Factors Affecting The Credit Growth of Vietnamese Commercial Banks

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Abstract
This research analyzes the factors that affect the credit growth of the Vietnamese commercial banking system. This study use data from the annual reports and financial statements of 16 commercial banks listed on the HOSE, HNX, and UPCOM exchanges that have operated continuously from 2011 to 2020. Two linear regression models were employed with two dependent variables: the credit growth rate and credit size. The findings indicate that credit size in the previous period, the annual growth rate of capital mobilization, bank size, and return on assets (ROA) positively affect the credit growth of Vietnamese commercial banks while liquidity ratio negatively affects them. Also, the bad debt ratio's effect on credit growth is unclear. Hence, some suggestions and recommendations are given for commercial banks to maintain stable, safe, and sustainable credit growth.

Keywords:
credit growth, bank, finance

INTRODUCTION

In a market economy, bank credit is not only an economic lever but also an instrument used by the government of a nation to adjust its economy (Ananzeh, 2016). It regulates production, divides social labor, adjusts the amount of issued and circulated money, effectively uses temporarily idle capital flows in society, reduces inflation, and stabilizes the purchasing power of money. Obviously, through the role of credit in the operation of commercial banks and credit institutions under the market mechanism of the government's macro-management, bank credit has promoted economic growth, facilitating entities, financial organizations, and individuals with capital for effective production and business performance. It contributes to socio-economic development and curbs inflation. However, if it is not strictly controlled, it can cause an imbalance between money and goods, resulting in high inflation. Therefore, it is essential to determine the factors that affect banks' credit growth.

The world economic crisis in 2008-2009 severely affected the economies of most countries, including Vietnam. Specifically, during this period, Vietnam's GDP growth was low, inflation was high, and many enterprises operated at a loss. These led to bankruptcy and an increase in bad debts that affected the business activities of the entire banking system. After the global economic crisis, the credit growth of Vietnam's banking system in 2009-2010 increased relatively high compared to 2008. From 2009 to date, the credit growth has been unstable: sometimes it grows very high and decreases at other times. 2020 is considered a year of great difficulties and challenges for the world economy and Vietnam specifically. The COVID-19 pandemic has complicated progress, disrupting the socio-economic activities of all countries worldwide alongside the US-China trade war. Natural disasters and pandemics significantly impact Vietnam's economy and its people's lives. In 2020 the credit growth of Vietnam's commercial banking system only reached 12.17% compared to the end of 2019. After increasing continuously from 2013 to 2016, this is the lowest growth rate since 2014 to date.

Figure 1. Credit Size and Credit Growth of the Banks from 2011 -2020
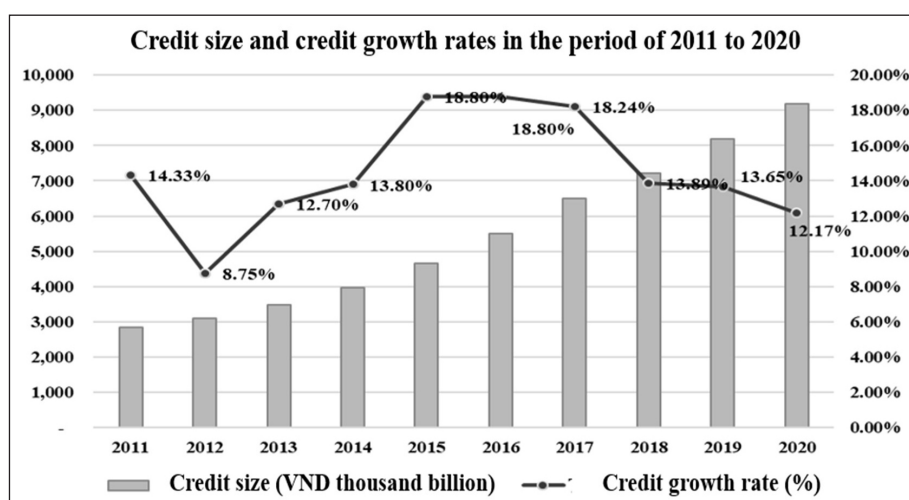
Source: The State Bank of Vietnam (2011 to 2020)

