Strategic Financial Review
Volume 1, Issue 1, 58-66
DOI: 10.59762/sfr794324261120240118158053

Moral Hazard Versus Adverse Selection On The People's Business Credit Program In Indonesia

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ABSTRACT

This paper discusses the behavior of providing bank credit to SMEs during the people's business credit (KUR) program in Indonesia. Since it was launched in 2007, the average NPL for these loans has increased. This indicates the existence of moral hazard behavior in lending by banks. To prove this indication, this paper implements a threshold regression model. Data covers 38 participating banks, which were observed during Q1-2008 to Q2-2021. The results of data analysis show that moral hazard behavior is indicated when NPL below or equal to 5.87%, on the contrary, experienced adverse selection. Specifically, moral hazard behavior is dominant in the case of investment credit and local government-owned banks. In working capital loans and others, this behavior also occurs, but not as in the case of investment loans. Moral hazard and adverse selection behavior were not detected at all in state-owned banks, while in private banks only occurred at a low level. At the end of the analysis, we also consider the shock effects of the global financial crisis (2008), European crisis (2009), and the Covid-19 pandemic (2020-2021) on the threshold regression model, but the results are negative, thus strengthening our previous findings. In general, the factors that significantly determine the risk of non-performing loans in the people's business credit program are the increase in credit growth, market share, deposit insurance interest rates, and economic growth as well as a decrease in the benchmark interest rate. However, the specifics are different, both in each type of credit and the type of participating bank.

Keywords: Moral hazard behavior, Adverse selection, Non-performing loan, People's business credit, Bank.

INTRODUCTION

The People's Business Credit Program (KUR) is one of the government's programs to improve access to financing for small and medium enterprises (SMEs) in Indonesia. This program was launched on November 5, 2007 or effectively implemented by all participating banks in early 2008, and is still ongoing (in 2021). This program is intended to strengthen business capital in the context of implementing policies to accelerate real sector development and empower SMEs (Inpres No. 6 of 2007). However, with this program, the average non-performing loan (NPL) ratio for SME loans tends to increase. From Figure 1, it can be seen that the average NPL for people's business loans reaches 5.43% with an increasing trend from year to year, especially starting in 2015 to 2020. In general, loans from regional development banks have the highest NPLs, at an average of 8.22% per year. Then followed by foreign banks (6.14%), state-owned banks (4.20%), and the lowest was national private banks (3.16%). The increase in NPL for the credit program is in the form of behavior adverse selection or moral hazard on credit delivery. The phenomenon of adverse selection and moral hazard is indeed very inherent in government programs. This is because direct subsidies from the government are considered as a form of direct

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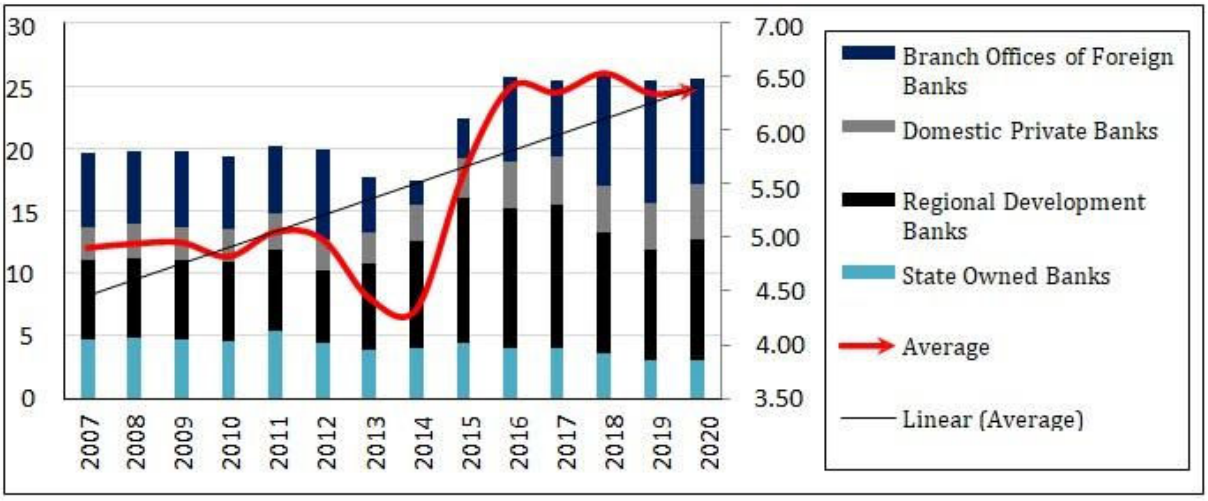
Received: Oct-26-2023 Revised: Dec-12-2023 Accepted: Jan-16-2024



