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BAD DEBT MANAGEMENT AT VIETNAM TECHNOLOGICAL AND COMMERCIAL JOINT STOCK BANK

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PREFACE

1. The necessity of the thesis

Credit activity is one of the most important core activities of commercial banks. Bad debt exists objectively in credit activities, and maintaining bad debt at a safe level is one of the important goals of commercial banks. Bad debt is not only a fundamental cause of insecurity, increasing risk provisioning, increasing the cost of handling bad debts, thereby reducing the bank's expected profit but also negatively affecting to socio-economic development, affecting the reputation of the bank itself as well as the health of the national financial system. Bad debt management is considered as an important activity for banks to identify causes, predict losses, and then offer effective measures to control and handle bad debts. Thereby commercial banks can minimize losses due to bad debt as well as providing preventive measures to avoid bad debts from repeating in the future.

In fact, bad debt management at Vietnamese commercial banks still has many shortcomings. The ratio of bad debts to total outstanding loans is still quite high, in many cases bad debts have not been properly recorded, therefore the bad debt ratio does not reflect the actual situation of credit activities, potentially causes losses to the bank as well as for the economy.

Vietnam Technological and Commercial Joint Stock Bank (Techcombank) is one of the leading private commercial banks in terms of total assets and large outstanding loans in Vietnam. Selected as one of the first 10 Vietnamese commercial banks to pilot Basel II, Techcombank always focuses on safety, transparency, and sustainability issues in business operations. However, the bad debt management activities at Techcombank, apart from the successes achieved, still have certain limitations.

From the above analysis, I chose the topic ***"Bad debt management at Vietnam Technological and Commercial Joint Stock Bank"***, to improve professional theory, approach research on the current situation of debt management and initially proposed some solutions to manage bad debts at Techcombank and strengthen the bad debt management of Vietnamese commercial banks in the current integration conditions.

2. Literature Review

2.1. International Literature Review

- Edward W. Reed, 1984 *"Commercial banking"* [109] mentioned bad debt in the following way: Bad debt is money that a bank lends to a customer, but when the debt is due to be recovered, it cannot be recovered due to subjective factors from the

customer such as the situaion of loss, bankrupcy, which lead to the inability to pay the bank's debt when maturity.

- Frederic S. Mishkin, 1992 *"The Economics of Money, Banking, and Financial Markets" [110]* focused on analyzing the causes of bad debt mainly arising from asymmetric information. He proposed some principles of loan management to reduce credit risk in general and limit bad debt in particular, including: (i) Screening and monitoring; (ii) Long-term customer relationships and credit rules; (iii) Collateral and compensating balance; (iv) Bank capital and desirable compatibility. In this work, he also mentioned the use of reserves as a remedy for the direct impact of bad debts on the bank's business.

- Simon Kwan & Robert A. Eisenbeis, 1997 *"Bank Risk, Capitalization, and Operating Efficiency" [114]* analyzed the impact of bad debt on the banking system and the economy. The author also pointed out a principle that when interest rates and bad debts reach a certain level, the "credit deterioration" effect will occur because banks are more careful in limiting development risks arising from the promotion of lending. The author explained that banks themselves will actively limit credit in the context of high bad debt.

- Carmen M. Reinhart & Kenneth S. Rogoff, 2010 *"Growth in a Time of Debt"* [107] said that bad debt is a warning sign for future financial crisis if not monitored and handled promptly. Understanding the causes as well as analyzing the impact of bad debt on the business activities of banks is extremely important to come up with effective measures to manage bad debts and ensure the safety of business operations of the bank.

- Raphael Espinoza and Ananthakrishnan, 2010 *"Nonperforming Loans in the GCC Banking System and their Macroeconomic Effects"[113]* said that bad debt has a large impact on the banking system of Gulf countries. The study showed that: according to an electronic control system, from 1995-2008 with about 80 banks in the Gulf region: the bad debt ratio increased with the development of the economy, which pushed back the bad debt ratio, interest rate, risk increased significantly. This model implied that the cumulative impact of long macroeconomic shocks over a three-year period was large. Industry-specific factors related to risk and performance are also related to future NPLs. The study also investigated the feedback effect of increasing NPL ratio on growth using VAR (vector autoregression) model.

- Moh Benny Alexandri and Teguh Iman Santoso (2015) *"Non Performing Loan: Impact of Internal and External Factor: Evidence in Indonesia"[111]* assumed that bad debt affects endogenous and exogenous factors. This study examined the

influence of domestic and foreign banks on the level of bad debt in Indonesian development banks. This was a quantitative study using a regression panel to analyze data for the period 2009 - 2013. The study subjects included 26 banks. Influencing factors consisted of safety ratio - CAR, efficiency level - ROA, growth rate of gross domestic product - GDP and inflation rate. The predictive model used is the Random Effects Model - REM panel data model. The results of this study concluded that: the efficiency of banks will reduce the level of bad debt.

2.2 Vietnam literature view

- Pham Thi Truc Quynh, *"Research on factors affecting the bad debt market in Vietnam"[70]*, Doctoral thesis of Economics 2020. The thesis used quantitative research methods and mathematical models to study the factors affecting the bad debt market and to offer policies to develop the bad debt market according to the market mechanism.

- Truong Thi Đuc Giang, *"Management of bad debt in credit activities of Joint Stock Commercial Bank for Industry and Trade of Vietnam"[90]*, Doctoral thesis of Economics 2020. The thesis focused on analyzing and assessing the current situation of bad debts and bad debt management in credit activities at Joint Stock Commercial Bank for Industry and Trade of Vietnam in the period 2012 - 2018.

