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Master’s Thesis

CREDIT RISK MANAGEMENT FOR SMALL AND MEDIUM ENTERPRISES AT VIETNAM JOINT STOCK COMMERCIAL BANK FOR INDUSTRY AND TRADE (VIETINBANK)-HANOI BRANCH

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Hanoi, June 2017
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DATE: ____________________________
ACKNOWLEDGEMENT

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ABSTRACT

This study aims to study about credit risk management in SMEs lending in Vietinbank – Hanoi Branch. To do that, this study have objectives of systematizing several theoretical and practical matters about credit risk management at Vietinbank - Hanoi Branch; studying the situation of credit risk management for small and medium enterprises at Vietinbank - Hanoi Branch; and providing some solutions to improve the quality of risk management in lending to at Vietinbank - Hanoi Branch. Moreover, qualitative research method is applied with secondary data is collected from books and journals about credit risk management. Internal reports about Vietinbank’s credit activities and credit risk management for SMEs customers will be collected during period of 2012-2016. Other while, primary data is collected from interview with relevant people who are working in areas related to credit risk management in Vietinbank – Hanoi Branch.

Major findings show that Vietinbank – Hanoi Branch have already had lending policies through two detail schemes. General scheme requires that the firms need to satisfy credit approval checklist and have the credit grading is from BB and above. Moreover, when the firms apply loans in Vietinbank – Hanoi Branch, they must utilize at least 3 related products, including saving, tax payment, salary payment, invoice payment, insurance, etc. Credit risk management process in Vietinbank – Hanoi branch consists of 4 steps, including identification, measurement, treatment, and implementation. Vietinbank is now applying credit scoring as credit risk management tools. Moreover, the main cause of credit risk in Vietinbank in general and Vietinbank – Hanoi Branch is limited in credit risk management capacity. Most of interviewees show that they do not receive proper training from headquarter in term of credit risk evaluation and credit risk identification.
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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AMC</td>
<td>Asset Management Company</td>
</tr>
<tr>
<td>CRO</td>
<td>Chief Risk Officer</td>
</tr>
<tr>
<td>FDI</td>
<td>Foreign Direct Investment</td>
</tr>
<tr>
<td>IV</td>
<td>Information Value</td>
</tr>
<tr>
<td>LTV</td>
<td>Loan to Value</td>
</tr>
<tr>
<td>NPL</td>
<td>Non-Performing Loans</td>
</tr>
<tr>
<td>SMEs</td>
<td>Small and Medium Enterprises</td>
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<tr>
<td>VOER</td>
<td>Vietnam Open Educational Resources</td>
</tr>
<tr>
<td>WOE</td>
<td>Weight of Evidence</td>
</tr>
<tr>
<td>WTO</td>
<td>World Trade Organization</td>
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CHAPTER 1: INTRODUCTION

1.1. Rationale of the study

Economic reforms have transformed Vietnam’s economy and small and medium-sized enterprises (SMEs). SMEs are central to the structural transformation of the Vietnamese economy. A report shows that total number of SMEs is nearing 400,000, represent 97% of total number of businesses of the country. This sector also has a major source of employment generation accounting for about 77% of the workforce and contributed over 40% of GDP is produced. However, the main obstacle to the development of the SME sector is the lack of stable finance, leading to banks are the main source of financing.

In recent years, the boom in the startup projects is causing the credit scale for SME to develop correspondingly to meet such demands. Credit scale for SME are more and more extended, namely that improving efficiency of the commercial banks’ credit operations, in particularly, the credit risk management for SME become more important and necessary. The purpose of SME lending includes working capital financing, trade financing, mortgages for commercial and industrial property, investment in plant, equipment and supply chain financing. In this case, these loans have any problem. It will have a direct effect on national economic growth and can be quite risky for bank and all country’s commercial banks system in general. So, what should we do to both widen the credit scale and satisfy demands of such SME and ensure safety of loans? The answer is only to improve efficiency of credit risk management for such type of enterprise. From this idea and combining with my experience in Vietnam Joint Stock Commercial Bank for Industry and Trade (Vietinbank)- Hanoi Branch, the topic: “Improve Risk Management in Lending to Small and Medium Enterprises at Vietinbank – Hanoi Branch” is chosen for my thesis.

1.2. Research objectives

As a credit administration officer of Vietinbank - Hanoi, I have had the chances to deal with documents and data concerning lending to enterprises generally and to small and medium enterprises particularly at my bank and my branch. The importance of this one in Vietnam are unquestionable, especially in the recent years with the boom in the startup projects, the loans are continuously increased in quantity. Moreover, the quality of the loans is still in a poor management.

Objectives of the research include the followings:
Systematize several theoretical and practical matters about credit risk management at Vietnam Joint Stock Commercial Bank for Industry and Trade (Vietinbank)-Hanoi Branch.

Study the situation of credit risk management for small and medium enterprises at Vietnam Joint Stock Commercial Bank for Industry and Trade (Vietinbank)-Hanoi Branch.

Recommend some solutions to improve the quality of Risk Management in Lending to Vietnam Joint Stock Commercial Bank for Industry and Trade (Vietinbank)-Hanoi Branch.

To clear the above objectives, the thesis must resolve these research questions.

What are credit risks?
What are features of small and medium enterprises Vietnam?
How does Vietinbank - Hanoi manage their risks in lending small and medium enterprises?

1.3. Scope of the study

The subject of the research is credit activities, emphasize on credit risk management in lending small and medium enterprises in Vietinbank - Hanoi.

The scope of the research concentrates in credit operations and credit risk management for small and medium enterprises at Vietinbank - Hanoi during 2012 - 2014 period.

1.4. Structure of the study

Beside of Introduction and Conclusion sections, the study is developed with 3 chapters:

Chapter 1: Literature Review


Chapter 3: Solutions to improve the quality of credit risk management in lending to SMEs at Vietinbank- Hanoi Branch
2.1. Theoretical background

2.1.1. Understanding of SMEs

SMEs is initial short name for Small and Medium Enterprises. It is defined throughout staff headcount and either turnover or balance sheet total (European Commission, 2017). It is asserted that a company is categorized as SME when it has total staff headcount less than 250 people and turnover is less than or equal to Euro 50 million or balance sheet total is less than or equal to Euro 43 million. Major characteristics of SMEs refers to the ability to satisfy limited demand in specialized markets, the tendency to employ many workers with low average technical skills, especially Is very flexible, able to quickly adapt to the needs and changes of the market. Small and medium-sized businesses can enter new markets without attracting the attention of large businesses (small business size), ready to serve in the smallest spots, small and medium gaps (VOER, 2017).

Vietnam conducted economic reform in 1986 that is considered as fuel to radical socio-economic development and market-orientation. Significant result has been obtained with a peak is recorded throughout WTO accession at the end of 2006. Vietnam is considered as a case study for economic growth and stability with expansion of foreign direct investment, poverty reduction, human development, and living improvements. These outstanding results are obtainable due to significant contribution of SMEs segment to the country’s economy (Tran et al., 2008).

Recent report from VnEconomy (2017) shows that 98% of total business firms in Vietnam is under SMEs formulation and they are contributing into nearly 50% of national GDP. In addition, SMEs also contributes 41% of collected amount to the State’s budget and it creates employment to 78% of total labor in Vietnam (VnEconomy, 2017). This report of VnEconomy (2017) also highlights the concern to SMEs development in Vietnam due to the proportion of SMEs which records business losses is increasing, from 25.14% in 2010 to 68.5% in 2016. In addition, profit before tax of SMEs firms in Vietnam decreases from 22.87% in 2010 to 7.26% in 2016 (VnEconomy, 2017). One of weakness point in SMEs business refers to higher income tax set by the Government. VnEconomy (2017) indicates that current income tax rate is 20% while this tax is set at lower rate in other countries (i.e. 15% in Thailand and 12.5% in Indonesia).
Under current situation of SMEs in Vietnam, it is asserted that there is still great prospect for SMEs development in long-run. It is proven through the Government’s commitment in term of future development of SMEs in Vietnam. Le (2016) indicates that Vietnamese Government has developed national development program for SMEs entity. This program is a 5-years plan with the objective of SMEs entity will contribute to 48-49% of total GDP and 30-35% of total factor productivity. This program expects that total productivity in SMEs firms will increase 5% annually and innovative ratio is between 30-35%. In addition to the Government’s commitment to support the development of SMEs entity, the prospect of SMEs in Vietnam is also fueled by continuous increases in Foreign Direct Investment (FDI). The World Bank (2017) reports that net FDI inflows as proportion of GDP in 2014 is 4.94% and it increases to 6.09% in 2015. With higher FDI inflows, it is expected that SMEs in Vietnam gain the benefit of higher production technology as well as business expertise from global companies.

2.1.2. Credit risk in banking

2.1.2.1. Definition of credit risk

Credit risk gains much attention from banking managers due to its affection to the operations and the profits of the banks. The concept of credit risk, at first, is clarified throughout the concept of risk factor. Business Dictionary (2010) provides one definition for risk as it is probability of happening a or multiple threats that lead to damages or losses or injuries at both of individual or organizational level and they are caused by external and/or internal vulnerabilities. However, the concept of risk is recognized as an opportunity in the statement provided by National Audit Office (2010) and risk is defined as something happening that may have an impact on achievement of business objectives and it also brings opportunities as well as threats.

Under the concepts of risk, credit risk is viewed as risk under financial business environment. Business Dictionary (2010) defined financial risk as probability of actual return is lower than expected one. Basel II Committee (2017) highlights that financial risk coming up with many forms such as credit risk, operational risk, market risk, etc. but credit risk is most important one. This committee also provides a definition for credit risk as the potential that a bank’s borrower or counterparty will fail to meet payment obligations under agreed conditions (Basel II Committee, 2017). This definition is widely accepted in many financial institutions and banks (Global Association of Risk Professionals, 2010). Herein, the concept of credit risk is put into comparisons with other types of financial risk, including operational risk and market risk. Market risk is defined as the losses or the reduction of values of items in
both of on-balance sheet and off-balance sheet because of movement of prices in the market (Dorfman, 1997). Operational risk is determined as losses which are resulted from process failure or lack of managerial controls within organizations (Tyson, 2008).

Summarily, this study considers credit risk and credit risk management in financial institutions and banks. The concept of credit risk which is used in this study refers to the failure in borrower’s commitments to pay their debt upon what are agreed in credit contract with the banks (Cornett and Saunders, 1998). In addition, credit risk in financial institutions and banks is appeared under many forms such as systematic risk and unsystematic risk (Duffie and Singleton, 2003; Brigo and Masetti, 2006). Each form of credit risk will be discussed further in next section about classification of credit risk.

2.1.2.2. Classification of credit risk

As mentioned above, credit risk is classified into 2 major forms, including systematic risk and unsystematic risk (Duffie and Singleton, 2003; Brigo and Masetti, 2006). It is asserted that credit risk is caused by macro factors or it is systematic risk (Duaka, 2015). Systematic risk brings financial problems to overall banking system due to the borrowers are not able to meet their debt obligation with the banks (Fukuda, 2012; Nijskens and Wagner, 2011; Wagner and Marsh, 2006). It is also called as systematic risk due to when one participator cannot pay, they will affect negatively to other borrowers or it is domino effect that lead to global financial crisis in 2009 (Giesecke and Kim, 2011).

