

The Influence of Credit Risk, Liquidity Risk, and Operational Risk on Profitability in Rural Banks in Bali Province

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ABSTRACT : This study aims to determine the effect of credit risk, liquidity risk, and operational risk on profitability at rural credit banks in the province of Bali. The population used in this study were all BPRs in Bali Province in the 2014-2018 period. This study uses purposive sampling with a total sample of 72 banks. Multiple linear regression is a method used to analyze the data in this study. The results showed that credit risk and operational risk had a negative effect on profitability. While the results of the liquidity risk study have a positive effect on profitability.

KEYWORDS: Credit Risk, Liquidity Risk, Operational Risk and Profitability

I. INTRODUCTION

Rural Credit Bank (BPR) is a type of bank whose activities are intended to serve micro, small and medium entrepreneurs who are provided in rural areas. The function of the BPR as a community trust institution is not only to extend credit to micro, small and medium entrepreneurs, it also receives deposits from the public and also provides easier requirements in terms of granting loans with a relatively quick process. Based on these advantages, BPR was chosen as an object in this study because it became one of the financial institutions that began to develop because of its success in lending to micro and small businesses that will be used as business capital by the public, so that BPRs are expected to be able to spearhead the financing of the micro business sector, small and medium enterprises (MSMEs) and can be accessed by all groups of people. Seeing the importance of BPR in supporting community economy, it is necessary for BPRs to get better attention.

BPR financial performance can be measured through financial statement analysis. Financial statement analysis is performed to determine the level of profitability and the level of risk or soundness of a bank (Capriani and Dana, 2016). Profitability is one of the main indicators to measure the level of performance of a bank. Profitability shows the relationship between profits and investments in a company. Profitability also shows the efficiency and effectiveness of the company in processing existing resources to generate profits (He et al., 2014). Bank profitability is the ability of banks to generate income that exceeds costs. A healthy and profitable banking sector is better able to withstand negative shocks and contribute to financial system stability (Alshatti, 2015). Therefore, the banking sector is a high regulated sector. The profitability of a bank depends on the specific characteristics of the bank and the market in which the bank operates (Domanovic et al., 2018).

Profitability has an important meaning in the banking industry, specifically (BPR), which is to maintain its long-term survival, because profitability shows whether the BPR has good prospects going forward. Thus, each BPR tries to increase its profitability. The higher the profitability of an BPR, the better the performance of the BPR, because it has operated effectively and efficiently.

Bank profitability is measured by the ratio of profits and assets, the majority of which is public savings, so Return on Assets (ROA) is more representative in measuring the profitability of a bank (Pratiwi and Wiagustini, 2015). ROA measures the ability of banks to generate profits from assets held. According to Capriani and Dana (2016) the greater the ROA, the greater the profitability, which means the better the performance of a company or banking.

Seeing the current phenomenon BPR in the Province of Bali discusses many things namely 134 BPRs. This means it will have an impact on unhealthy BPRs because BPRs in the Province of Bali are already excessively ideally 40-50 BPRs, coupled with a minimal capital structure. Thus, this will affect the profitability of rural banks which will lead to several banks that cause ineffective and inefficient banks. The ups and downs of profitability in several banks are caused by several factors, including credit risk, liquidity, and operations owned by the bank (Adam et al., 2018). This study discusses and analyzes several risks that can affect a bank's

profitability, namely credit risk, liquidity risk, and operational risk. The third type is related to the main activity of a bank, causing a large degree of change in profitability of a bank.

According to Badawi (2017) credit risk caused by the risk of debtors or other parties in fulfilling obligations to banks. Bank lending has the main goal to get profit. According to Noman et al. (2015) revealed excessive expansion credit, poor credit quality and improper credit management were the main reasons for the global financial crisis. This means that bank profitability is very important based on the amount of credit disbursed in a period. The more loans disbursed, the greater the benefits. Credit problems related to credit default. This means that the higher the quality of the credit given, will reduce the risk of bad loans or problems. The more credit defaults the bank profits will decrease.