- Nguyen Thi Kim Quynh, *"Improving the efficiency of Asset Management Companies in handling bad debts for Vietnamese credit institutions"[57]*, Doctoral thesis of Economics 2020. The thesis has built a quantitative research model including 10 factors affecting VAMC's bad debt handling efficiency.

- Nguyen Thi Hong Vinh, *"Bad debts of Vietnamese commercial banking system"[56]*, Doctoral thesis of Economics 2017. The thesis has proposed research models, data collection and regression model estimation. The thesis has used GMM dynamic panel data estimation to evaluate the influencing factors as well as the impact of bad debt in commercial banks in the period 2005-2015.

- Nguyen Thu Huong, *"Developing the bad debt trading market in Vietnam" [62]*, Doctoral thesis of Economics 2016. The thesis has systematized and clarified some theoretical and practical issues about bad debt, bad debt trading market and developing bad debt trading market.

- Nguyen Thi Thu Cuc*, "Bad debt management at Bank for Agriculture and Rural Development of Vietnam"[58]*, Doctoral thesis of Economics 2015. The thesis focused on analyzing and evaluating the situation and results of bad debt management activities at Bank for Agriculture and Rural Development of Vietnam in the period 2010 - 2014. The author also offered some models of bad debt

management in the world and in Vietnam.

- Duong Thi Hoan, *"Improving credit quality at Vietnam joint stock commercial banks"[2]*, Doctoral thesis of Economics 2020. The thesis has built a quantitative research model including 7 factors affecting the credit quality of commercial banks, thereby the thesis assessed comprehensively the credit quality of joint stock commercial banks in Vietnam in the period 2014 - 2018 through influencing factors.

3. Reasearch Gaps and Research Questions

3.1. Reasearch Gaps

Firstly, theoretically, there are many studies on bad debt and bad debt management, however, the number of studies on bad debt management considers all the components and the factors affecting bad debt management are still quite limited. In addition, when researching bad debt management, previous studies often only focused on the results of bad debt management activities but did not analyze the objectives of bad debt management and did not compare the results of bad debt management with the goal of bad debt management set by the bank.

On the other hand, previous studies on bad debt and bad debt management were mainly qualitative. They did not show the relationship between influencing factors and bad debt management results by econometric model. Therefore, the conclusions made in previous studies are still subjective. This is a gap of previous studies that the thesis will focus on clarifying.

Secondly, in practical terms, the financial - banking sector is associated with the movement of time. In the recent period, especially 2015 - 2020, the financial industry in general as well as the banking industry have been significantly changed. At the same time, in the period of 2015 - 2020, the State Bank had continued to improve the legal framework, develop mechanisms and policies for credit management, and accelerate the implementation of the project on restructuring the credit institution system in association with bad debt settlement. This made the topicality of previous studies significantly reduced.

Because there are still research gaps as above, it is necessary for me to choose the topic, which is meaningful in terms of theory and practice.

3.2. Research Questions

- What are the evaluation criteria and factors affecting bad debt management at commercial banks?

- What are models and tools to measure and evaluate the impact of factors affecting bad debt management at Vietnam Technological and Commercial Joint

Stock Bank?

- What are the limitations and causes in bad debt management at Vietnam Technological and Commercial Joint Stock Bank?

- What are solutions to manage bad debt at Vietnam Technological and Commercial Joint Stock Bank?

4. Research ojective and Research tasks

4.1. Research ojective

Proposing solutions to strengthen bad debt management at Vietnam Technological and Commercial Joint Stock Bank.

4.2. Research tasks

Clarifying the basic theories of bad debt and bad debt management of commercial banks, drawing lessons from experience on bad debt management for Vietnam Technological and Commercial Joint Stock Bank through studying the experience of some large commercial banks in Vietnam.

Assessing the current situation of bad debts and managing bad debts of Vietnam Technological and Commercial Joint Stock Bank for the period 2015 - 2020 systematically, pointing out limitations and causes, and then proposing solutions to strengthen bad debt management at Vietnam Technological and Commercial Joint Stock Bank in the near future.

5. Research subject and scope

5.1 Research subject

"Bad Management at Commercial Banks" in general and "Bad debt Management at Vietnam Technological and Commercial Joint Stock Bank" in particular.

5.2 Research scope

- Regarding the content: Bad debt, bad debt management in credit activity (lending) of commercial banks.

- Regarding space: The thesis focuses on researching at Techcombank.

- Regarding time: The thesis analyzes the current situation of bad debt management at Techcombank for the period of 2015 - 2020. The solution will be implemented according to the roadmap to 2030.

6. Research methods

- *Scientific methodology:* Dialectical and historical materialism of Marxism - Leninism to ensure the awareness of bad debt management in credit activities according to international standards at commercial banks in general and at Techcombank in particular always be logical between intuitive perception and

thinking and practice.

- *Statistical method:* Collecting primary and secondary data related to bad debt management at Techcombank according to time series from internal reports, reports of State management agencies and direct observation at the Head Office, several branches to collect information and data for the research of the thesis.

- *Interview method:* Interviewing experts, credit officers and managers at some branches of Techcombank (in person, by email) to get more necessary information, useful for the research and completion of the thesis.

- *Survey method by questionnaire:* Distributing questionnaires to get more information for assessing the influence of factors on bad debt management at branches of Techcombank. Branches selected by the author for the survey ensures representativeness: There are some in big cities, some in rural areas, some with high bad debt ratio, some with low bad debt ratio.

- *Experimental method:* Based on the results of the questionnaire survey and expert interviews, the author processed the data on excel and SPSS software, analyzes the reliability of each influencing factor as well as the measurement criteria. The author also applied descriptive statistics method to synthesize and compare to quantify the influence of factors.

- *Methods of comparison, analysis, synthesis:* Through statistics, comparison, analysis, and synthesis of statistical reports of Techcombank, the author evaluateed and analyzeed the current situation of bad debt management at Techcombank in the period of 2015 - 2020.

