The Pandemic Impact on Interest Based Income by Category of Commercial Banks in Indonesian

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

This study aims to analyze the impact of Covid-19 in Indonesia on commercial banks, especially in obtaining interest based income and proportion of interest based income as the main income of banks. This study uses quantitative descriptive method. The research was conducted Indonesia Stock Exchange, second quarter periode of 2018-2021. The data used are official documents as secondary data sources, namely banking financial reports obtained through the website www.idx.co.id. The research sample consisted of 18 commercial banks that were included in the BUKU II category, then the BUKU III category as many as 12 commercial banks, and BUKU IV recorded as many as 9 commercial banks. The test was carried out with the help of the IBM SPSS program, with data analysis methods including descriptive statistics, normality test using the One Sample Kolmogorov-Smirnov Test, and different tests using the Paired Sample T-Test and the Wilcoxon Signed-Ranks Test. The results of this study indicate that interest based income did not experience significant differences before and during the Covid-19 pandemic in all BUKU categories. Then the result of the proportion of interest based income there are significant differences in the BUKU IV category and overall banks, while in the BUKU II and III categories did not make a significant difference before and during the Covid-19 pandemic. It was concluded that interest based income as the main income of banks was able to survive in the midst of the pandemic, especially in the large bank category, with different proportions from before and during the Covid-19. On the other hand, small banks tended to decline and did not experience significant differences between before and during the Covid-19 pandemic.

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1. INTRODUCTION

The Covid-19 pandemic that has spread to Indonesia in the second quarter of 2020 has so far caused several problems, not only from the health aspect, but also from the Indonesian economy, which is marked by a contraction in Gross Domestic Product (GDP) decreased significantly in 2020 compared to previous years. One of the pressures of the crisis caused by the Covid-19 pandemic has an impact on banking operations. Sources of banking operating income consist of interest based income and fee based income [1]. However, interest based income as the bank's main income is the most affected, which can be seen in many banks experiencing a decline in credit levels, such as the government's policy through Bank Indonesia in the form of credit reconstruction by lowering the BI 7-Day Reverse Repo Rate (BI7DRR) by 25 bps to 3.75%, and the deposit facility interest rate fell to 2.75%, and the lending facility interest rate was reduced to 4.25%.

This policy will certainly affect the performance of banks in obtaining the bank's main income from interest based income so that this will trigger a slowdown and even a decline. The following is the average interest income generated by banks from 2019 to 2021 using the second quarter period.

Based on Fig. 1. shows interest income before the Covid-19 pandemic in Indonesia, namely in the 2019 period continuously decreased until the 2021 period which reached 3.6%, this of course was influenced by several problems such as BI's policy of lowering credit interest rates and limited company activities in obtaining income amidst the Covid-19 pandemic conditions.
People's behavior during the Covid-19 pandemic has also changed where customers will need more practical and easier transactions [2]. Thus, the best choice is in digital transactions, therefore banks will try and compete in launching the expansion of new features, especially in mobile banking services and to strengthen digital payment [3]. This phenomenon illustrates that the banking industry does not only rely on interest income in carrying out its operational activities, but seeks to increase its fund distribution activities by encouraging non-interest income or other operating income, so that this will trigger a decrease in the proportion of interest based income to operating income because there are increase from other sources such as fee based income.

The income obtained from interest based income in each bank will certainly be different, because small-sized banks and large-sized banks have different fund structures and in carrying out activities in the form of collecting/distributing funds and the products provided by these banks will be different, so this difference can be categorized with Commercial Banks Based on Business Activities (BUKU). Based on the Financial Services Authority Regulation No.6/POJK.03/2016, what is meant by BUKU is the grouping of banks based on business activities that are adjusted to the core capital owned by banks, there are four categories of BUKU. Thus, the difference in these categories will cause the strategies provided by the bank to also differ and result in the acquisition of interest based income that will not be the same for each BUKU category, so it is necessary to examine the differences according to the equivalent category.