Liquidity risk is the risk due to the inability of banks to meet obligations resulting from cash flow funding sources, or high quality liquid assets that can be mortgaged, without disrupting the activities and financial condition of the bank, as measured by the Loan to Deposit Ratio ratio (Badawi, 2017). Liquidity management takes one of two forms based on the definition of liquidity. One type of liquidity refers to the ability to trade assets, such as stocks or bonds, at current prices. Other definitions of liquidity apply to large organizations, such as financial institutions. Banks are often evaluated for their liquidity, or their ability to meet cash obligations and guarantees without incurring large losses.

Increased liquidity risk is associated with a decrease in profitability in terms of assets. Because many bank actions are based on the ability to liquidate assets if needed, the lack of this function will reduce income from loan-based businesses. Therefore, reduced interest income from loans is reflected in reduced interest margins that negatively affect the ability of banks. In addition, liquidity problems might cause a lack of customer confidence especially if withdrawal requests cannot be fulfilled (Al-Rdaydeh et al., 2017). Operational risk is the risk caused by the malfunctioning of the bank's internal processes, human errors, technological system failures, or due to external problems that affect bank operations (Syafi'i and Rusliati, 2016). The banking industry is an industry that experiences a variety of risks in carrying out its operations. Operational risk is different from other types of risk, because it is not directly related to efforts to produce a return.

Operational risk generally uses BOPO (Operating Expenses against Operating Income) as an indicator of research. BOPO shows the ability of bank management in controlling operational costs to operating income. Operational efficiency emphasizes that efficiency is achieved when transactions are carried out with minimum transaction costs. The operational activities of the banking industry generate operational costs, generate operational income and involve assets in the process (Adam et al., 2018). Operational efficiency is measured by the ratio of costs to revenues or overhead costs to total assets (Antoni and Nasri, 2015).

Based on the results of previous studies, according to Shafi'i and Rusliati (2016) shows that credit risk does not partially affect profitability. Operational risk and liquidity risk partially have a positive effect on profitability. Simultaneously shows that credit risk, operational risk and liquidity risk affect bank profitability. According to Antoni and Nasri (2015) shows that credit risk and operational risk do not affect the return on assets (ROA). According to Al-Rdaydeh et al. (2017) shows that the effect of liquidity risk on ROA is significant for Islamic and conventional banks. According to Saeed and Zahid (2016) it was found that credit risk indicators have a positive relationship with bank profitability. According to Adam et al., (2018) shows that liquidity does not affect profitability and operational efficiency negatively affects profitability. According to Tan et al, (2017) found that credit risk and liquidity risk significantly affect the profitability of commercial banks. According to Riyanto and Surjandari (2018) partially, credit risk affects profitability, while liquidity risk does not affect profitability. Based on the background that has been explained, the purpose of this study is to examine and analyze the effect of Credit Risk, Liquidity Risk and Operational Risk on Profitability.

II. HEADINGS

Niresh and Velnampy (2014) state that profitability can be attributed to changes in output results from either increasing demand or reducing costs. Achievement of high profitability (profitability) from the banking industry is important to note considering the company's performance measure in general is to see how much profit the company or banking makes.

Credit risk is the risk due to the failure of the debtor or other parties in meeting obligations to the bank. Credit risk is the possibility that the borrower will fail in the loan. In this context, failure is broadly defined when the borrower does not fulfill the terms of his contractual obligations with the lender. Credit risk is a serious threat to bank performance which, if not examined, will cause a total collapse of the bank (Ejoh et al., 2014).

Liquidity risk is the risk due to the inability of banks to meet obligations resulting from cash flow funding sources, or high quality liquid assets that can be mortgaged, without disrupting bank financial activities (Badawi, 2017).

Operational risk is the risk due to inadequate or malfunctioning internal processes, human error, system failures, and the presence of external events that affect bank operations (OJK Regulation Number 11 / POJK.03 / 2016). Bank operational efficiency aims to make the bank concerned run more optimally in serving its

customers. With efficiency carried out, banks can minimize expenditure figures, and vice versa maximize revenue figures (Adam et al., 2018).