Credit risk is also recognized as unsystematic risk which is sourced from internal factors (Duaka, 2015). It can be either temporary financial problem of one borrower that leads to his or her inability to meet credit obligation or the lack of transparency or credit frauds conducted by internal employees (Duaka, 2015). For instance, the report from The World Bank (2012) shows that internal employees who have opportunities and moral hazards may want to take interests from wrong credit granting to poorly performing firms and individuals with questionable credit records.

2.1.3. Credit risk management in commercial banks

2.1.3.1. Definition of risk management

A risk management is generally profound and proposed by International Standard Organization (2008). A proper risk management process involves 5 steps, including communication and consultation, establishing the context, risk assessment, risk treatment, and monitoring and review.
Communication is required when the banks’ managers need to ensure that banks’ risk appetites are communicated clearly to overall employees. Moreover, banks’ managers can hire consultation from consulting firms to strengthen their risk management process. The next step refers to the establishment of risk management context whether all risk policies must be documented and put into practices. After that, risk assessment is conducted with several subsequent steps, including risk identification, risk analysis, and risk evaluation. The fourth step in risk management process of International Standard Organization (2008) is risk treatment whether the banks establish different solutions to reduce and to mitigate the impacts of risk factors to overall banking performances. Finally, International Standard Organization (2008) suggests that the banks need to establish effective mechanism to monitor and to review overall risk management of the banks. Basel II Committee (1999) reports that major risks faced by the banks include credit risk, market risk, interest risk, liquidity risk, operational risk, legislative risk and reputation risk while Steinwand (2000) provides 3 different risks in commercial banks, including financial risk, operational risk, and strategic risk. Each type of
risk will require different action and management skills to ensure that risk exposure is at accepted level (Duaka, 2015).

2.1.3.2. 2.1.3.2 Roles of credit risk management in commercial banks

Roles of credit risk management in commercial bank is showing through its contribution to overall reduction of profit losses due to high credit risk event in credit pool (Giesecke, 2004). It is denoted that the increases of credit risk exposure will influence on higher marginal cost of debt and equity and therefore it increases cost of fund and higher lending interest rate and lower competition in the market (Basel II Committee, 1999).

During the time, there are many studies that are developed to highlight the role of credit risk management to overall business performance of financial institutions or banks. For instance, Robert and Gary (1994) identify most of failed banks is not resulted from poor operating efficiency but also from higher non-performing loan exposures. DeYoung and Whalen (1994) emphasize major difference between a failed bank and a successful bank is the healthiness in credit risk management activities. On the other hand, a successful bank’s managers earn higher profit not only from a cost efficiency approach but also from their choices of better loan underwriting process and frequent monitoring credit quality within their banks (DeYoung and Whalen, 1994). In addition, role of credit risk management in commercial bank to its profits and safety is also affirmed in many studies (Koehn and Santomero, 1980; Kim and Santomero, 1988; Athanasoglou, 2005). Indeed, there is correlation between bank’s profitability and the ability of foreseeing, avoiding, and monitoring credit risk.

Another role of credit risk management to financial institution or bank is to maintain liquidity level. Owojori et al. (2011) identify that a distress of liquidity is happening when banks are inability to collect loans, leading to higher credit risk exposure. The studies of Umoh (2002) and Ferguson (2003) provide evidences of few banks are not able to conduct sustainable development in case of depositors take out their funds and the bank hemorrhages and in the absence of liquidity support.

2.1.4. Credit risk policies, process, and tools

2.1.4.1. Credit risk policies

Credit risk policy is defined as a set of documents that provide banks’ credit risk appetite towards credit demands from the borrowers (Colquitt, 2007). Credit risk policy is often established by credit risk management team and it is independent to credit granting process to avoid the conflict of interests (Colquitt, 2007). On the other hand, it means that credit granting officers must to strictly follow credit risk policies which are provided by credit
risk management to avoid future credit losses. In addition, Luy (2010) indicates that proper credit risk policy must cover general and specific cases. General characteristic of credit risk policy addresses the importance of that credit risk policy can be applied for many cases while specific characteristic of credit risk policy can cover up specific demands from the borrowers. Altman et al. (2008) highlight the importance of not allowing specific cases to overcome more than 30% of total credit demand value within financial institution or bank.

2.1.4.2. Credit risk process

The goal of credit risk management is to maximize a bank’s risk-adjusted return by maintaining credit risk exposure within accepted level (Basel II Committee, 2017). To do that a financial institution or a bank needs to establish proper credit risk management process. As affirmed by Luy (2010), credit risk is monitored throughout specific workflow and it may be different across different banks but share common objective of credit risk mitigation and reduction of credit risk losses. In addition, credit risk management is established right after a credit is given to a borrower (Altman et al., 2008). Credit risk management process is also differentiated by types of borrowers which are characterised into retail credit risk management process and corporate credit risk management process (Crouchy et al., 2005).

Although credit risk management process is differed by borrower types or specific credit activities, a proper workflow is delivered by Weber et al. (2008) as below:

![Figure 2.2: Credit Risk Management Process](source: Weber et al. (2008))

Weber et al. (2008) assert that a prototype of credit risk management process involves 5 subsequent steps, including credit risk rating, credit risk costing, credit risk pricing, credit risk monitoring, and work-out. The first step is credit risk rating whether credit risk manager tries to identify sources of risk within credit activities. The second step refers to credit risk costing or the evaluation of the impact of credit risk to business profit of financial institutions or banks. Then, a credit risk pricing is conducted as the comparison between cost and return. Credit risk monitoring is set of activities that allow credit risk managers to monitor current performance of credit activities while work-out is combined of actions to help mitigating credit risk issues or manage credit risk at accepted level.
Another credit risk management process is given by Gestel and Baesens (2009). This process is designed with 4 different steps, including identification, measurement, treatment, and implementation.

**Figure 2.3: Credit Risk Management Process**
Source: Gestel and Baesens (2009)

Credit risk identification is the first step in credit risk management process which is proposed by Gestel and Baesens (2009). This step requires credit risk managers and credit risk officers to recognize the sources of credit risk and main reasons that lead to failure of borrowers in term of credit contract. Gestel and Baesens (2009) assert that most of financial institutions and banks to face up with high credit risk exposure due to credit risk officers cannot recognize the potential of credit risk in credit activities.

Credit risk measurement is the second step in credit risk management process and it addresses the importance of measuring credit risk exposure. Gestel and Baesens (2009) indicate that credit risk measurement can be done through the application of Expected Loss which is equal to the multiplication between Probability of Default and Loss Given Default and Exposure at Default. These indicators are considered as prominent factors which are required by Basel II Committee (2017).
After credit risk is measured, it is classified into high risk, medium risk, and low risk. The ranking of credit risk level helps credit risk managers to provide suitable treatments. The objective of credit risk treatment is to avoid future credit risk, to transfer credit risk, to reduce credit risk loss, or event to accept credit risk happening. To avoid future credit risk, it is recommended that financial institutions or banks need to reduce their investment into high risk counterparties or customer segment i.e. low income people or industries with high risk. To transfer credit risk or credit risk mitigation, financial institutions or banks need to establish credit risk policies in term of which types of collaterals to be received or what credit limit should be given to the borrowers, etc. To reduce credit risk exposure, financial institutions or banks need to diversify their investment and credit portfolio and it is reflected through the balance between high risk portfolio and low risk portfolio. Finally, credit risk management is implemented in bank wide level and it requires the involvement of many parties such as credit granting, operational risk management, audit, and finance to ensure that credit risk is maintained at accepted level.

2.1.4.3. Credit risk tools

There are many tools that are being used to support credit risk management process in financial institutions and banks. Common tool which is being used in credit risk management is credit scoring. This tool was developed in 1960s and now becoming common tool in credit risk evaluation and assessment of borrowers’ risk level (Vera et al., 2012). A credit scoring can be developed by either judgement-based method or data-driven method (Salazar, 2015). Judgment-based method is conducted upon on experts in credit risk management but this method is less objective and depended on experts’ point of view (Salazar, 2015). In this context, data-driven is becoming more useful method and now being applied widely in financial institutions and banks (Vera et al., 2012).

![Figure 2.4: Process of Credit Scoring Development under Data-driven Method](source: Siddiqui (2006))

Generally, credit scoring which is developed under data-driven method contains 6 step, including gathering data, sample and good/bad definition, data analysis, model development, scorecard calibration, and scorecard sign-off (Siddiqui, 2006). A trustful credit
scoring is obtained in case of enormous and reliable data to be collected from different sources such as demographic information of borrowers, credit profile of borrowers, collateral value and types, etc. Then, a sample is selected to develop proper scoring model and a logistic or linear model will be applied to identify the best combination among variables to predict future credit behavior of borrowers. The next step is to conduct data analysis and it comes along with 2 subsequent ones, including Weight of Evidence – WOE and Information Value – IV (Siddiqui, 2006). A model development is most important step in credit scoring development and it will provide the probability of credit risk of borrower based on inputted information. The last step refers to administration task of which a credit scoring will be documented and signed-off by different parties in financial institutions and banks. Although the last step does not involve much technique, it is still important due to its support to future modification of credit scoring.

2.1.5. Assessment of credit risk management in SMEs

Risk matrix table is simple but very useful in assessing current credit risk level in a financial institution or a bank (Lloyd, 2010). This tool is established as a matrix table with one aspect is likelihood of risk event and other aspect is consequence of impact. The likelihood of risk event is segregated into 5 levels, from almost certain to likely to possible to unlikely to rare. Likelihood of credit risk is normally measured within a certain period and it is often within 1 year. The consequence of impact is divided into insignificant, minor, moderate, major, and severe. In each area of risk matrix table, there are subsequent level of impact which consists of low, medium, high, and extremely high. To make an easy of recognize the level of impact, a set of color to be applied differently to each level of impact.

**Table 2.1: Risk Matrix Table**

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>Insignificant</th>
<th>Minor</th>
<th>Moderate</th>
<th>Major</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost certain</td>
<td>M</td>
<td>H</td>
<td>H</td>
<td>E</td>
<td>E</td>
</tr>
<tr>
<td>Likely</td>
<td>M</td>
<td>M</td>
<td>H</td>
<td>H</td>
<td>E</td>
</tr>
<tr>
<td>Possible</td>
<td>L</td>
<td>M</td>
<td>M</td>
<td>H</td>
<td>E</td>
</tr>
<tr>
<td>Unlikely</td>
<td>L</td>
<td>L</td>
<td>M</td>
<td>M</td>
<td>H</td>
</tr>
<tr>
<td>Rare</td>
<td>L</td>
<td>L</td>
<td>M</td>
<td>M</td>
<td>H</td>
</tr>
</tbody>
</table>

L – Low; M – Medium; H – High; E – Extremely High

Source: Lloyd (2010)
Although risk matrix table is simple and easily to implement in bank wide level, it is asserted that this tool consists of limitation. It is difficult to implement single risk matrix table for all activities of credit risk management. For instance, the likelihood is depended on disciplines and functional areas of credit activities while consequence of the impact is subjective due to its dependence on evaluators (Lloyd, 2010).