Credit growth is generally affected by two main factors: macro-factors and micro-factors. In practice, many studies have investigated the relationship between credit growth and its influencing factors in the scope of countries worldwide, particularly Vietnam. Some of these studies include those of Tamirisa & Igan (2008), Aydin (2008), Inekwe (2010), Tracey & Leon (2011), Guo & Stepanyan (2011), Laidroo (2012), Imran & Nishatm (2013), Abid et al. (2014), Rabab'ah (2015), Dhar & Bakshi (2015), Singh & Sharma (2016), Pasaribu & Mindosa (2021). Another study was also done in Vietnam, such as Dao et al. (2020) and Duong & Yen (2011).

For macro-factors, economic growth leads to higher credit growth and high inflation (Kremer et al., 2013). Domestic and foreign funding also contributes positively to credit growth (Guo & Stepanyan, 2011; Pasha & Bastanzad, 2015). Countries' monetary policies are also factors that affect credit growth to varying degrees (Abuka et al., 2019; Mahrous et al., 2020). In the study of Pham & Nguyen (2020), credit expansion even had a negative impact on economic growth in Vietnam in the long term.

Within the scope of this study, the authors focus on the factors affecting the credit growth of commercial banks in Vietnam. In the context of the country, the macro factors affecting the banking system's credit growth are assumed to be the same. Therefore, this study is interested in the effects of micro factors, internal features of the banks such as credit growth in the previous period, bank size, bad debt ratio, liquidity ratio, and ROA. The research question of this study is: What factors affect the credit growth rate of the banking system of Vietnam, and which policies should be imposed to promote the stable credit growth rate of the banking system? The credit growth of Vietnam's commercial banking system changes continuously. These determinants of credit growth can change over different periods. In this study, we used data from 2011 – to 2020 to update the banks' data and make policy recommendations appropriate for this period.

METHODS

Along with the development of the economy, credit activities in Vietnam are also growing and becoming perfect. Banks' credit activities play a crucial role in generating income for banks and stabilizing and developing a country's economy. Therefore, unstable credit growth will affect not only the banking system but also the whole economy of a nation (Pawłowska, 2016). Credit growth is always the top concern for the Vietnamese commercial banking system because reasonable and qualified credit growth will create a stable and safe source of income for the banks and promote national economic growth. However, if it is not strictly controlled, it can cause an imbalance between money and goods, resulting in high inflation. Therefore, it is essential to find out the factors that affect the banks' credit growth.

In the entire world Vietnam inclusive, many researchers have been studying this problem, such as Tamirisa & Igan (2008), Aydin (2008), Foos et al. (2010), Laidroo (2012), Tracey & Leon (2011), Guo & Stepanyan (2011), and Singh & Sharma (2016). In general, credit growth is influenced by two main factors: external macroeconomic

factors and internal micro factors within the banks. Within the scope of this research, we look at the primary influence of micro factors inside the banks (such as credit growth in the previous period, bank size, bad debt ratio, liquidity ratio, capital mobilization rate, and ROA) on the credit growth of Vietnamese commercial banks. It is based on the assumption that in a country and the same period, the influence of macro factors on credit growth is the same for all commercial banks.

To analyze the factors affecting the credit growth of Vietnamese commercial banks, we apply linear regression models with two dependent variables, namely the credit growth rate and credit size. In contrast, the independent variables are the micro factors inside the bank. The study proposed two research models with the following general form:

Model 1: Dependent variable is the credit growth rate

$$\text{Credit\_Gr}_{i,t} = \beta_0 + \beta_1 {}^*\text{Credit\_Gri}_{,t-h} + \beta_2 {}^*\text{Size}_{i,t\text{-}}h + \beta_3 {}^*\text{NLP}_{i,t-h} + \beta_4 {}^*\text{LIQ}_{i,t-h} + \beta_5 {}^*\text{ROA}_{i,t-h} + \beta_6 {}^*\text{Deposit\_Gr}_{i,t-h} + \varepsilon_{it}$$

