

**FACTORS AFFECTING CREDIT RISK FOR INDIVIDUAL CUSTOMERS AT
VIETNAM BANK FOR AGRICULTURE AND RURAL DEVELOPMENT, BINH
THANH BRANCH, HO CHI MINH CITY**

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ABSTRACT

The main objective of the study is to determine the factors affecting credit risk for individual customers at Vietnam Bank for Agriculture and Rural Development, Binh Thanh Branch, HCMC. In order to achieve the research objectives, the author used comparative and absolute numerical analysis methods; Descriptive statistics method; Probit regression method to identify factors affecting credit risk. The research results show that of 09 independent variables included in the research model, 05 variables correlated with the dependent variable which is the borrower's financial ability (X1); Industry (X3); Checking and supervising loan debts (X4); Experience of credit officer (X5); Number of dependents (X8). In particular, the variable that is positively correlated with the dependent variable is the number of dependents; The borrower's industry variable is the one that has the strongest impact on the dependent variable, followed by the borrower's financial ability. Based on the research results, the author proposes a number of solutions to improve credit efficiency for Vietnam Bank for Agriculture and Rural Development, Binh Thanh Branch as follows: Selection of credit officers experienced; Assess the number of dependents; Credit officers enhance inspection and supervision of loans; Increasing the financial security of borrowers; Focus on the main business that generates the income of customers when reviewing loan applications.

Keywords: Credit risk, individual customer, Binh Thanh Agribank, factor analysis.

1. INTRODUCTION

The context of increasingly deep integration of the Vietnamese economy into the world economy has created favorable conditions for our country's financial activities, and the banking market has also prospered, marking a step forward. New developments in both quality and quantity of the Vietnamese banking system. However, with the characteristics of a sensitive business field, influenced by many factors both directly and indirectly, large banking risks are unavoidable and have the potential to become a risk affecting the business seriously affect the sustainable development of banks in particular, financial markets and the economy in general. In fact, in the past few years, inefficient businesses and individual customers have gradually become the leading strategic development targets of commercial banks in particular and financial institutions in general. Banking products and services, especially credit products, are being provided by banks and are very diverse and rich and have become key competitive tools. Not only Vietnamese joint stock commercial banks, but also famous foreign banks or newly established financial companies also offer many strategies to attract science and technology. In fact, with small loans, compared to other types of conventional loans, consumer loan capital is deployed quite easily, becoming a

loophole for nefarious subjects to take advantage of and appropriate capital. Besides, lending to science and technology also has many potential risks and consequences, thereby showing that credit risks to science and technology have not been given due attention. According to the State Bank (SBV), at the end of 2021, the on-balance sheet bad debt ratio was 1.9% (an increase of 0.21 percentage points compared to the end of 2020), if additional debt sold to Asset Management Companies is included, this figure is 3.9%. Gross bad debt ratio (including on-balance sheet bad debt, unresolved bad debt sold to VAMC and potential bad debt from restructured accounts) increased sharply to 7.31% at the end of 2021 from 5.1% at the end of 2020 and nearly equivalent to the figure at the end of 2017 (7.4%) - also the year that Resolution 42/2017/QH14 took effect.

In the past year, although business results continued to grow positively, Covid 19 cast a shadow on the bad debt of Vietnam Bank for Agriculture and Rural Development (Agribank). The financial report shows that Agribank's bad debt as of December 31, 2021 was 24,553 billion VND, the bad debt ratio at the end of 2021 was 1.71%, an increase of 0.14%. Agribank's bad debt increased largely due to the fact that agricultural customers - Agribank's main customers - were greatly affected by the Covid epidemic, especially aquaculture and seafood processing. In addition, customers in sectors other than tourism, services, trade, retail, and disruption of the supply chain of customers producing exported and imported consumer goods of the bank are also heavily affected by the pandemic. Although the State Bank has allowed debt restructuring, the maximum debt restructuring time is 12 months while the epidemic has lasted for the past 2 years, so some loans still have to be transferred to debt groups. Although bad debt increased, Agribank's asset quality also improved significantly thanks to a sharp increase in bad debt coverage while accrued interest decreased sharply. Thus, although bad debt problems have been resolved in quite large numbers, with this number, banks still have to have plans for risk prevention and risk management in credit granting activities of credit institutions in Vietnam. On the other hand, personal credit risk is considered the top concern of commercial banks.

Starting from the practical issues mentioned above, the authors chose the topic "Factors affecting individual customer credit risk at Vietnam Bank for Agriculture and Rural Development Binh Thanh Branch, Ho Chi Minh City" as a research group.