Source: Indonesian Banking Statistics

Figure 1.
Development of NPL for People's Business Credit for the period 2007 – 2020

government intervention in the business sector, namely the transfer of funds without repayment. This means that if the project fails or does not meet the specified criteria, then the subsidy recipient (company) is obliged to return the funds, otherwise if the project is successful no repayment is required. Therefore, there is a tendency for banks to be non-selective in extending credit for the program. On the other hand, customers also have a tendency to borrow beyond their needs. As a result, if one of them applies, then the risk of bad credit will increase, and will increase when both apply. In addition, credit for SMEs is generally always marked with asymmetric information, so this further supports the occurrence of adverse selection (Vas, 2017). Repullo and Suarez (2013) call this condition a pro-cyclical market failure, which shows that banks lower the level of credit analysis to SMEs, making them more vulnerable in the event of an economic contraction. Since the KUR program was launched to date, there has been no empirical research exploring the behavior of banks in disbursing the program. This study is the first to explore this. Specifically, this study will identify the presence or absence of moral hazard behavior or adverse selection in the implementation of the program. If the behavior is indicated, then the significant factors that determine the behavior will be explored. This paper will describe the related literature. The third section describes the methodology. The fourth section presents the results of data analysis and discussion. The fifth part is the conclusion, which is also the closing part of this paper.

LITERATURE

People's Business Credit Program in Indonesia

People's Business Credit (KUR) is a credit guarantee program by the government to SMEs, which was launched on November 5, 2007, aimed at increasing access to financing for Small and Medium Enterprises (SMEs) in order to accelerate the development of the real sector and empower SMEs. This program was launched by the government, but the source of the funds came entirely from bank funds. Credit distribution is regulated by the government through Minister of Finance Regulation No. 135/PMK.05/2008 concerning People's Business Credit Guarantee Facility, but in its development the regulation on KUR continues to be updated every year. Some of the requirements specified in the distribution of KUR are:
1. SMEs that can receive credit guarantee facilities are productive businesses that are feasible, but not yet bankable,
2. KUR is distributed to SMEs for working capital and investment with the following conditions:
a. For loans up to Rp 5 million, the loan interest rate or financing margin imposed is a maximum of 20-21% effective per year;
b. For loans above Rp 5 million to Rp 500 million,

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the loan interest rate or financing margin is between 12-13% effective per year.
3. The implementing bank decides to grant credit based on an assessment of business feasibility in accordance with sound credit principles and taking into account the applicable provisions.

