e-Jurnal Apresiasi Ekonomi Volume 13, Nomor 2, Mei 2025 : 369-380 ISSN Cetak : 2337-3997
ISSN Online : 2613-9774

ANALYSIS OF UNCERTAINTY DURING THE COVID-19 PANDEMIC ON NIM, ROA, NPL, AND BOPO AT RURAL BANKS

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ABSTRACT

This study analyzes the effect of uncertainty due to the Covid-19 pandemic on the financial performance of conventional BPRs in Bali during the period 2016-2023. This research is important because it can provide insight into how strong BPR banks are in facing the crisis. Analysis of NIM, ROA, NPL, and BOPO, can understand the bank's ability to maintain profitability and operational efficiency amid economic uncertainty. Uncertainty is measured through the standard deviation of assets, funding, and loan growth as independent variables, while financial performance is evaluated using the NIM, ROA, NPL, and BOPO ratios as dependent variables. The research method used is quantitative with multiple regression method, the research sample was 66 BPR in Bali and the data analysis technique used multiple regression with SPSS 27.00 software with four equations. The results of the study show that H1, H2, H3, H4, H10, and H11 do not meet the hypothesis, while H5, H6, H7, H8, H9, and H12 meet the hypothesis. In hypotheses H1, H2, H3 and H4, the independent variable, namely the standard deviation of assets, has a significant positive effect on the dependent variables NIM and ROA, and a negative effect on the dependent variables NPL and BOPO. Furthermore, in H10 and H11, the independent variable does not affect the dependent variable, which means that the standard deviation of loan growth does not affect ROA and NPL. In H5, H6, H7, H8, H9, and H12, the hypothesis shows that the standard deviation of funding has a significant negative effect on NIM and ROA, and a significant positive effect on NPL and BOPO. In addition, the standard deviation of loan growth has a significant negative effect on NIM and a significant positive effect on BOPO.

Keywords: ***Uncertainty, Standard Deviation of Assets, Standard Deviation of Funding, Standard Deviation of Loan Growth, NIM, ROA, NPL, BOPO, BPR***

INTRODUCTION

*Coronavirus Disease*2019 (Covid-19) has become a terrible disease scourge throughout the world. In a short time, this outbreak has spread to hundreds of countries across continents since the first case was discovered at the end of 2019 in China. As of December 7, 2022, there have been 647 million cases of Covid-19 recorded in the world and 6.65 million people have died due to this pandemic. In Indonesia itself, the Covid-19 pandemic was declared a national disaster by the President of the Republic of Indonesia, Joko Widodo through Presidential Decree No. 12 of 2020 dated April 13, 2020. This pandemic has an impact on the emergence of uncertainty in all aspects of people's lives, including in the financial sector.

In general, the terms uncertainty and risk are often considered as two identical terms, even though in fact the two terms have different meanings. Uncertainty refers to the definition of unpredictable risk, while the term risk itself refers to predicted risk. Risk arises because there are uncertain or uncertain conditions. For example, investment activities, this can provide benefits, but can also cause losses. Thus, talking about uncertainty means not being separated from talking about risk because risk itself is the result of uncertainty.

The bank's response to uncertain situations can be reflected in the activities it undertakes to generate income other than interest. During times of high levels of uncertainty, banks tend to shift their portfolios to non-traditional activities that generate income other than interest (Tren et al., 2021). The bank's response to the overall components of income or expenses during times of uncertainty is also more evident in banks with high levels of*default credit risk*higher (Dang & Nguyen, 2022).

Based on Law Number 10 of 1998 concerning Banking, "A bank is a business entity that collects funds from the public in the form of savings and distributes them to the public in the form of credit and/or other forms in order to improve the standard of living of the people, consisting of Commercial Banks and Rural Credit Banks, both in conventional and Sharia forms". It is further explained that "Rural Credit Banks (BPR) are banks that carry out business activities

conventionally or based on sharia principles which in their activities do not provide services in payment transactions".The PSBB policy has had a significant impact on the income of BPR debtors, especially MSMEs, because many were forced to close their businesses early. The decline in people's purchasing power also worsened the situation, coupled with the lockdown policy and export restrictions that affected MSMEs in the tourism sector. MSMEs experienced four main problems: difficulty in obtaining capital loans, cash flow pressure, difficulty in obtaining raw materials, and reduced demand. As a result, many BPR debtors had difficulty paying credit installments. Internally, BPRs had difficulty in product marketing and collection due to physical operational restrictions. The impact of Covid-19 on BPR operational income in Indonesia is clearly visible. The phenomenon of the impact of Covid-19 on BPR operational income in Indonesia can be seen in the following picture.

