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MORAL HAZARD AND ADVERSE SELECTION ON THE PEOPLE BUSINESS CREDIT PROGRAM IN INDONESIA

Abstract: *This article discusses the behavior of providing bank credit to SMEs during the people business credit (hence shortened as KUR) program in Indonesia.Since its launch in 2007, the average NPL for these loans has increased.It indicates the existence of moral hazard behavior in the distribution of credit by the bank. To prove this, this article implements a threshold regression model. The data includes 38 participating banks, observed from Q1-2008 to Q2-2021.The results of data analysis reveal that moral hazard behavior exists 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 banks owned by local governments.In working capital loans and others, this behavior also occurs, but not as much as in the case of investment loans.Moral hazard and adverse selection behavior were not detected anyhow in state-owned banks, while in private banks, these 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. However, 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 business credit program are; increased loan growth rate, 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.*

Key words: *moral hazard behavior, adverse selection, non-performing loan, people business credit, threshold regression model, bank.*

Language: *English*

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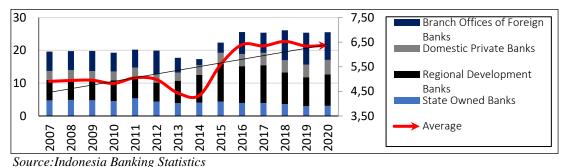
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Introduction

The People Business Credit Program (KUR) is one of the government's programs to improve access to financing for small and medium enterprises (SMEs) in Indonesia.Launched on November 5, 2007, this program was effectively implemented by all participating banks in early 2008 and is still ongoing (in 2021).It is intended to strengthen business capital in the context of implementing policies to accelerate real sector development and empower SMEs (Presidential Instruction No. 6 of 2007).However, this program tends to increase the average non-performing loan (NPL) ratio for SME loans.Figure 1 shows that the average NPL for people's business loans reached 5.43%, with an increasing trend from year to year, especially from 2015 to 2020.In general, loans from regional development banks have the highest NPLs, at an average of 8.22% per year.Then it is 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 indicates an adverse selection behavior or moral hazard in lending.

Source:Indonesia Banking Statistics

Figure 1 - Matrix Strategy Combination Formulation

The phenomenon of adverse selection and moral hazard is indeed highly inherent in government programs.It is because direct subsidies from the government are considered as a form of direct government intervention in the business sector, the transfer of funds without repayment.It 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 channeling credit for the program.On the other hand, customers also tend to borrow beyond their needs.As a result, if one of those tendencies applies, then the risk of bad credit will increase and will increase more when both apply.In addition, credit for SMEs is generally marked with asymmetric information. Thus it 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 for SMEs, making them more vulnerable in the event of an economic contraction.

Until now, 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 or adverse selection behavior in implementing the program.If the behavior is detected, then the significant factors that determine the behavior will be explored.The second section of this article will describe the review of related literature.The third section describes the methodology.The fourth section presents the results of data analysis and discussion.The fifth section is the conclusion, which is also the closing part of this paper.

Review Of Related Literature
People Business Credit Programme

People Business Credit (KUR) is a credit guarantee program by the government to SMEs, launched on November 5th, 2007. It aims at increasing access to financing for Small and Medium Enterprises (SMEs) to accelerate the development of the real sector and empower SMEs.Although this program was launched by the government, 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 Business Credit Guarantee Facility. However, 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 feasible productive businesses that are 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, 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 following sound credit policy and taking the applicable provisions into account.

Moral Hazard vs. Adverse Selection

In simple terms, moral hazard and adverse selection are the same behavior. They are both risky decision-making behavior.If a risky decision is made consciously or intentionally, it is called a moral hazard. However, if it is done without intention, for example, a wrong decision due to ignorance or negligence, it is called adverse selection.Therefore, these two behaviors are complicated to observe directly. However, these behaviors can be identified through observations of bank behavior.One of the predominant indicators used to indicate moral hazard behavior is excessive risk-taking, reflected in high non-performing loans (NPL) (Zhang et al., 2015).

