“Factors affecting non-performing loans of commercial banks: the role of bank performance and credit growth”

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FACTORS AFFECTING NON-PERFORMING LOANS OF COMMERCIAL BANKS: THE ROLE OF BANK PERFORMANCE AND CREDIT GROWTH

Abstract

The recent crisis of non-performing loans in the banking system has hit the Vietnamese economy hard. The GDP has been fallen down, while the bad debt ratio in the banking system has risen dramatically to 17.2 percent, and it takes more time to restore the economy and banking system. This research aims to define aspects that impact non-performing commercial bank loans in Vietnam. It covers the period of 2008–2017 using 200 identified banks of Ho Chi Minh City Stock Exchange and Hanoi Stock Exchange, and applies methods based on the regression of pooled ordinary least squares, fixed and random effects models, in particular, generalized least squares to confirm the stability of the regression model. The results show that non-performing loans this year will positively affect those in the next year. In addition, a raise in bank performance and credit growth also leads to the reduction in non-performing loans from banks. Regarding macroeconomic factors, higher interest rates would have a major and beneficial influence on failed loans in terms of macroeconomic dynamics, and, therefore, little effect on economic activity and inflation. Therefore, Vietnamese banking system should reduce the systematic risk and improve monitoring processes, drawing on the experience of global banks with extensive experience in risk management.

Keywords performance, bad debt, generalized least squares, robustness check

JEL Classification B26, G31, G32

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INTRODUCTION

Over the last decades, several banking problems have emerged all over the globe. Following the failure of Lehman Brothers and Fannie Mae and Freddie Mac, the subsequent global economic disaster of 2007–2008, which was adversely activated by the liquidity bubble due to a rapid sharp decline in the supply of capital or liquidity from banks and other borrowers of U.S. subprime mortgages, influenced an economic downturn and turmoil on world markets. Because of bad lending debts and economic downturn, income in Vietnam's banking industry deteriorated remarkably during the 2012–2015 era. More precisely, the bad debt ratio in the country's on-balance sheet of commercial banks has risen dramatically to 17.2 percent, although the entire mechanism would retain a reasonable 2 percent or less of the previous stages' bad debt ratio (Abbas, V.C. Nguyen, Yanfu, & H. T. Nguyen, 2020; Le, Dao, V. C. Nguyen, & X. D. Nguyen, 2020).

It is believed, according to Badar and Javid (2013), that if the financial system becomes ineffective and dysfunctional, which is reflected mainly through the activity of the state budget, it will be

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impossible for a country's economy to grow sustainably. To reduce such deficiencies, the government in general, and the central bank in particular, are quite concerned that bad loans from banks, particularly joint-stock commercial banks, have occurred, so the central bank has provided the legal and policy structure that commercial banks are attempting to enforce. At the same time, banks also tried to introduce many practices to regulate standard rules for limiting bad debts in the credit extension process. Bad debts will have an impact on liquidity risk in commercial banks, lower operating profit, and bank customer credibility (Dao, Pham, & Nguyen, 2020; H. T. Nguyen, Tran, Le, & T. H. Y. Nguyen; T. H. Nguyen, T. H. Y. Nguyen, Le, Vo, & T. V. Nguyen). Non-performing loans (NPLs) are described as the "blood clot" of the economic system, since bad debt puts banks in danger of bankruptcy, as some conventional scholars have done in their work on bankruptcy stimuli (Barr & Siems, 1993; Demirgue-Kunt, 1989; Kamran, Haseeb, V. C. Nguyen, & T. T. Nguyen, 2020).

Researchers and financial experts are still working on NPLs and their enormous impact on growth and the banking sector in particular, such as deflation, inflation, interest rate, exchange rate, GDP creation, credit demand, capital adequacy, unemployment, asset returns, bank size, credit loss reserves, etc. It is also important to acknowledge that the financial sector has various variables affecting the bad debt. In the case of Vietnam, work on the bank's bad debt and its consequences are needed. In the case of Vietnam, it would enable policymakers and bank managers to develop risk-reduction policies and solutions by conducting a research on commercial banks in 2008–2017, which will help reduce bad debt and improve banking efficiency.