Moral Hazard vs. Adverse Selection

In simple terms, moral hazard and adverse selection are the same behavior, namely risky decision-making behavior. If a risky decision is made consciously or intentionally, it is called moral hazard, but if it is done without elements of intent, for example making a wrong decision due to ignorance or negligence, it is called adverse selection. Therefore, these two behaviors are difficult to observe directly, but these behaviors can be identified through observations of bank behavior. One of the main indicators used to indicate moral hazard behavior is excessive risk taking, which is reflected in high non-performing loans (NPLs) (Zhang et al., 2015). There are several theories that can be used to explain moral hazard behavior, including agency theory, signaling theory, and contract theory. Agency theory explains that there are two motives for moral hazard behavior that occurs in bank lending. First, the managerial rent-seeking motive, where bank managers will seek profit by investing in "pet projects" or providing credit to borrowers to benefit from borrowers. The benefits in question can be in the form of bribes or fees or others. Second, the motive due to conflict of interest between bank owners and depositors, where bank owners want to invest in risky projects to obtain higher returns. However, when the bank faces risk, the bank owner will transfer this risk to depositors. The two moral hazard motives lead to higher credit growth rates and higher non-performing loans (NPLs). Meanwhile, in signaling theory, an increase in NPL will give a negative signal to bank owners that the bank is in a state of stress. With this signal, bank owners must be able to decide whether to continue to maintain their holdings with high risk or vice versa (Wanda, 2006; Novellyni and Ulpah, 2017). As in contract theory, moral hazard behavior occurs when bank owners design optimal contracts that give full authority to bank managers to maximize their utility. As a result, with full authority, bank managers tend to take policies with excessive risk, as happened in the 2008 global financial crisis (Bebchuk and Spamann, 2010; Bebchuk et al., 2010; Paulowicz, 2015). Meanwhile, adverse selection occurs due to information asymmetry between banks and borrowers. In the context of SMEs, the level of information asymmetry is very high, because they generally do not have accurate data or information. (Vas, 2017) As a result, banks will find it difficult to analyze their creditworthiness, so they tend to lower their level of analysis (Repullo and Suarez, 2013).

Behavioral Indications of Moral Hazard and Adverse Selection

Moral hazard behavior and adverse selection can be indicated through several factors. Specifically, these factors can be grouped into three categories. First, bank-specific factors (Boudriga et al., 2010; Dhar and Bakhsi, 2015), such as performance, liquidity, and credit growth. Adverse selection behavior is indicated when performance is positively related to NPL. Performance reflects management quality (Louzis et al., 2012). Therefore, good performance (good management quality) will be very selective and careful in lending, so that it can suppress NPLs, and vice versa. Meanwhile, moral hazard behavior is indicated when a high level of liquidity is matched by a high NPL. Islam and Nishiyama (2019) stated that high liquidity will reduce liquidity risk and improve management's ability to service and monitor loans resulting in lower non-performing loans. On the other hand, excess liquidity is a good proxy for behavior moral hazard between bank management and depositors, because they cannot monitor and make management bound for the effective use of funds. In addition, the positive relationship between credit growth and NPL can also capture moral hazard behavior. The increase in the volume of credit should be able to offset or reduce the NPL (Islam and Nishiyama, 2019). Therefore:

H1: adverse selection behavior is indicated when performance is positively and significantly related to NPL.
H2: Moral hazard behavior is indicated when liquidity is positively and significantly related to NPL.
H3: Moral hazard behavior is indicated when

credit growth is positively and significantly related to NPL.

Second, industrial factors (Islam and Nishiyama, 2019), such as market share and the deposit guarantee system. A large market share is expected to reduce NPL, because banks have a wider market segment, so they will be more selective. On the other hand, a large market segment offset by a high NPL will reflect moral hazard behavior. In addition, deposit insurance also often triggers moral hazard behavior. With a deposit guarantee, banks will be encouraged to finance high-risk projects with high returns (Ngalawa et al., 2016). The emergence of moral hazard behavior in the presence of deposit insurance has been widely supported in empirical studies. For example, Demirguc-Kunt and Detragiache (2002), Leaven (2002), Wheelock and Wilson (1995), Carapella and Di Giorgio (2004), and Cull et al. (2005). Therefore:

H4: Moral hazard behavior is indicated when market share is positively and significantly related to NPL.

H5: Moral hazard behavior is indicated when the deposit insurance interest rate is positively and significantly related to NPL.

Third, macroeconomic factors (Nkusu, 2011; Skarica, 2014; Beck et al., 2015), such as economic growth and interest rate policies. Adverse selection behavior is indicated when the NPL increases when economic growth increases. The increase in economic growth reflects the stability of the economy, thus, affecting the demand and supply of loans. In this condition, the borrower has the ability to pay debts well (Salas and Saurina, 2002). However, if the economy is in good condition and the NPL is high, this indicates that the bank is not selective or less careful in lending. In addition, the benchmark interest rate can also indicate adverse selection behavior. Nkusu (2011) and Castro (2013) state that an increase in interest rates will substantially weaken the ability to pay of borrowers, which will encourage an increase in NPLs. Therefore, adverse behavior selection will be indicated when interest rates are low and NPL is high. Therefore:

H6: adverse selection behavior is indicated when economic growth is positively and significantly related to NPL.