Several theories can be used for explaining 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 is when 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 is due to conflicts of interest between bank owners and depositors. It is when 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 loan growth rate 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 or not to continue to maintain their ownership with high risk (Janda, 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 of 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 strenuous to analyze their creditworthiness, therefore they tend to lower the level of analysis (Repullo and Suarez, 2013).

Behavioral Indications of Moral Hazard and Adverse Selection

Several factors can indicate moral hazard and adverse selection behavior.Specifically, these factors can be grouped into three categories.The first is bank-specific factors (Boudriga et al., 2010; Dhar and Bakhsi, 2015), such as performance, liquidity, and loan growth rate.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 prompt selective and careful behavior in lending, so that it can suppress NPLs, and vice versa.Meanwhile, moral hazard behavior is indicated when a high NPL is following a high level of liquidity.Islam and Nishiyama (2019) argue 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 of moral hazard behavior between bank management and depositors since they cannot monitor and therefore make the bank management committed to the effective use of funds.In addition, the positive relationship between loan growth rate and NPL can also capture moral hazard behavior.The increase in

credit volume should be able to offset or reduce the NPL (Islam and Nishiyama, 2019).Therefore:

H1 : Adverse selection behavior is indicated when performance is positively related and significance to NPL.

H2 : moral hazard behavior is indicated when liquidity is positively related and significance to NPL.

H3 : moral hazard behavior is indicated when loan growth rate is positively related and significance to NPL.

The second is 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 higher market segment. Thus 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 with deposit insurance has been widely supported in empirical studies,such as studies conducted by 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 related and significance to NPL.

H5 : moral hazard behavior is indicated when deposit insurance interest rates is positively related and significance to NPL.

The third is macroeconomic factors (Nkusu, 2011; Skarica, 2014; Beck et al., 2015), such as economic growth and interest rate policies.Adverse selection behavior is indicated by the NPL increase when economic growth increases.The increase in economic growth reflects economic stability. Thus, affecting the demand and supply of loans.In this condition, the borrower can pay debt well (Salas and Saurina, 2002).However, if the economy is in good condition and the NPL is high, it 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) argue that an increase in interest rates will substantially weaken the ability to pay borrowers, which will encourage an increase in NPLs.Therefore, adverse selection behavior will be indicated by low-interest rates and high NPLs.Therefore:

H6 : Adverse selection behavior is indicated when economic growth is positively related and significance to NPL.

H7 : Adverse selection behavior is indicated when interest rate is negatively related and significance to NPL..

Research Methods

The data includes all 38 KUR channeling banks. The data used is quarterly, starting from Q1-2008 to Q2-2021. The list of KUR channeling banks can be seen in Appendix 1.

This study employed a 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 following the set threshold value. On this basis, a threshold variable uses the average NPL. 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), loan growth rate (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 was obtained from the quarterly financial statements of each participating bank. Meanwhile, the deposit insurance rate (LPS rate) is obtained from the statistics of the Deposit Insurance Corporation. The LPS rate data used is the most recent 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, while the BI rate data used is the most recent data for each quarter.

$$NPL_{i.t} = \alpha + \sum_{j=0}^{m} \beta_1 X_{i.t-j}(NPL_{i.t-1} \leq \gamma) + \sum_{j=0}^{m} \beta_2 X_{i.t-j}(NPL_{i.t-1} > \gamma) + \sum_{j=0}^{m} \beta_3 C_{i.t-1} + \varepsilon \dots \dots \textbf{equation (1)}$$

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 $X_{(i.t-j)}$ $(NPL_{(i.t-1)} \leq \gamma)$; β_2 is the slope of the variable $X_{(i.t-j)}$ $(NPL_{(i.t-1)} > \gamma)$; $X_{(i.t-j)}$ is the independent variable of/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); γ 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 residual error. When the independent variables perform above the threshold value, then the decision-making process is taken from β_2, not from β_1. And vice versa.