2.2. Literature reviews about factors influencing on credit risk management in SMEs

During the time, there are many studies that are developed to highlight factors influencing on credit risk management in SMEs.

Horstedt and Linjamaa (2015) develop a study about credit risk evaluation of Swedish SMEs. This study aims to develop qualitative assessment of credit risk in SMEs lending. To identify main factors influencing on credit risk management in SMEs book, a sample of 10 participators who have intensive knowledge about credit risk management in SMEs lending in Sweden. Horstedt and Linjamaa (2015) provide key sources of credit risk issues and how their occurrences are. These researchers highlight the most influencing factors, including the owner/individual, industry specifics, internal discipline, key individuals in the firm, business plan, external discipline, customers’ issues, relationship between owner and the bank, contracts with customers, gut feeling of the banker, company form, cyclical sensitivity, overall picture of the firm, credibility, history, suppliers, transparency, environmental activities, ethics, and trust. Five main factors that are mostly occurring are the owner/individual, industry specifics, internal discipline, key individuals in the firm, and business plan.

Belas et al. (2014) provide a study about main determinants of credit risk of SMEs in banking sector of the Czech Republic and Slovakia. Some factors which are counted in this study include attitude’s change in commercial banks during the crisis, level of knowledge of credit conditions by entrepreneurs, the ability to manage financial risk in the company, and the level of business optimism. A quantitative research method is deployed in this study with main data analysis technique is Pearson Statistics. Key findings show that one of main cause of credit risk issue in Czech Republic and Slovakia refers to attitude’s change in commercial banks during the crisis and at least 30 % of Czech and Slovak entrepreneurs in SME segment thought that banks behave in an inappropriate manner. Other key finding refers to at least 30 % of Czech and Slovak entrepreneurs in SME segment thought that banks’ approach has worsened during the crisis. Moreover, at least 90 % of Czech and Slovak entrepreneurs in SME segment indicated that they can manage financial risks. Finally, despite the deterioration
of business environment, entrepreneurs are optimists. At least 90% of entrepreneurs in SME segment believe that their company will survive in next five years.

de le Torre et al. (2008) provide business and risk management models towards SMEs business in commercial banks. This study utilizes qualitative research method with case study of SMEs credit risk evaluation in Argentina and Chile. The result of this study shows that performance of credit risk management performance in commercial banks is depended on how risk management function is separated to sale function, the performance of loan recovery unit, and how the banks can provide clear and candid SMEs segment.

Yoshino et al. (2015) develop a model to measure SMEs credit risk in Thailand. A quantitative research method is utilised in this study with secondary data is collected from lending data of Thailand’s commercial banks, including initial loan amount, past due days, past due amount, total loans, and outstanding amount. For the credit risk analysis, Yoshino and Taghizadeh-Hesary introduced 11 financial ratios of SMEs (equity [book value]/total liabilities, cash/total assets, working capital/total assets, cash/net sales, retained earnings/total assets, etc.), which represent the positive characteristics of the examined SMEs. This means that the larger these variables are, the healthier a certain SME is. In addition, lending variables (past due amount, past due days, outstanding amount, etc.) and mainly represent the negative characteristics of SMEs.

Gladys (2009) develops a regression model to measure the effect of credit risk management practices on the level of NPLs in SMEs lending segment in Kenyan banks. This study comes up with 4 independent variables, including credit risk identification, credit risk analysis, credit risk mitigation, and credit risk monitoring. Quantitative result from regression analysis shows Beta values of these variables are -0.91, -0.19, -0.183, and -0.223 while p-values of these variables are 0.036, 0.126, 0.231, and 0.018. Thus, the influences of credit risk analysis and credit risk mitigation to NPLs in examined banks are not statistical significant at 5%.
Table 2.2: Summary of factor influencing on credit risk management in SMEs lending

<table>
<thead>
<tr>
<th>No</th>
<th>Main Factors</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>▪ The owner/individual&lt;br&gt;▪ Industry specifics&lt;br&gt;▪ Internal discipline&lt;br&gt;▪ Key individuals in the firm&lt;br&gt;▪ Business plan</td>
<td>Horstedt and Linjamaa (2015)</td>
</tr>
<tr>
<td>2</td>
<td>▪ Attitude’s change in commercial banks during the crisis&lt;br&gt;▪ Banks’ approach&lt;br&gt;▪ Ability to manage financial risks in SMEs&lt;br&gt;▪ Deterioration of business environment</td>
<td>Belas et al. (2014)</td>
</tr>
<tr>
<td>3</td>
<td>▪ Separation of risk management to sale&lt;br&gt;▪ Proper and effective setup loan recovery units&lt;br&gt;▪ Shape up SME lending segment</td>
<td>de le Torre et al. (2008)</td>
</tr>
<tr>
<td>4</td>
<td>▪ Initial loan amount&lt;br&gt;▪ Past due days&lt;br&gt;▪ Past due amount&lt;br&gt;▪ Total loans&lt;br&gt;▪ Outstanding amount</td>
<td>Yoshino et al. (2015)</td>
</tr>
<tr>
<td>5</td>
<td>▪ Credit risk identification&lt;br&gt;▪ Credit risk analysis&lt;br&gt;▪ Credit risk mitigation&lt;br&gt;▪ Credit risk monitoring</td>
<td>Gladys (2009)</td>
</tr>
</tbody>
</table>
CHAPTER 3:
RESEARCH METHODOLOGY

3.1. Research philosophy

Research philosophy relates to the belief of the researchers when they conduct academic studies (Levin, 1988). There are many research philosophies but there are two major ones, named as positivism and interpretivism (Collins, 2010). Positivism research philosophy is the employment of scientific method and the balance between theoretical framework and key findings and facts which are extracted from data analysis (Collins, 2010). In addition, the objective of positivism research philosophy is to generate research hypotheses and test these hypotheses (Levin, 1988).

In the contrast, interpretivism research philosophy represents for the belief of the researchers of which key findings from social phenomenon cannot be revealed throughout natural sciences but rationale evaluation from the researchers (Bryman and Bell, 2007). It is notable that interpretivists believe that social phenomenon existing independently to natural sciences (Gephart, 1999).

In this study, interpretivism research philosophy is chosen as main research philosophy and this choice is supported by following arguments:

First, the study does not aim to establish research hypotheses testing. Instead of that, the study relies on rationale evaluation of credit risk management system of Vietinbank – Hanoi Branch. Then, findings and facts are obtained accordingly.

Second, like other interpretivists, it is believed that the effectiveness of credit risk management in Vietinbank – Hanoi Branch is largely depended on personal perception of credit risk management of the managers and the employees in the branch. Throughout the interviews with a pool of respondents who are working in areas related to credit risk management, current performance of credit risk management in Vietinbank – Hanoi Branch will be revealed accordingly.

3.2. Research approach

Up to now, there are 2 research approaches, including deductive and inductive (Remenyi et al., 1998). Research approach addresses the process of implementing academic studies (Saunders et al., 2009). Like previous section, it is notable to highlight the differences between deductive and inductive research approach.

Deductive research approach is a process that involves 6 subsequent steps, including theory, hypothesis, data collection, findings, hypothesis confirmed or rejected, and revision of
theory (Bryman and Bell, 2007). This process addresses the importance of finding theories that are relevant to social phenomenon and then a list of hypotheses is provided to clarify relationships among variables. After that, subsequent primary data will be collected to support hypothesis testing. The result of hypothesis testing is either accepted or rejected and it is the input for revision of utilized theories.

Inductive research approach has a contrast process compared to deductive one (Anderson, 2004). It is denoted that inductive research approach starts with observation of social phenomenon to generate key findings. Then, the results are captured and used to generate new theories related to social phenomenon. In this context, the objective of inductive research approach differs to deductive research approach (Saunders et al., 2009).

In this study, both of deductive and inductive research approach will be selected and this choice is supported by following arguments:

First, this study is deployed with literature review of which the concepts of credit risk and credit risk management are examined clearly. Moreover, literature review provides examinations of credit risk management process, credit policies, and tools of credit risk management. It is the first step of deductive approach.

Second, inductive research approach is chosen due to this study does not aim to strip hypothesis but try to observe current situation of credit risk management in Vietinbank – Hanoi Branch. In addition, in-depth interviews with relevant people who are working in areas related to credit risk management in Vietinbank – Hanoi Branch is conducted to collect in-depth understanding about current situation of credit risk management in the branch.

3.3. Research strategy

Research strategy is defined as the way to obtain in-depth understanding about social phenomenon and it is done through the application of multiple strategies, including survey, case study, interview, archival documents, etc. (Collins, 2010). In real practice, case study and interview are two commonly used research strategy (Gable, 1994).

Case study is chosen in this study due to following arguments:

First, case study is selected in case of research question is established with “how” and “what” question type (Saunders et al., 2009). In Chapter I, there are 2 “what” and 1 “how” research questions; therefore, case study is selected to support answering these research questions.

Second, case study overcomes the weakness of interview strategy as interview is often conducted in specific point in time and therefore key finding from interview process is not
representative for long period (Gable, 1994). On the other hand, it means that interview strategy only provides a snap shop about social phenomenon (Soy, 1997).

Interview is chosen in this study due to following argument:

Interview strategy is widely accepted and utilized in management researches (Saunders et al., 2009). Indeed, the results which are extracted from interview strategy provide in-depth findings about social phenomenon that cannot be obtained throughout survey of questionnaire (Strauss and Corbin, 1990). In addition, interview allows the researchers to obtain underlying information due to direct interaction and discussion with respective respondents (Goulding, 2002).

3.4. Research method

There are 2 research methods that are being used in academic studies, including quantitative and qualitative (Saunders et al., 2009). Quantitative research method is deployed with the application of numerical analysis with data is collected from well-structured survey of questionnaire with relevant people (Dawson, 2009). Qualitative research method is contradicted to quantitative research method in the context of it aims to analyze non-numerical data which is collected from opened interview or group of discussion with experts in the field of social phenomenon (Nykiel, 2007).

Each research method has its own advantages (Saunders et al., 2009). Major advantage of quantitative research method refers to the fact that it brings objective findings, establishment of facts, prediction of causal relationship, and hypothesis testing (McCarthy, 2008). In addition, quantitative research method allows the researchers to select sample from overall population; thus, key finding is made up objectively or it has high representation for overall population (Vanderstoep and Ohnson, 2009).

Major advantage of qualitative research method refers to the fact that key findings are generally deep and contain multi-facets due to direct interaction with the respondents (Boxill et al., 2009). In addition, while the researchers who follow quantitative research method must strictly follow structured survey of questionnaire, the researchers who follow qualitative research method can rely on opened interviews to obtain the facts; therefore, key findings are more straightforward and direct to target social phenomenon (Nykiel, 2007).

