed to pay. NPL is a ratio used to measure a bank's ability to cover the risk of credit repayments by debtors. NPL reflects credit risk, the higher the NPL, the higher the loan interest arrears, which has the potential to reduce interest income, increase reserves for losses and reduce profits. Thus, the second hypothesis proposed is:

H2: There are differences in the soundness of banks as measured by the asset quality ratio between before and during the Covid-19 Pandemic in ASEAN 5 countries.

The third factor in the CAMEL ratio order is management. Management ratio shows the amount of net profit earned by the company (Dendawijaya, 2005). The management aspect in assessing bank performance in this study cannot use the pattern set by Bank Indonesia but according to the available data projected with Net Profit Margin. With the potential decrease in interest income and credit quality, it will burden banking profits, which will have an impact on a decrease in the Net Profit Margin . Thus the third hypothesis proposed is:

H3: There are differences in the soundness of banks as measured by the Management between before and during the Covid-19 Pandemic in ASEAN countries 5.

Earning (rentability) of banks is assessed by the ratio of Operating Expenses to Operating Income or operational efficiency ratio (OER). The OER is used to measure the level of efficiency and ability of a bank in carrying out its operational activities; the smaller the OER, the more efficient the operational costs incurred by the bank. The reason for the increase in OER was due to financing or credit restructuring. These things trigger differences in the performance of the profitability ratio before and during the existence of Covid-19. In accordance with research conducted by (Fitriani, 2020) which stated that there are differences in average values before and during Covid-19. Then, the fourth hypothesis proposed is:

H4: There is a difference in the soundness of banks as measured by the Earning ratio between before and during the Covid-19 Pandemic in ASEAN countries 5.

Loan to Deposit Ratio (LDR) is the ratio between the total amount of credit extended by banks with funds received by the bank. LDR describes how far the bank's ability to pay back the withdrawal of funds made by depositors by relying on the credit provided as a source of liquidity. The higher the LDR ratio indicates the lower the liquidity capacity of the bank concerned. Therefore, the hypothesis proposed is:

H5: There are differences in the soundness of banks as measured by the Liquidity between before and during the Covid-19 Pandemic in ASEAN 5 countries.

Methods

The study will compare the level of banking health in ASEAN-5 countries consisting of Indonesia, Malaysia, Singapore, Thailand, and the Philippines in two years before the Covid-19 Pandemic (2018-2019) and during the Covid-19 Pandemic in 2020 to Semester II 2021. The population used in this study are companies that have gone public and

are incorporated into the banking sub-sector in ASEAN-5 countries in each country, with a total population of 79 issuers.

The sample is a portion of the population taken using a sampling technique (Tahir et al., 2020). The technique used in this research is purposive sampling method, which is a sampling method that is adjusted to certain criteria (Melinda & Nurasik, 2021). The criteria used in the research are as follows:

1. Banking companies listed on the Stock Exchange in ASEAN-5 Countries for the 2018-2021 period.
2. Banking companies that publish financial reports as of December 31 for the 2018-2021 period.
3. Banking companies that have CAR, NPL, NPM, OER, and LDR results for the 2018-2021 period.
4. Availability and completeness of company data needed during the 2018-2021 period.

Of the total population of 79 banks listed on the stock exchange in each ASEAN-5 country, banking companies that met the sampling criteria were 28 banks, with details of 10 Indonesian banks, 6 Malaysian banks, 3 Singapore banks, 7 Thai banks and 2 Philippines banks.

Data processing in this study was carried out using statistical techniques in the form of descriptive statistics, normality tests, and two different average tests (independent sample t-test). The data obtained will be processed using software SPSS 25. Furthermore, hypothesis testing is determined based on the results of the research data normality test. For the first to fifth hypotheses, different test hypotheses will be tested using parametric, namely the t test (paired sample t-test) if the data is normally distributed, and using a non-parametric test, namely the Wilcoxon Signed Ranks Test if the data is not normally distributed. The significance level used in this study is α=5% or α=0.05.

Results

From the annual reports of banking companies in each ASEAN-5 country, the results of research on five companies' financial performance are obtained, including capital adequacy ratio (CAR), Non-Performing Loans (LOA), Net Profit Margin (NPM), Operating Expenses to Operating Income (OER) and Loan to Deposit Ratio (LDR) for the period before and during the Covid-19 pandemic. The results of descriptive statistical calculations for each variable are as follows.