1. LITERATURE REVIEW

As per the Basel Committee, it should be noted that the nonperforming loans are debts whose lenders fail to satisfy the debt-recovery obligation of a bank for more than 90 days. The International Monetary Fund (IMF) further notes that if credit rates have been discussed, restructured, or expanded as negotiated, bad debt only accounts for the loans, which will be repaid with interest and principal for 90 days or more than 90 days. By contrast, Rottke and Gentgen (2008) clarify that there is no generic concept of bad debt and indicate that such loans should be viewed in a specific and detailed way. For a specific sense, it is about outstanding loans that are not payable for longer than 90 days. All loans are often of low interest in a wide context, Dao, Pham, and Nguyen (2020); Nguyen and Dang (2020); Vo, Dang, Vu, and Ha (2020) share the opinion. In the case of Vietnam, Circular No. 02/2013/TT-NHNN dated January 21, 2013, states that loans are institutions and subsidiaries of international banks that enforce debt classification by five groups (Standard debt; debt necessitates special consideration; credit crunch loans; dubious debt; and conceivably irrecoverable debt), in which the debts of cluster 3, cluster 4, and cluster 5 are poor.

There are many factors of the bank's bad debt and observational work such as Messai and Jouini (2013), utilizing a research of 85 banks covering countries like Italy, Greece, and Spain for 2004–2008, demonstrates this. According to reality, a macroeconomic measure in the form of an increase in GDP, which has a detrimental effect on non-performing loans and unemployment rates, and the actual interest rate, has statistically significant opposite results. Concerning bank-specific characteristics, such as return on assets (ROA), Messai and Jouini (2013) found an adverse effect on NPL and a favorable effect on loan loss reserves.

As Makri, Tsagkanos, and Bellas (2014) show, using a sample size consisting of an unbalanced group of 14 countries with 120 research results for the timeframe 2000–2008 and the Generalized Method of Moments (GMM), the research demonstrates that bank-specific measures, such as the quantity of NPL from the prior year, the cash-to-asset ratio and ROE, tend to be unsteady. Further work concerns the macroeconomic situation, debt levels, economic development, unemployment, inflation rate, and government spending as a proportion of GDP and how they influenced the NPL index. First, economic development has a detrimental connection to NPLs, while government debt and underemploy-

ment have a positive relation. For starters, government expenditure and inflation levels are not statistically correct in all research models, loans to total deposits (LTD), return on assets (ROA).

For the period from 2003 to 2012, Abid, Ouertani, and Zouari-Ghorbel (2014) used pair of panel data from sixteen Tunisian banking institutions to assess non-performing loans, and concentrated on both bank-specific and macro-economic features. Experimental findings showed that the impact of NPLs on economic development, inflation, and interest rates is important. In contrast, a rise in economic development by one percent in the first and second halves of the NPLs would lead to a decline between 0.040297 and 0.043487. A strong link may be identified between inflation, interest rate and NPLs. Results from the analysis also show that ROE was found to be negatively associated with NPLs, whereas a favorable correlation for bank size was identified. For the period 2008–2012, Rajha (2016) predicated on panel data here on the impact of bank-specific and macroeconomic characteristics on NPLs in 22 commercial banks and four Islamic banks in Jordan. Therefore, the lagged NPLs, the loan-to-total assets ratio, and, especially, the global NPL financial crisis, were both positive and statistically relevant. The study also found that economic development and inflation levels of NPLs are negative and statistically important.

Partovi and Matousek (2019) studied the link between bank output and NPLs in the Turkish financial banks between December 2002 to December 2017, using the Data Envelopment Analysis Framework developed by Aparicio, Pastor, and Zofio (2015). Results suggest that the situation with bank management in the banking sector in that area, and, therefore, NPLs, has a negative impact on technical quality. Accordingly, Turkish banks may differ in the degree of effectiveness and rely on their ownership structure. Similarly, during the period 1990Q1–2015Q2, Dimitrios, Helen, and Mike (2016) analyzed the key factors of NPLs in the European banking sector. The findings revealed that the bank- and country-specific variables influence NPLs through the application of the GMM regression model. Nonetheless, in the period of 1990–2015, European banks would collapse due to increased losses from NPLs.