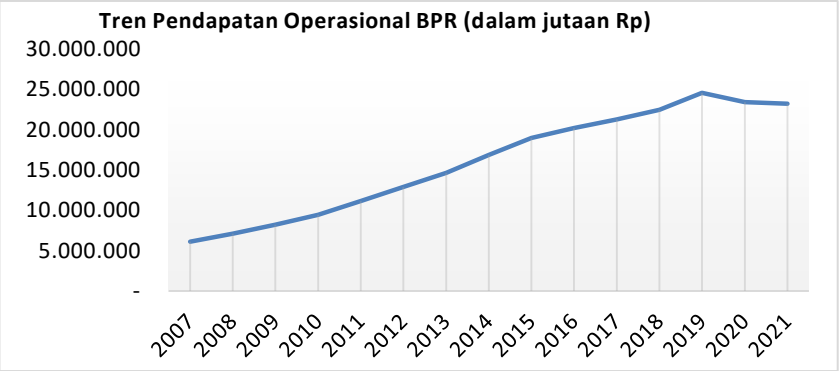

Figure 1. Trend of BPR Operational Income in Indonesia
Source: OJK data (processed)

Referring to the image above, it can be clearly seen that there is a significant downward trend in the operating income of Rural Credit Banks (BPR) in Indonesia during the period 2020 to 2021 which is the **Gap Phenomenon in this study**. This decline is not only striking, but also shows a significant gap phenomenon in the financial performance of these financial institutions. This phenomenon reflects the significant impact of the Covid-19 pandemic, which has affected various economic sectors, including the micro banking sector. With social restrictions, decreased economic activity, and increased uncertainty hitting the community, many BPRs face challenges in maintaining their operating income. This has led to a drastic decline in cash flow and profitability, which in turn can affect the BPR's ability to provide optimal service to customers and maintain their financial stability. Therefore, a deep understanding of the impact of this pandemic is very important to formulate an effective recovery strategy and ensure the sustainability of BPR operations in the future.

This research is to fill **research gap**in related literatureFrom the perspective of financial services institutions, there is a body of empirical literature on the impact of uncertainty, but evidence on the relationship between uncertainty and banking profitability is very limited. In addition, there is still a research gap between studies that discuss the issue of economic policy uncertainty and microprudential uncertainty, including the impact of banking variable volatility (Dang & Nguyen, 2022). Athari (2021) explores the relationship between local political policies and global economic policy uncertainty on the profitability of Ukrainian banks, measuring bank returns with ROA and ROE and using economic policy indices from 20 countries. Another study by Danisman et al. (2021) discusses the impact of economic policy uncertainty on loan loss provisions. Butch et al. (2015) analyze the effect of uncertainty on assets, profitability, funding, and loan growth. According to Dang & Nguyen (2022), uncertainty has a negative impact on net interest income and loan loss provisions, but a positive impact on non-interest income, using bank-level data for more in-depth analysis.

The **novelty of this research** is by referring to existing literature,lies in the approach used, namely examining uncertainty by utilizing the standard deviation of various variables, such as assets, funding, and loan growth, against the profitability performance ratio, productive assets, and operational efficiency at Rural Credit Banks (BPR) in Indonesia. Until now, there has been no research that specifically explores this relationship in the context of BPR, while previous studies have focused more on the performance or profitability of commercial banks abroad. Thus, this study

seeks to fill the gap in the existing literature, while providing new insights into how uncertainty in various financial aspects can affect the performance of microfinance institutions in Indonesia, which have different characteristics and challenges compared to commercial banks in other countries. This approach is expected to pave the way for further research and provide practical implications for BPR management in dealing with uncertainty in the market.

FORMULATION OF THE PROBLEM

The phenomenon that during the Covid-19 pandemic period in 2020-2021, BPR operational income in Indonesia has decreased. In addition, no research has been found on the effect of uncertainty with a standard deviation approach: assets, funding and loan growth on the profitability performance ratio, productive assets, and efficiency in BPR in Indonesia, the research questions are as follows:

1. Does asset standard deviation affect NIM?
2. Does asset standard deviation affect ROA?
3. Does asset standard deviation affect NPL?
4. Does asset standard deviation affect BOPO?
5. Does funding standard deviation affect NIM?
6. Does funding standard deviation affect ROA?
7. Is there any influence of funding standard deviation on NPL?
8. Is there an influence of funding standard deviation on BOPO?
9. Is there any influence of standard deviation of loan growth on NIM?
10. Is there an influence of standard deviation of loan growth on ROA?
11. Is there any influence of standard deviation of loan growth on NPL?
12. Is there an influence of standard deviation of loan growth on BOPO?

LITERATURE REVIEW

Relationship Between Research Variables

The Effect of Asset Standard Deviation on NIM

NIM is net interest income divided by the total earning assets.In the Covid-19 pandemic, in general, MSMEs, which are the main market for BPRs, experienced a significant decrease in income because many businesses had to close their businesses early, in addition to a decrease in people's purchasing power. This resulted in an increase in the number of non-performing loans so that BPR's net interest income would decrease. On the other hand, BPRs are also more careful in distributing credit, thus slowing down efforts to obtain credit interest income. This is also supported by research by Dang & Nguyen (2022), where uncertainty has a negative effect on net interest income. Referring to the description above, the following hypothesis is proposed:

H1: NIM is Negatively Affected by Asset Standard Deviation

The Effect of Asset Standard Deviation on ROA

The ROA ratio is an indicator that reflects the company's profitability in using its assets (Ibrahim, 2015). ROA is used to assess the company's profitability which is measured by dividing net income by total assets. In periods of uncertainty, companies will be more careful in carrying out expansion (Bloom et al, 2013). This can be interpreted that during periods of uncertainty, BPR credit expansion will be tighter because management is more careful so that the business scale tends to stagnate or even decline. Considering that credit interest income is the main source of BPR income, if credit expansion does not grow positively, this has the potential to reduce its profitability. Referring to the conditions above, the following hypotheses can be proposed:

H2: ROA Is Negatively Affected By Asset Standard Deviation

The Effect of Asset Standard Deviation on Non Performing Loans (NPL)

The Covid-19 outbreak that hit Indonesia has had a negative impact on the people's economy. Many MSMEs have experienced a continuous decline in income so that they have been forced to close their businesses. This has led to an increase in the unemployment rate which also means an increase in household debt. BPRs that focus on distributing credit to MSMEs have of course experienced an increase in the number of non-performing loans and higher NPLs. Research by Park & Shin (2021) shows that uncertainty has a positive effect on NPLs. Based on this condition, the following hypothesis is proposed:

H3: NPL is Positively Affected by Asset Standard Deviation

The Effect of Asset Standard Deviation on BOPO

In periods of uncertainty, companies will be more careful in expanding their businesses (Bloom et al, 2013). During the Covid-19 period, BPR performance generally declined due to slowing credit expansion and increasing numbers of non-performing loans. This has an impact on the increase in the BOPO ratio due to decreasing operating income from credit interest but operating costs tend to remain the same. Referring to the conditions above, the following hypothesis is proposed:

H4: BOPO is Positively Affected by Asset Standard Deviation

The Effect of Funding Standard Deviation on NIM

The funding standard deviation shows the fluctuation of third party fund collection in a certain period and can be used as an approach in terms of indicating uncertainty (Butch et al., 2015). During the Covid-19 period, BPR customers tend to withdraw their savings for living expenses including health. This indicates that the funds available for credit expansion will be increasingly limited so that interest income will decrease. In addition, to obtain funding, BPR will require greater efforts, thereby increasing the cost of funds and further reducing NIM. Referring to the conditions above, the following hypothesis is proposed:

H5: NIM is negatively affected by funding standard deviation

The Effect of Funding Standard Deviation on ROA

In the period of uncertainty of Covid-19, MSMEs who are BPR customers will tend to withdraw savings to meet daily needs. The decrease in the number of BPR customer deposits will affect the decrease in the number of BPR assets and the limited ability to carry out credit expansion. This is because funds for credit distribution become uncertain and will further impact the decline in interest income and ROA ratio. Based on this description, the following hypothesis is proposed:

H6: Funding Standard Deviation Has a Negative Effect on ROA

The Effect of Funding Standard Deviation on Non-performing Loans (NPL)

The weakening economy due to the Covid-19 pandemic has the potential to cause withdrawals of customer savings at BPR. This causes funds to distribute credit to decrease. If the ability to distribute credit decreases during Covid-19, while on the other hand the amount of non-current credit increases because MSMEs experience a decline in business, then the NPL ratio will increase. Mathematically, NPL is the amount of non-current credit divided by total credit. If non-current credit increases while total credit as a divisor tends to remain the same or even decrease, then the NPL ratio will automatically increase. Based on this description, the following hypothesis is proposed:

H7: Funding Standard Deviation Has a Positive Effect on NPL

The Effect of Funding Standard Deviation on BOPO

During Covid-19, BPR customers tend to withdraw their savings due to a decline in business or to meet daily needs. This indicates that the funds available for credit expansion will be increasingly limited so that interest income will decrease. In addition, to obtain funding, BPR will require greater efforts, thereby increasing the cost of funds and further causing interest income margins to decline and operational costs to increase. Based on this description, the following hypothesis is proposed:

H8: Funding Standard Deviation Has a Positive Effect on BOPO

The Effect of Standard Deviation of Loan Growth on NIM

During Covid-19, BPR management tends to be more careful in distributing new credit. This will have an impact on the decline in the credit portfolio in BPR's earning assets and ultimately cause credit interest income to decline further. If credit interest income decreases, the NIM ratio will also decrease. Referring to these conditions, the following hypothesis is proposed:

H9: Standard Deviation of Loan Growth Has a Negative Effect on NIM

The Effect of Standard Deviation of Loan Growth on ROA

Credit interest income is the main source of BPR income. Thus, if credit expansion does not grow positively, this has the potential to reduce its profitability. Referring to these conditions, the following hypothesis is proposed:

H10: The standard deviation of loan growth has a negative effect on ROA.