3.5. Data collection

There are 2 types of data that are often collected in management researches, including primary and secondary data (Saunders et al., 2009).

Secondary data is the information to be collected from existing sources such as books, journals, reports about social phenomenon (Srivastava and Rego, 2011). In this study,
secondary data will be collected from books and journals about credit risk management. Internal reports about Vietinbank’s credit activities and credit risk management for SMEs customers will be collected during period of 2012-2016.

Primary data is the information that cannot be collected from existing sources but it is collectable from survey or interview process (Srivastava and Rego, 2011). One of advantage point of primary data is that it has direct support to research objectives and research questions (Saunders et al., 2009). In this study, primary data will be collected from interview with relevant people who are working in areas related to credit risk management in Vietinbank – Hanoi Branch.

3.6. Interview design

Interview is selected as main research strategy in this study. Thus, it is required to have clear interview design with questions will be given to respective respondents. It is notable that interview question will cover each aspect of credit risk management process, including credit risk identification, credit risk measurement, credit risk treatment, and credit risk implementation in Vietinbank – Hanoi Branch.

Table 3.1: Interview Design

<table>
<thead>
<tr>
<th>No</th>
<th>Credit risk management area</th>
<th>Interview question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Credit risk identification</td>
<td>How to identify credit risk in Vietinbank?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>What are main causes of credit risk in Vietinbank?</td>
</tr>
<tr>
<td>2</td>
<td>Credit risk measurement</td>
<td>How to measure credit risk in Vietinbank?</td>
</tr>
<tr>
<td>3</td>
<td>Credit risk treatment</td>
<td>How to treat credit risk issues in Vietinbank?</td>
</tr>
<tr>
<td>4</td>
<td>Credit risk implementation</td>
<td>What is implementation process of credit risk management in Vietinbank?</td>
</tr>
</tbody>
</table>

The next step is to select sample size for interview process. Glaser and Strauss (1967) assert that appropriate sample size is based on types of researches. For ethnography research strategy, Morse (1994) suggests that appropriate sample size is 30-50 respondents while Creswell (1998) provides only 20-30 respondents. For grounded theory, sample size should be
30-50 respondents as recommended by Morse (1994) or 20-30 respondents as recommended by Creswell (1998). For phenomenological studies, sample size should be 12-20 (Baker and Edwards, 2008) while Morse (1994) suggests at least 6 respondents. From above findings, the interview is developed with involvement of 10 respondents who have been working for Vietinbank Headquarter and Vietinbank – Hanoi Branch.

In this study, sample size is 10 people who are working for Vietinbank. To conduct objective evaluation, 10 people will be selected from Vietinbank – Hanoi Branch and Vietinbank Headquarter.

Table 3.2: Respondents’ Profile

<table>
<thead>
<tr>
<th>Job role</th>
<th>Location</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit risk manager</td>
<td>Vietinbank Headquarter</td>
<td>1</td>
</tr>
<tr>
<td>Credit risk manager</td>
<td>Vietinbank – Hanoi Branch</td>
<td>1</td>
</tr>
<tr>
<td>Credit risk officer</td>
<td>Vietinbank Headquarter</td>
<td>2</td>
</tr>
<tr>
<td>Credit risk officer</td>
<td>Vietinbank – Hanoi Branch</td>
<td>2</td>
</tr>
<tr>
<td>Business manager</td>
<td>Vietinbank – Hanoi Branch</td>
<td>1</td>
</tr>
<tr>
<td>Business officer</td>
<td>Vietinbank – Hanoi Branch</td>
<td>3</td>
</tr>
</tbody>
</table>

3.7. Data analysis technique

The thesis mainly applies statistical analysis to clear the research objectives. Frequency analysis will be selected to provide information about current situation of credit risk management in Vietinbank – Hanoi Branch. In addition, the thesis also applies table and figure method to make clearer for analysis. Excel will be used as major data analysis tool and it helps to generate tables, figures, and frequency analysis during this study.
CHAPTER 4:
CURRENT SITUATION OF CREDIT RISK MANAGEMENT FOR SME IN VIETINBANK – HANOI BRANCH

4.1. Overview of Vietinbank – Hanoi Branch

4.1.1. Establishment and development history of Vietinbank – Hanoi Branch

Vietinbank – Hanoi Branch was established under internal decision from Board of Director of Vietinbank Headquarter. The location of Vietinbank – Hanoi Branch is at No#6 Ngo Quyen Str. Hoan Kiem Distr. Ha Noi. After years of operations, the branch has obtained significant business results. Net operating income increases 64% each year from 2014 to 2015 and from 2015 to 2016 and it is VND29.5 billion at the end of 2016. Profit before tax after minoring operating cost is recorded at VND21.0 billion in 2016 and it increases 75% compared to 2015. Net operating income per employee is increases more than 2 times from VND0.183 billion to VND0.387 billion in period 2014-2016.

Table 4.1: Business Performance of Vietinbank – Hanoi Branch

<table>
<thead>
<tr>
<th>Criteria</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount</td>
<td>Amount</td>
<td>Growth (%)</td>
</tr>
<tr>
<td>Net operating income</td>
<td>11</td>
<td>18</td>
<td>64</td>
</tr>
<tr>
<td>Profit before tax</td>
<td>7</td>
<td>12</td>
<td>71</td>
</tr>
<tr>
<td>Net operating income per employee</td>
<td>0.183</td>
<td>0.265</td>
<td>45</td>
</tr>
</tbody>
</table>

Source: Vietinbank’s Credit Report (2017)

Moreover, net operating income of Vietinbank – Hanoi Branch is characterized by different businesses, including Point of Sale (POS), Guarantee Services, and Other Services.

In term of POS business, actual operation shows that the branch is now earning income from different departments, including SMEs Department, Directors of SMEs Department, Retail Department, Directors of Retail Department, SUDICO Transaction Office, Tran Phu Transaction Office, Vu Trong Phung Transaction Office, Ha Dong Transaction Office, and Tan Tay Do Transaction Office. The shares of each department and transaction office in total operating income of Vietinbank – Hanoi Branch is reflected in Figure 4.1 as below:

Figure above shows that Retail Department contributes largest shares in total operating income of the branch with more than 50%. The second place is belonged to Vu
Trong Phung Transaction Office with 16% while the third place is belonged to Directors of Retail Department with 10%. SMEs Department comes at fourth place with 8%.

![Figure 4.1: Shares of Departments of Vietinbank – Hanoi Branch in POS](source: Vietinbank’s Credit Report (2017))

In term of other services, the shares among SMEs Department, Directors of SMEs Department, Retail Department, Directors of Retail Department, SUDICO Transaction Office, Tran Phu Transaction Office, Vu Trong Phung Transaction Office, Ha Dong Transaction Office, and Tan Tay Do Transaction Office are 34%, 9%, 3%, 8%, 10%, 14%, 10%, 8%, and 4% respectively.

![Figure 4.2: Shares of Departments of Vietinbank – Hanoi Branch in other services](source: Vietinbank’s Credit Report (2017))

In term of other services, the shares among SMEs Department, Directors of SMEs Department, Retail Department, Directors of Retail Department, SUDICO Transaction Office,
Tran Phu Transaction Office, Vu Trong Phung Transaction Office, Ha Dong Transaction Office, and Tan Tay Do Transaction Office are 34%, 9%, 3%, 8%, 10%, 14%, 10%, 8%, and 4% respectively.

In term of guarantee services, it is directly supporting for SMEs lending of the branch. The result shows that most of income in guarantee services is belonged to SME Department and it consumes about 98% of total income from this kind of business in Vietinbank – Hanoi Branch. Moreover, Vu Trong Phung Transaction Office also contributes small amount in term of guarantee services income with 1%.

In another spectrum, operating cost of the branch is divided into several cost items, including transaction cost, e-banking cost, cost due to wrong accounting, and other costs. The shares of departments in each cost item is presented in Table 4.2 as below:

Table 4.2: Shares of cost items by departments in Vietinbank – Hanoi Branch

<table>
<thead>
<tr>
<th>Department</th>
<th>Transaction cost</th>
<th>e-banking cost</th>
<th>Cost due to wrong accounting</th>
<th>Other costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMEs Department</td>
<td>31%</td>
<td>11%</td>
<td>0%</td>
<td>20%</td>
</tr>
<tr>
<td>Directors of SMEs Department</td>
<td>9%</td>
<td>11%</td>
<td>0%</td>
<td>9%</td>
</tr>
<tr>
<td>Directors of Retail Department</td>
<td>9%</td>
<td>11%</td>
<td>0%</td>
<td>9%</td>
</tr>
<tr>
<td>Retail Department</td>
<td>9%</td>
<td>11%</td>
<td>0%</td>
<td>9%</td>
</tr>
<tr>
<td>SUDICO Transaction Office</td>
<td>9%</td>
<td>11%</td>
<td>84%</td>
<td>21%</td>
</tr>
<tr>
<td>Tran Phu Transaction Office</td>
<td>9%</td>
<td>11%</td>
<td>0%</td>
<td>9%</td>
</tr>
<tr>
<td>Vu Trong Phung Transaction Office</td>
<td>9%</td>
<td>11%</td>
<td>0%</td>
<td>9%</td>
</tr>
<tr>
<td>Ha Dong Transaction Office</td>
<td>9%</td>
<td>11%</td>
<td>16%</td>
<td>11%</td>
</tr>
<tr>
<td>Tan Tay Do Transaction Office</td>
<td>9%</td>
<td>8%</td>
<td>0%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Source: Vietinbank’s Credit Report (2017)
4.1.2. Functions of Vietinbank – Hanoi Branch

Vietinbank – Hanoi Branch is one of branch network that is under management from Vietinbank Headquarter. Major functions of Vietinbank – Hanoi Branch are regulated by Vietinbank Headquarter and the branch needs conduct a dependent business entity with following duties:

- To provide deposit services to customers who want to deposit their money and to earn deposit interest rate by fixed or flexible periods.
- To provide lending services to both of Retail and SMEs customers within business location. The objective of lending services is to help individual and business firms to have significant funding for their lives or daily operation.
- To provide other banking services to both of Retail and SMEs customers such as card services (credit and debit cards), insurance services, payment and cash payment, money transfers to other bank account of customers.

4.1.3. Organization structure of Vietinbank – Hanoi Branch

Currently, Vietinbank – Hanoi Branch is organized by following organization model:

![Organization structure of Vietinbank – Hanoi Branch](image)

Source: Vietinbank’s Credit Report (2017)

Highest hierarchy of Vietinbank – Hanoi Branch is Branch Director who takes the responsibility of overall branch management in term of business performance, risk management, operation management, supporting activities management, and transaction
management. Branch Director must sign-off all credit contract with Retail and SMEs customers when they borrow money at the branch.