Research by Setiyono and Hidayatullah [2] stated that there was a significant difference between the growth trend of interest-based income and fee-based income in banking during the Covid-19 pandemic with interest-based income which tended to decline sharply Research conducted by Sari [5] shows that interest income has a significant positive effect on banking profitability, while there is no positive effect of credit interest income on the financial performance of PT. BRI (Persero) Tbk. Panwangan Unit [5]. Research by Utami and Nidtyo [6] also explains that net interest income affects bank performance in both crisis and non-crisis periods and the BUKU category strengthens net interest income on bank performance.

This research is a modification of research by Setiyono and Hidayatullah [2] and previous research which has a different view. Research on net interest income or interest based income continues to grow and becomes an interesting topic for research in Indonesian banking because there is a downward trend in interest income [7]. Therefore, this study conducted a different test between interest-based income and the proportion of interest-based income between before and during the Covid-19 pandemic by classifying them according to the BOOK

category, in order to assess the impact of Covid-19 on main income. bank which will affect the view of the performance of commercial banks. Thus, this can be a research gap and is still relevant to be researched.

2. LITERATURE REVIEW, HYPOTHESIS DEVELOPMENT AND RESEARCH METHODS

2.1 Literature Review

2.1.1 Stewardship theory

Stewardship theory is defined as a theory that explains situations where managers are not motivated and do not have individual goals but are more concerned with the main goal, namely for the interests of the principal, so this theory is designed by executives as stewards who are motivated to act according to the wishes of the organization with rational considerations because they are more trying to achieve goals organizational goals [8]. Stewardship theory is considered, one of which is to explain that in terms of bank management providing credit, collecting customer funds, and managing interest income, as a steward, will try as much as possible to generate profit value for the bank it manages [9].

The assumption of stewardship theory is that there is a strong bond between civil satisfaction and the success of the company's goals. The theory is designed by researchers to examine the circumstances in which company managers as managers can be motivated to do what is best for the principals, as interest income can be categorized as a measure of efficiency in running a company [10].

2.1.2 Commercial Banks Based on Business Activities (BUKU)

Based on Financial Services Authority Regulation No.6/POJK.03/2016 what is meant by BUKU is the grouping of banks based on business activities adjusted to the core capital owned by banks. Banks can be grouped into four BUKU categories, namely:

1. BUKU I is a bank with a core capital of up to less than Rp1,000,000,000,000.00
2. BUKU II is a bank with a core capital of at least Rp1,000,000,000,000.00 up to less than Rp5,000,000,000,000.00.
3. BUKU III is a bank with a core capital of at least Rp5,000,000,000,000.00.
4. BUKU IV is a bank with a core capital of at least Rp. 30,000,000,000.00.

2.1.3 Interest based income

PSAK Number 23 Regarding Income explains that income is defined as the gross cash inflows originating from economic benefits arising from an entity's normal activities during the period with the increase not originating from investment. The components of bank income consist of operating income, other operating income, and non-operating income.
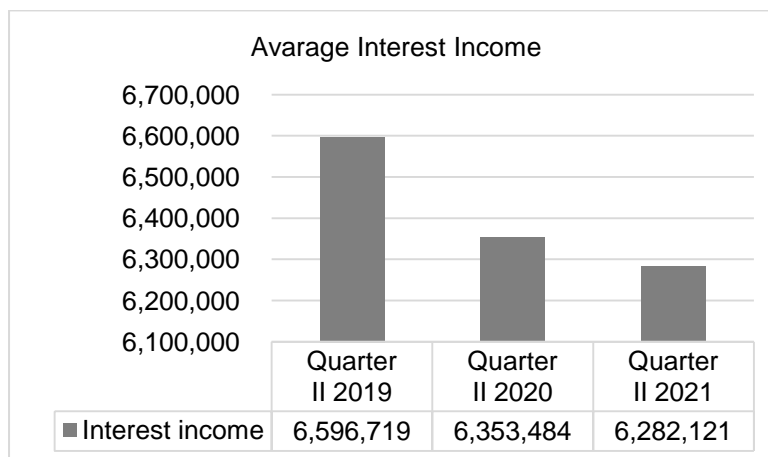