Specifically, the model can be described as:

$$\begin{aligned}
NPL_{i.t} = \alpha &+ \beta_{1.1}LAR_{i.t-1}(NPL_{i.t-1} \leq \gamma) + \beta_{1.2}LGR_{i.t-1}(NPL_{i.t-1} \leq \gamma) + \beta_{1.3}MS_{i.t-1}(NPL_{i.t-1} \leq \gamma) \\
&+ \beta_{1.4}LPS\_rate_{i.t-1}(NPL_{i.t-1} \leq \gamma) + \beta_{1.5}ROA_{i.t-1}(NPL_{i.t-1} \leq \gamma) \\
&+ \beta_{1.6}Eco\_growth_{i.t-1}(NPL_{i.t-1} \leq \gamma) + \beta_{1.7}BI\_rate_{i.t-1}(NPL_{i.t-1} \leq \gamma) \\
&+ \beta_{2.1}LAR_{i.t-1}(NPL_{i.t-1} > \gamma) + \beta_{2.2}LGR_{i.t-1}(NPL_{i.t-1} > \gamma) + \beta_{2.3}MS_{i.t-1}(NPL_{i.t-1} > \gamma) \\
&+ \beta_{2.4}LPS\_rate_{i.t-1}(NPL_{i.t-1} > \gamma) + \beta_{2.5}ROA_{i.t-1}(NPL_{i.t-1} > \gamma) \\
&+ \beta_{2.6}Eco\_growth_{i.t-1}(NPL_{i.t-1} > \gamma) + \beta_{2.7}BI\_rate_{i.t-1}(NPL_{i.t-1} > \gamma) + \beta_{3.1}Size_{i.t-1} \\
&+ \beta_{3.2}DGR_{i.t-1} + \beta_{3.4}BOPO_{i.t-1} + \beta_{3.5}NIM_{i.t-1} + \beta_{3.6}CAR_{i.t-1} \\
&+ \varepsilon \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots . . \qquad \textbf{equation (2)}
\end{aligned}$$

where: LAR is the liquidity assets ratio (independent variable 1); LGR is loan growth rate (independent variable 2); MS is market share (independent variable 3); LPS_rate is the deposit guarantee rate (independent variable 4); ROA is the 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 business credit program (KUR) tends to increase from time to time. The average NPL is 5.87%, showing an increase of around 0.79% per quarter. The average value is relatively 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. The next one 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 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, 3.99% and 3.83%. In this study, the observation period is divided into two parts. The first is the "normal period." A period where 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). The average NPL in the normal period, is 5.49%, while in the turbulence period, the average NPL is 5.55%. So, there is no significant difference between the NPL in the normal period and the turbulence period. The specifics of NPL statistics from KUR participating banks can be seen in Table 1.

Table 1. Statistics Summary

	N	Min	Max.	Mean	STDev.	Skewness	Kurtosis
INP (%)	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							
State-owned Corporation	600	1.28	8.56	3.99	1.71	0.26	-0.76
Provincial-owned Company	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

In general (see Table 1, General column, Panel A), the increase in NPLs throughout the observation period was significantly triggered by loan growth rate (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) do not show a significant relationship. The positive relationship among loan 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 the existence of moral hazard behavior in the distribution of people business loans (KUR). On the other hand, a positive relationship between economic growth and NPL ($\beta_{ECO.NPL} = 0.19$), and a negative relationship between the benchmark interest rate and NPL ($\beta_{BI.NPL} = -0.22$) indicate adverse selection behavior.

Table 2. Regression

	General		By Loan			By Bank			By Period	
			WC	Invest.	Other	State-owned Corporation	Provincial-owned Company	Private	Normal	Turb.