- *Logical reasoning method:* From the theoretical and practical issues, especially the shortcomings, weaknesses and causes at Techcombank on bad debt management, the author made logical inferences to propose solutions and recommendations to strengthen bad debt management at Techcombank.

7. Main achievements

Theoretically, the thesis has systematized the theories on bad debt management of commercial banks and at the same time established four contents of bad debt management in which the content of bad debt management is explained in association with characteristics of credit operations and governance of commercial banks and national legal framework. In addition, the study also presents the evaluation criteria for bad debt management of commercial banks built in two groups: (1) Quantitative criteria and (2) Qualitative criteria.

In practice, the thesis has analyzed and evaluated the current situation of bad debt management at Techcombank through econometric models, with surveys and

interviews with managers and scientists to collect and analyze data. With those methods, the thesis has fully and comprehensively pointed out the level of achievement and limitations in the situation of bad debt management at Techcombank in the period 2015 - 2020.

The thesis has built a group of highly feasible solutions with modern content to strengthen bad debt management at Techcombank, which includes Solution on building legal system separate bad debt management; Solution to complete the organizational model and exchange information in bad debt management; Group of solutions to support human resources, information technology, financial policies...

8. Structure of the thesis

In addition to the introduction, conclusion, the thesis is divided into three chapters:

- *Chapter 1:* Basic theory of bad debt management of commercial bank
- *Chapter 2:* Current situation of bad debt management at Techcombank
- *Chapter 3:* Solution for bad debt management at Techcombank

CHAPTER 1
BASIC THEORY OF BAD DEBT MANAGEMENT
OF COMMERCIAL BANK

1.1 Bad debt of commercial bank

### *1.1.1 Definition of bad debt of commercial bank*

Bad debt is the subprime loan, which could be overdue and suspicious about the solvency of the borrower as well as the recoverability of the capital. This is a debt that the borrower (an individual or a legal entity) cannot pay the lender upon maturity payment commitments in the credit agreement.

1.1.2 Bad debt classification

Based on different classification criteria, people divide bad debts into different types: (1) B*ased on classification's basis:* Substandard debt; Doubtful Debt and Potential Irrecoverable Debt; (2) B*ased on security:* Secured Bad Debts and Unsecured Bad Debts and (3) *Based on accounting principles:* On-balance sheet Bad Debt and off-balance sheet Bad Debt.

1.1.3 Causes of bad debt

Figure 1.1: Describe the causes of bad debt of commercial banks
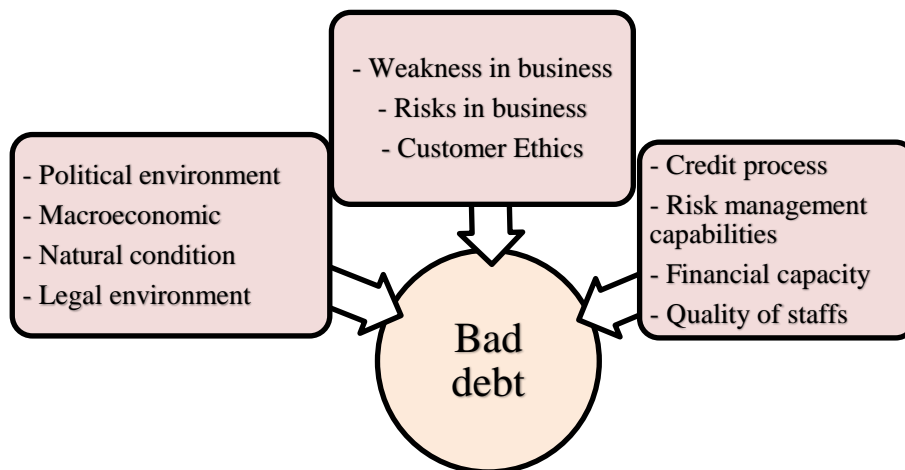
Causes of bad debt are considered from two aspects: *Objective causes and subjective causes*

1.1.4 The impact of bad debts.

Bad debt not only causes financial loss and reputation of the bank, but also brings difficulties for customers in accessing loans, and the cost of loans for customers will be increased. Besides, bad debt also has a negative impact on the economy in general, reducing financial capacity and affecting the safety in sustainable development of the economy.

1.2 Bad debt management

1.2.1 Concept of bad debt management

Bad debt management is the process of formulating and implementing strategies and systems of solutions to prevent and limit new bad debts arising, along with the handling of bad debts that have arisen in order to maximize profits, in line with the bank's risk appetite.

1.2.2 Goals for bad debt management

Objectives for bad debt management are: *(1)* Controlling bad debts*;(2)* Ensuring safety and *(3)* Ensuring profitability

1.2.3 Content of bad debt management

1.2.3.1 Developing and promulgating bad debt management strategies, policies, and procedures

1.2.3.2 Organizational structure

1.2.3.3 Bad debt management implementing

1.2.3.4 Report on bad debt management

1.2.4 Evaluation Criteria of bad debt management

1.2.4.1 Quantitative Criteria

Three groups of quantitative criteria include: Criteria reflecting the ability to control bad debts; Criteria reflecting the ability to ensure safety; The criteria reflect profitability.

1.2.4.2 Qualitative criteria

Four criteria include: Developing and promulgating strategies and policies on bad debt management; Model and organizational structure of bad debt management apparatus; The implementation of bad debt management; Reporting on bad debt management.

1.2.5 Factors affecting the bad debt management

1.2.5.1 Objective factors

Three objective factors: natural and social conditions; Political institutions and the legal environment; Economic environment.