2. LITERATURE REVIEW

Financial capacity of the borrower

Measured by the ratio of the customer's equity capital participating in the project to the total investment capital of the loan project. According to research on credit risk, the stronger the borrower's financial potential, the higher their ability to tolerate risk. Therefore, in this study, the author expects that if the borrower's equity capital participating in the loan project is larger, the lower the cost of paying for the loan capital, they will also invest time and attention more to the project, so the project will be more successful and thus the risk will be lower, or the financial capacity of the borrower is inversely related to credit risk (Truong Dong Loc, 2010), Phan Dinh Khoi and Nguyen Viet Thanh (2017); Bui Huu Phuoc, Ngo Thanh Danh and Ngo Van Toan (2017). H₁: The financial capacity of the borrower has a negative (-) impact on the credit risk of individual customers at Binh Thanh Agribank.

Loan security

According to Nguyen Van Tien (1999), the debt recovery ability of secured loans is more certain than unsecured loans. Collateral is a dummy variable that takes value 1 if the loan is mortgaged with real estate and 0 if the loan is unsecured or does not mortgage collateral. Collateral is also a very important component of the loan. It is the second source of repayment if a problem occurs with the individual's loan. The higher the value of collateral, the higher the ability to repay the bank (Dang Thanh Truc , 2012). In this study, we expect that the greater the ratio of loan amount to collateral value, the higher the risk of the loan, which means that the loan to collateral value ratio is related to proportional to credit risk.

H₂: Loan security has a positive (+) impact on the credit risk of individual customers at Binh Thanh Agribank.

Main income sector used to repay loans

reality in the Mekong Delta region in recent years shows that the aquaculture and agriculture sectors are not favorable and have many risks, so the ability to generate income from this field to repay loans on time is very difficult. Therefore, we expect that the aquaculture and agricultural production sectors have an inverse relationship with credit risk (Truong Dong Loc, 2010).

H₃: Main income sector used to repay loans has a negative (-) impact on the credit risk of individual customers at Binh Thanh Agribank.

Loan inspection and supervision

Previous studies, one of the causes of credit risk is inadequate inspection and supervision after lending. Credit officers who regularly check and supervise loans will promptly capture information about science and technology, promptly recover loans if there are signs of risk, and expect that the more checks there are, the lower the credit risk factor. Inspection and supervision are inversely proportional to credit risk (Nguyen Thi Tuyet, (2010), Bui Huu Phuoc, Ngo Thanh Danh and Ngo Van Toan (2017)).

H₄: Loan inspection and supervision has a negative (-) impact on credit risk of individual customers at Binh Thanh Agribank.

Experience of credit officers

According to Le Van Tu (2005), the qualifications and experience of credit officers have a great influence on credit risk. A qualified staff can not only analyze the customer's financial capacity and predict the situation well, but can also advise customers to overcome temporary difficulties. The qualifications and experience of credit officers have an impact on credit risk. A credit officer who has knowledge and has worked for many years in credit has the ability to analyze the borrower's financial situation, predict difficulties and can give good advice to the borrower. The longer a credit officer has worked in loan management, the more risks will be limited (Nguyen Thi Tuyet, 2010). In this study, the author expects that the longer a credit officer has worked, the more experienced and qualified he or she will be in appraising and managing loans as well as supporting customers in difficult times. Credit set is inversely proportional to credit risk.

H₅: Experience of credit officers has a negative (-) impact on credit risk of individual customers at Binh Thanh Agribank.

Experience of borrower

Studies on credit risk have concluded that management capacity and borrower experience are important factors for the successful implementation of loan projects. or fail. People with more experience will be better able to predict the situation and respond to unforeseen circumstances. In this study, the author expects that the longer people have worked in a certain profession, the higher the likelihood of success, or that the borrower's experience is inversely proportional to credit risk (Truong Dong Loc, 2010).

H₆: Experience of borrower has a negative (-) impact on individual customers' credit risk at Binh Thanh Agribank.

Loan value

Research by Tran Thi Tuyet Lan Anh (2015) concluded that the higher the loan amount, the cheaper management costs are than small loans, but the larger the loan amount, the higher the risk, because If the loan value is large, the monthly payment will be high, leading to increased debt repayment risk. In this study, the author expects this variable to be proportional to the dependent variable (Truong Dong Loc, 2010).

H₇: Loan value has a positive (+) impact on individual customers' credit risk at Binh Thanh Agribank.

Number of dependents

The higher the number of dependents who do not generate income, the higher the risk level. The number of dependents will create an additional cost burden for the borrower, leading to affected loan repayment ability and resulting in high credit risk (Tran Thi Tuyet Lan Anh, 2015). In this study, the author expects this variable to be proportional to the dependent variable.