Fig. 1. Average Banking Interest Income for the Second Quarter of 2019-2021
Source: www.idx.co.id (processed data)

Interest based income is included in the operating income item, namely income from a bank activity, and one of the operating income posts includes interest income on loans or income generated from business activities carried out alone, income obtained from business activities in banking. is income derived from credit interest. Credit interest can be interpreted as remuneration provided by banks based on conventional principles to customers who buy and sell their products. In banking activities there are two kinds of interest, namely deposit interest and loan interest [11]. Deposit interest is defined as the interest given as a reward for customers who save their money in the bank, while loan interest is the interest paid to the borrowers or the price that the borrowing customer has to pay to the bank. The proportion of interest based income is calculated with interest income divided by total operating income sourced from interest income plus non-interest income.

2.2 Hypothesis Development

2.2.1 Differences interest based income before and during the covid-19 with the buku category

Stweardship theory explains that managers are not motivated and do not have individual goals but are more concerned with the main goal, namely for the interests of the principal, so that the acquisition of interest income is one of the the form of banking activities in achieving company goals, although the bank's main income is affected by the uncertainty of the Covid-19 pandemic, interest based income is still the main and largest income earned by banks from the results of operational activities.

Through previous research conducted by Setiyono and Hidayatullah which found that from the third quarter to the end of 2020 interest based income tends to decline sharply [2], and also research by Khotijah and Sugiyono which states that interest based income affects bank income [12], in line with Bintari et al. that interest based income also affects ROA [13]. And the results of Cakranegara state that there are differences in the characteristics of banks in each strata or category of BUKU [14].

During the Covid-19 pandemic, the trend of interest based income, especially interest income from customers (debtors), fluctuated and even tended to decline. Many aspects of the business were hit by problems, coupled with the policy of credit restructuring, and loosening of credit installment collections, as well as the reduction in bank loan interest rates issued by the government. Thus, bank interest income will certainly be depressed with operating expenses still having to be spent, so this is one of the triggers for the decline in interest based income, even the proportion of interest based income to banking operating income is also threatened to experience contraction.

The proportion of interest based income is assessed to see changes in the amount of interest income earned on total banking operating income and also as an estimate of whether there are other factors besides a decrease in interest based income, namely in this case an increase in income sourced from banking services, namely fee based income during the Covid19 pandemic. Based on the differences between each bank in obtaining income from operating income, banks are divided into the category of Commercial Banks Based on Business Activities (BUKU) to assess the accuracy of differences in interest based income in different classifications. Therefore, the proposed hypothesis is:

H1a: There is a significant difference in interest based income before and during the Covid-19 pandemic with the BUKU category.

H1b: There is a significant difference in the proportion of interest based income before and during the Covid-19 pandemic with the BUKU category.

2.3 Hypothesis Development

2.3.1 Research design

This research analyzes and makes comparisons between interest based income and the proportion of interest based income before and during the Covid-19 pandemic based on the BUKU category. The following research framework is formulated in this study:

2.3.2 Population and research sample

The population as objects in this study are banks that have been listed on the Indonesia Stock Exchange (IDX) for the period 2018-2021, namely the second quarter of 2018-2019, the period before the Covid-19 pandemic and the period of the second quarter 2020-2021 the time

during the Covid-19 pandemic. The selection of this bank is based on the core capital category, or better known as the Commercial Bank for Business Activities (BUKU). The sample was determined based on purposive sampling with predetermined sample selection criteria based on considerations that were adjusted to the research objectives. The following is the sample selection table for this research.