Under Branch Director, there are 5 managers who take different responsibilities, including Business Unit Manager, Risk Manager, Operation Manager, Support Manager, and Transaction Manager. It is notable that Transaction Manager will manage transaction offices which are belonged to Vietinbank – Hanoi Branch. Business Manager will conduct customer relationship activities to big corporates, SMEs, and Retail customers. Risk Manager will manage overall risk level at the branch and this manager also manage debt collection activities. Operation Manager focuses on accounting management, vault management, and foreign trading. Support Manager covers 3 job roles, namely administration, HR, and IT.

4.1.4. Business results of Vietinbank – Hanoi Branch

4.1.4.1. Capital mobilization

Capital mobilization is considered as main business of Vietinbank – Hanoi Branch.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Plan</td>
<td>Amount</td>
<td>Plan</td>
</tr>
<tr>
<td>Total capital mobilization</td>
<td>N/A</td>
<td>654</td>
<td>810</td>
</tr>
<tr>
<td>By customer type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Big Corporates</td>
<td>N/A</td>
<td>310</td>
<td>244</td>
</tr>
<tr>
<td>SMEs</td>
<td>N/A</td>
<td>110</td>
<td>221</td>
</tr>
<tr>
<td>Retail</td>
<td>N/A</td>
<td>234</td>
<td>345</td>
</tr>
<tr>
<td>By term</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No and &lt;=12 months</td>
<td>N/A</td>
<td>569</td>
<td>N/A</td>
</tr>
<tr>
<td>&gt;12 months</td>
<td>N/A</td>
<td>85</td>
<td>N/A</td>
</tr>
<tr>
<td>By currency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VND</td>
<td>N/A</td>
<td>589</td>
<td>N/A</td>
</tr>
<tr>
<td>Foreign currency</td>
<td>N/A</td>
<td>65</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Source: Vietinbank’s Credit Report (2017)
Total capital of Vietinbank – Hanoi Branch in 2014, 2015, and 2016 are VND654 billion, VND981 billion, and VND2,084 billion. It is denoted that the branch provides a plan for capital mobilization in 2015 and 2016 and the result shows that actual capital mobilization amount is higher than plan or target in these years. In addition, capital mobilization structure of Vietinbank – Hanoi Branch is characterized by customer type, by term, and by currency.

Currently, the branch provides deposit service to 3 different types of customers, including big corporates, SMEs, and Retails. The shares of deposit amount by different customer types is illustrated in the Figure below:

![Pie Chart showing capital mobilization structure by customer types]

**Figure 4.4: Capital mobilization structure by customer types**

Source: Vietinbank’s Credit Report (2017)

Figure 4.4 shows that capital mobilized from Big Corporates consumes the smallest portion which is about 17% of total capital mobilization volume. The largest portion is belonged to Retail segment and it consumes 47% of total capital mobilization volume while SMEs segment consumes 36% total capital mobilization volume.

In addition, capital mobilization structure of Vietinbank – Hanoi Branch is also characterized by term and it includes no term or less than 12 months and more than 12 months. Table 4 shows that most of mobilization size is belonged to no or less than 12 months as term (VND 1,938 billion). Vietinbank – Hanoi Branch also accepts deposit by VND and foreign currency (i.e. EUR and USD). The result shows that most of deposit is VND with VND1,771 billion while deposit by foreign currency consumes small part with VND313 billion.

4.1.4.2. Lending

Lending is traditional banking service along with capital mobilization through deposit service. It is true in case of Vietinbank – Hanoi Branch.
Table 4.4: Lending Size in Vietinbank – Hanoi Branch

<table>
<thead>
<tr>
<th>Criteria VNDb</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total outstanding loan</td>
<td>1,089</td>
<td>1,252</td>
<td>1,382</td>
</tr>
</tbody>
</table>

**By term VNDb**

<table>
<thead>
<tr>
<th>Term Type</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short term</td>
<td>756</td>
<td>869</td>
<td>893</td>
</tr>
<tr>
<td>Long/medium term</td>
<td>333</td>
<td>383</td>
<td>489</td>
</tr>
</tbody>
</table>

**By customer type VNDb**

<table>
<thead>
<tr>
<th>Customer Type</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big Corporates</td>
<td>183</td>
<td>211</td>
<td>232</td>
</tr>
<tr>
<td>SMEs</td>
<td>516</td>
<td>593</td>
<td>655</td>
</tr>
<tr>
<td>Retails</td>
<td>390</td>
<td>448</td>
<td>495</td>
</tr>
</tbody>
</table>

Source: Vietinbank’s Credit Report (2017)

Table 4.4 shows that total outstanding loan in Vietinbank – Hanoi Branch. The first structure of lending in the branch is by term and it includes short term loans and long/medium term loans. It is denoted that short-term loan consumes almost double long/medium term loans. The second structure of lending in the branch is by customer type and Vietinbank – Hanoi Branch is now providing lending services to 3 different customer types. At the end of 2016, total outstanding of big corporates is VND232 billion while total outstanding of Retails is VND495 billion. In addition, total outstanding of SMEs segment consumes largest part that is VND655 billion at the end of 2016.

![Figure 4.5: Shares of SMEs Lending](source)

Source: Vietinbank’s Credit Report (2017)
Figure 4.5 shows that SMEs lending is now consuming largest portion in total lending size of Vietinbank – Hanoi Branch. The shares of big corporates, SMEs, and Retail lending are 17%, 47%, and 36% respectively. In addition, current NPLs of each portfolio is presented in the Figure 4.5 as below:

![Figure 4.6: NPLs of lending portfolio](image)

Source: Vietinbank’s Credit Report (2017)

Figure 4.6 shows that big corporate lending receives lowest NPL compares to SMEs and Retails’ lending portfolio. The NPL ratios of big corporate, SMEs, and Retails are 0.05%, 3.50%, and 2.17% respectively. In addition, the NPL values of big corporate, SMEs, and Retails are VND232 billion, VND655 billion, and VND495 billion.

4.2. Situation of SMEs credit risk management in Vietinbank – Hanoi Branch

4.2.1. Situation of credit activities to SMEs

Lending procedures for SMEs customer in Vietinbank – Hanoi Branch is illustrated in the figure below:
Lending procedures for SMEs in Vietinbank – Hanoi Branch is to follow decentralized underwriting model. The procedure begins with business unit or transaction offices and they take the responsibility of receiving loan application from customers and to fulfill checklists and request customers to provide additional information if any. Risk management unit proceeds the next step and they verify loan application and compared information with the bank’s checklists in term of credit limit, collateral types and values, etc. In case of this credit application passes the checklists, it will be submitted to support unit to finish credit contract and to disburse the loan. Herein, lending procedure for SMEs customers is done within the branch only and it is no independent units to manage this procedure.

As mentioned previously, SMEs lending consumes largest part in total lending portfolio in Vietinbank – Hanoi Branch. It is asserted that the branch provides lending services to SMEs customers based on their business purposes.
### Table 4.5: SMEs Lending Purposes Vietinbank – Hanoi Branch

<table>
<thead>
<tr>
<th>Criteria</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total outstanding loan</td>
<td>516</td>
<td>593</td>
<td>655</td>
</tr>
<tr>
<td><strong>By loan purposes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working Capital</td>
<td>337.1</td>
<td>355.3</td>
<td>381.5</td>
</tr>
<tr>
<td>Project Financing</td>
<td>100.6</td>
<td>137.3</td>
<td>119.9</td>
</tr>
<tr>
<td>Auto Loan</td>
<td>59.1</td>
<td>77.7</td>
<td>107.5</td>
</tr>
<tr>
<td>Credit Card</td>
<td>7.7</td>
<td>7.8</td>
<td>12.1</td>
</tr>
<tr>
<td>Unsecured for Household</td>
<td>11.5</td>
<td>14.8</td>
<td>34.1</td>
</tr>
</tbody>
</table>

Source: Vietinbank’s Credit Report (2017)

Table 4.5 shows that SMEs lending portfolio in Vietinbank – Hanoi Branch has 5 major loan purposes, including working capital, project financing, auto loan, credit card, and unsecured loan for household business. Clearly, working capital is traditional SMEs lending product and it consumes largest volume of SMEs lending in the branch. Project Financing comes at second place with size of VND119.9 billion at the end of 2016 while auto loan for business purpose comes at third place with size of VND107.5 billion. Credit card and unsecured for household business consume smallest part which are VND12.1 billion and VND34.1 billion at the end of 2016.

#### 4.2.2. Credit risk management in lending to SMEs at Vietinbank- Hanoi Branch (2014-2016)

**4.2.2.1. Credit risk management policies**

Currently, credit risk management policies are conducted throughout specific statements in lending policies.

In term of which SMEs entity, Vietinbank – Hanoi Branch provides loans to two different types of customers. The first type is start-up firms which have business licenses from the Government agencies and they have operating cycle less than or equal to 3 years. The second type is micro firms.

In term of credit requirements, there are two detailed schemes. General scheme requires that the firms need to satisfy credit approval checklist and have the credit grading is from BB and above. In addition, the firms need to have proper credit profile or they did not have more than 10 overdue days before or they do not have debt group level 2 in other banks.
and financial institutions in Vietnam. Moreover, when the firms apply loans in Vietinbank – Hanoi Branch, they must utilize at least 3 related products, including saving, tax payment, salary payment, invoice payment, insurance, etc. Finally, the firms need to maintain minimum saving amount at 3% of total outstanding balance in the bank. In addition to general scheme, the bank also applies specific scheme for different type of borrowers. For instance, the bank requires that SMEs need to have proper board of management who have experiences more than 3 years.

4.2.2.2. Credit risk management process

Current credit risk management process in Vietinbank – Hanoi Branch is to follow the process which is proposed by Gestel and Baesens (2009). This process is designed with 4 different steps, including identification, measurement, treatment, and implementation.

Credit risk identification

To understand how credit risk is identified in Vietinbank – Hanoi Branch as well as other branches, the first interview question is conducted as “How to identify credit risk in Vietinbank?” Most of the interviewees assert that they identify credit risk through reporting mechanism. Up to now, reports about credit risk level in SMEs lending portfolio in Vietinbank – Hanoi Branch are prepared by risk management unit and the report provides NPLs ratio by loan purposes. Definition of NPLs is based on SBV’s regulation whether the customers are categorized as Debt Group 3. It is notable that SBV requires commercial banks in Vietnam to provide debt classification with 5 groups and Group 3+ is considered as bad debt and it may lead to financial losses to the bank. Moreover, this report is designed with coverage to different loan purposes, including working capital, auto loan, credit card, and unsecured for household business.