H₈: The number of dependents has a positive (+) impact on the credit risk of individual customers at Binh Thanh Agribank.

Age

According to the author, the level of credit risk may vary depending on age. As age increases, prestige and trust will be higher than that of younger people, so the younger the age, the higher the credit risk (Tran Thi Tuyet Lan Anh, 2015). In this study, the author expects this variable to be inversely proportional to the dependent variable.

H₉: Age has a negative (-) impact on the credit risk of individual customers at Binh Thanh Agribank.

Proposed research model

Through the results of a review of related studies, the authors propose the following research model:

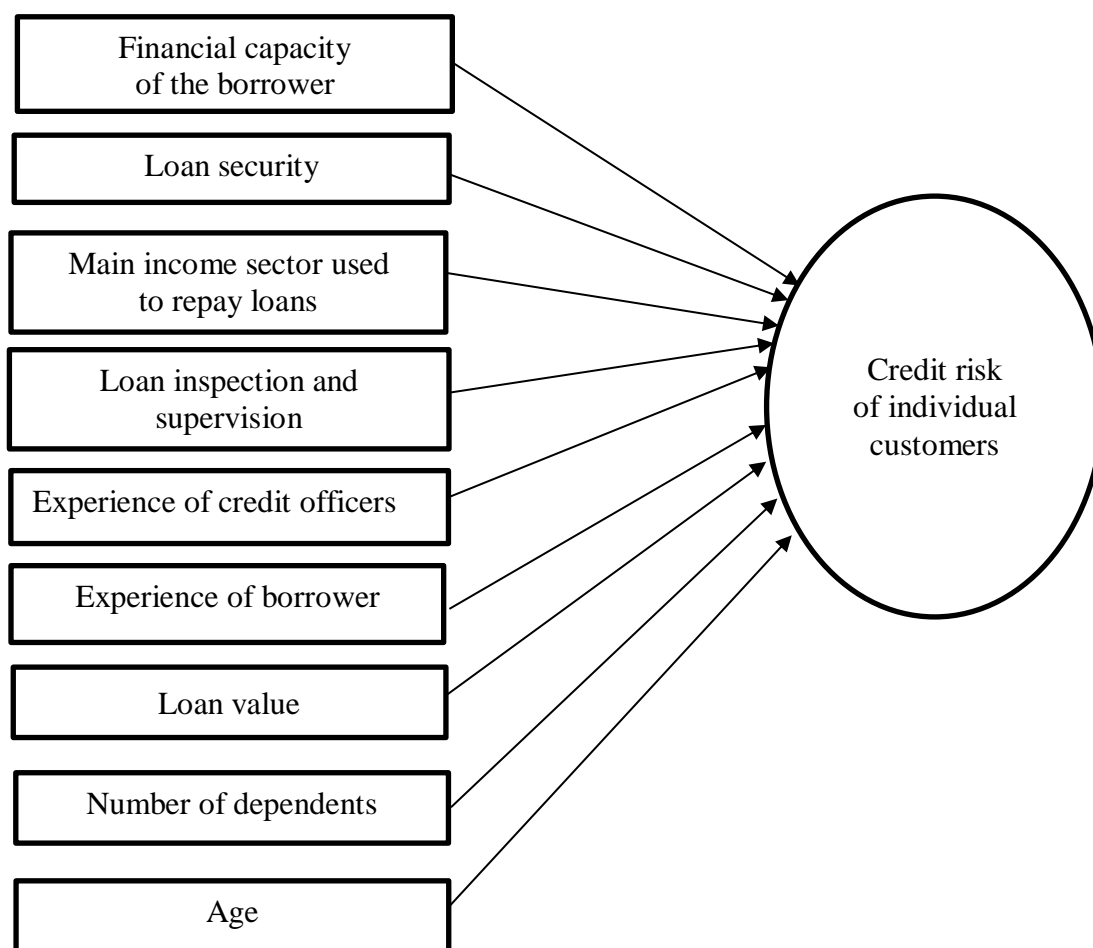


Figure 1. Proposed research model
Source: Author compiled, 2024

3. RESEARCH METHOD

Qualitative research

Qualitative research was conducted by discussing a group of experts through open questions to identify and analyze factors affecting individual customer credit risk at Binh Thanh Agribank . Open-ended questionnaires were used for interviews and group discussions to adjust scales and concepts accordingly.

Quantitative research

Quantitative research is conducted by surveying 150 individual customers have loan applications at Agribank based on a pre-designed questionnaire. The survey sample in the official study was conducted using the convenience sampling method. After collected data will be processed using SPSS software. Using probit regression method to identify and measure factors affecting personal credit risk at Binh Thanh Agribank to clarify issues related to the research hypothesis.