Table 1. Variable Description of the Period Before and During the Covid-19

Variable	Period	Min	Max	Mean	Std Dev.
CAR	Before Pandemic	11.10	24.20	17.60	3.10
	During Pandemic	11.30	35.70	19.34	0.66
NPL	Before Pandemic	0.50	4.53	1.92	0.95
	During Pandemic	0.30	4.30	2.04	0.15
NPM	Before Pandemic	12.79	146.05	72.96	35.24
	During Pandemic	8.15	140.80	61.73	4.36
OER	Before Pandemic	25.05	98.12	57.39	17.56
	During Pandemic	19.44	91.61	57.95	2.62
LDR	Before Pandemic	80.50	137.70	94.97	10.77
	During Pandemic	62.00	107.10	86.19	1.35

Source: Analysed data, 2021

Table 1 provides an illustration, that is, during the pre-pandemic period, the capital adequacy ratio (CAR) of the largest bank was 24.20% owned by Bank Danamon (Indonesia), while during the pandemic the maximum CAR was owned by Bank Permata (Indonesia) with a CAR ratio of 37.70%. Meanwhile, the minimum CAR ratio before the pandemic was 11.1% owned by AmBank (Malaysia), and only slightly different from the minimum CAR during the pandemic, which was 11.30% owned by AmBank (Malaysia). Furthermore, the average CAR ratio before and during the pandemic did not differ too much, 17.60% (before) and 19.34% (during). Meanwhile, the standard deviation value for the CAR ratio before the Covid-19 pandemic was 3.10 and during the pandemic it was 0.66. The increase in the CAR ratio during this pandemic illustrates that large banks in these ASEAN-5 countries tend to increase their capital adequacy to anticipate loans that have the potential to have a relatively higher risk.

The Non-Performing Loan (NPL) ratio before the Covid-19 pandemic had a maximum value of 4.53% which occurred at Krung Thai Bank (Thailand) and the minimum NPL ratio during the Covid-19 pandemic was 4.3% owned by Banks Negara Indonesia (BNI). The minimum NPL ratio before the Covid-19 pandemic was 0.5% and 0.3% during the pandemic, owned by Public Bank Berhad (Malaysia). Meanwhile, the average value of non-performing loans before the pandemic was 1.92% and increased during the pandemic to 2.04. The standard deviation value before the Covid-19 pandemic was 0.95 and during the Covid-19 pandemic it was 0.15. This illustrates that there was an increase in the number of non-performing loans when the global economy was experiencing a recession due to the Covid-19 Pandemic and especially in ASEAN countries experiencing a recession. However, in general ASEAN Top Banks is still able to maintain the NPL ratio on average below 5%.

Prior to the pandemic, the maximum value of the Net Profit Margin (NPM) ratio of banking in ASEAN-5 was 146.04% which was owned by Bank Central Asia (BCA) (Indonesia), and during the pandemic the bank that had the largest NPM ratio was also BCA (Indonesia), which occurred in 2021 by 140.80%. The minimum NPM ratio before the pandemic was 12.79% owned by Permata Bank (Indonesia), and during the pandemic the minimum NPM ratio was 8.15% owned by Permata Bank (Indonesia). The average value of the NPM ratio also shows a statistically significant

difference, where before the pandemic, the NPM ratio of ASEAN-5 banks averaged 72.96% and fell to 61.73% during the pandemic. The standard deviation of the NPM ratio before the pandemic was 35.24 and during the pandemic was 4.36%. The decline in the NPM ratio illustrates an increase in bank operating costs during the pandemic by carrying out various policies that are adaptive adjustments to the Covid-19 outbreak, causing the bank's profit ratio to decrease.

Meanwhile, the maximum operational efficiency ratio (OER) before the pandemic was 98.12% owned by Bank Tabungan Negara (BTN) (Indonesia) and during the pandemic the largest OER ratio was 91.61% which was also achieved by BTN (Indonesia). The minimum value of the OER ratio in the two years before the pandemic was 25.05% owned by Kiatnakin Phatra Bank (Thailand), and during the pandemic the minimum value of the OER ratio was 19.44% which was also owned by Kiatnakin Phatra Bank (Thailand). The average value of the OER ratio of Top ASEAN Banks before the pandemic was 57.39% and there was a slight increase of 57.95%. The standard deviation before the pandemic was 17.56 and during the pandemic it was 2.62. This global economic recession has implications for the soundness of banks, as shown in the increase in the OER ratio in banks in this ASEAN country, although this increase is not very significant on average. However, an increase in the OER ratio indicates that banking operational costs tend to be poorly managed.