The Effect of Standard Deviation of Loan Growth on Non-performing Loan (NPL)

The weakening economy due to the Covid-19 pandemic has the potential to increase non-performing loans because BPR debtors, especially the MSME sector, are experiencing a decline in business. On the other hand, credit tends to decrease because BPRs are more careful in distributing credit. This will cause the NPL ratio to increase because the number of non-performing loans tends to increase while credit growth tends to decrease. Referring to the conditions above, the following hypothesis is proposed:

H11: The standard deviation of loan growth has a positive effect on NPL.

The Effect of Standard Deviation of Loan Growth on BOPO

During the Covid-19 period, credit distribution will tend to decrease because BPR management will be more careful in disbursing new credit. This will have an impact on decreasing credit interest income. If credit interest income, which is the main income of BPR, decreases, then BPR's operational income will also decrease. On the other hand, operational costs, especially HR salary costs, tend to stagnate so that the BOPO ratio has the potential to increase. Based on this description, the following hypothesis is proposed:

H12: The standard deviation of loan growth has a positive effect on BOPO.

Framework

From the literature review and ideas from previous research, a research framework was obtained, namely as follows.

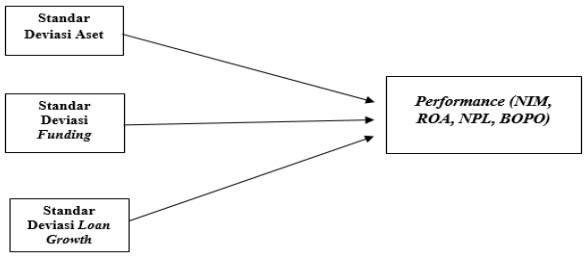

Figure 2. Framework of Thought

RESEARCH METHODS

Research Design

The design of this research is quantitative and aims to analyze the influence of uncertainty analysis during the Covid-19 pandemic on NIM, ROA, NPL, and BOPO at Rural Credit Banks.in Bali for the period 2016 – 2023.

Types and Sources of Research Data

The type of data source used in the research is a secondary data source consisting ofNIM, ROA, NPL, BOPO of conventional BPRs for the period 2016 to 2021. Data sources were obtained from the BPR Annual Report through the database on the BPR Banking Information System (SIP) managed by the OJK Department of Banking Licensing and Research (DPIP).

Population and Sample

The population of this study is all conventional BPRs in Bali Province registered with the OJK for the period 2016-2023 and totaling 132 BPRs. The research sample uses a purposive sampling technique, providing the following limitations that will be used as sampling, conventional BPRs registered with the OJK and have submitted financial reports during the period 2016-2023, have a minimum core capital of IDR 6 billion - IDR 50 billion, and have not had their business licenses revoked during the period 2016-2023.

Method of collecting data

This study uses secondary data taken from OJK data in the form of BPR annual financial reports through the database on the BPR Banking Information System (SIP) managed by the OJK Department of Banking Licensing and Research (DPIP) for the 2016-2023 period.

RESEARCH RESULT

Descriptive Statistics of Variables

Descriptive statistics of Uncertainty consisting of Std. Assets, Std. Funding, and Std. Loan Growth andThe dependent variables are NIM, ROA, NPL, and BOPO, as follows:

Table 1. Descriptive Statistical Analysis

VARIABLES	N	Min	Max	Mean	Std Deviation
NIM (%)	528	-3.01	15.31	7.32	2.81
ROA (%)	528	-13.68	11.57	1.40	3.12
NPL (%)	528	0.00	64.41	10.90	8.85
BOPO (%)	528	39.78	299.21	92.26	25.25
STD ASSETS (thousands)	528	249,400	47,005,090	5,112,509	5,984,990
STD FUNDING (thousands)	528	143,908	46,209,251	4,466,348	5,232,169
STD LOAN GROWTH (thousands)	528	256,407	50,387,512	3,596,564	4,316,760

Based on table 1. above, it can be seen that the lowest NIM is -3.01% and the highest NIM is 15.31%. The average NIM value is 7.32% with a standard deviation of 2.81%. Based on further review, the lowest NIM was experienced by BPR 601857 in 2023 and the highest NIM was achieved by BPR 601850 in 2022.

The lowest ROA is -13.68% and the highest ROA is 11.57%. The average ROA value is 1.40% with a standard deviation of 3.12%.Based on further review, the lowest ROAexperienced by BPR 601823 in 2022 and the highest ROA was achieved by BPR 601818 in 2016.

The lowest NPL was 0.00% and the highest NPL was 64.41%. The average NPL value was 10.90% with a standard deviation of 8.85%. Based on further review, the lowest NPL was achieved by BPR 601825 in 2016 and the highest NPL was experienced by BPR 601823 in 2020.

The lowest BOPO was 39.78% and the highest BOPO was 299.21%. The average BOPO value was 92.26% with a standard deviation of 25.25%. Based on further review, the lowest BOPO was achieved by BPR 601009 in 2020 and the highest BOPO was experienced by BPR 601120 in 2021.

The lowest asset fluctuation of IDR 249,400 thousand was achieved by BPR 601814 in 2021 and the highest asset fluctuation was IDR47,005,090 thousandexperienced by BPR 601019 in 2017. The average value of asset fluctuation was Rp.5,112,509 thousandwith a standard deviation of Rp.5,984,990thousand.