Based on the table above, the total research data obtained is 156 data, where the test is carried out based on the core capital category or BUKU I-IV. However, according to OJK, there are no longer banks with core capital below 1 Trillion Rupiah, namely the BUKU I category. Thus, there are only 18 banks that fall into the BUKU II category with core capital between 1 – 5 Trillion Rupiah, then banks with core capital between 5 – 30 Trillion Rupiah, namely the BUKU III category there were 12 banks and the last BUKU IV category became a bank with a core capital of more than 30 Trillion Rupiah, namely 9 banks.

2.3.3 Data collection techniques

Research uses quantitative data types, namely developing a mathematical model with data in the form of numbers from financial reports to see interest based income. The document used in this study is an official document used as a secondary data source, namely the financial statements of banking companies listed on the Indonesia Stock Exchange. This study uses data collection techniques by means of documentation as well as recording and collecting company financial statements obtained through the official website of the Indonesian Stock Exchange, namely www.idx.co.id.

2.3.4 Data analysis method

The data analysis method used in this research is descriptive statistics, then normality test is also carried out and different tests are used to test research hypotheses. The normality test uses the One Sample Kolmogorov Smirnov Test analysis tool, while the hypothesis testing is carried out with the Paired Sample t-test if the data is normally distributed and if the data is not normally distributed then the Wilcoxon Signed Rank Test is used. Microsoft excel 2016 and the Statistical Package for the Social Sciences (SPSS) version 26.0 software were the assistance programs used in the test.
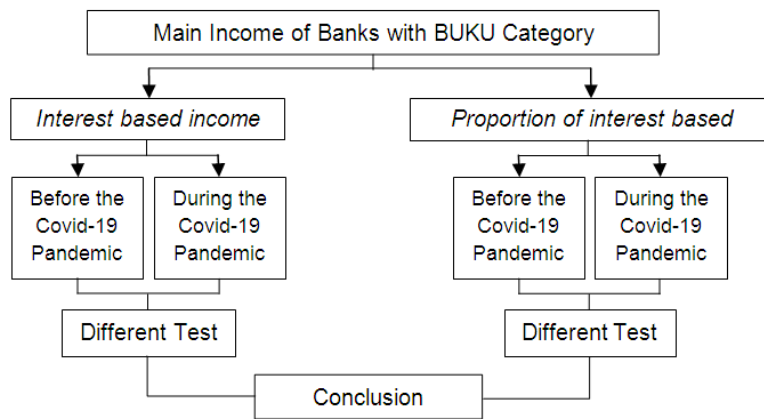
Fig. 2. Theoritical Framework

Table 1. Research sample selection

Information	Total
Banks listed on the IDX during the period June 2018 – June 2021	47
Banks that did not publish complete quarterly financial statements during the period June 2018 – June 2021	(6)
Banks that did not have interest income during the period June 2018 – June 2021	(2)
The number of research samples	39
Total research data (39×4 period)	156

3. RESULTS AND DISCUSSION

3.1 Data Analysis

3.1.1 Descriptive statistica analysis

The descriptive statistical analysis of the two variables is as follows.

Based on Table 2. it can be seen that interest based income or interest income has decreased in certain BUKU categories only, this illustrates in general that changes in interest income from before and during the Covid-19 pandemic did not experience significant changes.

Illustrated in the maximum value and minimum value, it can be seen in BUKU II, namely PT Bank OKE Indonesia Tbk. generated the lowest interest-based income for the period before and during the Covid-19 pandemic, which was only Rp.100,037,890,000, with the highest interest income in BUKU II being PT Bank Victoria Indonesia Tbk. which generates income of more than 1 Trillion Rupiah. In BUKU III, the lowest score both in the period before and during the pandemic was produced by PT Bank Jago Indonesia Tbk. which only generates no more than 50 billion Rupiah. Furthermore, in BUKU III the period before the pandemic with PT Bank Maybank Indonesia Tbk. generated the highest value and during the period during the Covid-19

pandemic the highest interest based income was obtained by PT Bank Tabungan Negara (Persero) Tbk., both of which reached more than 11 Trillion Rupiah. Then the period before and during the pandemic the lowest interest based income income in the BUKU IV category was produced by PT Bank Permata (Persero) Tbk. and at least more than 50 Trillion Rupiah generated by PT Bank Rakyat Indonesia Tbk. so that it becomes the highest gain.