For objective 1: Descriptive statistical methods and comparative methods are used to evaluate the Bank's credit status and credit risks. Statistical values used include: average, maximum value, minimum value, standard deviation, frequency. Indicators used for evaluation include: bad debt ratio, overdue debt, and bad debt growth during the research period.

For objective 2: Research using Probit regression method to estimate factors affecting credit risk for science and technology at Binh Thanh Agribank.

For goal 3: Based on the analysis results in goal 1 and goal 2, from the model processing results to find the existence, causes and factors affecting credit risk for science and technology as The basis provides some policy implications to limit credit risk of science and technology at Binh Thanh Agribank.

4. RESEARCH RESULTS

Table 1. Current status of overdue debt of individual customers at Binh Thanh Agribank, HCMC

Targets	2021	2022	2023	Difference 2022/2021		Difference 2023/2022	
					Ratio (%)		Ratio (%)
Total number of customers	3.687	3.722	3.614	35	0,95	-108	-2,90
Total loan amount	4.600	4.897	4.777	297	6,46	-120	-2,45
Number of individual customers	3.673	3.711	3.599	38	1,03	-112	-3,02
Number of loans from individual customers	4.568	4.845	4.724	277	6,06	-121	-2,50
Number of overdue individual customer loans	132	108	242	-24	-18,18	134	124,07
Number of overdue individual customers	87	80	100	-7	-8,05	20	25,00
Proportion of science and technology/total number of customers (%)	99,62	99,70	99,58	0,08	0,08	-0,12	-0,12
Proportion of Science and Technology's loans/total number of loans (%)	99,30	98,94	98,89	-0,37	-0,37	-0,05	-0,05
Proportion of overdue science and technology/quantity of science and technology (%)	2,37	2,16	2,78	-0,21	-8,99	0,62	28,89
Proportion of overdue Science and Technology loans/total number of Science and Technology loans (%)	2,89	2,23	5,12	-0,66	-22,86	2,89	129,81

Source: Binh Thanh Agribank, 2024

To evaluate the overdue debt situation of individual customers at Binh Thanh Agribank, we consider the following criteria:

Total number of customers: The total number of customers over the past 3 years has decreased steadily, in 2022 it increased by 0.95%, equivalent to an increase of 35 customers, making the number of customers increase to 3,722 people, while in 2021 there was only 3,687 people. Since then, it has been shown that the bank has expanded the scale of lending and transactions in the area. By 2023, there will only be 3,614 customers, a decrease of 2.9%, equivalent to a decrease of 108 people. On the other hand, the State Bank continues to implement credit solutions to control credit scale in accordance with orientation targets, while improving credit quality and controlling inflation, creating favorable conditions for science and technology in the future. access to credit capital. Thanks to synchronous solutions, in the first months of 2024, although negatively affected by the COVID-19 epidemic, the number of science and technology credits increased right from the beginning of the year and improved compared to the same period in 2023.

Total number of loans: Because the number of customers increased and decreased unstable during the research period, the number of loans was also similar, increasing and decreasing unstable. In 2021, the amount of loans was 4,600 billion, in 2022 it increased by 6.46% compared to 2021 but in 2021 it decreased by 2.45%, making the number of loans in 2023 reach 4,777 billion VND.

Number of individual customers: The number of individual customers also fluctuates over the years. Specifically, in 2021, the number of customers was 3,673 people, but by 2022 it increased to 3,711 people, equivalent to an increase of 38 people, equivalent to 1.03%. and in 2023 there will be a decrease of 112 people, equivalent to 3.02%. Thanks to the bank's advertising campaigns, product diversity, etc., it has attracted many individual customers to transact with the bank in 2022. Particularly in 2023, due to the epidemic situation Due to the outbreak, the number of science and technology transactions coming to banks has decreased but not significantly.

Number of loans from individual customers: because the number of individual customers fluctuated during the research period, the number of loans from KHCN also increased and decreased differently. Through table 4.6, we see that 2022 is the year with the highest increase in the number of loans up to 4,845 billion VND, equivalent to an increase of 6.06% compared to the same period in 2021. Continuing in 2023, the number of loans from Science and Technology reached 4,724, an increase of 156 billion compared to 2021, but decreased by 121 billion, equivalent to 2.5% compared to the same period in 2022.