The maximum value of the Loan to Deposit Ratio (LDR) was 137.70% before the pandemic and 107.10% during the pandemic which was owned by Kiatnakin Phatra Bank (Thailand). Meanwhile, the minimum value of the LDR ratio was 80.5% before the pandemic which was owned by BCA (Indonesia) and 62% during the pandemic which was also owned by BCA (Indonesia). Then the average LDR value of banks in ASEAN-5 before the Covid-19 outbreak hit the world was 94.97% and decreased to 86.19%. Meanwhile, the standard deviation value before the pandemic was 10.77 and during Covid-19 it was 1.35. The decrease in this ratio illustrates that during a pandemic, on average the top ASEAN-5 banks reduced the number of loans originating from their third-party funds.

Normality test

Normality test in this study used the One-Sample Kolmogorov Smirnov test. The normality test results can be seen in the following table.

Table 2. One-Sample Kolmogorov-Smirnov (KS)

	t statistic		**Asymp. Sig. (2-tailed)**		**Conclusion**
Ratio/Period	Before	During	Before	During	
CAR	0.088	0.181	0.200[c,d]	0.000[c]	Not normally distributed
NPL	0.172	0.148	0.000[c]	0.004[c]	Not normally distributed
NPM	0.097	0.092	0.200[c,d]	0.200[c,d]	Normally distributed
OER	0.169	0.211	0.000[c]	0.000[c]	Not normally distributed
LDR	0.167	0.105	0.000[c]	0.195[c]	Not normally distributed

Source: Analysed data, 2021

Table 2 shows the significance value of the KS normality test in the period before and during the Covid-19 Pandemic. The results of the normality test show that there are variables not normally distributed because they have a significance value of less than 0.05, namely CAR (during the pandemic), NPL (before and during the pandemic), OER (before and during the pandemic), and LDR (before the pandemic). There is only one variable that has a significance value (p-value) > 0.05, namely the NPM variable, so it can be concluded that the NPM variable is normally distributed (before and during the pandemic).

Thus, according to the research design described in previous section, the normally distributed variables in this study will then be tested with a parametric approach through a paired sample t test to test the third hypothesis. Meanwhile, the not normal variables in this study cannot be processed using a parametric approach through the paired sample t test, because it does not meet one of the assumptions that the data to be processed using the paired sample t test must be normally distributed. Therefore, testing the first, second, fourth, and fifth hypotheses in this study will be carried out using a non-parametric approach through the Wilcoxon Signed Ranks Test.

Hypothesis testing result

After testing the data population using the normality test, there are data that are normally and not normally distributed. For normally distributed data, namely the NPM variable, testing the hypothesis on the NPM variable uses a paired sample t test. Meanwhile for the CAR, NPL, OER, and LDR variables, because these variables are not normally distributed, the hypothesis testing uses a non-parametric approach through the Wilcoxon Signed Ranks Test.

To analyze the two paired data, the paired sample t test and the non-parametric Wilcoxon Signed Ranks Test were carried out using the help of test analysis through the SPSS Statistics program version 25. The results of hypothesis testing for each research variable are described as follows:

Variable capital adequacy ratio (CAR)

Table 3. Results of Testing Variable CAR (Wilcoxon Signed Ranks Test) – Ranks

		N	Mean Rank	Sum of Ranks
CAR During Pandemic - CAR Before Pandemic	Negative Ranks	10[a]	15.70	157.00
	Positive Ranks	43[b]	29.63	1274.00
	Ties	3[c]		
	Total	56		

Source: Analysed data, 2021

Table 4. Results of Testing Variable CAR (Wilcoxon Signed Ranks Test) – Statistical Test

Time	Mean	Z	Significance	Conclusion
Before Pandemic	17.597	-4.945	0.000	H_1 Not Rejected
During Pandemic	19.3445			
Delta Change	1.7475			

Source: Analysed data, 2021

The calculation results of the Wilcoxon Signed Ranks Test – Ranks for the CAR variable indicates that the negative ranks is 10, which means that ASEAN-5 banks experienced a decrease in the CAR ratio 10 times during the pandemic with an average decrease of 15.70%; while a positive ranks of 43 means that there were 43 banks in ASEAN 5 that experienced an increase in the CAR ratio when the Covid-19 pandemic occurred, with an average increase of 29.63%.

Furthermore, in the Wilcoxon Signed Ranks Test) – Statistical Test table (Table 4), it shows that the significance value of the calculation output obtains a Z-Score of -4.945 with a p-value of 0.000. This significance value is less than 0.05, which means that there is a significant difference in the Capital Adequacy Ratio (CAR) before (2018-2019) and during (2020-2021) the Covid-19 pandemic. Thus, H1 is not rejected. Based on the results of the data description, the average CAR value for the period during the pandemic was higher than the period before the pandemic, indicating that the presence of the Covid-19 pandemic had an impact on banking health performance as measured using the capital adequacy ratio (CAR).