H7: adverse selection behavior is indicated when interest rates are negatively and significantly related to NPL.

METHOD

The data includes all KUR channeling banks, which are 38 banks. The data used is quarterly data, starting from Q1-2008 to Q2-2021. The list of KUR channeling banks can be seen in Appendix 1. Data analysis used threshold regression model. This model is designed by dividing observations into two classes that are conditioned on a predetermined variable value. Therefore, the research sample will be divided automatically into two groups according to the set threshold value. In this context, the average NPL is used as a threshold variable. Systematically, the threshold regression model developed for this study is: Moral hazard behavior and adverse selection are proxied by non-performing loans (NPL). Bank performance is proxied by return on assets (ROA), liquidity by liquidity assets ratio (LAR), credit growth (LGR) by changes in total loans between the current quarter and the previous quarter, and market share (MS) by the percentage of bank loans to SMEs to total credit for SMEs. Data related to this is obtained from the quarterly financial statements of each participating bank. Meanwhile, the deposit guarantee rate (LPS rate) is obtained from the statistics of the Deposit Insurance Corporation. The LPS rate data used is the latest data for each quarter. Meanwhile, economic growth (eco_growth) and the benchmark interest rate (BI rate) were obtained from the Central Statistics Agency and Bank Indonesia. The economic growth data used is quarterly data, while the BI rate data used is the latest data for each quarter

$$NPL_{it} = \alpha + \sum_{j=0}^{m} \beta_1 X_{i.t-j}(NPL_{i.t-1} \leq Y) + \sum_{j=0}^{m} \beta_2 X_{i.t-j}(NPL_{i.t-1} > Y) + \sum_{j=0}^{m} \beta_3 C_{i.t-1} + \varepsilon \quad \text{Equation 1}$$

where: $NPL_{i.t}$ is the NPL of bank i in period t (current quarter); α is a constant; β_1 is the slope of the variable $X_{i.t-j}$ $(NPL_{i.t-1}) \leq_y$), β_2 is the slope of the variable $X_{i.t-j}$) $(NPL_{i.t-1}) >_y$); $X_{i.t-j}$) is an independent variable from/for bank i in period t-1 (previous quarter); $NPL_{i.t-1}$ is the NPL of bank i in period t-1 (previous quarter); $_y$ is the threshold value; β_3 is the slope of the control variables; $C_{i.t-1}$ are control variables for bank i in period t-1 (previous quarter; and ε is the residual error. When

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the independent variables perform above the threshold value, then the decision-making process is taken from β_2, not of β_1. And vice versa. Specifically, the model can be described as:

$$\begin{aligned}NPL_{i.t} = \alpha &+ \beta_{1.1}LAR_{i.t-1}(NPL_{i.t-1} \le \Upsilon) + \beta_{1.2}LGR_{i.t-1}(NPL_{i.t-1} \le \Upsilon) \\ &+ \beta_{1.3}MS_{i.t-1}(NPL_{i.t-1} \le \Upsilon) + \beta_{1.4}LPS\_rate_{i.t-1}(NPL_{i.t-1} \le \Upsilon) \\ &+ \beta_{1.5}ROA_{i.t-1}(NPL_{i.t-1} \le \Upsilon) + \beta_{1.6}ECO\_Growth_{i.t-1}(NPL_{i.t-1} \le \Upsilon) \\ &+ \beta_{1.7}BI\_rate_{i.t-1}(NPL_{i.t-1} \le \Upsilon) + \beta_{2.1}LAR_{i.t-1}(NPL_{i.t-1} > \Upsilon) \\ &+ \beta_{2.2}LGR_{i.t-1}(NPL_{i.t-1} > \Upsilon) + \beta_{2.3}MS_{i.t-1}(NPL_{i.t-1} > \Upsilon) \\ &+ \beta_{2.4}LPS\_rate_{i.t-1}(NPL_{i.t-1} > \Upsilon) + \beta_{2.5}ROA_{i.t-1}(NPL_{i.t-1} > \Upsilon) \\ &+ \beta_{2.6}ECO\_Growth_{i.t-1}(NPL_{i.t-1} > \Upsilon) + \beta_{2.7}BI\_rate_{i.t-1}(NPL_{i.t-1} > \Upsilon) \\ &+ \varepsilon_{30} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{Equation 2}\end{aligned}$$