Based on previous studies and to clarify the relationship, it is necessary to make a conceptual framework that briefly describes the relationship of each variable. The conceptual framework in this study is shown in Figure 1 below:

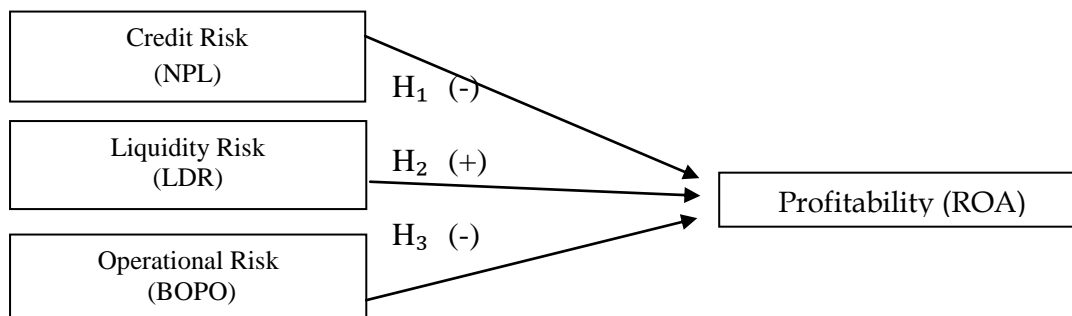


Figure 1: Conceptual Framework for Research

Source: Previous research studies

Based on the formulation of the proposed problems, literature review, and previous studies related to this research, the formulation of hypotheses in this study can be stated as follows:

H1: Credit risk has a negative effect on bank profitability.

H2: Liquidity risk has a positive effect on bank profitability.

H₃ : Operational risk has a negative effect on bank profitability.

III. INDENTATIONS AND EQUATIONS

This research was conducted at BPRs in Bali Province using data obtained from financial reports published by the Financial Services Authority (OJK). This location was chosen based on the consideration of researchers because of the phenomenon of profitability (ROA) which fluctuated at the Rural Credit Bank in Bali Province and has a large amount, so it is hoped that later it can provide a broader picture of the characteristics of the studied data.

The dependent variable in this study is the profitability of BPR in Bali Province which is proxied by ROA. The independent variables in this study are Credit Risk (X_1) which is proxied with NPL (Non Performing Loan), Liquidity Risk (X_2) which is proxied by the Loan to Deposit Ratio (LDR) ratio, and Operational Risk (X_3) which is proxied by the Operational Cost ratio towards Operating Income (BOPO).

The population of this study uses all BPRs in Bali Province in the 2014-2018 period, 134 BPRs. The method used in determining the sample is purposive sampling, namely the Rural Bank in succession in the Province of Bali in the 2014-2018 period which published its complete financial statements for the 2014-2018 period according to the variables to be examined and did not experience successive losses during the 2014 period. -2018. Based on these considerations, the sample used in this study was the Rural Credit Bank in Bali Province in the 2014-2018 period, which was 72 Banks.

The data in this study were collected by analyzing financial statements and observations on data sourced from BPR financial statements in Bali Province for the 2014-2018 period obtained from the OJK website www.ojk.go.id. The data analysis technique used in this study is multiple regression analysis. The formula of multiple regression analysis is as follows (Wirawan, 2014: 254):

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Information :

Y = Profitability

β_0 = constant coefficient

$\beta_1 - \beta_3$ = Coefficient of independent variable regression (X_1, X_2, X_3)

X_1 = Risk of Credits

X_2 = Liquidity Risk

X_3 = Operational Risk

e = Residual

IV. FIGURES AND TABLES

Description of research variables convey information about the number of observations, minimum values, maximum values, mean values and standard deviations of the research variables. Table 1 shows the results of the descriptive statistical analysis.

Table 1
Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
NPL	360	.2813	17.3428	1.365517	1.6242086
LDR	360	44.0938	700.4550	145.128095	68.0654326
BOPO	360	4.1995	346.8529	74.746606	29.1425268
ROA	360	-27.2442	12.8650	2.609538	2.7682785
Valid N (listwise)	360				

Source: Data processed, 2019

The lowest (minimum) Credit Risk (NPL) value is 0.2813 percent which occurs at PT. BPR Dewangga Bali Artha during the 2016 period and the highest (maximum) Credit Risk (NPL) was 17.34 percent which occurred at PT. BPR KaryaArtha during the period of 2015. Credit Risk (NPL) had an average value of 1.365 percent, with a standard deviation of 1.62 percent. This means that there is a difference in the value of the Credit Risk (NPL) studied against the average value of 1.62 percent. The value of the standard deviation of Credit Risk (NPL) is higher than the average value, meaning that the distribution of Credit Risk (NPL) during the period 2014-2018 is uneven or the data difference from one to the other is relatively high.