Variables non-performing loan (NPL)

Table 5. Results of Testing Variable CAR (Wilcoxon Signed Ranks Test) – Ranks

		N	Mean Rank	Sum of Ranks
NPL During Pandemic - NPL Before Pandemic	Negative Ranks	25[a]	25.02	625.50
	Positive Ranks	29[b]	29.64	859.50
	Ties	2[c]		
	Total	56		

Source: Analysed data, 2021

Table 6. Results of Testing Variable NPL (Wilcoxon Signed Ranks Test) – Statistical Test

Time	Mean	Z	Significance	Conclusion
Before Pandemic	1.9209	-1.008	0.314	H_2 Rejected
During Pandemic	2.0357			
Delta Change	0.1148			

Source: Analysed data, 2021

The calculation results of the Wilcoxon Signed Ranks Test – Ranks for the NPL variable indicates the negative ranks is 25, which means that there were 25 times that ASEAN-5 banks experienced a decrease in the NPL ratio during the pandemic with an average decrease of 25.02%; while a positive ranks of 29 means that there were 29 banks in ASEAN 5 that experienced an increase in the NPL ratio when the Covid-19 pandemic occurred, with an average increase of 29.64%.

Furthermore, in the Wilcoxon Signed Ranks Test) – Statistical Test table, it shows that the significance value of the calculation output obtains a Z-Score of -1.008 with a p-value of 0.314. The significance value is greater than 0.05, which means that there is no significant difference in Non-Performing Loans (NPL) before and during the Covid-19 pandemic or in other words H2 is rejected. Based on the results of the statistical description, the mean of the NPL variable did not differ significantly between the pre-pandemic period and during the Covid-19 pandemic, indicating that the presence of the Covid-19 pandemic did not have a significant impact on bank health performance as measured by the NPL ratio.

Variable net profit margin (NPM)

Table 7. NPM Variable Testing Results (paired sample t test)

Time	Mean	Z	Significance	Conclusion
Before Pandemic	72.9593	3.251	0.002	H_3 Not Rejected
During Pandemic	61.7295			
Delta Change	-11.2298			

The calculation results presented in Table 7 show that the significance value of the calculation output using the paired sample t test obtains a statistical t value of 3.251 with a p-value of 0.002. This significance value is less than 0.05, which means that there is a significant difference in Net Profit Margin (NPM) before (2018-2019) and during (2020-2021) the Covid-19 pandemic. Thus, H3 is not rejected. Based on the results of the data description, the average NPM during the pandemic was lower than the pre-pandemic period, indicating that the Covid-19 pandemic had an impact on banking health performance as measured by net profit margin (NPM).

Variable operational efficiency ratio (OER)

Table 8. Results of Testing Variables OER (Wilcoxon Signed Ranks Test) – Ranks

		N	Mean Rank	Sum of Ranks
OER During Pandemic - OER Before Pandemic	Negative Ranks	28[a]	26.59	744.50
	Positive Ranks	27[b]	29.46	795.50
	Ties	1[c]		
	Total	56		

Source: Analysed data, 2021

Table 9. Results of Testing Variables OER (Wilcoxon Signed Ranks Test) – Statistical Test Calculation

Time	Mean	Z	Significance
Before Pandemic	-0.214	0.831	H_4 Rejected
During Pandemic			
Delta Change			

Source: Analysed data, 2021

The results of Wilcoxon Signed Ranks Test – Ranks for variables OER indicates that the negative ranks is 28, which means there were 28 times that ASEAN-5 banks experienced a decrease in OER during the pandemic with an average decrease of 26.59%; while a positive ranks of 27 means that there were 27 banks in ASEAN 5 that experienced an increase in the OER ratio when the Covid-19 pandemic occurred, with an average increase of 29.46%.

Furthermore, in the Wilcoxon Signed Ranks Test – Statistical test table (Table 9), it shows that the significance value of the calculation output for the OER variable obtained a Z value of -0.214 with a p-value of 0.831. The significance value is greater than 0.05 which means that there is no significant difference for the OER variable at the period before and during the Covid-19 pandemic or in other words H4 is rejected. Based on the results of the statistical description, the mean of the OER variable during the Covid-19 pandemic was relatively the same as the pre-pandemic period, which indicated that the Covid-19 pandemic had no impact on bank health performance as measured using the OER ratio.