On average, interest income in BUKU II and III decreased, due to small bank credit contracting, where according to the OJK, bank credit as of April 2021 was still contracting by 3.6%. Only in BUKU IV did interest income increase due to improvement in lending to the large bank industry, which was getting higher in the third quarter of 2021, namely at BRI and BCA which experienced an increase in interest income in line with the company's ability to maintain profits.

With the assessment that the mean of all BUKU categories is higher than the standard deviation value, the variability of the interest based income variable in the second quarter in the period before the pandemic and during the pandemic has an even distribution, so that this acquisition states that the data taken in the study is good because there are no deviations. quite large data.

Table 2. Descriptive statistical results interest based income

BUKU	Period	N	Minimum*	Maximum*	Mean*	Std. Deviation*
II	Before	36	100,037.89	1,161,243.15	441,295.29	318,237.27
	During	36	89,611.18	998,325.44	425,472.36	258,534.98
III	Before	24	27,184.48	11,591,212.00	3,952,008.78	3,112,961.04
	During	24	41,261.00	11,380,512.00	3,795,167.54	3,135,897.24
IV	Before	18	4,593,540.00	58,403,407.00	20,895,558.67	17,152,346.91
	During	18	4,978,714.00	59,873,100.00	21,465,975.72	18,226,415.51
II-IV	Before	78	27,184.48	58,403,407.00	6,241,487.46	11,638,703.58
	During	78	41,261.00	59,873,100.00	6,315,486.51	12,173,636.01

In Million Rupiah

Table 3. Descriptive statistical results interest based income

BUKU	Period	N	Minimum	Maximum	Mean	Std. Deviation
II	Before	36	69.33	99.31	91.78	6.72
	During	36	48.39	98.86	90.04	9.10
III	Before	24	65.82	99.27	89.19	7.57
	During	24	55.16	104.04	88.41	9.62
IV	Before	18	74.25	94.12	83.90	5.80
	During	18	75.11	92.96	81.92	5.47
II-IV	Before	78	65.82	99.31	89.17	7.40
	During	78	48.39	104.04	87.66	9.08

In Table 3. which is the result of descriptive statistics from the proportion of interest based income to total operating income, it can be seen that there is a decrease in the proportion from before the Covid-19 pandemic to the Covid-19 pandemic period, which is a decrease of almost 2% from each BUKU. It can be seen in the minimum and maximum values that the proportion of interest based income as a whole has decreased, but in BUKU III there has been a drastic increase, this is because at PT Bank Bukopin Tbk. experienced minus income from fee-based income in the second quarter of 2021, so the proportion of interest-based income as the main income became a very large proportion.

In BUKU II, III, IV, and as a whole, banks seen from the mean (average) proportion of interest based income experienced a downward change from the period before to the period during the Covid-19 pandemic. Then there is no big deviation from the interest based income proportion data because it is reflected in the standard deviation value which is lower than the mean (average) so that the data varies or spreads evenly.

3.1.2 Normality test

A normality test needs to be carried out to assess the spread of research data, whether the data passes the normality test, meaning that the data is normally distributed or does the data do not pass the normality test where the data is not normally distributed, and this test is also used as a condition for testing the hypothesis, namely the parametric difference test. or nonparametric. One sample kolmogorov smirnov-test is an analytical tool used in this test. The following are the test results from interest based income data and the proportion of interest based income in the BUKU II-IV category for the period before and during the Covid-19 pandemic.