Credit risk measurement

Credit risk measure in SMEs lending portfolio is done through financial and non-financial ratio.
Table 4.6: Credit Grading Model of Vietinbank

<table>
<thead>
<tr>
<th>Type</th>
<th>Financial criteria</th>
<th>Non-financial criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate</td>
<td>Liquidity ratio</td>
<td>Debt service</td>
</tr>
<tr>
<td></td>
<td>Operational performance</td>
<td>Management capacity and other internal factors</td>
</tr>
<tr>
<td></td>
<td>Leverage ratio</td>
<td>Relationship with Vietinbank</td>
</tr>
<tr>
<td></td>
<td>Profitability ratios</td>
<td>Industry factors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Factors affecting business operation</td>
</tr>
<tr>
<td>Financial Institution</td>
<td>Capital adequacy ratio</td>
<td>Environment</td>
</tr>
<tr>
<td></td>
<td>Asset quality</td>
<td>Management capacity, internal environment and</td>
</tr>
<tr>
<td></td>
<td>Liquidity ratio</td>
<td>competitiveness</td>
</tr>
<tr>
<td></td>
<td>Profitability ratio</td>
<td>Ability to maintain business operation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other factors</td>
</tr>
</tbody>
</table>


In term of corporate scoring model, financial criteria include liquidity ratios, operational performance, leverage ratio, and profitability ratios. Non-financial criteria include qualitative assessment in debt services, management capacity and other internal factors, industry risk and competition evaluation, and other factors impacting on business operation of corporates.

In term of financial institution, financial criteria include capital adequacy ratio, asset quality, liquidity ratio, and profitability ratio. Non-financial criteria include business environment, management capacity, internal environment and competitiveness, ability to maintain business operation, and other factors.

Credit risk treatment

Credit risk treatment for SMEs lending is clarified through the fourth interview question “How to treat credit risk issues in Vietinbank?” The discussion with 10 interviewees shows that Vietinbank in general and Vietinbank – Hanoi Branch only apply one technique in credit risk treatment, namely provision and it is based on regulation of SBV.

In terms of types of collateral in Vietinbank, real estate accounted for the highest weight of 62.29%; Plant and Equipment (16.32%); Letter of guarantee (3.69%); Land and
Railway transportation vehicles (3.48%); Contract rights (3.09%); River, Sea and Air transportation vehicles (2.7%); Inventories (1.9%); and other assets accounted for small weights of the total collateral values. According to the manager of credit risk policy department, collateral is considered as the second source of debt payment, which is used when customers face difficulties in business and fails to repay debts. However, the most majority of loans in Vietinbank are secured by real estate, equipment, inventories which is risky, and hard to monitor and manage especially to unsecured loans; moreover, assets formed from loans also account for significant percentage. Collateral quality depends sufficiently on the assessment and valuation experience of staffs, and the collateral monitoring and management depend on the compliance of branches with Vietinbank policies.

Some difficulties relating to collateral valuation and management as followed. The majority of machine and equipment, which account for 60% of secured loans, is synchronous equipment lines which are of high value, low liquidity, and quick depreciation due to quick pace of changing technology. Separated plant and equipment using in coal, printing, packaging and textile sectors...are difficult to monitor and manage. Inventories (which mainly are agriculture products, transportation vehicles...) have the quick price movement, and some types of products require good condition of storage and movement to avoid quality depreciation, and difficult to manage...The problems also raised from intangible assets as contract rights, as well as the management of transportation vehicles. The total loans secured by those types of assets account more than 24.4%, of which the loans secured by assets formed by loans make up 41.7%.

The notable issue is the weights of loans secured by real estate which is 62% total secured loans, of which loans secured by real estate formed by the loans account for 24.1% (mostly are real estate in large production projects).

According to CRO of Vietinbank, real estate has always been considered as the priority assets for branches to take as collaterals. However, he also addressed that the real estate market has recently been frozen in Hanoi and Ho Chi Minh City, and the house prices have declined significantly. The real estate therefore make up significant part of collaterals, of which those formed from loans raise the needs to be revaluated. In addition, he also highlighted that the letter of guarantee also contains significant risks as the potential losses from not conforming the terms while branches have the authority to receive letter of guarantee without the need to propose to the Head Office.
Credit risk management implementation

To identify how credit risk management is implemented in Vietinbank – Hanoi Branch, the fifth interview question “What is implementation process of credit risk management in Vietinbank?” to be delivered. The result of interview with credit risk manager in Vietinbank Headquarter and Vietinbank – Hanoi Branch shows that Loan origination model for SME was divided into 3 appraising channels including Channel A (appraisal at Credit Processing Centers), Channel B (appraisal at Credit Division) and Channel C (approval without appraisal at Business Unit). For Channel A and B, credit underwriting is centralized in two Appraisal units (North and South). Each channel will apply risk policy corresponding to risk level. Risk policy defined by SME Risk includes customer acceptance criteria, credit limit setting formulas, document checklists, collateral requirements including allowed assets and LTV, application scorecards rules, verification procedures (including phone and field) and deviations. The bank is implementing application score cards for 2 sub segment – Micro SME and Middle/Small SME which is developed upon on judgement method.

4.2.2.3. Credit risk management tools

Credit risk measurement for SMEs lending portfolio in Vietinbank – Hanoi Branch is done by using a credit scoring model. This model is based judgement method has been implemented for Vietinbank for more than 5 years under consultant services provided by leading consultant company named as Ernst & Young Vietnam. This model will generate a score which represents for credit risk level of SMEs borrower. This score is calculated from evaluations of financial criteria and non-financial criteria and there are differences between scoring model for corporates and scoring model for financial institutions. There are 10 grades which is presented and explained in the table below:
Table 4.7: Credit Grades in Vietinbank

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA</td>
<td>The customers have high ability to repay monthly installment, including principal and interest repayment</td>
</tr>
<tr>
<td>AA</td>
<td>The customers have less ability to repay monthly installment to the bank without affection from external market</td>
</tr>
<tr>
<td>A</td>
<td>The customers can repay monthly installment and they rarely face up with difficulty to repay from adverse events from external</td>
</tr>
<tr>
<td>BBB</td>
<td>The customers can repay monthly installment but their ability to pay is influenced by external market events</td>
</tr>
<tr>
<td>BB</td>
<td>The customers can repay monthly installment but they are easily affected by internal and external factors</td>
</tr>
<tr>
<td>B</td>
<td>The customers may not repay monthly installment in full amount and their ability to pay is depended on business performance and market condition</td>
</tr>
<tr>
<td>CCC</td>
<td>The customers may miss monthly installment and their ability to pay is depended on business performance and market condition</td>
</tr>
<tr>
<td>CC</td>
<td>The customers are likely to declare bankruptcy and collateral seize is required</td>
</tr>
<tr>
<td>C</td>
<td>The customers cannot pay monthly installment fully and they are bankruptcy</td>
</tr>
<tr>
<td>D</td>
<td>The customers have inability to pay at all and credit losses will be occurred</td>
</tr>
</tbody>
</table>


4.3. Evaluation of factors influencing on SMEs credit risk management of Vietinbank on business p

Evaluation is answered throughout the second interview question as “What are main causes of credit risk in Vietinbank?” To do that, a set of main causes of credit risk issues is provided to 10 respondents and they will make a choice of which are happening in Vietinbank. The result is presented in the table below:
Table 4.8: Main causes of credit risk in Vietinbank – Hanoi Branch and they are determined through the choices of 10 respondents. It is noted that the interviewees can select as many as they want. The result shows that the main cause of credit risk in Vietinbank in general and Vietinbank – Hanoi Branch is limited in credit risk management capacity. Most of interviewees show that they do not receive proper training from head quarter in term of credit risk evaluation and credit risk identification. For example, fraud scanning in lending documents is not provided so that credit officers in business do not have sufficient knowledge to recognize issues. The second cause of credit risk refers to poor loan underwriting and it is true since Vietinbank is still applying decentralized underwriting process which leads to the conflict of interest or fraud happening. Two other causes “Poor lending practices” and “Poor credit assessment” are selected by 4 interviewees. Poor lending practices are happening due to credit officers do not receive proper training while poor credit assessment comes from the fact that Vietinbank is lack of supported information. In fact, some limits on certain counterparty exposure size and group counterparty exposures and incomplete sector limits or concentration limits. Moreover, there are issues from limit structure delegated from Board and limit granting criteria and process for Investments not clear and doesn’t include market risk assessment.
To evaluate senior managers’ perception on safety management, the author has asked them to rating the current situation of credit risk management at Vietinbank. All of managers have strongly agreed that the current credit risk management in Vietinbank is being not successful. The CRO of Vietinbank said that most of the members in the Board of Director and Board of Management are now focusing on the credit growth and high profit but credit risk management. Clearly, if the bank can increase credit risk management levels that dramatically improves credit safety levels too. Furthermore, it is also very interesting when making a relationship between the point of view of Vietinbank’s managers to the theory of cross-cultural organizational management where organizational factors affect to the credit risk outcomes.

The CRO of Vietinbank also said the first role is that the credit and credit risk managers should set the direction for effective health and safety credit management system through a health and safety policy that becomes an integral part of business culture, values and performance standards. The managers also have to protect their employees through management systems and practices that ensure risks are dealt with sensibly, responsibly and proportionately. Moreover, the managers should ensure a system of monitoring is in place so that relevant incidents, events or breaches can be addressed. Finally, they have to perform a formal review on credit risk management performance at least once a year.

The CRO of Vietinbank said that the employees in Vietinbank have not been trained much of about credit risk management or they are being trained but not in-line with the business strategies of the bank in the long run. The author has worked with the Human Resource Management to collect all the training section of Vietinbank in 2011 and the results revealed the fact that there was only one training about risk management in the bank. This training, furthermore, was only the general training not in-depth training so, the author believes that not so many employees in the bank understand clearly about the credit risk management.

The manager of credit risk measurement emphasized that Vietinbank’s employees has not applied modern techniques to measure credit risk level. The managers of credit risk measurement also agreed with the CRO and he said the staffs need continue to train in order to increase the awareness of credit risk management, especially to appraisal staffs who are facing with many potential frauds (such as fraud in documents) that would be leading to credit risk loss in the future.

Currently, Vietinbank has two risk management plans: one is the credit transparently and effectively which is funded by Asian Development Bank (ADB) and other is the Basel II
Roadmap which is funded by the World Bank. While the first project is being carried out in the bank wide, the second project is still in bidding. According to the Directors of branches, in 2016, Vietinbank has carried out seven ADB-funded projects with a total capital of US$92.5 million, including Tea and Fruit Development Project; Rural Development Credit Project; Agricultural Development Programme; Central Region Poverty Reduction Project; Rural Enterprise Finance Project; Quality and Safety Enhancement of Agricultural Products and Biogas Development Project; and Fisheries Infrastructure Rehabilitation Project. These projects have been implemented very effectively. Some of them have finished the disbursement stage and are recovering investment capital.

By the end of the first quarter of 2016, outstanding loans of ADB-funded projects reached VND 2,144 billion (approximately US$113 million), with 52,573 loans were disbursed. Accrued credits as of the end of the first quarter of 2011 were VND 12,972 billion, with 553,088 loan items. Subprojects which receive investment trust funds of ADB are carried out in accordance with provisions on repayment and environmental commitments for each project. Bad debts are kept at as low as 0.67%. These projects have created 906,025 new jobs. 51.5% of subproject owners are women. Being fully aware of the importance of ADB-funded projects, the Director Vietinbank Hanoi Branch has deployed comprehensive solutions to utilise this source of capital transparently and effectively. Since the stage of start-up, the branch has made public notice and coordinated with women's associations and farmers associations to introduce and guide every citizen and every household about the projects. During the process of deployment, Vietinbank periodically examines, supervises and evaluates the projects in order to quickly identify advanced models, good aspects to be promoted and bad sides to be addressed. Besides, Vietinbank Hanoi Branch also builds a complete documentation system to guide implementation, accounting and general/specific provisions for each project to clearly define responsibilities of each unit in the process of appraising and approving loans in accordance with provisions of ADB, the Government of Vietnam and Vietinbank; builds a complete information technology system to ensure rapid and accurate accounting; establishes and maintains a project turnover fund under the regulations.