Number of overdue loans of individual customers: we see that the overdue loans of individual customers in 2021 were 132 billion VND but decreased in 2022 to only 108 billion VND, down 18.18% (down 24 billion VND) but By 2023, the number of loans will increase dramatically to 242 billion VND, equivalent to an increase of 124.07% (an increase of 134 billion VND). The results of using loan capital often have a direct and decisive impact on the borrower's ability to repay debt. The characteristic of consumer credit is that the results of loan use only indirectly affect the customer's loan repayment. The decisive factor in the ability to repay consumer debt is the source of income from production and business activities, from customers' salaries... Therefore, factors that have an unfavorable impact on production and business activities, wages and income of customers are the main causes of risk for consumer loans. The main causes of overdue debt are as follows:

Households and individuals produce and do business at a loss, leading to a decline in debt repayment ability, due to unstable commodity prices, or produced goods that cannot be sold, are stagnant, and incur losses. capital...;

The borrower is an employee or employee who lost their job due to a violation of discipline or because the company or business where the borrower worked went bankrupt or dissolved, leading to no source of revenue to repay the debt;

Weak financial situation and lack of transparency of customers: For customers with consumer loans, having a lot of external debt but not declaring it or dishonestly declaring it to the bank when borrowing capital is a risk. risks for banks;

Using capital for the wrong purpose, not being willing to repay the loan: Some customers borrow money from banks in the name of consumption, but when they receive capital, they use it for other purposes, the most dangerous is participating in risky business activities, containing high risks, doing business in professions prohibited by law, or using capital to pay debt, gambling, entertainment... The result is a loss of loan capital and the borrower's life. not improved, combined with customers' unwillingness and ability to repay debt, leading to risks for the bank;

Risks related to assets securing loans: Arising from the mortgage of assets that are in dispute or assets that are being distrained for judgment enforcement, due to the bank's failure to grasp information and property insurance. Expired products but not replenished in time. The valuation of the assets securing the loan is higher than their actual value, the situation in which the collateral assets decrease in value during the loan term, leading to the failure to secure the loan;

Other risks from the customer: There may be unpredictable risks such as illness, accident... causing the customer to fall into financial difficulties such as a decrease or complete loss of income.

Number of overdue individual customers: we see that in 2022, the number of overdue individual customers decreased from 87 people to 80 people, down 7 people (corresponding to 8.05%). This is a good sign for the bank. Because in 2020, the number of overdue customers in 2021 has stabilized economically, so the bank's ability to collect debt has developed. However, by 2023, the rate of customers with overdue debt increased dramatically to 100 customers (an increase of 25%). The main reason is that banks expanded the scale of consumer loans, leading to an increase in the number of individual customers with overdue debt.

Proportion of individual customers/total number of customers (%): Individual customers are an important object that determines the development of the bank, we see that over the years the proportion of individual customers/total number of customers accounts for more than 99%. The banking system in general and Binh Thanh Agribank in particular depend on the amount of customers coming to transact at the bank and building appropriate strategies to take care of old customers and attract new customers.

Proportion of loans from individual customers/total number of loans (%): Loans from individual customers account for more than 98% of the bank's loans. Because the number of individual customers accounts for a large proportion, the number of loans also accounts for a large proportion.

Proportion of overdue individual customers/number of individual customers (%): Looking at the proportion of overdue individual customers in table 1, we see that this proportion increases and decreases unstable. Specifically, in 2020 it decreased to only 2.16% compared to the same period in 2021, which was 2.37%, but by 2023 it increased to 2.78%.

Proportion of overdue individual customer loans/total number of individual customer loans (%):

The proportion of overdue loans in 2021 was 2.89%, by 2022 it decreased to 2.23% and increased again. In 2023 it will be 5.12%. In general, the overdue loan rate is still within the bank's control. There are two types of overdue debt: old overdue debt and new overdue debt. In 2023, this debt will increase because old overdue debts that have not been completely resolved still remain outstanding. In addition, new overdue debts arise because banks expand their lending scale. On the other hand, the reality is that banks often only rely on collateral and do not pay attention to the financial capacity and cash flow of customers. This makes banks unable to manage business cash flow, leading to loss of debt collection ability and increased overdue debt.