Based on table 4. which is the result of the normality test on interest-based income data, and the proportion of interest-based income in the BUKU II-IV category and overall banks for the period before and during the Covid-19 pandemic, it can be seen that in the BUKU category of interest-based income, the significance is greater than 0.05, namely in BUKU II and BUKU III, namely 0.200> 0.05 so that the data is normally distributed, the rest is in BUKU IV and all banks have a significance value of less than 0.05 then the results do not meet the

data requirements can be said to be normal . Then the proportion of interest based income in BUKU II, IV, and overall banks got a significance value of 0.200 > 0.05 which concluded that the data met the normality requirements, and only in BUKU III, especially in the period before the Covid-19 pandemic which had a value of less than 0. 0.05, which is 0.004 so that the data in BUKU III is concluded to be not normally distributed. Thus, hypothesis testing is carried out by using a paired sample t-test if the data is normally distributed and vice versa if the data is not normally distributed then the Wilcoxon signed ranks test is used for testing.

3.1.3 Difference Test

3.1.3.1 Comparison of interest based income before and during the covid-19 pandemic

The following are the results of the interest based income difference test based on the BUKU category between the period before and during the Covid-19 pandemic, as follows.

Based on table 5. BUKU II, III, IV and overall banks between the periods before and during the Covid-19 pandemic, it can be seen that the results of the different tests show that the significance value is greater than ($α = 0.05$) so that in conclusion there is no significant difference between interest based income before and during the Covid-19 pandemic with all BUKU categories, thus H_{1a} is not supported.

Interest based income in BUKU II and BUKU III seems to have decreased slightly during the Covid-19 pandemic, this indicates that small banks are still being affected by the Covid-19 pandemic. However, apart from that, banks in BUKU IV tend to be able to maintain their operations as seen in the increase in interest based income, meaning that large banks are still able to maintain and maximize income during the pandemic.

The cause of the test results is that there is no difference in interest based income before and during the Covid-19 pandemic due to insignificant changes in interest income and in line with the improvement in banking income in the II-III 2021 quarter with soaring economic growth to 7.07% according to the Central Statistics Agency. (CNBC Indonesia, 2021). The following is gross domestic product as a benchmark for Indonesia's economic growth.

Table 4. Normality test results

BUKU	Period	Interest Based Income	Proportion Interest Based Income
II	Before	0.200	0.200
	During	0.200	0.200
III	Before	0.200	0.004
	During	0.200	0.141
IV	Before	0.001	0.200
	During	0.000	0.200
II-IV	Before	0.000	0.200
	During	0.000	0.200

Table 5. Interet based difference test resultsincome

BUKU	Average		Asym. Sig (2-Tailed)	Conclusion	Information
	Before*	During*			
II	441,295.29	425,472.36	0.909	Not Supported	There is no significant difference
III	3,952,008.78	3,795,167.54	0.364	Not Supported	There is no significant difference
IV	20,895,558.67	21,465,975.72	0.647	Not Supported	There is no significant difference
II-IV	6,241,729.45	6,317,802.42	0.836	Not Supported	There is no significant difference

In Millions of Rupiah
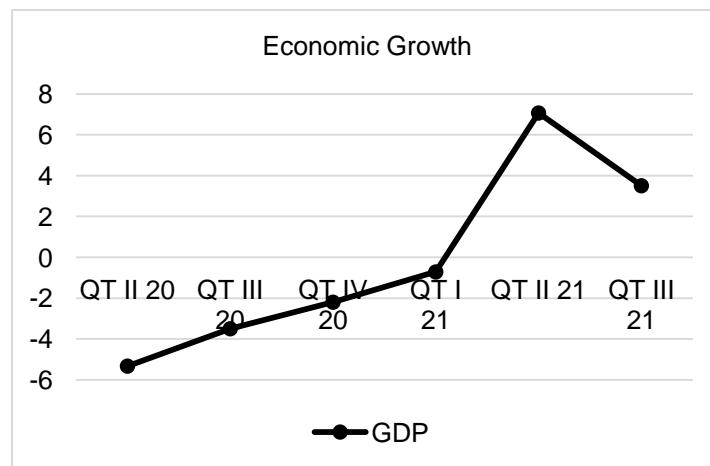
Fig. 3. Indonesia's Economic Growth Quarter II 2020-Quarter III 2021
Source: www.bps.go.id