Panel A.Panel Regression - Common

	General		WC		Invest.		Other		State-owned Corporation	Provincial-owned Company		Private		Normal		Turb.	
Constant	19.84	***	14.11	***	16.95	***	33.33	***	.99	82.94	***	5..35		36.75	***	28.58	
$LAR_{i,t-}$	.07		-.04	*	.11		.37	***	.02	.41	***	-.02		.28	***	-.04	
LGR_{t-1}	.96	***	.70	***	.91	***	.44	***	-.02	.52	***	-.33		.57	***	.11	
MS_{t-1}	.23	***	-.83	***	.65	***	.03		-.19	.61	***	.06		.26	***	.22	
LPS_{t-1}	.69	***	-.34	***	.42	***	-.32	***	-.21	.66	***	.29		.26	***	-.28	
ROA_{t-1}	.20		-.18	**	-.79	***	.27	***	-.24	.81	***	-.21		.37	***	-.03	
ECO_{t-1}	.19	**	.23	***	-.02		.56	***	-.01	.05		-.01		.01		-.07	
BI_{t-1}	-.22	***	.08		-.56	***	.16		.03	-.22	**	-.33	*	.05		-.30	
$SIZE_{t-1}$	-.94	***	.84	***	-.96	***	-.70	***	.35	-.91	***	.83	***	.77	***	.69	
DGR_{t-1}	.94	***	.79	***	.38	***	.81	***	-.48	.20	**	-.44	***	.89	***	.39	
$BOPO_{t-1}$	.84	***	.65	***	.18	***	.01		.03	.13		-.01		.31	***	-.22	
NIM_{t-1}	.23	***	.23	***	.77	***	-.31	***	.28	.97	***	.38	*	.19	**	.09	
CAR_{t-1}	.01		-.20	***	.12		.10		-.09	.31	**	.05		.02		.04	

Memo Item

	General	WC	Invest.	Other	State-owned Corporation	Provincial-owned Company	Private	Normal	Turb.
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

	General		WC		Invest.		Other		State-owned Corporation	Provincial-owned Company		Private		Normal		Turb.
Constant	53.43	***	37.20	***	52.20	***	38.86	***	3.23	90.78	***	6.10	*	61.03	***	75.82
$LAR_{i,t-1}(NPL_{it-1} \leq \gamma)$	.39	***	.02		.56	***	.22	***	.04	.46	***	-.03		.38	***	-.04
$LAR_{.t-1}(NPL_{it-1} > \gamma)$	.06		.97	***	.12		.02		.02	.26	***	-.06		.03		-.04
$LGR_{.t-1}(NPL_{it-1} \leq \gamma)$	.62	***	-.14		.64	***	.85	***	.14	.97	***	-.21		.68	***	.38
$LGR_{.t-1}(NPL_{it-1} > \gamma)$	-.05		.71	***	-.05		.89	***	.05	.94	***	.54	***	.13		-.16
$MS_{.t-1}(NPL_{it-1} \leq \gamma)$	.29	***	-.09		.95	***	.05		.11	.29	***	.13		.37	***	.16
$MS_{.t-1}(NPL_{it-1} > \gamma)$	-.02		.33	***	-.16	*	.54	***	-.12	.17	**	.22	***	.03		.21
$LPS_{.t-1}(NPL_{it-1} \leq \gamma)$	.59	***	.16	**	.08		.42	***	-.10	.31	***	-.02		.41	***	-.25
$LPS_{.t-1}(NPL_{it-1} > \gamma)$	-.14		.76	***	.04		-.12		-.05	.60	***	.34	***	.01		-.74

$ROA_{.t-1}(NPL_{it-1} \le \gamma)$	-.14	-.17	.06	-.09	.31	.40 ***	.29	.07	.13
$ROA_{.t-1}(NPL_{it-1} > \gamma)$	.81 ***	-13	.26 ***	-.08	-.12	.47 ***	-.13	.22 ***	-.77
$ECO_{.t-1}(NPL_{it-1} \le \gamma)$	-.01	.02	.16 **	.16 ***	.01	.22 ***	-.12	.01	-.04
$ECO_{.t-1}(NPL_{it-1} > \gamma)$	.01	.23	.11	.11	-.12	.12 *	.01	.01	-.28
$BI_{.t-1}(NPL_{it-1} \le \gamma)$	-.06	-.12	.04	.04	.12	-.20 ***	.08	.06	-.12
$BI_{.t-1}(NPL_{it-1} > \gamma)$	.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