The lowest funding fluctuation of IDR 143,908 thousand was achieved by BPR 601010 in 2017 and the highest funding fluctuation was IDR46,209,251 thousandexperienced by BPR 601019 in 2017. The average value of funding fluctuation was Rp.4,466,348 thousandwith a standard deviation of Rp.5,232,169 thousand.

The lowest loan growth fluctuation was Rp.256,407thousand was achieved by BPR 600997 in 2019 and the highest loan growth fluctuation was Rp.50,387,512 thousandexperienced by BPR 601822 in 2017. The average value of loan growth fluctuation was Rp.3,596,564 thousandwith a standard deviation of Rp.4,316,760 thousand.

Data Analysis Process and Results

Based on the hypothesis of the variables studied, this study uses regression analysis with the following equation:

NIM = a0 + b1X1+ b2X2 + b3X3 + e1 (Regression 1)

ROA = a1 + b4X1+ b5X2 + b6X3 + e1 (Regression 2)

NPL = a2 + b7X1+ b8X2 + b9X3 + e1 (Regression 3)

BOPO = a3 + b10X1+ b11X2 + b12X3 + e1 (Regression 4)

The first regression aims to determine the effect of standard deviation of assets, funding and loan growth on NIM, the second regression to determine the effect of standard deviation of assets, funding and loan growth on ROA, the third regression to determine the effect of standard deviation of assets, funding and loan growth on NPL, and the fourth regression to determine the effect of standard deviation of assets, funding and loan growth on BOPO.

Data Normality Test

The following are the results of the data normality test in the first and second regressions:

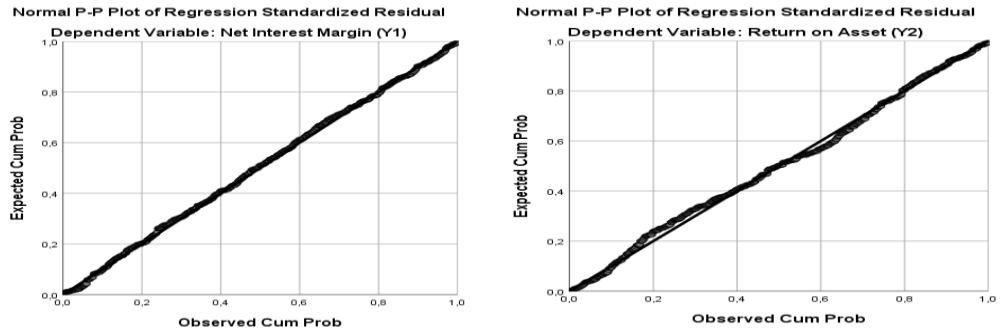

Figure 3. First and Second Regression Normality Test

The graphic method above Normal PP plot of regression standardized residual can be seen that in the first and second regressions, the points are spread around a straight line and follow the diagonal line, so the data is normally distributed.

Furthermore, the results of the third and fourth regression normality tests are as follows:

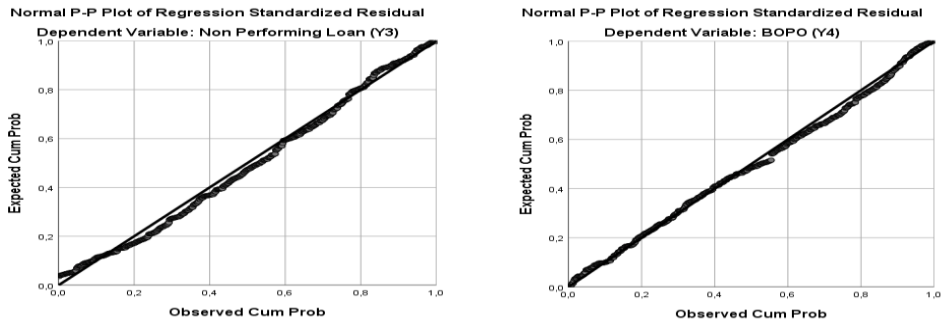

Figure 4. Third and Fourth Regression Normality Test

In Figure 4. Showing the normal PP plot of regression standardized residual, it can be seen that in the third and fourth regressions, the points are spread around a straight line and follow the diagonal line, so the data is normally distributed.

t-statistic test results

The results of the t-statistic test of the influence between Uncertainty variables consisting of Asset Std., Funding Std., and Loan Growth Std. on NIM, ROA, NPL, and BOPO, are as follows:

Table 2. t-statistic test

First Regression			
Research Variables	**B**	**t-statistic**	**P-value**
Asset Standard Deviation	1,157	1,648	,100
Funding Standard Deviation	-1,723	-2,573	,010
Standard Deviation of Loan Growth	-1,385	-2,111	,035
Second Regression			
Research Variables	**B**	**t-statistic**	**P-value**
Asset Standard Deviation	1,157	1,919	,100
Funding Standard Deviation	-1,723	-2,832	,010
Standard Deviation of Loan Growth	-1,385	,068	,035
Third Regression			
Research Variables	**B**	**t-statistic**	**P-value**
Asset Standard Deviation	1,157	-4,205	,100
Funding Standard Deviation	-1,723	2,905	,010
Standard Deviation of Loan Growth	-1,385	1,578	,035
Fourth Regression			
Research Variables	**B**	**t-statistic**	**P-value**
Asset Standard Deviation	1,157	-3,366	,100
Funding Standard Deviation	-1,723	2,418	,010
Standard Deviation of Loan Growth	-1,385	2,342	,035

a. In the first regression the standard deviation of assetsobtained a significance value of 0.100 or the same as the significance probability value of 0.10 and a t-statistic value of 1.648 > 1.645. This means that sThe standard deviation of assets has a significant positive effect on NIM.
b. For sstandard deviation fundingobtained a significance value of 0.010 < 0.10 and a t-statistic value of-2,573> 1.645 which meansfunding standard deviation has a significant negative effect on NIM.
c. Forstandard deviation of loan growthobtained a significance value of 0.035 < 0.10 and a t-statistic value of-2,111> 1.645 which means, sThe standard deviation of loan growth has a significant negative effect on NIM.
d. In the second regressionasset standard deviationobtained a significance value of 0.056 < 0.10 and a t-statistic value of 1.919 > 1.645, which means that sThe standard deviation of assets has a significant positive effect on ROA.
e. Standard deviation of fundingobtained a significance value of 0.005 < 0.10 and a t-statistic value of-2,832> 1.645 which meansfunding standard deviation has a significant negative effect on ROA.
f. Standard deviation of loan growthobtained a significance value of 0.946 > 0.10 and a t-statistic value of 0.068 < 1.645, meaning that,The standard deviation of loan growth has no effect on ROA.
g. In the third regression for sasset deviation standardobtained a significance value of 0.000 < 0.10 and a t-statistic value of -4.205 > 1.645, which means that sThe standard deviation of assets has a significant negative effect onNPL.
h. Standard deviation of fundingobtained a significance value of 0.004 < 0.10 and a t-statistic value of2,905> 1.645 means,funding standard deviation has a significant positive effect onNPL.
i. Standard deviation of loan growthobtained a significance value of 0.115 > 0.10 and a t-statistic value of 1.578 < 1.645, meaning that,The standard deviation of loan growth has no effect onNPL.
j. In the fourth regressionsasset deviation standardobtained a significance value of 0.001 < 0.10 and a t-statistic value of -3.366 > 1.645, which means sThe standard deviation of assets has a significant negative effect onBOPO.
k. Standard deviation of fundingobtained a significance value of 0.016 < 0.10 and a t-statistic value of2,418>1.645 which meansfunding standard deviation has a significant positive effect onBOPO.
l. Standard deviation of loan growthobtained a significance value of 0.020 < 0.05 and a t-statistic value of 2.342 > 1.645, which means that sloan growth standard deviation has a significant positive effect onBOPO.

DISCUSSION

The Effect of Asset Standard Deviation on NIM

Testing the effect of asset standard deviation on NIM obtained a t-statistic value of 1.648 with a significance of 0.100. This means thatThe standard deviation of assets has a significant positive effect on NIM and does not meet the H1 hypothesis which states thatNIMnegatively affected by the standard deviation of assets.

The standard deviation of assets shows the fluctuation of assets over a certain period of time and can be used as an approach to indicate uncertainty (Butch et al., 2015).NIM is net interest income divided by the amount of productive assets., where net interest income is obtained from the difference between interest income minus interest expenses. BPR's productive assets are generally dominated by credit and during the Covid-19 pandemic, credit expansion will decline because BPR will tend to be more careful in its distribution. On the other hand, BPR's credit interest income will also decline because MSMEs, which are BPR's main market, have experienced a significant decline in income and ultimately have difficulty paying credit installments. However, the test results prove that asset fluctuations actually have a significant positive effect on NIM.

The Effect of Asset Standard Deviation on ROA

Based on the testing of the standard deviation of assets against ROA, the t-statistic value obtained was 1.919 with a significance of 0.056. Thus, this means that sThe standard deviation of assets has a significant positive effect on ROA because the t-statistic value of 1.919 is greater than 1.645 and the significance value of 0.056 is less than 0.10. However, these results indicate the H2 hypothesis which states thatROAnegatively affected by the standard deviation of unproven assets.

The ROA ratio is an indicator that reflects the profitability of a company in using its assets (Ibrahim, 2015). BPR assets consist of productive and non-productive assets. Assets that generate the main and significant income for BPR are of course productive assets where for the BPR industry productive assets are in the form of distributed credit. In line with the discussion of the impact of

asset risk on NIM, it should be that in the uncertainty period, BPR's main income from credit interest will decrease because BPR management will tend to be more careful in distributing credit. However, the test results prove that asset risk actually has a significant positive effect on ROA.