Table 2. Current status of personal credit products at Binh Thanh Agribank

STT	Loan products	Frequency	Ratio (%)
1	Medium and long-term loans to buy housing	8	5,33
2	Short-term loans according to production and business limits	32	21,33
3	Short-term mortgage loans	44	29,34
4	Short-term loans based on production and business items	28	18,67
5	Medium-term consumer loans without collateral	17	11,33
6	Medium-term consumer loans secured by real estate	15	10,00
7	Medium-term loans for production and business	6	4,00
Total		150	100,00

Source: Binh Thanh Agribank, 2024

A survey of 150 individual customers shows that customers focus on loan products such as short-term mortgage loans by item, short-term loans by production and business limit, short-term loans by production and business item. In particular, short-term mortgage loan products by item account for the highest proportion at 29.34%, followed by short-term loans according to production and business limits, accounting for 21.33% and short-term loans by production and business items accounting for 18.67%. The reason why customers focus on these types of loans is due to flexible loan conditions with low interest rates per installment to serve the purpose or needs of customers who want to borrow in the short term because of quick procedures and takes less time. Based on the specific business plan, the bank will meet the loan needs associated with the loan purpose, ensuring the loan is used for the right purpose and the business plan is feasible. This form of loan is suitable for customers who need to borrow based on seasonal capital use purposes. For short-term lending activities under production and business limits, the maximum loan term is 1 year and the maximum loan amount is 100% of the maximum limit according to the bank's credit granting regulations and does not exceed the ratio. The value of the collateral is determined by the bank. Customers can easily borrow capital in this form of loan because if the production plan is feasible, the loan capital is for the right purpose and the collateral meets loan standards, the bank will disburse money to the customer early.

Analyze factors affecting personal credit risk at Binh Thanh Agribank

Before regression analysis, the author conducted correlation analysis. The results of correlation analysis show that the factors that are correlated with the dependent variable are: Financial capacity of the borrower; Career; Check and monitor loan debt; Experience of credit officers; The number of dependents is due to the Sig value of the variables <0.1 (10%), the remaining variables have no correlation with the dependent variable. Estimated results from the regression model are presented in Table 3.

Based on Table 3 we have the following results:

Pseudo-R2 coefficient is the coefficient that explains the influence of variables on the dependent variable which is the customer's ability to repay debt. We see that the Pseudo-R2 coefficient of the model is 88.68, which means that 88.68% of the dependent variable is explained by the independent variables in the model, the remaining 11.32% are other factors. included in the research model or included but did not reach statistical significance.

Prob value > Chi2 = 0.0000 < 0.05 indicates that the model is suitable at the 5% significance level and we reject the hypothesis H0: all independent variables are included in the model and there are no influencing variables. affecting the ability of individual customers to repay loans means that the factors in the model have an impact on the ability of customers to repay loans.

Through the analysis results in Table 4.10, it shows that of the 09 independent variables included in the research model, there are 05 variables that have a correlation with the dependent variable, which is the borrower's financial capacity variable (X1); Occupation (X3); Check and monitor loan debt (X4); Experience of credit officers (X5); Number of dependents (X8). In particular, the variable that has a positive correlation with the dependent variable is the number of dependents. In particular, the borrower's industry variable is the variable that has the strongest impact on the dependent variable, followed by the borrower's financial ability variable.

Table 3. Factors affecting personal credit risk at Binh Thanh Agribank

Independent variables	Regression coefficient	Coefficient dy/dx	z value	Significance level
Constant	9,82	-	2,26	0,02
Financial capacity of the borrower (X1)	-5,84	-0,35	-1,85	0,06
Loan guarantee (X2)	-0,01	-0,00	-0,09	0,93
Main occupation that generates income to repay debt (X3)	-3,41	-0,52	-2,32	0,02
Check and monitor loan debt (X4)	-0,26	-0,02	-1,97	0,05
Experience of credit officers (X5)	-1,62	-0,09	-2,85	0,00
Borrower experience (X6)	0,09	0,01	0,31	0,76
Loan value (X7)	-0,00	-0,00	-0,99	0,32
Number of dependents (X8)	1,65	0,09	2,53	0,01
Age (X9)	-0,01	-0,00	-0,28	0,78
Number of observations				150
LR value				174,82

Prob>Chi ²				0,000
Pseudo-R ²				88,68

Source: Results of data analysis, 2024

Factors affecting personal credit risk at Binh Thanh Agribank are analyzed at the 10% significance level as follows:

The first factor affecting personal credit risk is the borrower's financial capacity variable (X1), ($dy/dx = -0.35$). The higher the customer's financial capacity and the more secure it is, the lower the credit risk. Analysis results show that if other factors remain unchanged, customers whose financial capacity increases by 1 time will reduce credit risk by 0.35 times. It is recommended to quantify indicators to measure customers' financial capacity such as limit usage rate, number of days overdue, fluctuations in cash flow in and out... to increase efficiency and ensure data is updated over time. real time. Consistent with expected results and consistent with previous research by Phan Dinh Khoi and Nguyen Viet Thanh (2017), Nguyen Quang Truong (2020).