1.2.5.2 Subjective factors

6 subjective factors include: *(1)* Views on bad debt management of Senior Managers; *(2)* Financial policy; *(3)* Bad debt management culture; *(4)* Methods of bad debt management implemeting; *(5)* Human resources; *(6)* Technology platform.

1.3 Bad debt management experiences of some commercial banks and lessons for Techcombank

1.3.1 Bad debt management experiences of some commercial banks

1.3.2 Lessons on bad debt management for Techcombank

CONCLUSION OF CHAPTER 1

Chapter 1 focused on clarifying the theoretical issues of bad debts and bad debt management at the commercial bank:

Firstly, systematizing the basic theoretical content of bad debts of the commercial bank

Secondly, presenting the general content of bad debt management of the commercial bank

Thirdly, giving out two examples of bad debt management at VietcomBank and VietinBank and drawing 6 lessons for TechcomBank.

CHAPTER 2
CURRENT SITUATION OF BAD DEBT MANAGEMENT AT VIETNAM COMMERCIAL JOINT STOCK BANK

2.1 Overview of Vietnam Industrial and Commercial Joint Stock Bank

In this part, the thesis described overview of the history of formation and development, organizational structure, operational network of Techcombank and business results of Techcombank in the period of 2015 - 2020.

2.2 Bad debt management at Vietnam Industrial and Commercial Joint Stock Bank

2.2.1 Bad debt management status at Vietnam Industrial and Commercial Joint Stock Bank through quantitative criteria

2.2.1.1 Criteria for controlling bad debt

- *Regarding bad debt ratio:* In the period of 2015 - 2020, Techcombank's bad debt ratio decreased markedly, maintaining at <3%.

- *Regarding the reduction of bad debt ratio:* In the period of 2016 - 2017 Techcombank grew its outstanding debts rapidly, the ratio of bad debts decreased from 1.67% in 2015 down to 0.5% in 2020.

- *Regarding the growth rate of bad debts / Lending growth rate:* In the period of 2015 - 2020, Techcombank's lending growth rate has always reached quite high levels. In 2020, Techcombank's bad debt ratio has decreased sharply because Techcombank has actively handled some bad debts.

2.2.1.2 Criteria for ensuring safety

Table 2.7: Techcombank's capital security and liquidity
2015 – 2020

Unit: %

Item	2015	2016	2017	2018	2019	2020
Bad debt loss compensation	62,67	66,53	72,91	85,08	94,73	171,0
Capital adequacy Ratio (CAR)	14,7	13,3	9,4	14,6	15,5	16,1
Credit balance to capital mobilization ratio (LDR)	70,0	71,8	76,6	65,5	76,3	78,1
Ratio of short-term capital for medium-term loans	45,9	41,5	43	31,5	38,4	33,9

Source: [19],[22],[25],[29],[33],[34]

TechcomBank's bad debt loss compensation factor increased steadily over the years between 2015 and 2020 with an average value in this period of 92.15%.

2.2.1.3 Profitability Criteria

Table 2.8: Profitability of Techcombank in the period of 2015 - 2020

Unit: %

Item	2015	2016	2017	2018	2019	2020
Net interest income ratio (NIM)	4,4	4,1	4,0	3,7	4,2	4,9
Ratio of net interest income/Total operating income	77,20	68,81	54,26	62,07	67,67	69,34
ROA	0,8	1,5	2,6	2,9	2,9	3,1
ROE	9,7	17,5	27,7	21,5	17,8	18,3
Risk provision cost/Net Interest	50,29	44,96	40,41	16,21	6,43	13,9

Source: [19],[22],[25],[29],[33],[34]

Techcombank's ROA, ROE and NIM consistently hold high positions in the group of private joint stock banks.

2.2.2 Bad debt management status at Vietnam Industrial and Commercial Joint Stock Bank through qualitative criteria

2.2.2.1 Developing the promulgating of bad debt management strategies, policies, and procedures at Vietnam Commercial Joint Stock Bank

Techcombank has issued quite a full set of internal documents on capital adeasure activities, lending activities, debt classification and provisioning, credit risk management policies, problem debt handling, bad debts...

2.2.2.2 Organizational structure of bad debt management apparatus at Vietnam Industrial and Commercial Joint Stock Bank

Bad debt management model at Techcombank with 3 protection lines:

The first line of protection (TBV1) includes the branches/units directly doing business; they are responsible for receiving risks and managing risk; **The second line of protection (TBV2)** includes the professional units tasked with formulating risk management policies, internal regulations on risk management, measurement, risk monitoring and compliance; **The 3rd Line of Protection (TBV3)** includes the professional units tasked with internal audit of risk management.

2.2.2.3 Bad debt management organization at Techcombank

- Bad debt identificating

Techcombank identifies bad debts at the transaction level and the entire portfolio level. Techcombank also implements bad debt identification through the internal credit rating system guided by Basel II which is built into two models for two main groups of customers: individual customers and corporate customers.

Table 2.12: Ranking scale of the internal credit rating system at Techcombank

Class of customer	Total points	Interpretation of the credit capacity of customers	Level of risk	Debt classification
Aaa	100	Especially good.	No risk	Qualified
Aa1	95-99	Extremely good	Very low	Qualified
Aa2	90-94	Good	Low risk	Qualified
Aa3	85-89	Good	Low risk in the short term.	Qualified
A1	80-84	Pretty good	Relatively low risk	Qualified
A2	75-79	Very pretty good.	Relatively low risk	Qualified
A3	70-74	Fairly	Relatively low risk	Qualified
B1	65-69	Pretty average	Average	Need attention
B2	60-64	Common	Average	Need attention
B3	55-59	Above average	Average	Need attention
C1	50-54	Average	Relatively high	Substandard
C2	45-49	Below average	High	Substandard
C3	40-44	Slightly weak	High	Substandard
D1	35-39	Weak	Very high	Doubt
D2	30-34	Poor	Very high	Doubt
D3	25-29	Very poor	Very high	Doubt
D4	20-24	Particularly poor	Very high	Doubt
E1	15-19	Need to watch	Especially high.	Potential loss of capital
E2	10-14	Special attention is needed.	Especially high.	Potential loss of capital
E3	<10	Threatening status	Especially high.	Potential loss of capital

Source: [46]

- ***Bad debts measuring***

Techcombank has estimated the PD - the probability that customers fail to repay their debts. Techcombank is based on data on past debts of customers, including: Outstanding debts, debts in the term and non-recoverable debts.