2. DATA AND METHODOLOGY

2.1. Data

The analysis used balance sheet statistics (obtained by individuals and time) from Vietnam's Stock Exchange, with supplementary data collected from annual audited financial statements of 20 commercial banks listed and not listed on Vietnam's Stock Exchange. Vietnam has two portfolios, namely Hanoi Stock Exchange (HNX) and Ho Chi Minh City Stock Exchange (HOSE). In comparison, the analysis gathered about 200 variables observed over 10 years, including projections from the Stata 15 system.

2.2. Methodology

The Jordanian banking industry relies on the theoretical basis for NPLs and the observed model by Messai and Jouini (2013), Makri, Tsagkanos, and Bellas (2014) with Eurozone research (Rajha, 2016). The study has also attempted to improve this by introducing a variety of independent variables to match the realities of commercial banks' situation in Vietnam. The research can be analyzed in the following sequence:

$$NPL_{i,t} = \beta_0 + \beta_1 \cdot NPL_{i,(t-1)} + \beta_2 \cdot SIZE_{i,t} + \\ + \beta_3 \cdot ROA_{i,t} + \beta_4 \cdot EAR_{i,t} + \beta_5 \cdot CGR_t + \\ + \beta_6 \cdot INF_t + \beta_7 \cdot GDP_t + \beta_8 \cdot IR_t + u_{it}. \quad (1)$$

This study implemented a hierarchical panel data method, calculated by the combination of OLS, REM, and FEM techniques. More specifically, many experiments are performed to validate the appropriateness of the panel layout used in this study. Next is F-test, which discusses the null hypothesis that the discrepancy between the fixed effect (FE) and the pooled OLS is not intrinsic in the model. Second is the Lagrange Multiplier (LM) test, showing the optimal combination of the random effect (RE) and the pooled OLS. The findings of such studies reveal what strategy is more acceptable. Several variances and problems of generalized least squares autocorrelation (GLS) may be proposed to address this problem. While checking the robustness of the tests, it is necessary to use GLS to verify the robustness study. The component figures are displayed in Table 1 and the analysis model is in Figure 1.

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Table 1. Calculations of variables

Source: Results obtained by the authors.

Variable description	Formula	Abbreviation	Previous studies
Non-performing loans	Total bad debts/Total loans	NPL	Fofack (2005); Circular No. 02/2013/TT-NHNN dated January 21, 2013
Previous year's *NPL*	The lagged variable of *NPL*	*NPL(-1)*	Makri, Tsagkanos, and Bellas (2014); Rajha (2016)
Bank size	Ln(Total asset)	*SIZE*	Khemraj and Pasha (2009); Abid, Ouertani, and Zouari-Ghorbel (2014); Rifat (2016)
Return on assets	Profits/Total asset	*ROA*	Messai and Jouini (2013); Makri, Tsagkanos, and Bellas (2014); Abid, Ouertani, and Zouari-Ghorbel (2014)
Equity-to-asset ratio	Equity/total asset	*EAR*	Makri, Tsagkanos, and Bellas (2014)
Credit growth	$\frac{Loan\ balance_t - Loan\ balance_{(t-1)}}{Loan\ balance_{(t-1)}}$	CGR	Vithessonthi (2016)
GDP growth	$\frac{GDP_t - GDP_{t-1}}{GDP_{t-1}}$	GDP	Messai and Jouini (2013); Makri, Tsagkanos, and Bellas (2014); Abid, Ouertani, and Zouari-Ghorbel (2014); Rajha (2016)
Inflation	$\frac{CPI_t - CPI_{t-1}}{CPI_{t-1}}$	INF	Fofack (2005); Abid, Ouertani, and Zouari-Ghorbel (2014); Rajha (2016)
Interest rate	The real interest rate at year *t*	*IR*	Khemraj and Pasha (2009); Dash and Kabra (2010); Messai and Jouini (2013); Abid, Ouertani, and Zouari-Ghorbel (2014)

Source: Results obtained by the authors.