The Effect of Asset Standard Deviation on Non Performing Loans (NPL)

Based on table 2 above, the t-statistic value obtained is -4.205 > 1.645 with a significance value of 0.000 < 0.10. This means that sThe standard deviation of assets has a significant negative effect on NPL and does not meet the H3 hypothesis. which states that NPL is positively influenced by the standard deviation of assets.

The Covid-19 pandemic followed by large-scale social restrictions and the paralysis of the tourism sector in Bali has caused many people working in the MSME sector to lose their livelihoods. The impact of the loss of sources of income for the MSME sector will weaken purchasing power and reduce the ability to pay obligations to BPRs. BPRs that focus on distributing credit to the MSME sector will of course experience an increase in the number of non-performing loans. However, the test results prove that asset fluctuations have an effectsignificant negativeagainst NPL.

The Effect of Asset Standard Deviation on BOPO

Based on table 2 above, the significance value is 0.001 < 0.10 and the t-statistic value is -3.366 > 1.645. This means that sThe standard deviation of assets has a significant negative effect onBOPOand does not meet the H4 hypothesis which states that BOPO is positively influenced by asset standard deviation.

In the BPR cost structure, operational costs consist of third party fund interest costs, credit restructuring loss costs, productive asset provision costs (PPAP), general administrative costs (including salaries, R&D, rent, depreciation of fixed assets and office inventory, taxes, goods & services) and other costs. On the other hand, BPR's operating income comes from interest income and other income. Interest income is mainly obtained from the credit business, interbank assets, and securities. During the Covid-19 period, BPR's performance will decline due to slowing credit expansion and increasing numbers of non-performing loans. However, the test results prove that asset fluctuations have an effectsignificant negativeagainst BOPO.

The Effect of Funding Standard Deviation on NIM

Based on table 2 above, the significance value obtained is 0.010 < 0.10 and the t-statistic value is-2,573> 1.645. This means,The standard deviation of funding has a significant negative effect on NIM and meets the H5 hypothesis which states thatNIMnegatively affected by the standard deviation of funding.During the Covid-19 period, BPR customers tend to withdraw their savings for living expenses including for health. If it continues, this will have an impact on the increasingly tight liquidity of BPR. Thus, to maintain its liquidity, BPR will make every effort to find new funding sources or try to maintain existing third-party fund deposits. In an effort to find and maintain funding sources, BPR will incur additional costs which ultimately increase the cost of funds and will further negatively affect NIM.

The Effect of Funding Standard Deviation on ROA

Based on table 2 above, a significance value of 0.005 < 0.10 was obtained and a t-statistic value of-2,832> 1.645. This means,The standard deviation of funding has a significant negative effect on ROA and meets the H6 hypothesis which states thatROAnegatively affected by the funding standard deviation. In line with the discussion of the effect of funding standard deviation on NIM, during the Covid-19 pandemic, there was an increase in the withdrawal of third-party funds from BPRs which affected BPR liquidity. Furthermore, in an effort to find and maintain funding sources, BPRs will incur additional costs which ultimately increase the cost of funds. This will further impact the decline in BPR profitability and will ultimately have a negative impact on the ROA ratio.

The Effect of Funding Standard Deviation on NPL

Based on table 2 above, a significance value of 0.004 < 0.10 was obtained and a t-statistic value of2,905> 1.645. This means,The standard deviation of funding has a significant positive effect on NPL and fulfills the H7 hypothesis which states thatNPLpositively influenced by the funding standard deviation. The tendency to withdraw third-party funds during the Covid-19 pandemic will have an impact on the increasingly limited sources of funds for BPR to carry out credit expansion. This will cause credit expansion to decline. If the ability to distribute credit decreases during Covid-19, while on the other hand the number of non-current loans increases because the MSME sector is experiencing a decline in business, then the BPR NPL ratio will be even higher. Mathematically, NPL is the number of non-current loans divided by total loans.

The Effect of Funding Standard Deviation on BOPO

Based on table 2 above, the significance value obtained is 0.016 < 0.10 and the t-statistic value is2,418>1.645. This means, sfunding standard deviation has a significant positive effect onBOPOand fulfills H8 which states thatBOPOpositively influenced by the funding standard deviation. During Covid-19, BPR customers will withdraw their savings due to a decline in business or to meet daily needs. Furthermore, in an effort to maintain liquidity, BPR will issue a larger cost of funds and further increase operational costs. In addition, the limited sources of funds for credit expansion will cause operational income from credit interest to decrease and further affect the increase in the BOPO ratio.

The Effect of Standard Deviation of Loan Growth on NIM

Based on table 2 above, a significance value of 0.035 < 0.10 and a t-statistic value of-2,111> 1.645. This means that sThe standard deviation of loan growth has a significant negative effect on NIM and meets the H9 hypothesis which states thatNIMnegatively affected by the standard deviation of loan growth. During Covid-19, BPR management tends to be more careful in distributing new credit so that credit expansion will decrease. This will have an impact on the decline in the credit portfolio in BPR's earning assets and ultimately cause credit interest income to decline further. In line with the decline in credit interest income, the NIM ratio will also decline further.