Variable loan to deposit ratio (LDR)

Table 10. Results of Testing Variable LDR (Wilcoxon Signed Ranks Test) – Ranks

		N	Mean Rank	Sum of Ranks
LDR During Pandemic - LDR Before Pandemic	Negative Ranks	49[a]	30.99	1518.50
	Positive Ranks	7[b]	11.07	77.50
	Ties	0[c]		
	Total	56		

Source: Analysed data, 2021

Table 11. Results of Testing Variable LDR (Wilcoxon Signed Ranks Test) – Statistical Test Calculation

Time	Mean	Z	Significance	Conclusion
Before Pandemic	94.9729	-5.877	0.000	H_5 Not Rejected
During Pandemic	86.1866			
Delta Change	-8.7863			

Source: Analysed data, 2021

The results Wilcoxon Signed Ranks Test – Ranks (Table 10) for the LDR variable indicates that the negative ranks is 49, which means that there were 49 times that ASEAN-5 banks experienced a decrease in the LDR ratio during the pandemic with an average decrease of 30.99%; while a positive ranks of 7 means that there were 7 banks in ASEAN 5 that experienced an increase in the LDR ratio when the Covid-19 pandemic occurred, with an average increase of 11.07%.

Furthermore, in the Wilcoxon Signed Ranks Test) – Statistical Test (Table 11), it shows that the significance value of the calculation output obtains a Z-Score of -5.877 with a p-value of 0.000. This significance value is less than 0.05, which means that there is a significant difference in the Loan to Deposit Ratio (LDR) before (2018-2019) and during (2020-2021) the Covid-19 pandemic. Thus, H5 is not rejected. Based on the results of the data description, the average LDR value during the pandemic was lower than the pre-pandemic period, indicating that the presence of the Covid-19 pandemic had an impact on banking health performance as measured using LDR.

Based on the results of the calculations described above, a summary of the test results for all research hypotheses and the change in the average value (mean) for each variable can be made as follows.

Table 12. Summary of Hypothesis Testing Results

Variable	Mean		Delta Change	Conclusion
	Before Pandemic	During Pandemic		
Capital Adequacy Ratio (CAR)	17.24	17.92	0.68	Not Rejected
Non-Performing Loan (NPL)	2.10	2.42	0.32	Rejected
Net Profit Margin (NPM)	83.99	70.04	-13.95	Not Rejected
Operational Efficiency Ratio (OER)	38.09	38.91	0.82	Rejected
Loan to Deposit Ratio (LDR)	90.82	85.59	-5.23	Not Rejected

Source: Analysed data, 2021

Discussion

The differences capital adequacy ratio (car) in the period before and during the covid-19 pandemic

The result test for CAR variable using the Wilcoxon Signed Ranks Test shows that there are significant differences in banking soundness performance in ASEAN-5 countries as measured using the capital adequacy ratio (CAR) as a proxy for Capital of the CAMEL method for the period before and during the Covid-19 pandemic, or in other words H1 is accepted. This difference was caused by the mean of the CAR variable in the period during the Covid-19 pandemic was higher than in the pre-pandemic period, which illustrates that banks in ASEAN-5 on average increased the percentage of their capital adequacy in anticipating the risk of credit problems amid the Covid-19 pandemic. 19.

Based on the results of the data description, it can be seen that the average CAR value during the Covid-19 pandemic experienced a significant difference which increased from the pre-pandemic period. This can be seen from the mean value of the CAR variable during the Covid-19 pandemic which was higher than the average value of the CAR variable before the Covid-19 pandemic. This increase can also be seen from the increase in the average CAR value of all banks in ASEAN-5 countries. Indonesia is the most aggressive when the Covid-19 Pandemic occurred, which was indicated by the average bank in Indonesia increasing its capital adequacy level to 3.35%. In contrast to banks in Thailand and the Philippines, which increased the CAR ratio during the pandemic, on average, it was only around 1% -2%. Meanwhile, banks in Malaysia and Singapore are on average not too aggressive to be able to increase their capital adequacy ratio where the CAR ratio of banks in the two countries only increased by no more than 1%.

This increase in the average CAR of banks in each ASEAN-5 country indicates that during the period during the Covid-19 pandemic they implemented policies to increase capital adequacy to anticipate credit risk amid the Covid-19 pandemic. However, Indonesian banks responded to the economic recession caused by Covid-19 by being more aggressive as shown by the increase in the CAR ratio of more than 3% compared to before the Covid-19 outbreak.