The second factor that affects personal credit risk is industry. If the customer's main source of income to repay debt comes from aquaculture and agricultural production, the credit risk will decrease and from other industries, the credit risk will increase. With a 10% significance level ($dy/dx = -0.52$), if the customer's main source of income from fisheries and agricultural production increases to 1 million, the possibility of causing credit risk will decrease to 0.52 times. The survey shows that in Binh Thanh area, individual customers mainly earn income from aquatic resources and agricultural production, so this also brings convenience to customers if their main source of income is from this job. Consistent with expected results and consistent with previous research by Phan Dinh Khoi and Nguyen Viet Thanh (2017), Nguyen Van Dua (2020).

The third factor that affects the ability of individual customers to repay debt on time is the variable of loan inspection and monitoring. With a significance level of 10% ($dy/dx = -0.02$) under the condition that other factors remain unchanged, when checking and monitoring loan debt of credit officers increases by 1 time, credit risk decreases by 0.02 times. Regular inspection and supervision will help manage loans better, ensuring households will use loans for the right purpose. In addition, the bank will have solutions to promptly correct those who use capital for the wrong purpose, and can even recover capital if farmers do not adjust the correct purpose of capital use. Consistent with expected results and consistent with previous research by Bui Huu Phuoc, Ngo Thanh Danh and Ngo Van Toan (2017), Tran Thi Mong Lan (2019).

The fourth factor that affects individual customers' ability to repay debt on time is the experience of credit officers. With a significance level of 10% ($dy/dx = -0.09$) under the condition that other factors remain unchanged, when the credit officer's experience increases by 1 year, credit risk decreases by 0.09 times. In many cases, loan officers act as sales staff, contacting customers to determine loan needs and convincing customers to borrow money from their bank. Loan officers will answer questions about the process and sometimes help customers fill out loan applications. If a credit officer has experience, it will be easy to recognize the instability in the customer's loan application to decide whether to grant the customer a loan or not. A skilled credit officer, when detecting instability, will ask the customer to provide additional information or, in the case of commercial credit, a copy of the individual's financial documents. Only then can credit officers

analyze finances and evaluate risks to minimize risks for the bank. When facing risks, the role of credit officers is also very important because at this time they will be a debt collection officer, contacting people with overdue debts to help them find ways to repay the debt and avoid default. in debt. If the repayment plan is not successful, the debt collector will propose a collateral sale in which the lender confiscates the collateral: house, car, land, etc. to pay off the debt. loan amount. Consistent with expected results and consistent with previous research by Nguyen Van Dua (2020), Nguyen Quang Truong (2020).

The final factor that affects personal credit risk is the number of dependents. The number of dependents reflects the customer's financial burden because of having to subsidize and care for those who are no longer able to work. dynamic. The analysis results show that if other factors remain unchanged, at the 10% significance level ($dy/dx=0.09$), customers whose number of dependents increases by 1 person will increase their personal credit risk. increased by 0.09 times. The dependents in the family are mainly elderly parents or young children who are not yet of working age. Therefore, the cost for these subjects is quite high. Old age requires a lot of medical care, and young children have to pay for their education in addition to their medical care, in addition to their normal living expenses. Therefore, customers with many dependents will have more difficulty repaying their debt to the bank. Consistent with expected results and consistent with previous research by Tran Thi Tuyet Lan Anh (2015), Nguyen Van Dua (2020), Nguyen Quang Truong (2020).

Besides the above factors, the remaining factors in the model that are not statistically significant are the loan guarantee factor, borrower experience, loan value and customer age.

5. CONCLUSIONS AND MANAGEMENT IMPLICATIONS

Conclusions

Through research results, the author has achieved the following results:

Regarding the current status of the bank's credit activities, the bank's income tends to increase gradually over the years. Specifically, in 2021 it was 135 billion VND, by 2022 the income was 140 billion VND, an increase of 5 billion VND compared to 2021. By 2023, the income was reduced by 16 billion compared to 2022, due to the impact of the Covid pandemic. -19 broke out strongly this year, leading to an unstable economy, leading to a significant decrease in bank income. The cost in 2021 is 99 billion VND and in 2022 it is 105 billion VND, an increase of 6 billion VND. In 2023, the economy faces many difficulties due to the stressful epidemic situation, so the banking industry's task is to reduce interest rates for businesses and reduce operating costs. Therefore, costs in 2023 will decrease significantly compared to 2022, specifically 13 billion. In general, over the past 3 years, the bank's profit level has decreased but not significantly. Specifically, in 2021 the bank's profit was 36 billion VND, in 2022 it decreased to 35 billion VND, followed by 32 billion VND in 2023. The decrease in profits is due to the difficult economy and the impact of the epidemic. In addition, the State Bank has issued Circular 01/2020/TT-NHNN guiding credit institutions to restructure debt repayment terms, exempt or reduce loan interest, and maintain the same debt group to support customers affected by the debt. affected by the Covid-19 epidemic. Therefore, the decrease in profits is partly due to the application of these bank incentives. In addition, banks' income sources are not only affected by the decline in credit activities, but fee income sources are also negatively affected when all transactions in the economy slow down.