Table 2.13: The ranking of business customer corresponding to the probability of defaulting on debt

Stt	Category	Probability of default (PD)
1	AAA	PD<0.67%
2	AA	0.67%<=PD<0.95%
3	Hah	0.95%<=PD<1.32%
4	B1	1.32%<=PD<2.17%
5	B2	2.17%<=PD<3.29%
6	B3	3.29%<=PD<4.61%
7	C1	4.61%<=PD<5.3%
8	C2	5.3%<=PD<5.86%
9	C3	5.86%<=PD<7%
10	D,E	PD>=7%

Source: [46]

Techcombank has also initially estimated LGD and EAD parameters, but these parameter estimating projects have not yielded concrete results. The Bank's data source is not large enough and not reliable enough to create a database ensuring the operation of the model.

- *Bad debt controling*

To control bad debts, Techcombank has taken some basic measures as follows:

First, developing a credit risk management strategy.

Techcombank's credit risk management strategy is defined in the long term and adjusted according to the specific situation of the economy.

Second, standardizing the credit management process.

The credit process at Techcombank is specifically built into the bank's Credit Handbook. The credit process includes the following steps: (i) Receiving and checking the loan application; (ii) Credit appraisal; (iii) Review and decision-making; (iv) Completing legal procedures before disbursement; (v) Disbursement, monitoring and supervision; (vi) Debt collection, interest and fee collection, and arising handling; (vii) Credit agreement closure.

Third, making credit risk provision

Table 2.16: Bad debt, bad debt loss compensation ratio of Techcombank in the period of 2015 - 2020

Unit: billion, %

Item	Unit	2015	2016	2017	2018	2019	2020

1.Total outstanding debt	Billion	112.200	142.600	160.849	159.939	230.802	277.525
2.Bad debts in the table	Billion	1.862	2.247	2.584	2.803	3.078	1.295
3.On-balance sheet bad debt	%	1,66	1,57	1,61	1,75	1,33	0,5
4.Year-end risk provision	Billion	1.167	1.495	1.884	2.385	2.916	2.214
5. Bad debt loss compensation ratio	%	62,67	66,53	72,91	85,08	94,73	171,0
6.Bad debt handled by provision and sold to VAMC	Billion	1.105	3.730	1.748	2.553	256	3.364

Source:[23],[26],[30],[35],[38],[39]

Fourth, strengthening internal inspection and control

Techcombank's internal control system is organized and operated on three independent protection lines.

Fifth, limit controling based on collateral

The Bank sets the maximum loan-to-value ratio of secured assets for each type of loan and each type of collateral and established a credit limit based on the classification of collateral and internal credit rating.

- **Bad debts handling**

Techcombank uses many measures to handle bad debts, including debt restructuring, handling secured assets, selling debt, and handling bad debt with risk provision fund.

2.2.2.4 Bad debt management report and information disclosure at Techcombank

The bad debt management report at Techcombank is carried out in two categories: internal reporting and reporting to state management agencies. Techcombank annually publishes information on capital adequacy ratio.

2.2.3 The situation of factors affecting to the bad debt management of Techcombank

The view on bad debt management of senior managers is very clear and specific. Techcombank's managers always express the cautious view with the ratio of bad debt which always reachs low levels and within the limits of state regulations.

Financial policy for bad debt management: Techcombank does not have a specific financial policy to invest in bad debt management activities.

Bad debt management culture: Techcombank's compliance culture and risk sense are also constantly emphasized, expressed in seriously complying with legal regulations, international standards and proactively complying with the law.

Methods of bad debt management implemeting: Techcombank uses traditional methods and measures, which has not changed much with the trend of modern banks in the world.

Human resources: Techcombank has a total of 10,307 employees working at the Headquarters, branches, and transaction offices across the country. Of which, more than 18% of staff has Master's degrees, 7% have Doctoral degrees, the rest have Bachelor's degrees and under Bachelor's degrees.

Technology platform: Techcombank has invested in modern IT systems in the field of bad debt management and credit risk management.

2.3 Study the impact of factors on bad debt management of Vietnam Industrial and Commercial Joint Stock Bank through the econometric model
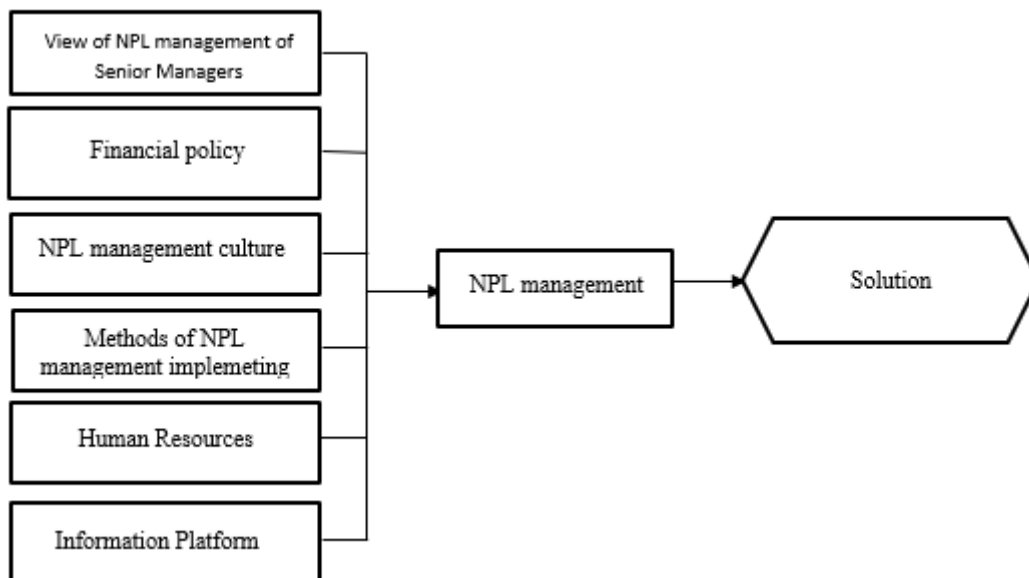
2.3.1 Model Selection