These results showed the same conclusions as several previous studies conducted by (Sullivan & Widoatmodjo, 2021) which analyzed and concluded that there were differences in bank health performance with the CAR variable of banking companies in Indonesia in the period before and during the Covid-19 pandemic. However, the results of this study contradict the results of research (Pandiangan et al., 2022) which found that there were no significant differences in the CAR variable in conventional banks and Islamic banks in Indonesia.

The differences in non-performing loans (npl) the period before and during the covid-19 pandemic

Testing the NPL variable using the Wilcoxon signed rank test showed that there was no significant difference in the company's financial performance as measured using Non-Performing Loans (NPL) as a proxy for the Assets of the CAMEL method before and during the Covid-19 pandemic. 19, or in other words H2 is rejected. This is because the mean of the NPL variable during the pandemic period only had a slight difference compared to the pre-pandemic period, which illustrates that the risk of bad loans earned by almost all banks in ASEAN-5 countries did not experience a significant increase during the Covid-19 pandemic. going on.

Based on the results of the data description, it appears that the average NPL value during the Covid-19 pandemic did not experience a significant difference from the pre-pandemic period. This can be seen from the average (mean) value of the NPL variable during the Covid-19 pandemic which was not higher than the average value of the

NPL variable before the Covid-19 pandemic. However, there was an increase in the average NPL value in several banks in ASEAN-5 countries and even an increase in the average NPL in Indonesia that occurred at Bank Negara Indonesia (BNI) became the bank with the highest NPL increase of 2.4% in the period the Covid-19 pandemic.

However, Philippine Banking is the most impactful bank when viewed from the NPL ratio, because on average banks in the Philippines experienced an increase in the bad credit ratio of 1.32%; where compared to Malaysian banking, it actually experienced a decline in the lifting of bad loans amid the Covid Pandemic, which fell to -0.038%.

These results show results that are contradictory to research conducted by (Barua & Barua, 2021) which found that the Covid-19 pandemic had exacerbated the banking NPL situation in Bangladesh, where an increase in the NPL ratio during the pandemic caused a decrease in other aspects, such as company value, capital adequacy, and interest income. Tiwu (2020) also revealed that the Covid-19 Pandemic also had a significant impact on the NPL of Rural Banks (BPR) in Indonesia, where entrepreneurs, labor and other economic sectors lost income and profits, this resulted in the inability of borrowers who consists of entrepreneurs to return funds to BPRs in Indonesia.

The differences net profit margin (npm) in the period before and during the covid-19 pandemic

Testing the NPM variable using a paired sample t test shows that there are significant differences in banking performance in ASEAN-5 countries as measured using net profit margin (NPM) as a proxy for aspects Management from the CAMEL method for the period before and during the Covid-19 pandemic, or in other words H3 accepted. This difference was due to the fact that the mean of the NPM variable during the Covid-19 pandemic was lower than the pre-pandemic period, which illustrates that banks in ASEAN-5 on average experienced a decline in net profit margins amid the Covid-19 pandemic.

Based on the results of the data description, it can be seen that the average NPM value during the Covid-19 pandemic experienced a significant difference which decreased from the pre-pandemic period. This can be seen from the average (mean) value of the NPM variable during the Covid-19 pandemic which was lower than the average value of the NPM variable before the Covid-19 pandemic. This decline can also be seen from the decrease in the average NPM value in all banks in ASEAN-5 countries. Indonesian banking was the most affected by the Covid-19 Pandemic, because it experienced the largest decline in NPM among other ASEAN-5 countries, with an average decrease of up to 38% during the Covid-19 pandemic. The highest decline in NPM was experienced by Bank Negara Indonesia (BNI), which was 105% in 2020, and followed by Bank Rakyat Indonesia (BRI) which experienced a decrease in NPM of up to 80% in 2020.

These results show the same results as research conducted by (Melinda & Nurasik, 2021) which stated that there were significant differences in net profit margin (NPM) performance before and during the Covid-19 pandemic at state-owned banks in Indonesia. This is the same as research conducted by (Liniarti & Nasution, 2022) which tested NPM on company performance during the Covid-19 pandemic. The results of this study indicate that during the Covid-19 pandemic the NPM variable had a negative influence on the growth of asset quality as measured by the Return on Assets (ROA) ratio in logistics companies in Indonesia.

The differences in operating efficiency ratio (oer) in the period before and during the covid-19 pandemic

Testing the OER variable using the Wilcoxon signed rank test shows that there is no significant difference in the company's financial performance as measured using Operating Efficiency Ratio (OER) as a proxy for the Earnings in the CAMEL model before and during the Covid-19 pandemic, or in other words H4was rejected. Based on the results of the data description, it can be seen that the average OER value during the Covid-19 pandemic did not change significantly from the pre-pandemic period.