where: LAR is the liquidity assets ratio (independent variable 1); LGR is credit growth rate (independent variable 2); MS is market share (independent variable 3); LPS_rate is the deposit guarantee rate (independent variable 4); ROA is return on assets (independent variable 5); Eco_growth is economic growth (independent variable 6); BI_rate is the bank reference interest rate variable (independent variable 7); size is bank size (control variable 1); DRG is the growth rate of third party funds (control variable 2); BOPO is the efficiency ratio (control variable 3); NIM is the productivity ratio (control variable 4); and CAR is the capital adequacy ratio (control variable 5).

RESULTS

The results show that in general, the ratio of non-performing loans (NPL) of participating banks to the people's business credit program (KUR) tends to increase from time to time. The average NPL is 5.87%, which is an increase of around 0.79% per quarter. The average value is quite high, because it is close to the maximum limit set by the banking authorities in Indonesia (NPLMax = 6%). Specifically, based on the type of credit disbursed, investment credit has the highest NPL (avg. 8.06%) or is already above the Indonesian banking standard. Next is credit for working capital (avg. 5.43%) and other KUR loans (avg. 4.11%), both of which are still at Indonesian banking standards. Meanwhile, based on the types of

	N	Min	Max	Mean	STDev.	Skewness	Kurtosis
NPL (%)	5,700	1.28	22.33	5.87	3.98	1.71	2.59
By Types							
Worcap.	1,900	2.46	9.38	5.43	1.88	0.35	-1.11
Invest.	1,900	1.91	22.33	8.06	5.41	0.86	-0.70
Others	1,900	1.28	12.42	4.11	2.60	1.68	2.44
By Banks							
BUMN	600	1.28	8.56	3.99	1.71	0.26	-0.76
BUMD	3,300	1.71	22.33	8.68	4.27	1.05	0.27
Private	1,800	1.61	6.41	3.83	1.11	0.05	-0.73
By Period							
Normal	4,218	1.30	22.33	5.49	3.42	1.94	2.55
Turbulence	1,482	1.30	17.89	5.55	4.27	1.97	2.80
LAR (%)	1,900	12.84	38.43	19.94	5.87	1.15	0.52
LGR (%)	1,900	-18.42	16.27	0.71	2.46	-0.21	17.80
ROA (%)	1,900	1.07	5.32	2.71	0.68	0.44	-0.06
MS (%)	1,900	3.24	47.70	24.02	17.25	0.03	-1.93
LPS_rate (%)	50	4.00	7.75	6.42	1.01	-0.57	-0.22
Eco_Growth (%)	50	-5.32	7.07	4.86	1.21	-5.25	37.11
BI_rate (%)	50	3.50	7.75	5.55	1.36	0.29	-1.28
Size (Log10_TA)	1,900	5.26	6.59	6.00	0.40	-0.04	-1.39
DGR (%)	1,900	-23.20	25.23	0.77	3.94	-0.61	8.99
BOPO (%)	1,900	66.16	113.91	80.91	6.78	0.82	1.38
NIM (%)	1,900	1.86	8.16	5.07	1.30	-0.20	-0.47
CAR (%)	1,900	15.33	61.01	24.81	11.76	1.72	1.35