2.3.1.1 Survey Purpose

Assessing the impact of factors on techcombank's bad debt management, thereby assessing the quality of those factors to provide solutions to improve and strengthen bad debt management.

2.3.1.2 Proposed Research Model

Diagram 2.1Proposed research model on bad debt management

2.3.1.3 Developing Research Hypotheses

Six research hypotheses were developed that assumed that influencing factors were in the same way as bad debt management.

2.3.1.4 Data sources

- **Secondary data source:** TechcomBank's reports for 2015 - 2020
- **Primary data sources:** collected between June and August 2019.

2.3.2 Designing survey slip

2.3.3 Conducting survey

Time: From June 2019 to August 2019.

Method: The survey is sent directly to bank officials and by post and email, the number of survey votes issued is 250 votes.

Subject: Managers, credit staff and professional staff of branches and Head Office of Techcombank in Hanoi, Ho Chi Minh City, Hai Duong, Hung Yen and Bac Ninh.

2.3.4 Survey results

2.3.4.1 General survey slip

The total number of slips issued was 250, the total number of slips collected was 223 votes, of which 212 met the analytical standards.

2.3.4.2 Estimating the reliability of Scale by Cronbach's Alpha Coefficient

Cronbach's Alpha coefficient of the variables is greater than 0.6, so it is reliable enough to be an official scale.

2.3.4.3 Analysing EFA

a, Analysis EFA factor of scales of factors affecting bad debt management

Table 2.20: The 1st KMO inspection of independent variables

KMO and Bartlett's Test (1th)		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.686
Bartlett's Test of Sphericity	Approx. Chi-Square	1825.236
	Df	172
	Sig.	.000

Source: *SPSS*

In the first factor analysis, there is one disqualified variable, while the remaining 18 variables are used for the second factor analysis. In the second factor analysis, the communatilies coefficient of variables and the factor matrix both ensure the required conditions. The factor analysis phase was formed with 18 different variables.

Table 2.21: The 2nd KMO inspection of independent variables

KMO and Bartlett's Test (2nd)		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.678
Bartlett's Test of Sphericity	Approx. Chi-Square	1747.004
	Df	163
	Sig.	.000

After two analyses of the discovery factor, the observed variables of the factors are eligible for multi-variable regression analysis.

b, Analysising EFA for NPL management Scale

Table 2.24: KMO inspection of dependent variables

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.608
Bartlett's Test of Sphericity	Approx. Chi-Square	158.478
	Df	3
	Sig.	.000

KMO accreditation has the value of 0.608>0.5, which confirms the KMO value ensures the relevance of the analysis of the discovery factor and the level of significance of the data put into the implementation of the factor analysis. Themisrepression is 65.183%, this value is quite high, so 65.1 83% of the variation of the data is explained by one factor, the scales are drawn and accepted.

2.3.4.4 Statistics describing regression variables

The average value of most variables revolves around the value of 4.3 which indicates the proportionateness of the variables together. The independent variable with the largest average value is A (4.67) the difference compared to the dependent variable of +0.1 and the independent variable with the lowest average value is B, the difference from the dependent variable is -0.45.

2.3.4.5 Assessing the relevance of the model

Linear regression analysis results show that the model has $R^2 = 0.688$ and R^2 correction = 0.672. The appropriateness of the model is 68.8%, or in other words, 68.8% of the variation of NPL management(G) activity is explained by 6 factors: A (Leadership perspective on bad debt management), B (Financial policy), C (RRTD management culture), D (How, measures to organize the implementation of QLNX),

E (Human Resources), F (Technology Platform).

2.3.4.6 Testing the appropriateness of the model

Using F test in differential analysis with a value F = 163.423 to test the hypothesis of the suitability of the regression model to consider the NPL management that is linearly related to independent variables and with a sig = 0.000 < 0.05 meaning, which indicates the suitability of the model.

2.3.4.7 Results of model

Table 2.31: Result of regression analysis Coefficients[a]

Model		Unstandardized		Standardized	t	Sig.	Collinearity	
		B	Std.Err	Beta			Toleran	VIF
1	(Consta	.30	.266		1. .	.00		
	Hah	.06	.069	.069	.	.00	.967	1. .
	B	.21	.043	.247	15.	.00	.830	1. .
	C	.03	.015	.014	.438	.00	.872	1. .
	D	.45	.038	.429	27.	.00	.986	1. .
	E	.12	0.21	.108	6.359	.00	.737	1.357
	F	.10	.049	.139	5. 819	.00	.989	1. .

a.　　　Dependent Variable: QLNX activity

Source: SPSS

The Beta Regression coefficient of independent variables is positive, which mean that dependent variables will vary in the same direction with each independent variable. The regression equation of the model shows the extent of the impact of 6 factors on NPL management activity as follows: **G = 0.308 + 0.069A + 0.247B + 0.014C + 0.429D + 0.108E + 0.139F**

2.3.4.8 Regression hypothesis verification

a, Regression hypothesis verification with Methodist Analysis

ANOVA inspection results for 6 variables for Sig value <0.05 confirms 6 variables affecting bad debt management activities.

b, Regression hypothesis verification with overall average accreditation

Using the Paired Samples Test, with a meaning of 5% it can be concluded that there is an effect of the above-mentioned factors A, B, C, D, E, F on the NPL management activity because the Sig. value of the hypothesis tests with each variable A, B, C, D, E, F is less than 0.05.