Model 2: Dependent variable is credit size

$$\text{LnLoan}_{i,t} = \beta_0 + \beta_1 {}^*\text{LnLoan}_{i,t-h} + \beta_2 {}^*\text{Size}_{i,t-h} + \beta_3 {}^*\text{NLP}_{i,t-h} + \beta_4 {}^*\text{LIQ}_{i,t-h} + \beta_5 {}^*\text{ROA}_{i,t-h} + \beta_6 {}^*\text{Deposit\_Gr}_{i,t-h} + \varepsilon_{it}$$

The authors could not collect all data on the Vietnamese commercial banking system; thus, they used a database sample of 16 commercial banks officially listed on three exchanges (HOSE, HNX, and Upcom) from the period 2011 - to 2020. The microdata was collected from annual reports and audited financial statements of commercial banks. The data are in the form of panel data.

Many factors affect Vietnamese commercial banks' credit market speed, from quantifiable to non-quantifiable factors. To evaluate the influence of the factors on the credit market of Vietnamese commercial banks, the method used in this article is the quantitative method. This study mainly used regression models, with the dependent variables being the annual increase/decrease in the credit balance and the loans of customers. In addition, the independent variables include micro factors inside the banks such as credit growth in the previous period, bank size, bad debt ratio (NPL), liquidity ratio (LIQ), the annual increase in mobilized capital, and return on total assets (ROA).

Many methods are used to estimate the model, such as Pooled OLS, FEM, and REM. However, one drawback of the three models (Pooled OLS, FEM, and REM) is that they cannot handle the latent endogeneity due to simultaneity and omitted variables. The simultaneous effect shows a two-way causal relationship between dependent and independent variables. It means that the banks' credit growth can have the opposite effect on the factors inside the bank (bank size, debt-to-equity ratio). Thus, the regression of these variables can be correlated with random error leading to endogeneity. In the model, the independent variable is used as the lagged variable of the dependent variable. In other words, the model contains endogenous variables.

Moreover, the data used in this research were only collected on 16 listed commercial banks over ten years (T<N). Therefore, the appropriate research method is the Feasible

Generalized Least Squares (FGLS). The FGLS estimation model will overcome the outstanding drawbacks of the three Pooled, FEM, or REM models.

Research data are in the form of panel data. In the scope of this research, data of 16 commercial banks officially listed on three exchanges (HOSE, HNX, and UPCOM) are aggregated, corresponding to the period of 2011-2020. In addition, microdata is collected from annual reports and audited financial statements of commercial banks.

RESULTS AND DISCUSSION

Within the scope of this research, we analyzed four models, POOLED OLS, FEM, REM, and FGLS, respectively, with two dependent variables of Credit_Gr and LnLoan. However, as stated above, the FGLS model can effectively and almost wholly overcome the defects of the remaining models. Therefore, the FGLS model was chosen as the empirical outcome decision model, while the remaining models were used for comparison to check the empirical stability. The specific estimation results show in Table 1.

Table 1. Estimation Results of Factors Affecting the Credit Growth of Vietnamese Commercial Banks

Variable	FGLS (Model 1: Dependent variable is Credit_Gr)		FGLS (Model 2: Dependent variable is LnLoan)	
	Coefficient β	P-value	Coefficient β	P-value
$Credit\_Gr_{i,t-1}$	0.225***	0.000		
$LnLoan_{i,t-1}$			0.531***	0.000
$Deposit_{i,t}$	0.556***	0.000	0.120***	0.000
$LnSize_{i,t}$	-0.026**	0.050	0.489***	0.000
$NPL_{i,t}$	-1.230**	0.046	-0.205	0.360
$LIQ_{i,t}$	0.038	0.585	-0.264***	0.000
$ROA_{i,t}$	0.366	0.769	0.743*	0.089
C	0.195	0.021	-0.119	0.001

*, **, *** statistically significant at the 10%, 5%, and 1%, respectively

Source: The authors' estimation

The research results by the FGLS method in the model with the dependent variable Credit_Gr show that the speed of Credit_Gr in the previous period, Deposit has a positive influence on the Credit_Gr of Vietnamese commercial banks and is consistent with the initial hypothesis. Bank size and bad debt ratio have negative effects on Credit_Gr. However, according to the initial hypothesis, bank size positively affects Vietnamese commercial banks' credit market. Meanwhile, there is no evidence of the influence of the remaining variables on the banking Credit_Gr.