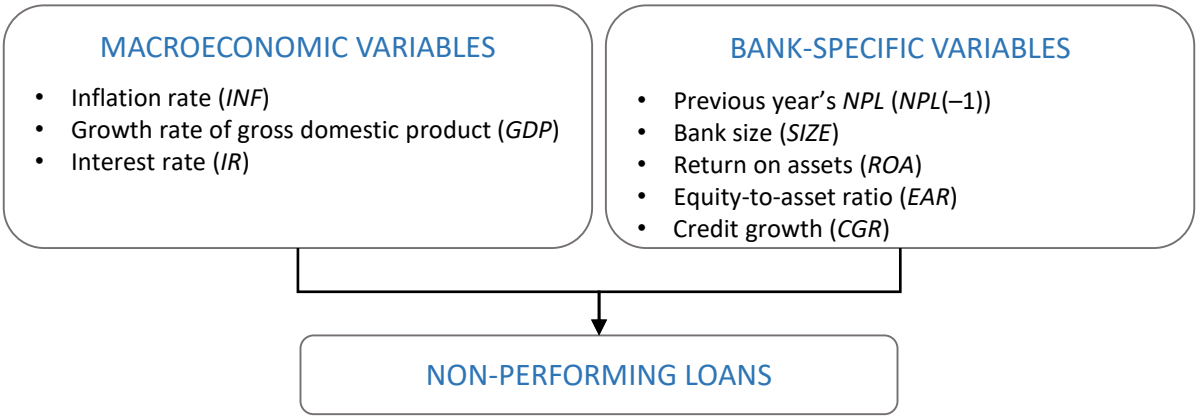


Figure 1. Research model

3. RESULTS AND DISCUSSION

3.1. Research results

According to a survey of 20 Vietnam Stock Exchange's commercial banks for the period 2008–2017, the ratio of NPLs to overall loans ranged from 1.71 to 4.56 trillion measured by the gross bad debt quotient. In reality, in 2006–2011, Vietnam faced a variety of problems, such as high government debt, high NPLs, and a downturn in economic development. However, in 2008–2017, the NPLs ratio in most banks was less than 3 percent, accompanied by the central bank control. Figure 2 also reveals that either a government bank (such as VCB, BIDV, and CTG) or a bigger bank has fewer NPLs than a non-state bank. It should be remembered that a state-owned bank is more likely to handle its bad debt condition well in accordance with strengthened risk control and regulatory frameworks. In fact, a large bank has lower costs and higher productivity thanks to economies of scale, as costs per unit of output will decline with the volume as a bank became more efficient in operation (Nguyen, 2020; T. T. Nguyen, V. C. Nguyen, & Tran, 2020).

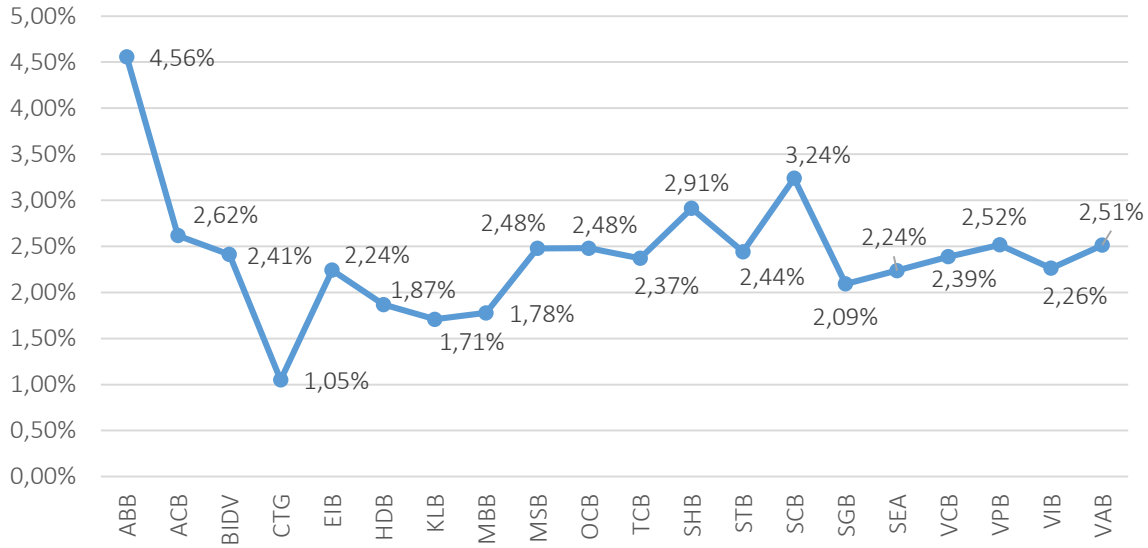


Figure 2. Non-performing loans in the banking system

Table 2. Descriptive statistics

Source: Analysis results from STATA 15 software.