Vietinbank has provided loans to right borrowers as specified by loan agreements. However, there are two groups of priority for ADB-funded projects. The first group is households doing business in relation to agriculture and countryside, farm owners, and households living on traditional industries. The objectives for this group are too boost labor productivity, increase incomes, improve living conditions, and shift production to
commercialization. The second group is small and medium enterprises serving agriculture and rural areas like purchasers of agricultural products, post harvest service providers, traders, processors, exporters and others.

All credit staffs said that they have to comply with internal regulation of the bank and there is very few cases are put into exception. However, the exceptional cases are still submitted to the Credit Committee to get the approval. They also highlight the fact that Vietinbank has established and implemented the code of conduct for credit officers in the branches. Code of conduct is defined as the standard of expected ethical behavior for the company's employees to follow during working. Normally, it talks about expectations to obey the law, conflicts of interest, insider trading, preserving confidential information, bribery, corporate opportunities, and competition.

The credit staff of Vietinbank Hanoi Branch said that the credit staffs will feel more easy when their managers stand out to protect them in case of the bad debt has happened although the credit officer still complies with the internal regulation of the bank. Thank to the idea of Reason in 1997 of about the blame-free reward culture system also help to encourage employees to report unsafe acts and potential accidents and hazards, the author recognized that high punishment for safety violation is not useful measure to enhance safety situation. According to American Institute of Stress, 60% to 80% of on-the-job accidents are stress related and US industries has loss 75 million working days per year as the result of on-the-job stress and fear punishment hazards with $50 billion in related compensation costs.
CHAPTER 5:
IMPROVING CREDIT RISK MANAGEMENT FOR SMEs AT VIETINBANK- HANOI BRANCH.

6.1. Development orientation of credit operation for SMEs of Vietinbank- Hanoi Branch

It is necessary to examine development orientation of credit operation for SMEs of Vietinbank – Hanoi Branch. Long-term objective of Vietinbank is to provide diversified products and services to SMEs customers in Vietnam. Products and services are designed in accordance with international standards as must-be requirement after Vietnam joined into WTO. In addition to traditional products and services like deposit and loans, Vietinbank aims to provide other products and services for SMEs customers, including payment and cash management, international payment and trade finance, foreign exchange and capital market, internet banking service, card service, and life insurance service.

Table 5.1: Products and Services in SMEs banking in Vietinbank

<table>
<thead>
<tr>
<th>No</th>
<th>Product and Service</th>
<th>Sub-Product Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Deposit</td>
<td>Current account, custody account, overdraft deposit, auto-investment term deposit, multi-purpose investment term deposit, and flexible investment term deposit</td>
</tr>
<tr>
<td>2</td>
<td>Loan</td>
<td>Short-term loans, Mid-term and long-term loans, special loans, and international credit program loans</td>
</tr>
<tr>
<td>3</td>
<td>Payment and cash management</td>
<td>Remittance, receivables management, payables management, cash management, and tax payments</td>
</tr>
<tr>
<td>4</td>
<td>International payment and trade finance</td>
<td>For exporting corporates, importing corporates, and domestic trading corporates</td>
</tr>
<tr>
<td>5</td>
<td>Foreign exchange and capital market</td>
<td>Foreign exchange and derivatives and investment banking service</td>
</tr>
<tr>
<td>6</td>
<td>Internet banking service</td>
<td>Internet banking service through web-based application to transfer money and to make online-repayment</td>
</tr>
<tr>
<td>7</td>
<td>Card service</td>
<td>Card services throughout various card types such as credit and debit cards, etc.</td>
</tr>
<tr>
<td>8</td>
<td>Life insurance service</td>
<td>Life insurance service for employees throughout insurance care services to employees in corporates</td>
</tr>
</tbody>
</table>

Source: Vietinbank (2017)
In the long-run, Vietinbank will make continuous enhancement in its credit operations with the establishment of centralized underwriting center. Example of centralized underwriting process is illustrated in the Figure below:

**Figure 5.1: Centralized Underwriting Process**

Centralized underwriting process involves 6 steps from branch to credit center to credit administration and highest objective of this process is to increase transparency in credit granting process as well as reducing adverse impacts from wrong credit granting decision. In this process, SMEs customers will go to the branch to submit credit application to customer officers. Then, customer officers will review the application throughout specific check-lists and then submitting these applications to credit center. The process in credit center is divided into 3 major sub-steps, including application process, collateral appraisal, and approval. In application process, officers in credit center will review submitted applications and provide verification reports. In case of one loan application is passed verification step, it will be transferred to collateral management department to make collateral evaluation with verification on liquidity and value of collateral assets. It is notable that credit risk management team in Vietinbank will provide different risk appetite to different collateral upon on location (i.e. city or province), collateral type (residential mortgage, car), liquidity or
collateral asset (i.e. easy to sell or hard to sell). If collateral which is pledged for loans meets the bank’s requirements, loan application will be submitted for approval and approval result (i.e. accepted or rejected) will be transferred back to the branch to inform to the customers. Finally, credit administration team will be involved into this process and this team takes the responsibility of preparing credit contract for sign-off between branch managers and SMEs customers.

6.2. Solutions to improve credit risk management for SMEs at Vietinbank-Hanoi Branch

6.2.1. Collect credit risk information

To support credit risk identification or to timely detect potential credit risk issues, Vietinbank – Hanoi Branch needs to collect subsequent information. It is notable that the more information provision, the more analytics to be made up to timely identify potential credit risk issues. One of the most information is to capture the reasons of unfulfillment of credit obligation from the borrowers. It is notable that main causes of credit risk include inadequate supervision of SBV, government’s interference, poor lending policies, lack of adequate credit assessment, underperformance of underwriting process, low capital and liquidity levels, too high lending interest rates, over credit limit given to one customer. Each main cause should be collected and captured by client level and then a report to be made up to identify the main reasons of credit risk within Vietinbank – Hanoi Branch. Moreover, credit risk officers in the branch can rely on different information sources such as Credit Information Center (CIC) to collect credit history of each SMEs customers when they borrowed money from other banks. In addition, subsequent information about customers’ collaterals is important information and it is assurance for future bad debt recovery process. The information related to SMEs credit risk management is also different to the information related to Retail credit risk management. In more detail, guarantors play prominent role in SMEs lending and Vietinbank – Hanoi Branch needs to collect information related to guarantors of SMEs customers.

6.2.2. Invest in technology and modernize the information system of the bank

It is recommended that Vietinbank should invest into electronic system that helps credit risk managers and officers to better monitor current situation of credit risk in lending activities.

Loan Origination System (LOS) will be implemented which supports new credit granting and electronic approvals for credit proposals from customers. The advantages of LOS system are to reduce time to process each loan application as well as increasing transparency in credit granting activities in Vietinbank. Another system refers to a debt collection system and a dialing system which allow the bank to collect bad debt account
efficiently. In more detail, debt collection system will help to allocate bad debt account to collection agencies while dialing system is conducted to make automatic phone calls to bad debt customers and then allocating back to collection agencies. In this context, these systems will increase efficiency in bad debt collection and guarantee for higher bad debt collection amount that contribute directly to reduction of NPLs.

Another system which is worthwhile to invest is credit risk management system. Currently, there are many credit risk management systems that is provided by leading companies in the globe such as Optial SmartStart, GRC Cloud, A1 Tracker, MATLAB, RiskTurn, Active Risk Manager @Risk, etc. With strengthen in financial capability, Vietinbank must invest into one of those systems to further improve its credit risk management. Purchased software will be implemented at branch level and therefore credit risk managers and officers in Vietinbank – Hanoi Branch can utilise this software accordingly.

6.2.3. Analyze and evaluate credit risk level of customer

The process of analyzing and evaluating customers must be based on risk-based pricing. It is modern and common credit risk assessment which is being applied in global financial institutions and commercial banks.

![Figure 5.2: Risk-based pricing versus traditional pricing](image)

Risk-based pricing is different to traditional pricing method. Figure above illustrates both of 2 methods with traditional pricing is on the left-hand side and risk-based pricing is on the right-hand side. One of weakness point in fixed pricing is that most of customers are being applied same lending interest rate when they go to Vietinbank – Hanoi Branch. However, this model is not based on risk level of customer. Therefore, Vietinbank – Hanoi Branch must apply risk-based pricing model with clear detection between high risk customers and low risk customers. It means that high risk customers will receive higher lending interest rates while low risk customer will be benefited by lower lending interest rates. Moreover, risk-based
Pricing model is carried out by applying either Cost-Plus Model or Competitive Model. Cost-Plus Model is data-driven method with quantitative calculation of lending interest rates based on fixed operating cost of Vietinbank – Hanoi Branch as well as estimation of provision of each SMEs customer. However, this model does not utilize market information, leading to the establishment of Competitive Model. Under Competitive Model, Vietinbank - Hanoi Branch will conduct market researcher and collect lending interest rate in other banks. Then, the branch manager will decide the level of lending interest rate given to each SMEs customer.

Currently, Vietinbank has an issue as lack of modern quantitative model to measure credit risk level. In accordance with Basel II’s and Basel III’s framework, it is recommended that credit risk management department in Vietinbank headquarter needs to setup proper model to measure 3 important indicators, including Probability of Default, Loss Given Default, and Exposure at Default. These indicators help to calculate Expected Loss within credit activities. Each indicator will be calculated at branch level and credit risk management in headquarter needs to provide the result to each branch so that branch manager in Vietinbank - Hanoi Branch can understand better about current credit risk level.

In addition, data-driven credit scoring must be implemented with data input about credit profile of SMEs borrowers as well as their business performance. It is notable there are 2 types of credit scoring: one is application credit scoring which is applied for new SMEs borrowers and other is behavior credit scoring which is used for existing SMEs borrowers. Application credit scoring will be applied for new credit granting process while behavior credit scoring helps to detect high potential credit risk from pools of SMEs borrowers and then subsequent plans are developed to reduce negative from those cases.

Use collection analytics to make sure Vietinbank runs the most efficient collection process with resources to be available. Increasingly, collection activities depend on the principles as being applied in account management – delivering an accurate, timely, and relevant offer to the customers while maintaining valued customer relationship and producing profit for the bank.