However, the research results using the FGLS method in the model with the dependent variable LnLoan show that the variables such as LnLoan in the previous period, Deposit, LnSize, and ROA have a positive influence on the credit market of Vietnamese commercial banks. Besides that, LIQ has a positive influence on the credit market of

Vietnamese commercial banks. Only the NPL variable does not affect the bank credit market. At the same time, for this model, the Pooled OLS, FEM, and REM models mostly have similar results to the results of the FGLS model. This result confirms the reliability of the quantitative research results according to the FGLS method.

After applying the regression model by the FGLS method, both models with dependent variables Credit_Gr and LnLoan are statistically significant and overcome the defect of variance and autocorrelation in the model. However, according to model 1 (the dependent variable, LoanGr), the regression results show that only three variables are statistically significant and consistent with the original research hypothesis. On the other hand, according to model 2 (dependent variable, LnLoan), five variables are statistically significant and consistent with the original research hypothesis. Therefore, in the scope of this research, we select model 2 with the dependent variable LnLoan to analyze the factors affecting the credit growth of Vietnamese commercial banks.

$$LnLoan_{i,t} = -0.119 + 0.531* LnLoan_{i,t-1} + 0.120* Deposit_{i,t} + 0.489* LnSize_{i,t} - 0.264* LIQ_{i,t} + 0.743* ROA_{i,t} + \varepsilon$$

Based on the regression results in model 2, we can explain the relationship between micro factors and credit growth of Vietnamese commercial banks as follows.

Firstly, the credit balance of the previous period has a positive effect on the current period's credit growth of the banks. As analyzed above, commercial banks operate on the principle that the following year's targets must grow higher than the previous one. Based on the previous year's performance, the headquarter assigns new targets to each branch to ensure that income fund, salary, and bonus are given to each employee. The bank's management must find all solutions to achieve the targets. Credit growth is one of the most important targets that the headquarter assigns to the branch. As a bank is a financial intermediary specializing in the borrowing, lending and income from credit are the sources that account for a high proportion of the bank's profit structure. Therefore, the credit size of the previous year positively affected the current year's credit growth of Vietnamese commercial banks. It is also the factor that significantly affects credit growth among all the factors. Therefore, to achieve the credit growth target, it is necessary to pay special attention to this factor.

Secondly, the annual growth rate of mobilized capital has positively influenced credit growth. The research results of Tamirisa & Igan (2008), Guo & Stepanyan (2011), and Duong & Yen (2011) show the same outcome. Specifically, within the scope of this research, when the growth rate of mobilized capital in the year increases by 1%, the credit growth of Vietnamese commercial banks also increases by 0.12%. The bank is an intermediary organization acting both as a borrower and a lender. It means that banks mobilize idle capital of organizations and individuals in the economy to make loans and invest in organizations and individuals that are temporarily short of capital. Therefore, when a bank has a large enough mobilized capital, it has more sources to lend. Banks will promote searching for new customers who need to borrow capital to use the mobilized capital effectively. It will affect its business performance if it is not

possible to lend out while the bank still has to pay interest on deposits to customers. Therefore, when mobilized capital increases, it will promote the banks' credit growth.

Thirdly, bank size has a positive effect on the credit growth of Vietnamese commercial banks. The results of this research are consistent with those of Singh & Sharma (2016). So far, reputable large banks and highly qualified personnel will quickly mobilize capital and then expand credit granting to entities in the economy. Therefore, it will increase the credit growth rate of the banking system. Specifically, within the scope of this research, when the bank size increases by VND 1 billion, the credit growth of Vietnamese commercial banks increases by VND 0.489 billion. Thus, based on the theoretical background and the results of the regression research along with the actual situation in Vietnam, we can conclude that the bank size has a positive effect on the credit growth of Vietnamese commercial banks.