The lowest (minimum) Liquidity Risk (LDR) value is 44.09 percent which occurs at PT. BPR KerthaWarga during the 2018 period and the highest (maximum) Liquidity Risk (LDR) of 700.45 percent which occurred at PT. BPR Surya Natapala during the period 2016. Liquidity Risk (LDR) has an average value of 145.12 percent, with a standard deviation of 68.065 percent. This means that there is a difference in the value of the Liquidity Risk (LDR) under study against the average value of 68.065. The standard deviation of Liquidity Risk (LDR) is higher than the average value, meaning that the distribution of Liquidity Risk (LDR) during the 2014-2018 period is uneven or the difference in data from one to the other data is high.

The lowest (minimum) Operational Risk (BOPO) value is 4.19 percent that occurs at PT. BPR SuryajayaKubutambah during 2018 and the highest (maximum) Operational Risk (BOPO) of 346.85 percent which occurred at PT. BPR DanamasterDewata for the period of 2017. Operational Risk (BOPO) has an average value of 74.74 percent, with a standard deviation of 29.142 percent. This means that there is a difference in the value of the Operational Risk (BOPO) that was studied against the average value of 29,142. The standard deviation of the Operational Risk (BOPO) is lower than the average value, meaning that the distribution of Operational Risk (BOPO) during the 2014-2018 period has been evenly distributed or the data difference between one and the other data is not high.

The lowest (minimum) Profitability (ROA) value is -27,244 percent which occurs at PT. BPR DanamasterDewata during the 2017 period and the highest (maximum) profitability (ROA) was 12.86 percent which occurred at PT. BPR Jaya Kerti during the period of 2015. Profitability (ROA) had an average value of 2.609 percent, with a standard deviation value of 2.768 percent. This means that there is a difference in the value of the profitability (ROA) studied against the average value of 2.768. The standard deviation value of Profitability (ROA) is higher than the average value, meaning that the distribution of Profitability (ROA) during the period 2014-2018 is not evenly distributed or the data difference from one to the other is relatively high.

Regression models will be more appropriate to use and produce more accurate calculations, if the following assumptions can be fulfilled. The classic assumption tests in this study are summarized in the following Table 2:

Table 2
Summary of Classical Assumption Test Results

Normality Test Results	Autocol Result (Run Test)	Variable	Multikolinierity Test Results		Heteroscedasticity Test Results
			Tolerance	VIF	Signifikansi
N = 360	Asymp. Sig.	NPL	0,963	1,039	0,223
Kolmogrov = 2,411	(2-tailed) =	LDR	0,982	1,019	0,407
Asymp. Sig. = 0,179	0,139	BOPO	0,952	1,050	0,869

Source: Data processed, 2019

All the classic assumption tests in Table 2 are already worthy of testing, so the regression analysis model can be carried out further. This multiple linear regression analysis is used to analyze the effect of Credit Risk (NPL) (X1), Liquidity Risk (LDR) (X2), and Operational Risk (BOPO) (X3), on Profitability (ROA) (Y) on BPRs in Bali Province. Multiple linear regression analysis was processed with the help of SPSS 18.0 for Windows software with the results that can be seen in the following Table 3.

Table 3
Summary of Multiple Linear Regression Analysis Results

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	7.938	.316		25.139	.000
	NPL	-.114	.053	-.067	-2.150	.032
	LDR	.003	.001	.073	2.372	.018
	BOPO	-.075	.003	-.789	-25.217	.000

Source: Data processed, 2019

From the results of the multiple linear regression analysis in Table 3, the following equation can be made:

$$Y = 7.938 - 0.114 X1 + 0.003 X2 - 0.075 X3 + e$$

Based on the above equation, things can be explained as follows:

1. A constant value of 7.938, if the value of Credit Risk (NPL) (X1), Liquidity Risk (LDR) (X2), and Operational Risk (BOPO) (X3), is equal to zero, then the value of Profitability (ROA) (Y) did not increase or equal to 7.938 percent.
2. $\beta_1 = -0.114$, if the value of Credit Risk (NPL) (X1) increases by 1 unit, then the value of Profitability (ROA) (Y) will decrease by -0.114 percent with the assumption that other independent variables are constant.
3. $\beta_2 = 0.003$, if the value of Liquidity Risk (LDR) (X2) increases by 1 unit, then the value of Profitability (ROA) (Y) will increase by 0.003 percent assuming the other independent variables are constant.
4. $\beta_3 = -0.075$, if the value of Operational Risk (BOPO) (X3) increases by 1 unit, then the value of Profitability (ROA) (Y) will decrease by 0.075 percent assuming the other independent variables are constant.

Furthermore, to determine and measure the ability of the model to explain the variation of independent variables in this study using the coefficient of determination (R²). The results of the coefficient of determination in this study can be seen in the following Table 4.

Table 4
Determination Coefficient Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.817 ^a	.668	.665	1.6018825

Source: Data processed, 2019

The test results in Table 4 give results where the adjusted R² is obtained (the adjusted coefficient of determination) is equal to 0.665. This means that variations in profitability (ROA) on BPRs in the Province of Bali can be significantly influenced by the variables Credit Risk (NPL) (X1), Liquidity Risk (LDR) (X2), and Operational Risk (BOPO) (X3), amounting to 66.5 percent, while the remaining 33.5 percent is explained by other factors.

The F statistical test in this study was conducted by looking at the significance value in the ANOVA table. The F test results can be seen in Table 5 below:

Table 5
F Test Results (ANNOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1837.643	3	612.548	238.714	.000 ^a
	Residual	913.506	356	2.566		
	Total	2751.148	359			

Source: Data processed, 2019

The results of the F test (F test) show that the calculated F value of 238,714 with a significance value of P value 0,000 which is smaller than $\alpha = 0.05$, this means that the model used in this study is feasible. This result gives the meaning that the three independent variables are able to predict or explain the phenomenon of Profitability (ROA) on BPR in the Province of Bali during the period 2014 to 2018. This means simultaneously Credit Risk (NPL) (X1), Liquidity Risk (LDR) (X2), and Operational Risk (BOPO) (X3), have a significant effect on profitability (ROA) of BPRs in Bali Province during the period 2014 to 2018.

The results of t-test calculations can be seen in table 3. From the table it is known that the regression coefficient value X1 or Credit Risk (NPL) is -0.114 with a significance level of 0.032 smaller than the real level $\alpha = 0.05$. This shows that Credit Risk (NPL) has a negative and significant effect on profitability (ROA), so the first hypothesis is accepted. This means that the higher the credit risk, the lower the profitability of the BPR. That is because credit risk is a risk due to failure or the inability of the customer to return the loan amount received along with the interest, according to a predetermined time period. Credit risk occurs when a bank gives a loan to a customer in accordance with an agreed period of time, then the customer is unable to repay the loan

he has received at maturity with interest, it is usually due to intentional or unintentional, such as the customer experiencing a natural disaster or go bankrupt, so banks are forced to bear the risk. With the credit risk that must be borne by the bank, it will cause a loss of opportunity by the bank to obtain income from the credit provided, thus adversely affecting the profitability of the bank itself.

The results of this study are in accordance with research conducted by Yusriani et al. (2018) which states that Credit Risk (NPL) has a significant negative effect on profitability, ie the higher the non-performing loans in bank credit management indicated in the NPL, the lower the level of bank profitability reflected through ROA. The results of this study are also in line with research conducted by Putri and Dewi (2017) which found that NLP had a negative and significant effect on profitability.

The results of t-test calculations in table 3 show that the regression coefficient value of X2 or Liquidity Risk (LDR) is 0.003 with a significance level of 0.018 smaller than the real level $\alpha = 0.05$. This shows that Liquidity Risk (LDR) has positive and significant effect on profitability (ROA), so the second hypothesis is accepted. This means that the higher the liquidity risk, the higher the profitability. This is due to the fact that Liquidity Risk is a risk that arises because the bank experiences difficulties or is unable to meet its short-term obligations. If the number of loans extended by banks increases, the profitability generated by banks will also increase. The problem that might be faced is that the bank cannot know exactly when and how much the funds will be needed or withdrawn by the customers. Therefore, in managing a bank, estimating liquidity needs is a fairly complex bank problem. The ability of banks in managing liquidity will have an impact on public confidence in the bank so that it will help the operational activities and the existence of the bank.