The Effect of Standard Deviation of Loan Growth on ROA

Based on table 2 above, the significance value is 0.946 > 0.10 and the t-statistic value is 0.068 < 1.645. This means,The standard deviation of loan growth has no effect on ROA, so it does not fulfill the H10 hypothesis which states thatROAnegatively affected by the standard deviation of loan growth. Credit interest income is the main source of BPR income. Thus, if credit expansion during the Covid-19 pandemic decreases because BPR is more careful, then this should have a negative impact on BPR's ability to generate profitability. However, the test results prove that loan growth fluctuations have no effect on ROA.

The Effect of Standard Deviation of Loan Growth on NPL

Based on table 2 above, the significance value is 0.115 > 0.10 and the t-statistic value is 1.578 < 1.645. This means,The standard deviation of loan growth has no effect on NPL, so it does not fulfill the H11 hypothesis which states thatNPLpositively influenced by the standard deviation of loan growth.

The weakening economy due to the Covid-19 pandemic has the potential to increase non-performing loans because BPR debtors, especially the MSME sector, are experiencing a decline in business. On the other hand, credit tends to decrease because BPRs are more careful in distributing credit. This will cause the NPL ratio to increase because the number of non-performing loans tends to increase while credit growth tends to decrease. However, the test results prove that fluctuations in loan growth have no effect on NPL.

The Effect of Standard Deviation of Loan Growth on BOPO

Based on table 2 above, the significance value is 0.020 < 0.10 and the t-statistic value is 2.342 > 1.645. This means that,The standard deviation of loan growth has a significant positive effect onBOPOand fulfills the hypothesis H12 which states thatBOPOpositively influenced by the standard deviation of loan growth. During the Covid-19 period, credit distribution will tend to decrease because BPR management tends to be more careful in disbursing new credit. This will have an impact on decreasing credit interest income. If credit interest income, which is the main income of BPR, decreases, then BPR's operational income will also decrease. On the other hand, operational costs increase because BPR's cost of funds in maintaining liquidity stability tends to increase so that the BOPO ratio also increases.

RESEARCH LIMITATIONS

This study has several limitations that can be improved in further research. Some of the limitations of this study are:

1. The sample selection in this study only used BPRs in Bali considering that nationally the impact of Covid-19 on the economic sector is greatly felt by the Balinese people.
2. This study has limitations in the research period before and during the pandemic. Conditions during the pandemic are still influenced by the implementation of economic stimulus policies from the government which can affect several BPR financial ratios. BPR conditions can change if the economic stimulus policy is no longer implemented by the authorities and the government.

THEORY IMPLICATIONS

The results of this study identify the importance of effective risk management in dealing with uncertainty in the banking sector. The

theoretical implications of these findings can be used to formulate better managerial strategies in asset and funding management, as well as to improve the performance of BPR banks in the future.

PRACTICAL IMPLICATIONS

This study has policy implications, namely the importance of Covid-19 stimulus policies from regulators and the government during the Covid-19 pandemic in order to create stability in the financial sector as a whole. In addition, further policy analysis is needed to ensure that the BPR industry remains safe in the transition period after the stimulus policy ends in 2024.

FUTURE RESEARCH AGENDA

Based on the limitations of this study, suggestions for future research agendas are:

1. Expanding the sample selection by involving BPRs from other regions in Indonesia, especially those affected by the pandemic, to increase the generalizability of the results. Further research can also include non-bank financial industries (IKNB) such as insurance, financing, guarantees, and fintech P2P lending.
2. Expanding the study after the pandemic to understand BPR's adaptation strategies to economic changes. This research can also explore the role of regulators and government policies in maintaining financial sector stability.

CONCLUSION

Based on hypothesis testing, the following conclusions were obtained:

1. The standard deviation of assets has a significant positive effect on NIM, thus not supporting the H1 hypothesis which states a negative effect.
2. Asset standard deviation also has a significant positive effect on ROA, rejecting hypothesis H2.
3. The standard deviation of assets has a significant negative effect on NPL, contrary to hypothesis H3.
4. The standard deviation of assets has a significant negative effect on BOPO, not supporting hypothesis H4.
5. The funding standard deviation has a significant negative effect on NIM, supporting hypothesis H5; funding deviation risk increases the cost of funds.
6. The standard deviation of funding has a significant negative effect on ROA, fulfilling hypothesis H6, which indicates an increase in operational costs.
7. The standard deviation of funding has a significant positive effect on NPL, supporting hypothesis H7, increasing nonperforming credit.
8. The standard deviation of funding has a significant positive effect on BOPO, fulfilling hypothesis H8, which indicates an increase in operational costs.
9. The standard deviation of loan growth has a significant negative effect on NIM, supporting hypothesis H9.
10. The standard deviation of loan growth has no effect on ROA, rejecting hypothesis H10.
11. The standard deviation of loan growth has no effect on NPL, rejecting hypothesis H11.
12. The standard deviation of loan growth has a significant positive effect on BOPO, supporting hypothesis H12.

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