This improvement is supported by the start of improving credit demand in line with the ongoing recovery in banking performance, followed by the decrease in the daily positive case rate and accompanied by a gradual loosening of PPKM, therefore credit demand will increase again accompanied by increased community mobility and the reopening of economic activity so that interest income will tend to recover.

Based on the OJK, during 2021 the banking intermediation function recorded an improvement trend compared to the previous year which was marked by the positive growth of bank credit. There has been positive growth in banking credit from the start of the Covid-19 pandemic in Indonesia, namely in 2020 reaching Rp. 5,481.560 million with the current pandemic period, which is 2021, increasing to Rp. 5,768,580,000,000 with an increase of 5.2% yoy. Meanwhile, credit growth by type, namely MSMEs grew 3.67%, Consumption 4.67%, and Corporates 2.72%.

Efforts to rescue non-performing loans by the bank usually provide several ways, one of which is credit restructuring [15]. However, the credit trend to the trend in the number of Covid-19 restructuring debtors as of April to June and even to November 2021 continues to experience a downward movement compared to the previous month. The role of credit restructuring is very large and even affects the interest income of banks so that the stability of the financial services sector can grow positively.

Outstanding credit restructuring in 2020 reached IDR 829,718,000,000, but in 2021 outstanding restructuring began to decline compared to December 2020, where as of November 2021 the total was IDR 693,630,000,000 with the number of MSMEs of IDR 264,875,000,000 and non MSMEs as much as IDR 428,755,000,000. Along with the number of restructuring debtors during the Covid-19 pandemic which showed a declining trend for both MSMEs and Non MSMEs. The number of debtors, which was initially 6,258,129 debtors, then decreased to 4,219,112 debtors as of November 2021, with a decrease in MSMEs by 32.89% and Non MSMEs by 31.75%. This indicates that the outstanding credit restructuring impacted by Covid-19 in the banking sector continues to decline, which is largely due to the fact that many debtors have returned to carrying out their obligations normally as the business world has improved.

Although the tests obtained show no significant difference, it can be seen that the average interest-based income at BUKU II and III banks has decreased, but in contrast to BUKU IV, which has increased due to a decrease in outstanding credit reconstruction in the third quarter of 2021, especially in the third quarter of 2021. BRI and BCA, based on Cakranegara research which explains that banks in the BUKU IV category will be relatively more resilient to crisis compared to other bank categories, because there are three strengths, namely the highest level of income, the highest liquidity and the highest asset quality [14].

3.1.3.2 Comparison of the proportion of interest based income before and during the covid-19 pandemic

The details of the test results for the different proportions of interest based income before and during the Covid-19 pandemic with the BUKU category are as follows.

From table 6. which is the result of a different test of the proportion of interest based income to total operating income before and during the Covid-19 pandemic with BUKU II, III, IV categories and as a whole bank, resulting in a significant value BUKU II and BUKU III are 0.406 and 0.361, respectively, where this result is greater than (α=0.05), thus the proportion of interest based income before and during the Covid-19 pandemic is in the BUKU II and BUKU III categories. did not produce a significant difference. However, the significance value in BUKU IV and as a whole for the bank is 0.035 and 0.000, this indicates that the value is smaller than the 0.05 significance level, so the conclusion is not supported, which means that there is no difference in the proportion of interest based income before and during the Covid-19 pandemic with the BUKU category because only the BUKU IV category and all banks experienced significant differences.