Table 1.
Summary of Statistics

participating banks, regional government-owned banks (BUMD) have the highest NPLs than state-owned and private banks. The average NPL from BUMD banks reached 8.68%, while the average NPL from state-owned and private banks tended to be equal, namely 3.99% and 3.83%, respectively. As for the observation period, in this case the observation period is divided into two parts. The first, referred to as the "normal period", is a period in which there are no significant economic and financial shocks. This period starts from Q1/2010 to Q1/2020. The second, referred to as the "turbulence period", is a period of significant economic and financial shocks. In this case, the shocks of the global financial crisis (Q1-Q4 2008), the European crisis (Q1-Q4 2009), and the Covid-19 pandemic (Q2/2020 – Q2/2021). In the normal period, the average NPL is 5.49%, while in the turbulent period the average NPL is 5.55%. So, there is no significant difference between the NPL in the normal period and the turbulence period. Specific NPL statistics from KUR participating banks can be seen in Table 1.

In general (see Table 1, General column, Panel A), the increase in NPLs throughout the observation period was significantly triggered by credit growth (LGR), increased market share (MS), increased deposit insurance interest rates (LPS rate), economic growth (Eco growth), and a reduction in the banking benchmark interest rate (BI rate). The level of liquidity (LAR) and performance (ROA) does not show a significant relationship. The positive relationship between credit growth (($\beta_{LGR.NPL}$=0.96), market share ($\beta_{MS.NPL}$= 0.23), and deposit insurance interest rates with non-performing credit risk ($\beta_{LPS.NPL}$= 0.69) indicates an indication the existence of moral hazard behavior in the distribution of people's business credit (KUR). On the other hand, a positive relationship between growth economy with NPL ($\beta_{ECO.NPL}$= 0.19), and the negative relationship between the benchmark interest rate and NPL (β_{BIN-PL}= -0.22) indicates adverse selection behavior.

Specifically, the threshold regression results (see Table 2, General Column, Panel B) show that moral hazard behavior only occurs in banks with NPLs less than or equal to 5.87% (threshold value). In this case, banks with such NPLs are dominated by state-owned and private banks (see Table 1). This means that banks with such NPLs tend to use their excess liquidity to increase the distribution of KUR, especially for SME investment, thereby increasing their market share. However, the banks concerned may intentionally channel these loans to risky SMEs or deliberately approve credit proposals that are inadequate or inappropriate. As a result, their risk of non-performing loans (NPL) increases. Meanwhile, banks with NPLs above 5.87%, which were dominated by BUMD banks, experienced adverse selection, which may have been triggered by information asymmetry between bank credit analysts and borrowers (SMEs). As a result, the NPL of these banks also increased Based on the type of credit disbursed, investment credit has the highest NPL (avg. 8.06%) or is already above the Indonesian banking standard. Next is credit for working capital (avg. 5.43%) and other KUR loans (avg. 4.11%), both of which are still at Indonesian banking standards. The factors that significantly determine the risk of non-performing loans on investment loans, working capital, and others are the past loan growth rate, and the increase in deposit insurance interest rates. Past performance and good economic growth also influenced the risk of bad credit on working capital loans and others. Meanwhile, the decline in the benchmark interest rate is a significant additional factor determining the risk of non-performing loans on investment loans. In investment credit, moral hazard behavior only occurs in banks with NPLs below or equal to the threshold value (8.06%), while banks with NPLs above this value tend to experience adverse selection. Contrary to these findings, moral hazard behavior in working capital loans actually occurs in banks with NPLs greater than the threshold value (5.43%), while adverse selection behavior is not indicated, either in banks below or above the threshold. . As for other loans, moral hazard behavior also occurs in banks below or equal to the threshold value (4.11%), and there is no proven adverse selection behavior. Based on the types of participating banks, increased liquidity, credit growth, increased market share, increased interest rates for deposit guarantees, improved performance, economic growth, and decreased benchmark interest rates are significant factors in determining the risk of