Fourth, the bank liquidity ratio negatively affects the credit growth of Vietnamese commercial banks. This result is similar to Tamirisa & Igan (2008) and Tracey & Leon (2011). Specifically, when the bank liquidity ratio increases by 1%, the credit growth of Vietnamese commercial banks decreases by 0.264%. Due to the characteristics of the banking sector, during their operations, commercial banks must always maintain a minimum amount of cash to meet the withdrawal needs of customers promptly. Therefore, the higher the liquidity ratio, the lower the loan ratio. Specifically, the higher the liquidity ratio, the lower the credit growth. In other words, the liquidity ratio has a negative effect on credit growth.

Fifth, return on assets (ROA) positively affects the credit growth of Vietnamese commercial banks. The results of this research are consistent with those of Laidroo (2012). With the same level of invested assets, a larger ROA shows more profit generated by the banks. The profit of Vietnamese commercial banks is mainly from credit-granting activities. In other words, ROA has a positive effect on the credit growth of commercial banks. Specifically, within the scope of this research, when ROA increases by 1%, the banks' credit growth increases by 0.743%.

According to the research results, the annual growth rate of mobilized capital positively influences the credit growth of Vietnamese commercial banks. In addition, capital mobilization is an important activity, contributing to the banks' credit scale expansion. To grow the mobilized capital, banks need to regularly train customer communication skills for staff to provide them with an appropriate point of view on their position and role and be well behaved to handle different situations for each type of customer. It is to avoid dissatisfying those fastidious customers. In particular, the bank tellers are the face of the bank, so it is necessary to choose young, dynamic, devoted, and good-looking staff to do customer transactions to make an impression and create sympathy for customers. In addition, staff must practice cross-selling skills to exploit customers' needs thoroughly.

Banks need to keep a close eye on their operational areas, maintain good relationships with local authorities and agencies to exploit the number of potential customers fully,

and take advantage of their relationships to look for more new customers. The bank capital mobilization products need to be diversified and improved regularly based on the needs of depositors to meet customers' needs best. That will attract more customers with different needs. Besides, it is also essential to apply remuneration policies and take care of customers. Specifically, there is a need to have a separate customer care department that regularly sends text messages to keep in touch with their customers and congratulate them on special days such as holidays and birthdays. Moreover, the banks should give gifts to their customers or organize lucky draw programs for them.

To make each staff member have self-discipline and be highly responsible, the bank leaders can assign capital mobilization targets to each staff member. At the same time, they need to organize and launch emulation movements to encourage staff morale regularly. Also, the banks should invest in communication and brand promotion such as logos, billboards, posters, and leaflets. They should regularly support social security projects to improve their reputation and image. In addition, they need to pay special attention to the balance between capital sources and capital used to achieve the best business performance. They should also ensure that the liquidity ratio is reasonably aligned with their business objectives in each period.

CONCLUSION

In the operation of the banking system, credit growth is one of the top targets that commercial banks must obtain. Credit activities have a significant influence on the financial position of the banking system. Therefore, it is necessary to provide a reasonable level of credit growth. Before making a credit growth plan, banks must consider many factors to decide the next growth rate. Research results show that credit growth is affected by credit size in the previous period, the annual growth rate of capital mobilization, bank size, liquidity ratio, and return on assets. Therefore, to develop a reasonable level of credit growth, the banks' planners, in addition to bank size and the previous year's credit growth rate, need to pay attention to the factors discussed.

Irrespective of the results obtained, the study still has certain limitations. In recent times, the operations of commercial banks in Vietnam have been facing many difficulties. Some commercial banks are subject to special control by the State bank. Therefore, the research data obtained are relatively up-to-date (2011-2020) but not complete for all commercial banks in Vietnam. Besides the quantitative variables, other qualitative factors are assumed to affect the credit growth of Vietnamese commercial banks. The factors such as interest rates, factors related to the marketing activities of the bank, policies of each bank, and even the management quality. Hence, if the data are available for further studies, it is necessary to include more data on all commercial banks in Vietnam. The data collection period should be extended, and variables representing the unique characteristics of each bank need to be added to identify better the factors affecting the credit growth system of commercial banks in Vietnam.

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