Variable	Obs.	Mean	Std. dev	Min	Max
NPL	200	0.0241	0.0183	0.0034	0.1622
NPL(–1)	200	0.0232	0.0185	0.0008	0.1622
SIZE	200	13.9826	0.5046	12.4682	15.080
ROA	200	0.0087	0.0060	0.0002	0.0473
EAR	200	0.0985	0.0495	0.0346	0.3563
CGR	200	0.2481	0.2714	–0.9554	1.2203
INF	200	0.0851	0.0675	0.0088	0.2312
GDP	200	0.0601	0.0053	0.0525	0.0681
IR	200	0.1085	0.0355	0.0696	0.1695

Table 3. Correlation matrix

Source: Analysis results from STATA 15 software.

Items	NPL(–1)	SIZE	ROA	EAR	CGR	INF	GDP	IR
NPL(–1)	1.000	–	–	–	–	–	–	–
SIZE	0.042	1.000	–	–	–	–	–	–
ROA	–0.229	–0.193	1.000	–	–	–	–	–
EAR	–0.051	–0.724	0.353	1.000	–	–	–	–
CGR	0.014	–0.070	0.145	–0.079	1.000	–	–	–
INF	–0.167	–0.333	0.310	0.255	–0.079	1.000	–	–
GDP	–0.083	0.252	–0.112	–0.191	–0.049	–0.312	1.000	–
IR	–0.127	–0.301	0.357	0.224	–0.034	0.919	–0.335	1.000

Table 4. Heteroskedasticity test

Source: Analysis results from STATA 15 software.

Variable	VIF	1/*VIF*
IR	7.04	0.1421
INF	6.95	0.1440
EAR	2.55	0.3926
SIZE	2.44	0.4092
ROA	1.45	0.6880
GDP	1.19	0.8430
CGR	1.13	0.8835
NPL(–1)	1.11	0.9044
VIF mean	2.98	

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Table 2 shows the results of concision statistics. The total of entrants filled out is 200. The *NPL* is 2.41 percent overall. The *NPL*'s average and minimum amounts were 0.34 percent and 16.22 percent, respectively. According to the Vietnam State Bank's policy, to balance monetary policies and macroeconomy, NPLs at financial institutions will be lowered to below 3 percent. With respect to bank-specific variables, the magnitude of scale on average, minimum, and the peak is 13.98, 12.47, and 15.08, respectively, indicating that banks' scale is not so unique. In addition, between 0.02 and 4.73 percent, the productivity of the commercial banking assessed by ROA has increased dramatically. On the other side, the EAR calculated for a bank's balance sheet stability fluctuated between 3.46% and 35.63%, suggesting that certain banks are expected to utilize more strategic resources in their capital structure. In contrast, the financial sector kept its credit production at an average of 24.81 percent.

The study should perform the Pearson correlation test to determine the multicollinearity problem utilizing the correlation coefficient regarding the relationship between independent variables. A multicollinearity question can arise in the case of a correlation value of 0.8 or greater between two independent variables. That applies to the state of testing for heteroskedasticity (Nguyen & Do, 2020) based on Inflation Factor 10 and under variance (*VIF*). Table 3 shows the effects of independent variables that do not reach the minimum threshold, and Table 4 states that the *VIF* coefficient does not surpass the maximum threshold.

Table 5 shows the regression results of the study model, and the NPL acts as a proxy for the non-performing loans. The pooled OLS is suitable for applying quality models and is focused on evidence from all diagnostic studies in Table 6 and Table 7. The reliability review often helps one to

Table 5. Regression results

Source: Analysis results from STATA 15 software.