Specifically, the threshold regression results (see Table 2, General Column, Panel B) shows that moral hazard behavior only occurs in banks with NPLs less than or equal to 5.87% (threshold value).Banks with such NPLs are dominated by state-owned and private banks (see Table 1).It 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 voluntarily approve inadequate or inappropriate credit proposals.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.The next one is credit for working capital (avg. 5.43%) and other KUR loans (avg. 4.11%), both of which are still at Indonesian banking standards.Significant factors that determine the risk of non-performing loans on investment loans, working capital, and others are past loan growth rates, and increases in deposit insurance interest rates.Previous 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 loans, 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 occurs in banks with NPLs greater than the threshold value (5.43%). Meanwhile, 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 type of participating bank, increased liquidity, loan growth rate, increased market share, increased deposit insurance interest rates, improved performance, economic growth, and

decreased benchmark interest rates are significant factors in determining the risk of non-performing loans in BUMD banks. Significant moral hazard behavior occurs in the banks that are 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 do not significantly exist. As for private banks, the increase in NPL occurred at a low significance level ($\alpha = 10\%$), which was only triggered by credit growth, and which declined in the benchmark interest rate. However, moral hazard behavior exists 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 from Q1-2008 until Q2-2021. During this period, at least three major shocks occurred, namely the global financial crisis in 2008 followed by the European crisis in 2009, and shocks due to the Covid-19 pandemic that began in Q2-2020 and are 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 business loans. Therefore, this study divided the period into two groups. The first is the "normal period" (Q1-2010 to Q1-2020). The second is 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 of people business lending banks only occurs in the 'normal period.' This significant increase was triggered by increased liquidity, loan growth rate,

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

The results of data analysis reveal that moral hazard behavior generally exists 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 banks owned by local governments. In working capital loans and others, this behavior also occurs, but not as much as in the case of investment loans. Moral hazard and adverse selection behavior were not detected anyhow in state-owned banks, while in private banks, these 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. However, 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 business credit program are; increased loan growth rate, 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..

Apendix

Appendix 1: Sample Bank List
1. Bank Rakyat Indonesia (Persero), Tbk.
2. Bank Mandiri (Persero), Tbk.
3. Bank Negara Indonesia (Persero), Tbk.
4. Bank Tabungan Negara (Persero), Tbk.
5. Bank Central Asia, Tbk.
6. Bank Bukopin, Tbk.
7. Bank Maybank Indonesia, Tbk.
8. Bank Sinarmas, Tbk.
9. Bank Permata, Tbk.
10. Bank Tabungan Pensiunan Nasional, Tbk.
11. Bank OCBC NISP, Tbk.
12. Bank Artha Graha International, Tbk.
13. Bank BRI Agroniaga
14. Bank Nationalnobu.
15. Bank Mandiri Taspen
16. BPD Bali
17. BPD Kalbar
18. BPD NTT
19. BPD DIY

20. BPD Sulselbar
21. BPD Sumut
22. BPD Sumbar (Bank Nagari)
23. BPD Sumsel Babel
24. BJB
25. BPD Kalsel
26. BPD Riau Kepri
27. Bank NTB Syariah
28. BPD Lampung
29. BPD Papua
30. BPD Bengkulu
31. BPD Kaltimtara
32. BPD Jambi
33. BPD Jateng
34. BPD Sultra
35. BPD Kalteng
36. BPD SulutGo
37. BPD Jatim
38. Bank Syariah Indonesia*)

Notes:

*) is a bank resulting from the merger of Bank Syariah Mandiri, BRI Syariah, BNI Syariah, and BTN Syariah in 2020.Prior to the merger, the four banks were participants in the KUR program.Therefore, the data before the merger uses the combined data from the four banks.

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