2.4 Assessment of bad debt management at Techcombank

2.4.1 Achievements

2.4.1.1 About the implementation of bad debt management objectives

Firstly, TechcomBank's bad debt ratio has tended to decrease in recent years, the growth rate of bad debts is lower than the credit growth rate. *Secondly,* the management of bad debts has ensured the safety objectives in the bank's credit activities. *Thirdly,* the management of bad debts has contributed to improving the bank's financial capacity.

2.4.1.2 About the implementation of bad debt management content

Firstly, Vietnam Industrial and Commercial Joint Stock Bank has initially built a bad debt management apparatus as recommended by Basel II.

Secondly, Techcombank's risk management culture has always been focused and promoted.

Thirdly, the implementation of bad debt management at the Bank is gradually being completed.

2.4.2 Disadvantages.

Firstly, the construction and promulgation of internal documents do not yet have a synchronous and separate legal system for bad debt management.

Secondly, the model of organizing the bad debt management apparatus lacks the combination of defense lines as well as the whole system.

Thirdly, the implementation of bad debt management has some limitations.

2.4.3 Causes of disadvantages

2.4.3.1 Subjective causes

The subjective causes can be mentioned: Limitations on the quality of human resources; Lack of specific financial plans for investment for bad debt management; The organization, training, assignment of responsibilities and decentralization are still not close to reality, unclear; Business indicators and work pressures; IT systems have not fully promoted their role in bad debt management

2.4.3.2 Objective causes

The objective causes of restrictions in bad debt management at Techcombank are: The complexity of Basel II; The capacity and level of development of the national financial market is limited; The operating system and legal corridor are not yet valid; NPL management activities lack specific guidance from the SBV; The SBV's inspection and supervision activities are limited; The consciousness of a small part of the customer is weak; There is a lack of professional independent credit rating agencies.

CONCLUSION OF CHAPTER 2

Chapter 2 presented the situation of bad debt management at techcombank in the period of 2015 - 2020 based on two groups of indicators to assess the management of bad debts presented in chapter 1. In Chapter 2, the author also used econometric model with SPSS 20 software to assess the impact of factors on the bank's bad debt management. The results indicated that the factors presented in Chapter 1 have an impact on bad debt management with varying degrees of influence. From there, it pointed out the limitations and causes in the management of bad debts at Techcombank.

CHAPTER 3
BAD DEBT MANAGEMENT SOLUTIONS AT VIETNAM COMMERCIAL JOINT STOCK BANK

3.1 Orientation for business development and bad debt management at Techcombank to 2025 and vision to 2030

Based on the development orientations of Vietnam's banking industry, Techcombank stated business development orientations in general and bad debt management orientations.

3.2 Solutions to strengthen bad debt management at Vietnam Industrial and Commercial Joint Stock Bank

3.2.1 Building a separate documental system for bad debt management

- Promulgating a document guiding the identification of bad debts based on criteria and signs of recognition for groups of customers divided by specific economic sectors and key sectors.

- Developing specific guidance on steps as well as work to be done in bad debt management including identifying, evaluating, monitoring, handling, compiling reports and proposing appropriate management measures such as urging debt collection, debt restructuring as well as steps to handle bad debts...

- Promulgating specific regulations on the powers and responsibilities of everyone, department, professional department as well as management levels in the management of bad debts

- Re-evaluating the system of internal credit rating criteria and study and adjusting the system of parameters and weighting in accordance with reality.

- Perfecting the system of looking up legal and internal documents on banking activities in general and bad debt management in particular.

- The development and promulgation of internal processes and documents on

bad debt management should be consulted by relevant departments and departments

3.2.2 Completing the model of organizational structure and information exchange in bad debt management

Firstly, separating the credit-granting apparatus according to the marketing departments, credit analysis and credit approval departments as well as the clear responsibilities of the participating departments.

Secondly, developing an effective information exchange mechanism, ensuring regular, continuous, and timely communication of important information between functional departments in credit issuance and bad debt management activities.

3.2.3 Focusing on investment finance policies for bad debt management

The bank should issue specific policies on investment for NPL management. These policies should be divided into short, medium and long-term policies. In the short term, specific tasks include: opening classes, training courses on NPL management, improving the reward regime for employees who have achieved excellent achievements in the NPL management, hiring experts ... For medium and long-term policies, the Bank should identify and calculate investment funds for improving IT infrastructure in order to collect, analyze, store and export information of borrowers, as a basis for identifying, measuring and early handling of bad debts.

3.2.4 Strengthening the organization and training in depth and assigning responsibilities and decentralization associated with the interests of employees

Techcombank needs to pay attention to depth training. In addition, it is necessary to build a system of standards for evaluating employees through competitions, professional examinations, knowledge about credit risk management and bad debt management. In addition, the Bank should focus on decentralizing and assigning responsibilities associated with the rights of employees transparently.

3.2.5 Completing the organization of bad debt management

- *Enhancing the efficiency of bad debt identification:* Buiding of Early Warning System (EWS); promulgating an EWS policy framework that clearly defines the functions and tasks of each department, implementation process and operating mechanism; ensuring the proportionality and reliability of information from the Enterprise Data Warehouse System (EDW), Internal Credit Rating System, Credit Risk Management System; transfering knowledge from international consultants; integrating some more features into the EWS system...