Although the economy is difficult and volatile, the market always has fierce competition from existing competitors in the area, both in terms of quality and quantity. But the bank still ensures effective operations and promptly responds to capital sources. That is the result of the efforts of all employees under the active leadership of the Board of Directors and most importantly, the trust of customers and Binh Thanh Agribank achieved much success today. Besides, to evaluate the suitability of the factors when included in the model, the project conducted correlation analysis, the results showed that the factors that have a correlation with the dependent variable are: Financial capacity of the borrower; Career; Check and monitor loan debt; Experience of credit officers; Number of dependents due to Sig value of variables <0.1 (10%). The regression results are quite good when identifying 05 out of 09 variables included in the model that influence the dependent variable, which is the borrower's financial capacity variable (X1); Occupation (X3); Check and monitor loan debt (X4); Experience of credit officers (X5); Number of dependents (X8). Based on the research results, the author has proposed a number of solutions as follows: Increase the financial security of borrowers; Pay attention to customers' main income-generating industries when reviewing loan applications; Select credit officers with extensive experience; Assess the number of dependents; Credit officers strengthen inspection and supervision of loan debt.

Policy implications

Based on the research results, the authors propose some policy implications to minimize credit risk in the coming time, banks need to implement some of the following key solutions:

Increase the borrower's financial security

The financial capacity of the borrower is considered based on the customer's own capital in the total capital for production and business. Therefore, when credit officers review loan applications, they should pay attention to evidence of equity capital. Practice shows that when the loan capital is large, the customer's cost burden increases, leading to a decrease in the ability to rotate capital to repay debt to the bank, causing credit risk to increase. To ensure financial risk reduction, there are 2 suggestions as follows:

On the customer side, it is necessary to ensure financial ability to be honest with the individual's actual conditions to both prevent personal credit risks when not being able to pay due to lack of financial ability. In case a customer prepares a loan application with high integrity, it will both help the customer and the bank in the loan approval process, creating conditions for the bank to quickly review the loan application to promptly disburse money to the borrower.

On the bank's side, credit officers should check loan applications closely to avoid cases where credit officers have negative behavior in approving customers' loan applications based on close relationships. That will put both customers and banks at high risk of not being able to repay debt.

Pay attention to the main occupation that generates customers' income when reviewing loan applications

According to research results, the main industry that generates income for customers is from aquaculture or agriculture, which will help customers have a higher ability to repay debt than other industries, which will reduce credit risk. personal use for banking. Therefore, when reviewing loan applications, banks need to pay attention to customers who have land for aquaculture and agriculture in addition to other income-generating industries for customers. Besides, it is necessary to pay attention to the agricultural land area for farming and production of customers. With a large

land area, farming conditions will be more favorable, bringing higher income to customers. Banks should also pay attention to the area of leased land that is not owned by customers to consider the level of risk when doing business on leased land, because rented land will cost more.

Select credit officers with extensive experience

Previous studies also show that experienced credit officers will help review loan applications with fewer errors and limit personal credit risks for banks. Experienced credit officers will have more in-depth vision, judgment and analysis when receiving capital financing applications. Proficiency in consulting as well as mastering bank regulations in lending will be of great help to customers because each customer has different levels and understanding abilities. When customers have guaranteed information and clearly understand that information, it will help customers avoid errors when preparing loan documents as well as ensure loan documents. For experienced credit officers, customers also have higher confidence in receiving consulting information and creating conditions for customers to quickly decide to borrow capital at banks.

Assess the number of dependents

Banks need to accurately determine the number of dependents of customers and give priority to considering the group of dependents who are unable to work because these people will be a huge burden for the customer's family. For dependents who are young children still going to school, there will be support from organizations, schools or a loan policy from policy banks to support children going to school. This is also an important aspect of considering dependents. If the bank only evaluates the quantity in general, the customer's loan application will be misleading and not highly effective.

Credit officers strengthen inspection and supervision of loan debts

Credit officers need to take measures to regularly check and monitor farmers' loans to ensure that farmers use capital for the right purposes. Report the capital use situation of farmers to the branch periodically and regularly. In cases where capital is discovered for improper purposes, it is necessary to immediately report to the branch for solutions and adjustments. Credit officers are not allowed to cover up for farmers based on relationships that increase the risk of loans, causing damage to the bank as well as reducing the customer's ability to repay debt.

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