However, on average, banks in Indonesia and Singapore experienced an increase in operating expenses to their operating income, namely 3.84% and 0.71% respectively. The increase in the OER ratio in Indonesian banking was due to the CAR ratio, Indonesian banks were the most aggressive in increasing capital adequacy, while the NPM ratio showed that Indonesian banks experienced a decrease in net profit on average.

These results show the same results as research conducted by (Ningsih & Aris, 2022) which stated that there is no difference between the performance of the OER variable in Islamic Banking before and during the Covid-19 pandemic. However, the results of this study contradict the results of research conducted by (Sullivan & Widoatmodjo, 2021) which found that there were significant differences in the OER variable in Indonesian banks that had been listed on the Indonesia Stock Exchange before and during the Covid-19 pandemic.

The differences loan to deposit ratio (ldr) before and during the covid-19 pandemic

Testing the LDR variable using the Wilcoxon signed rank test showed that there were significant differences in banking performance in ASEAN-5 countries as measured using the loan to deposit ratio (LDR) as a proxy aspect Liquidity of the CAMEL method for the period before and during the Covid-19 pandemic, or in other words H5 is accepted. This difference is caused by the mean of the LDR variable during the Covid-19 pandemic period which was lower than the pre-pandemic period, which illustrates that banks in ASEAN-5 on average have decreased the number of loan loans amid the Covid-19 pandemic.

Based on the results of the data description, it can be seen that the average LDR value during the Covid-19 pandemic experienced a significant difference which decreased from the pre-pandemic period. This can be seen from

the average (mean) value of the LDR variable during the Covid-19 pandemic which was lower than the average value of the LDR variable before the Covid-19 pandemic. This decline can also be seen from the decrease in the average LDR value of all banks in ASEAN-5 countries, even the decrease in the bank liquidity ratio in Indonesia and the Philippines, on average, has fallen to 10%. The most drastic decrease in the percentage of LDR occurred at Bank Central Asia (BCA) (Indonesia), which fell to 60% during the Covid-19 pandemic.

These results showed the same results as research conducted by (Pandiangan et al., 2022) which suggested that there were significant differences in the LDR variable before and during the Covid-19 pandemic between conventional banking companies and Islamic banking. However, (Yasin & Fisabilillah, 2021) revealed that there are significant differences in LDR performance at BPRs in Indonesia. Before the pandemic period, it experienced an increase and during the pandemic, the LDR remained stable until the second quarter of the pandemic, then decreased in the third and fourth quarters. This was because at the beginning of the pandemic, BPRs tended to maintain LDR by not extending credit but increasing DPK and this was an attitude of caution for BPRs in dealing with the Covid-19 pandemic.

Conclusion

There are significant differences in the performance of banking health in ASEAN-5 countries analyzed using the CAMEL approach, namely the Capital Adequacy Ratio (CAR) as a proxy for Capital, Non-Performing Loans (NPL) as a proxy for Assets, Net Profit Margin (NPM) as a proxy for Management, and Loan to Deposit Ratio (LDR) as a proxy for Liquidity before and during the Covid-19 pandemic. There are two variables from this CAMEL approach, namely the NPL and the OER variable as proxies for Assets and Earnings which do not have a significant difference. In general, the difference in bank health performance was due to the Covid-19 pandemic, many banks implemented policies that were adaptive to developments in the Covid-19 case, such as credit restructuring. On the other hand, the risk of bad credit has also increased due to the economic recession which has caused people to be unable to finance their obligations. However, for further studies, it is recommended to implement the current methods to measure firm performances, as well as to develop the object of study to other sectors.

References

Barua, B., & Barua, S. (2021). COVID-19 implications for banks: evidence from an emerging economy. *SN Business & Economics*, *1*(1), 1–28. https://doi.org/10.1007/s43546-020-00013-w

Demirguc-Kunt, A., Pedraza, A., & Ruiz-Ortega, C. (2020). Banking Sector Performance during the COVID-19 Crisis. In *Banking Sector Performance during the COVID-19 Crisis*. https://doi.org/10.1596/1813-9450-9363

Demirgüç-Kunt, A., Pedraza, A., & Ruiz-Ortega, C. (2021). Banking sector performance during the COVID-19 crisis. *Journal of Banking and Finance*, *133*(August). https://doi.org/10.1016/j.jbankfin.2021.106305

Dendawijaya, L. (2005). *Manajemen Perbankan*. Ghalia Indonesia.