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General	By Loan			By Bank			By Period	
	WC	Invest.	Other	BUMN	BUMD	Private	Normal	Turb.
Panel A. Panel Regression - Common								
Constant LAR$_{i,t-}$ LGR$_{t-1}$	19.84***	14.11***	16.95***	33.33***	.99	82.94***	5..35	36.75***	28.58
MS$_{t-1}$	.07	-.04*	.11	.37***	.02	.41***	-.02	.28***	-.04
LPS$_{t-1}$	.96***	.70***	.91***	.44***	-.02	.52***	-.33	.57***	.11
ROA$_{t-1}$	.23***	-.83***	.65***	.03	-.19	.61***	.06	.26***	.22
ECO$_{t-1}$	.69***	-.34***	.42***	-.32***	-.21	.66***	.29	.26***	-.28
BI$_{t-1}$	.20	-.18**	-.79***	.27***	-.24	.81***	-.21	.37***	-.03
SIZE$_{t-1}$	.19**	.23***	-.02	.56***	-.01	.05	-.01	.01	-.07
DGR$_{t-1}$	-.22***	.08	-.56***	.16	.03	-.22**	-.33*	.05	-.30
BOPO$_{t-1}$	-.94***	.84***	-.96***	-.70***	.35	-.91***	.83***	.77***	.69
NIM$_{t-1}$	.94***	.79***	.38***	.81***	-.48	.20**	-.44***	.89***	.39
CAR$_{t-1}$	.84***	.65***	.18***	.01	.03	.13	-.01	.31***	-.22
	.23***	.23***	.77***	-.31***	.28	.97***	.38*	.19**	.09
	.01	-.20***	.12	.10	-.09	.31**	.05	.02	.04
Memo Item									
R	.68	.90	.92	.76	.33	.43	.35	.70	.63
Adj. R^2	.46	.80	.85	.56	.08	.16	.09	.49	.35
F-stat.	80.48***	130.9***	176.3***	41.63***	3.65***	6.99***	4.15***	79.96***	7.96***
Obs.	5,700	1,900	1,900	1,900	600	600	600	4,218	1,482
Panel B. Panel Regression Threshold									
Constant	53.43***	37.20***	52.20***	38.86***	3.23	90.78***	6.10*	61.03***	75.82
LAR$_{i,t-1}$(NPL$_{it-1}$≤γ)	.39***	.02	.56***	.22***	.04	.46***	-.03	.38***	-.04
LAR$_{t-1}$(NPL$_{it-1}$>γ)	.06	.97***	.12	.02	.02	.26***	-.06	.03	-.04
LGR$_{t-1}$(NPL$_{it-1}$≤γ)	.62***	-.14	.64***	.85***	.14	.97***	-.21	.68***	.38
LGR$_{t-1}$(NPL$_{it-1}$>γ)	-.05	.71***	-.05	.89***	.05	.94***	.54***	.13	-.16
MS$_{t-1}$(NPL$_{it-1}$≤γ)	.29***	-.09	.95***	.05	.11	.29***	.13	.37***	.16
MS$_{t-1}$(NPL$_{it-1}$>γ)	-.02	.33***	-.16*	.54***	-.12	.17**	.22***	.03	.21
LPS$_{t-1}$(NPL$_{it-1}$≤γ)	.59***	.16**	.08	.42***	-.10	.31***	-.02	.41***	-.25
LPS$_{t-1}$(NPL$_{it-1}$>γ)	-.14	.76***	.04	-.12	-.05	.60***	.34***	.01	-.74
ROA$_{t-1}$(NPL$_{it-1}$≤γ)	-.14	-.17	.06	-.09	.31	.40***	.29	.07	.13
ROA$_{t-1}$(NPL$_{it-1}$>γ)	.81***	-13	.26***	-.08	-.12	.47***	-.13	.22***	-.77
ECO$_{t-1}$(NPL$_{it-1}$≤γ)	-.01	.02	.16**	.16***	.01	.22***	-.12	.01	-.04
ECO$_{t-1}$(NPL$_{it-1}$>γ)	.01	.23	.11	.11	-.12	.12*	.01	.01	-.28
BI$_{t-1}$(NPL$_{it-1}$≤γ)	-.06	-.12	.04	.04	.12	-.20***	.08	.06	-.12
BI$_{t-1}$(NPL$_{it-1}$>γ)	.02	.04	-.20***	-.12	-.23**	-.51***	-.13	.01	-.41
SIZE$_{t-1}$	-.96***	.92***	.92***	.95***	-.98***	-74***	.95***	.91***	.97
DGR$_{t-1}$	.69***	-.65***	.89***	-83***	.53***	.49***	-.10	.33***	.02
BOPO$_{t-1}$	.64***	.10*	.26***	-.30***	.28**	.01	.01	.26***	-.04
NIM$_{t-1}$	-.18*	.29***	.43***	-.43***	.03	.60***	.17	.25***	.21
CAR$_{t-1}$	.21	-.31***	-.08*	-.05	.05	-.12	-.11	.32***	.12
Memo Item R	.64	.85	.89	.82	.56	.69	.68	.62	.32
Adj. R^2	.40	.72	.79	.65	.27	.42	.43	.37	-.29
F-stat.	27.78***	55.43***	73.83***	54.96***	7.06***	8.91***	13.76***	18.48***	.26
Obs.	5,700	1,900	1,900	1,900	600	600	600	4,218	1,482
Threshold	5.87	5.43	8.06	4.11	3.99	8.68	3.83	5.49	5.55