- *Completing the measurement of bad*debts:

+ The internal credit rating system should rank all borrowers on the basis of scoring indicators, including quantitative and qualitative indicators with weights for

each group of indicators suitable to the industry, size and field of operation of customers, especially for key industries;

+ Diversifying the indicators included in the analysis and ranking including financial indicators;

+ Reviewing and re-evaluating the results of internal credit rating periodically;

- *Completing the control and prevention of bad debts:*

Developing specific goals in the short, medium and long term that apply to each specific group of customers, depending on the industry, size and area of customer activity; Formulating different reaction scenarios based on past, present and future estimations; Improving the rate and quality of loans with secured assets; Completing the credit process; Strengthening internal inspection and control activities.

- *Strengthening bad debt settlement:*

+ Focusing on diversifying measures to handle bad debts on the basis of evaluating and analyzing the effectiveness of measures to find the most appropriate measures;

+ Researching, developing and applying advanced debt settlement methods;

3.2.6 Strengthening the inspection, supervision and reporting of bad debt management

The inspection and supervision of bad debt management of the Bank should be focused and promoted, especially in sensitive areas, which contain many risks. Accordingly, inspection and supervision are carried out on both aspects: (1) Inspection and supervision at the transaction level and (2) Inspection and supervision at the category level.

For bad debt reporting, in addition to reports requested by state management agencies, the Bank needs to detail the targets: Total outstanding debt; NPL ratio; Rate of increase/decrease of bad debts; Bad debt coverage rate... At the same time, Techcombank need to provide analysis and predictions about the situation of bad debts.

3.2.7 Promoting the application of modern IT to bad debt management

Comprehensively investing in information infrastructure; Implementing cloud technology for core services to replace traditional storage technology; Tending to the trend of partnering with fintech companies to exploit the strengths of these financial technology companies in providing databases; Looking for reputable technology companies and leading technology experts to advise and design software on bad debt management; Increasing financial and human resources for IT activities.

3.2.8 Improving the professional quality as well as the ethics of the bank's staff

Creating opportunities to access and grasp international practices, provisions of law as well as internal regulations of the Bank on credit risk management and bad debt management; Organizing intensive classes for each separate department in the bad debt management apparatus; Setting criteria on the quality of of managers and employees; Encouraging employees to cultivate professional ethics and building a worthy and fair treatment policy.

3.3   Recommendations

3.3.1 Recommendation to the State Bank

3.3.2 Recommendation to the Banking Association

3.3.3 Recommendation to the Government and relevant Ministries

CONCLUSION OF CHAPTER 3

Chapter 3 presented 8 solutions to improve the content of NPL management and enhance the quality of factors affecting Techcombank's NPL management. The group of solutions focuses primarily on the subjective factors within the Bank.

In addition, Chapter 3 also presented a group of 3 recommendations to State management agencies to improve the quality of the business environment and recommendations on policies and regulations on NPL management, improve the role of State agencies in monitoring the implementation, creating a transparent and favorable legal environment for the NPL management of the whole banking industry in general and Techcombank in particular.

GENERAL CONCLUSION

With the goal of completing and strengthening the management of bad debts at Vietnam Commercial Joint Stock Bank, the thesis has solved the following problems:

First, codifying the theories for bad debt and bad debt management at commercial banks in the condition of new changes as banks are implementing the provisions of the Basel II Treaty.

Secondly, analyzing the situation of bad debts and bad debt management at Vietnam Commercial Joint Stock Bank for the period of 2015-2020 based on the group of indicators, to make comprehensive, accurate and practical assessments. Through the results of the inspection by the econometric model, the thesis assessed the impact of factors on bad debt management activities.

Thirdly, based on the results of analysis and highly reliable qualitative and quantitative evaluation, the thesis has proposed solutions suitable to the actual situation of the Bank and the current development to strengthen the management of bad debts of Vietnam Commercial Joint Stock Bank.

Despite certain results, the thesis still has certain limitations:

Firstly, the primary data used in the thesis has only been collected at some bank branches in Hanoi, Ho Chi Minh City, Hung Yen, Hai Duong and Bac Ninh, but has not been collected at the whole bank. The number of experts, managers and employees participating in the survey is limited.

Secondly, the secondary data source used in the thesis has many limitations of reliability as well as the comprehensiveness and completeness due to the sensitivity of the information.

Thirdly, the thesis considered the management of bad debts in the whole system of Vietnam Industrial and Commercial Joint Stock Bank without conditions for analysis and research specific to each branch, each typical situation to provide solutions suitable and close to the actual conditions of each unit.

LIST OF PUBLISHED WORKS RELATED TO THE THESIS

1. Vu Ngoc Anh (2018) "Securitization - A measure to handle bad debts of credit institutions", Southeast Asia Special Science and Investment, No. 2 June 2018, p.18-19.

2. Vu Ngoc Anh (2018) "Solutions for capital market development, enhanced medium and long-term capital mobilization", Southeast Asia Special Science and Investment, No. 2 June 2018, p.24-25.

3. Vu Ngoc Anh (2020) "Debt securitization to relief credit institution bad debts", Review of Finance, Vol 3, Issue 2 - 2020, page. 12.

4. Vu Ngoc Anh (2020) "Vietnam Social insurance and Deposit Insurance: Investment issues associated with bond market development", Vietnamese financial economy, No.3 June 2020, p.59.

5. Vu Ngoc Anh (2021) "Bad debts of Vietnamese commercial banking system - Situation and solutions", Journal of Financial and Accounting Research, No. 04(213) - 2021, p. 65-71.