Fitriani, P. D. (2020). *Analisis Komparatif Kinerja Keuangan Bank Umum Syariah Pada Masa Pandemi Covid–19*.

Ilhami, & Thamrin, H. (2021). Analisis Dampak Covid 19 Terhadap Kinerja Keuangan Perbankan Syariah Di Indonesia. *Jurnal Tabarru': Islamic Banking and Finance*, *4*(1), 37–45. https://doi.org/10.25299/JTB.2021.VOL4(1).6068

Jalih, J. H., & Rani, I. H. (2020). Respon NPL Bank Konvensional di Indonesia: Analisis Sebelum dan Sesudah Pandemi Covid-19 dan Penerapan New Normal. *Reviu Akuntansi Dan Bisnis Indonesia*, *4*(2).

Liniarti, S., & Nasution, R. S. A. (2022). Analysis of Factors Affecting Learning Difficulties during the Covid 19 Pandemic. *Enrichment: Journal of Management*, *12*(2), 1291–1298. https://doi.org/10.37010/fcs.v3i1.537

Melinda, H., & Nurasik, N. (2021). Comparative Analysis of the Financial Performance of Banking Companies Before and After the Covid-19 Announcement. *Academia Open*, *5*, 1–13. https://doi.org/10.21070/acopen.5.2021.2370

Mou, J. (2020). Research on the Impact of COVID19 on Global Economy. *IOP Conference Series: Earth and Environmental Science*, *546*(3). https://doi.org/10.1088/1755-1315/546/3/032043

Nguyen, A. H., Nguyen, H. T., & Pham, H. T. (2020). Applying the CAMEL model to assess performance of commercial banks: Empirical evidence from Vietnam. *Banks and Bank Systems*, *15*(2). https://doi.org/10.21511/bbs.15(2).2020.16

Ningsih, I. W., & Aris, M. A. (2022). Analisis Komparatif Kinerja Keuangan Bank Sebelum Dan Selama Pandemi Covid-19. *Seminar Nasional Pariwisata Dan Kewirausahaan (SNPK)*, *1*(2020), 303–309. https://doi.org/10.36441/snpk.vol1.2022.55

OECD. (2020). *The impact of the coronavirus (COVID-19) crisis on development finance*.

Pandiangan, D. G., Effendi, I., & Lubis, A. (2022). Analisis Perbandingan Kinerja Keuangan Bank dalam Masa Pandemi Covid 19. *Economics, Business and Management Science Journal*, *2*(1), 49–56. https://doi.org/10.34007/ebmsj.v2i1.228

Sullivan, V. S., & Widoatmodjo, S. (2021). Kinerja Keuangan Bank Sebelum Dan Selama Pandemi (COVID – 19). *Jurnal Manajerial Dan Kewirausahaan*, *3*(1), 257–266. https://doi.org/10.24912/JMK.V3I1.11319

Tahir, S. H., Quddus, A., Kahnum, Z., & Usman, M. (2020). Determinants of Cash Holding Decision : Evidence from Food Industry of Pakistan. *Innovation Management and Education Excellence Vision 2020: Regional Development to Global Economice Growth*, 3032–3039.

Tiono, I., & Djaddang, S. (2021). Analisis Komparasi Kinerja Keuangan Pada Perbankan Konvensional Buku Iv Di Indonesia Sebelum Dan Sesudah Pandemi Covid-19. *BALANCE: Jurnal Akuntansi, Auditing Dan Keuangan*, *18*(1), 72–90. https://doi.org/10.25170/BALANCE.V18I1.2336

Tiwu, M. I. H. (2020). Pengaruh Pandemic Covid 19 Terhadap Npl Bank Perkreditan Rakyat Di Indonesia. *Jurnal Akuntansi : Transparansi Dan Akuntabilitas*, *8*(2), 79–87. https://doi.org/10.35508/jak.v8i2.2869

Wardhani, R. S., Rosalina, E., Elvany, R., & Awaluddin, M. (2021). A new decade for social changes. *Technium Social Sciences Journal*, *19*, 302–310.

Yasin, A., & Fisabilillah, L. W. P. (2021). Analisis Komparasi Kinerja Keuangan Bank Perkreditan Rakyat (BPR) Sebelum dan Pada Pandemi Covid-19. *EQUILIBRIUM : Jurnal Ilmiah Ekonomi Dan Pembelajarannya*, *9*(2), 142. https://doi.org/10.25273/equilibrium.v9i2.10011