Table 2.
Regression

non-performing loans at BUMD banks. Significant moral hazard behavior occurred in this bank, both below and above the threshold value (8.68%). In addition, significant adverse selection behavior was detected in these two bank groups. In contrast, state-owned banks as a whole did not show a significant increase in NPLs. Therefore, the behavior of moral hazard and adverse selection in state-owned banks is not significantly indicated. As for private banks, the increase in NPL occurred in a low level of significance (α = 10%), which was only triggered by credit growth and a decline in the benchmark interest rate. However, moral hazard behavior is indicated in these banks, especially those with NPLs above the threshold value. There is no indication of significant adverse selection in the distribution of KUR to these banks. The observation period starts in Q1-2008 to Q2-2021. During this period, at least three major shocks occurred, namely the global financial crisis in 2008, which was followed by the European crisis of 2009, and the shocks of the Covid-19 pandemic which occurred from Q2-2020 and is still ongoing until the end of this observation period (Q2-2021). These shocks may have an impact on banking performance, particularly in the distribution of people's business loans. Therefore, this study divided the research period into two groups. The first, referred to as the "normal period" (Q1-2010 to Q1-2020). The second, referred to as the "turbulence period" (Q1-Q4 of 2008, Q1-Q4 of 2009, Q2 of 2020 to Q2 of 2021). The general regression results show that the increase in NPL from banks distributing people's business loans only occurs in the normal period. This significant increase was triggered by increased liquidity, credit growth, increased market share, increased deposit insurance interest rates, and improved performance. Significant moral hazard behavior occurs in banks with NPLs below or equal to the threshold value. Therefore, these findings support our previous findings, especially our general findings. In other words, the shocks of the global financial crisis (2008), the European crisis (2009) and the Covid-19 pandemic (2020-2021) did not adversely affect the results of this analysis.

CONCLUSION

Based on the results of data analysis, it can be concluded that in general moral hazard behavior occurs when the NPL is below or equal to 5.87%, on the contrary, it experiences adverse selection. Specifically, moral hazard behavior is dominant in the case of investment credit and local government-owned banks. In working capital loans and others, this behavior also occurs, but not as in the case of investment loans. Moral hazard and adverse selection behavior were not detected at all in state-owned banks, while in private banks only occurred at a low level. At the end of the analysis, we also consider the shock effects of the global financial crisis (2008), European crisis (2009), and the Covid-19 pandemic (2020-2021) on the threshold regression model, but the results are negative, thus strengthening our previous findings. In general, the factors that significantly determine the risk of non-performing loans in the people's business credit program are the increase in credit growth, market share, deposit insurance interest rates, and economic growth as well as a decrease in the benchmark interest rate. However, the specifics are different, both in each type of credit and the type of participating bank.

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