The difference in the results obtained was due to in BUKU II and III the change in interest based income decreased on average which was not significant or only about 1% compared to the BUKU IV category, where the decrease in the proportion of interest based income resulted from an increase in fee based income which is a component of total operating income, so there is also a difference in the overall proportion of banks because the role of BUKU IV income is very large for all banks, meaning that large banks can still survive in obtaining interest income, but not in proportion because during the Covid-19 pandemic fee-based income a very significant increase of 19% compared to the increase in interest based income which was only 2%. It is different with small banks, although they are quite depressed due to low interest income, other operating income has not changed significantly during the Covid-19 pandemic.

From the two test results, it can be concluded that although the results of the interest-based income test in all BUKU categories are not different, in terms of the proportion of BUKU IV and all banks there are significant differences, meaning that large banks have changed in the structure of the ratio of interest income. where the ratio of interest income to total operating income is lower than the period before the Covid-19 pandemic, this indicates that there is an increase in another proportion in this case is other operating income to total operating income. On the other hand, small banks that fall into the BUKU II and III categories are indicated

Table 6. The results of the different interest based income proportion test

BUKU	Average.		Asy Sig (2-Tailed)	Conclusion	Information
	Before	During			
II	91.78	90.04	0.406	Not Supported	There is no significant difference
III	89.19	88.41	0.361	Not Supported	There is no significant difference
IV	83.90	81.92	0.035	Supported	There is a significant difference
II-IV	89.17	87.66	0.000	Supported	There is a significant difference

to have not experienced significant changes both in interest based income and their proportion to total operating income, therefore the Covid-19 pandemic does not significantly affect interest income for banks with core capital. small ones, especially BUKU II and III.

4. CONCLUSION

a. The results of the Paired Sample T-Test and the Wilcoxon Signed-Ranks Test on interest based income between before and during the Covid-19 pandemic with the BUKU II, III, IV categories and overall banks concluded that there was no significant difference. Thus, the banking sector during the Covid-19 pandemic was still able to maintain interest income even though in BUKU II and III the acquisition of interest based income was sloping, while in BUKU IV it tended to be stable and even increased although not significantly due to credit restructuring at the beginning of the pandemic, but there were improvements. in the second quarter of 2021 which is marked by Indonesia's GDP starting to increase.

b. The results of the Paired Sample T-Test and the Wilcoxon Signed-Ranks Test on the proportion of interest based income between before and during the Covid-19 pandemic with the BUKU II, III categories showed no significant differences, but there were significant differences in the BUKU IV category and significantly whole bank. This explains that there is another proportion that results in a difference in the proportion of interest-based income at large banks that fall into the BUKU IV category, namely an increase in fee-based income during the Covid-19 pandemic.

5. SUGGESTION

a. The results show that overall interest based income from all BUKU categories does not experience significant

differences, so further research is needed by adding or changing the research period to find out more about the impact of the Covid-19 pandemic on interest based income and its proportion in banking Indonesia, because the pandemic has not yet ended, it is possible that economic activities are still limited which will affect the main income of banks.

b. As the category of Commercial Banks Based on Business Activities (BUKU) which was implemented in Indonesia from the end of 2012 to mid 2021, with that the BUKU category has changed to the category of Bank Groups Based on Core Capital (KBMI) which is effective from July 2021, so that further research can replace the category BUKU with a new bank classification category, namely KBMI which has been approved by the Financial Services Authority (OJK) at the end of June 2021.

c. In 2020, apart from the Covid-19 pandemic in Indonesia, the application of PSAK 71 will also begin in 2020. Therefore further research can pay attention to the factors of changes in PSAK 71 to CKPN which may have an impact on banking income and expenses so that it affects changes in interest based income and its proportion.

d. For banking, technology development and increasingly fierce competition between banks are one of the important reasons for optimizing income other than interest or interest based income. One of them is by optimizing fee-based income which can be a preventive measure for lending which is predicted to be limited, because it can be an alternative to support the bank's main income, one of which is obtained from the bank's service activities.

DISCLAIMER

The products used for this research are commonly and predominantly use products in

our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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