The results of this study are consistent with the results of research conducted by Nugraheni and Alam (2014) which showed that LDR had a significant positive effect on profitability (ROA). The high level of LDR occurs because the amount of funds needed to finance or extend credit is greater. The size of the financing shows that the bank manages most of the funds in the form of financing or credit so that the interest income from the results of the financing or credit also increases. Increasing the amount of interest from the results of the financing or credit will cause bank profitability to also increase. The results of this study are also in line with research conducted by Alshatti (2015), Al-Rdaydeh et al, (2017) and Riyanto and Surjandari (2018) which states that liquidity has a significant positive effect on profitability (ROA).

The results of t-test calculations in table 3 show that the regression coefficient value X3 or Operational Risk (BOPO) is -0.075 with a significance level of 0,000 smaller than the real level $\alpha = 0.05$. This shows that Operational Risk (BOPO) has a negative and significant effect on profitability (ROA), so the third hypothesis is accepted. This means that the higher the operational risk, the lower the profitability. This is because Operational Risk is the costs incurred to generate profits that are smaller than the profits derived from the use of assets. Operational risks occur due to inadequate or malfunctioning internal processes, human error, system failures, and external events that affect bank operations (Indonesian Bankers Association, 2016: 59). Any increase in operational costs will result in reduced profit before tax which will ultimately reduce the profit or profitability of the relevant bank. Operational risk can come from decreasing profits which is influenced by the bank's operational cost structure and the failure of services.

The results of this study are consistent with the results of research conducted by Adam et al, (2018) which shows that operational risk negatively affects profitability (ROA). The results of this study are also in line with research conducted by Pamularsih (2015) and Putri et al. (2018) which found that operational costs of operating income had a significant negative effect on profitability. The greater the percentage of BOPO shows the low ability of banks to reduce operational costs, causing inefficient costs. The smaller the BOPO percentage shows the more efficient operational costs incurred by banks, so the less likely a bank will face problematic conditions.

V. CONCLUSION

Based on the results of the research analysis and the results of the discussion it can be concluded that Credit Risk (NPL) has a statistically negative and significant effect on profitability (ROA) (H1 accepted). Liquidity Risk (LDR) statistically has a positive and significant effect on profitability (ROA) (H2 received). Operational Risk (BOPO) has a statistically negative and significant effect on profitability (ROA) (H3 accepted).

Based on the results of the research analysis, discussion and conclusions, there are a number of suggestions that can be used as material for consideration in determining the Profitability (ROA) policy for BPRs in Bali Province in the future, including: PT. Bali Provincial People's Credit Bank is expected to have a high level of liquidity with good credit quality, is able to project the funds needed, provide sufficient liquidity to meet obligations to creditors because lending is the main activity for banks to increase bank profitability. PT. Bank Perkreditan Rakyat is also expected to have a low level of credit risk by applying the principle of prudence in extending credit to prospective borrowers and limiting the provision of funds to related parties and to non-related parties by a certain percentage. In addition, PT. Bank Perkreditan Rakyat is expected to have lower operational costs than operating income by identifying sources of operational risk and monitoring the

implementation of operational processes and systems of the bank so that operating expenses can be minimized.

The results of the analysis in this study indicate the Profitability (ROA) of BPR in the Province of Bali can be significantly influenced by the variables Credit Risk (NPL) (X1), Liquidity Risk (LDR) (X2), and Operational Risk (BOPO) (X3), amounting to 66.5 percent, while the remaining 33.5 percent is explained by other factors. Therefore, it is advisable for future researchers to consider other variables not included in this study, such as Capital Adequacy Ratio (CAR), Third Party Funds, and Net Interest Margin (NIM), in addition to the reference to the variables studied.

VI. ACKNOWLEDGEMENTS

This research only conducts research on BPRs, so that further research is expected to increase the number of company samples that will be used as research samples, for example by examining all Banks in Bali Province, not only on BPRs

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