Advanced credit risk analytics can be used as following: probability of default, value at risk, expected roll amount, and expected collected amount. Credit risk analytics can drive decision process and segment customer based on risk level. Once segmented, Vietinbank can determine the actions and timing of collection activity. Econometric model can be built to measure any number of collection measures. Analytical models can predict with a high degree of accuracy whether the account is not likely to roll to higher bucket. Analytic model can also
add how much a delinquent account is not likely to pay after specific time interval and how much a delinquent account is self-cured without taking any actions.

Credit risk treatment is required to reduce level of NPLs in Vietinbank – Hanoi Branch. A quick solution is provided in the context of Vietinbank needs to improve further internal debt collection process. Up to now, Vietinbank relies on debt collection which is decentralized and setup in branch level and it may lead to high conflict of interest due to credit officers in the branches take the responsibilities of opening new loans as well as collecting bad debt accounts. Therefore, it is recommended that Vietinbank conducts a centralized debt collection center to collect money from uncommitted accounts.

Collection system allows to create and to maintain workflow based on certain criteria. The workflow setup in collection system must be easy in term of process establishment and amendment to react quickly with changes in SME Business.

Collection system requires the support from IT Department to transfer the data from core banking system, the support from BIC to update all available phone number of customers from standalone systems to single source.

In addition to internal workflow, collection system must include the functions of establishing different contact channels to the customers such as email or SMS or Letter. Collection system needs to support predictive or auto dialer campaign and it also allows to make Interactive Voice Message (IVM) to the customers in specific time interval.

![Figure 5.3: End-to-End Collection Workflow](image)
The supervisor in collection and recovery system needs to aware about real time performance of their agencies. The system used in collection workflow, therefore, should generate operational reports in real-time to ensure that all agents are working properly. Real-time performance tracking is generated by different perspectives such as queue level, customer level, loan account level, agent level, and team level. Collection system allows to prioritize workloads with prioritization rules. The rules must be flexible enough to cope with changes in SME Business and allow to use any data associated with customer level such as application score and behaviour score. Collection system allows to group all individual account of one borrower into single group so workload prioritization can be undertaken by customer level. Workload prioritization can be conducted at product level in case of high roll forward rate from product type in the bank.

Collection strategies are developed for retail business segment with differentiation among two subsets, including secured and unsecured lending.

SMEs collection workflow includes call action. It includes gentle reminder call before due date and harder call after overdue. Different collection strategies with different contact channels will be applied automatically for Low Risk and High Risk. Dialing strategy is important part of collection strategy for SMEs segment. It determines how to allocate portfolio, call scripts to customers, and intensity of call per customer.

Dialing strategy must be allocated to Individual Queue and Team Queue. Individual Queue receives fixed portfolio. Team Queue receives one portfolio and the allocation to each agent is random. It is also set upon on portfolio and queue is separated by region, secured, unsecured, and bucket. Moreover, work-flow driven scripts are required to process the accounts based on collection process. The scripts are based on several factors related to the account, such as: customer data, account data, collateral data, collection history, etc.

Collection workflow includes field management which cover the cases with 30+DPD. Field strategy does not require to have 100% of customers to be field but focusing on value of loan exposure customers with geographic distance to field location within 100 kilometers. In the long run, high technology shall be applied to monitor field efficiency and compliance. Major technology is Global Positioning System (GPS) that helps to track field agent in real-time.

It is recommended that a proper debt collection center will be separated in between early debt collection and late debt collection with trigger point depended on customers’ default point. After customers pass a default point, they will be transferred to Asset
Management Company (AMC) of Vietinbank to apply higher actions or even collateral seize to increase collected amount.

Another possible solution in term of credit risk treatment is to write-off cases which have long time in bad debt situation. The write-off activities must be strictly followed rite-off policies which are set by SBV. Vietinbank – Hanoi Branch also needs to consider using debt outsourcing services from external agencies. When using this service, the bank needs to pay fees based on collected amount or recovery rate.

Finally, credit risk treatment throughout collection activities comes along with effective capacity planning. Capacity planning is based of capacity model that considers collection strategy, assumptions on productivity and volumes. Collection capacity is fully aligned with business growth plan. Collection targets for early collections and recoveries are defined for each month, each product, each delinquency bucket. Targets are derived from business plan. Collections results are monitored monthly and reported on Collection committee and BOM meetings.

To further improve credit risk measurement, another solution is made up in accordance with credit risk management implementation. It is recommended that proper credit risk management culture must be conducted and setup in bank wide level as assurance for credit risk management implementation.

To do that, it is required the branch’s manager to actively participate into credit risk management process. For instance, the branch’s manager needs to establish and to involve into weekly meeting with credit officers to review current credit pool to SMEs customers. The objective of this meeting is to ensure that current SMEs borrowers are paying well and to detect potential threats from unpaid SMEs customers.

Branch’s manager needs to coordinate with supporting divisions in Vietinbank headquarter in term of new credit policies in both of internal and external market changes. The manager will communicate with his or her followers at the branch to ensure that they will strictly follow up new credit policies as well as reducing incompliance.

Vietinbank – Hanoi Branch should develop credit risk management evaluation with the balance between time to make an evaluation and the content of evaluation. Generally, each branch manager needs to conduct credit risk management evaluation at least once per month. In addition, ad-hoc evaluation will be conducted in case of specific cases or big amount to be disburses or fallen into bad debt bucket.

In addition, Vietinbank – Hanoi Branch needs to provide clear and candid content for credit risk management evaluation. The evaluation should cover credit limit check, credit
history in case of SMEs customers have loans in another financial institutions and commercial banks in Vietnam, current repayment behavior of SMEs customers, and up-to-date information in term of business performance and financial strengths of SMEs customers.

Vietinbank should establish 2 dimensional risk target setting: 1) Annual business plan sets financial risk targets on portfolio level – provision costs, NPL, Collection Roll Rate, Recovery rate and recovery amount of AMC. 2) Each product has risk limit and risk triggers.

SME Risk analysts does periodical monitoring (portfolio view and vintage view) as well as specific analysis to suggest corrective actions. Based of analysis, SME Risk Policy team collaborates with SME Business to amend policy. Early warning system (EWS) should be developed by Modeling and Credit review and Fraud reports are also useful tools in portfolio management. EWS was also used for cross-sale and top-up activities. SME risk department needs to strongly cooperates with other units, like Collections, CPC, Fraud investigation, Credit review, Operational risk, Internal audit, Post Disbursement Monitoring – to improve knowledge of SME portfolio and address risk issues.

6.3. Recommendations

It is recommended that State Bank of Vietnam (SBV) needs to establish a green credit growth and environmental social risk management in credit granting activities in Vietnam’s financial institutions and commercial banks. To do that SBV needs to conduct a long-term plan that requires every unit in SBV and other entities (i.e. commercial banks, finance companies, financial leasing companies, cooperative banks, foreign bank branches) in Vietnam banking system to strictly follow or to perform following tasks.

First, SBV needs to monitor and to amend legal framework in accordance with changes in credit environment. The legal framework covers Credit Institution Law and supervision of SBV’s Banking Supervisory Agency. A long-term financial sector strategy must be established to support Socio-Economic Development Plan (SEDP) which is set by the Government during period 2013-2020. The objective of financial sector strategy is to build a healthy financial system, to measure and to manage the operations of financial system under safe and sound conditions, to stabilize macro-economic performance throughout 2 major instruments, including monetary and fiscal policies, to manage financial resources effectively, to conduct administrative and operational reforms in State-Owned Banks, and to leverage effectiveness and validity in financial management and banking supervision.

Second, the major concerns in Vietnam banking system refers to the heavy of State’s management and old administrative culture in State-Owned Banks. While these banks are still consuming large quantum in overall banking system, it is a concern of lack of transparency
and modernization will lead to inefficiency in banking operations and higher bad debt. In this context, SBV needs to foster equitization process in State-Owned Banks.

Third, SBV needs to strengthen the operation of Vietnam Asset Management Company (VAMC) to better collect money from bad debt accounts. It is notable that VAMC has been going to operation since 2013 and the operational efficiency of this company is still questionable. To further improve the effectiveness of VAMC, SBV should provide clear objectives to that company, including quickly resolving bad debts and encouraging debt selling or bad debt restructuring. The ultimate objective of VAMC is explained through the country’s NPL level at below 3%. In addition, SBV should apply new financial instrument into operation of VAMC. Herein, it is recommended that a special bond with zero coupon and 5-years of maturity is put into place. This special bond can be used as collateral for SBV refinancing and it must be written off 20% each year.

Fourth, SBV should provide clear definition and guidance in term of Bankruptcy Law. This law is extremely important in modern banking system and it is being applied in many developed countries. Under that law, a legal framework is established to support secured asset transaction and it allows to make auction bad debts by market-orientation. In addition, SBV needs to enhance the role of debt collection outsourcing companies to support debt collection for unsecured loans. It is worth to denote that most of banks in Vietnam and even VAMC are dealing up with higher volume of unsecured bad debt accounts and the roles of debt collection outsourcing companies, therefore, is more visible to help reduce NPLs in overall banking system.

Fifth, SBV needs to pay attention to modernize of banking operation throughout the increases in foreign investment ratio in local financial institutions and commercial banks. Up to now, the cap of foreign investment ratio is regulated in Decree 01 which is provided to replace Decree 69 before. The new regulation allows foreign investors to increase ownership up to 30% which is aligned with Vietnam’s World Trade Organization commitments. Such action ensures the presentation of foreign owners in local financial institutions and commercial banks with high expertise and therefore attaining modernization in banking operations.

Vietinbank Headquarter plays prominent role in improving credit risk management in its lending system. Some recommendations are made up to further improve effectiveness of credit risk management in Vietinbank.

First, Vietinbank should perfects its internal lending regulations to SMEs customers with the application of internal supervision process and credit risk management under Basel
II’s and Basel II’s framework. This framework requires the bank to make clear definition and the classification of bank’s assets. Especially to SMEs’ lending portfolio, Vietinbank Headquarter needs to make clear lending policies to different lending purposes, including project finance, objective finance, commodities finance, income-producing real estates, and high-volatility commercial real estates.

Second, Vietinbank Headquarter must further improve its internal accounting system. It is notable that Vietinbank is following National Accounting Standards which are set by Vietnam Ministry of Finance. However, the next stage of development refers to the application and the implementation of Internal Financial and Reporting Standards (IFRS) to ensure transparency in accounting system. Vietinbank Headquarter needs to strengthen the operation of internal audit which is perceived as independent supervision of credit granting and credit monitoring activities.

Third, modern administration technologies need to establish and all credit activities must be put into daily monitoring from head quarter’s units. It allows the reduction of fraud in credit granting as well as timely addressing the potentials of credit risk issues within the bank. Another solution refers to the application of collection system and dialing system into internal collection department of Vietinbank to ensure that bad debt accounts are impacted in time and therefore enhancing collected amount from those cases.
APPENDIX

Interview Question

1. How to indentify credit risk in Vietinbank?
2. What are main cause of credit risk in Vietinbank?
3. How to measure credit risk issues in Vietinbank?
4. How to treat credit risk issues in Vietinbank?
5. What is implementation process of credit risk management in Vietinbank?
LIST OF REFERENCES


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