Variable	Method			
	Pooled OLS	FEM	REM	GLS
NPL(–1)	0.2936*** (4.30)	0.1988*** (2.70)	0.2936*** (4.30)	0.1189* (1.73)
SIZE	–0.0005 (–0.15)	0.0030 (0.37)	–0.0005 (–0.15)	0.0002 (0.05)
ROA	–0.5659** (–2.33)	–0.5282* (–1.84)	–0.5659** (–2.33)	–0.6570*** (–2.57)
EAR	0.0243 (0.62)	0.0558 (1.22)	0.0243 (0.62)	0.0301 (0.73)
CGR	–0.0100** (–2.12)	–0.0109** (–2.09)	–0.0100** (–2.12)	–0.0097** (–2.02)
INF	–0.0422 (–0.90)	–0.0494 (–0.97)	–0.0422 (–0.90)	–0.0500 (–1.07)
GDP	0.0116 (0.05)	–0.0598 (–0.22)	0.0116 (0.05)	–0.1025 (–0.42)
IR	0.1638* (1.82)	0.1697* (1.84)	0.1638* (1.82)	0.1689* (1.8)
_Cons	0.0150 (0.26)	–0.0320 (–0.28)	0.0150 (0.26)	0.0154 (0.25)
Prob > F	0.0000	0.6645	0.0000	0.0056
R-squared	0.1766	0.1311	0.1232	

Note: *, ** and ***denote the level of significance at 10%, 5% and 1%, respectively.

Table 6. Model selection

Source: Analysis results from STATA 15 software.

Items	Pooled OLS	FEM	Hypothesis	Results
F test	*Prob* > *F* = 0.0000 < α = 1%	*Prob* > *F* = 0.6645 > α = 10%	Reject H_1 => Accept H_0	Pooled OLS
LM test	*Prob* > chibar2 = 1.0000 > α = 10%		Reject H_1 => Accept H_0	Pooled OLS

Table 7. Diagnostics test

Source: Analysis results from STATA 15 software.

Test	Model	Statistics	Hypothesis	Results
Heteroskedasticity (White)	Pooled OLS	*Prob* > chi2 = 0.5657 > α = 10%	Reject H_1 => Accept H_0	Supported (Homoskedasticity)
Heteroskedasticity (Wald)	FEM	*Prob* > chi2 = 0.0000 < α = 1%	Reject H_0 => Accept H_1	Supported (Heteroskedasticity)
Heteroskedasticity (Breusch and Pagan Lagrangian mutiplier)	REM	*Prob* > chibar2 = 1.0000 > α = 10%	Reject H_1 => Accept H_0	Non-supported (Homoskedasticity)
Autocorrelation (Wooldrige)	Pooled OLS	*Prob* > *F* = 0.0166 < α = 5%	Reject H_0 => Accept H_1	Supported (Autocorrelation)

test the consistency of the regression model using GLS; Table 6 indicates that the findings are adequate and accurate.

3.2. Discussion

To show how NPL influences the model variables, the analysis is split into three classes to treat the test outcomes as follows.

3.2.1. The variables have a constructive effect on NPL

The earlier year's NPL

The findings of the analysis in Table 6 found that the NPL of the earlier year had a constructive impact on the current NPL amount, and a strong 5 percentage point. It is important to note that the NPL decreased by 1 unit for the previous year and remained constant throughout the current year for other variables in the calculation; NPLs will increase by 0.2936 units (pooled OLS) or 0.1189 units (GLS formulation). This finding will clarify that if bad debts from the previous period are not treated properly, the new era's bad debts would be favorably affected. It ensures that certain banks' credit period is short, incoherent, and the capacity to handle risk is limited, and bad debts emerge from lending. In addition, during the study period, Vietnam faced many problems in the financial sector, in which banking strategies were not steady, inflation and interest rates rose rapidly, leading firms to have difficulties in the supply chain and corporate processes about their capacity to repay debt, and some clients fleeing debt repayment obligations. Many researchers found it compliant with work in the Eurozone, such as Makri, Tsagkanos, and Bellas (2014), Rajha (2016), the Jordanian banking sector.

Interest rate (IR)

Interest rates have a strong and beneficial effect on NPLs, as seen in Table 5. There are more than 100 banks in Vietnam that can be described in this situation, such as banks maintained by state, commercial joint-stock banks, international bank branches, and global joint-venture banks, but most banks are small to medium-sized. Furthermore, the presence of a growing number of small and medium-sized banks may contend with big banks, particularly state-owned ones with more preferred government financing; commercial banks could have forced their deposit rates to raise more capital to fulfill their credit growth targets and restructure their long-term finances. Consequently, banks in general, especially small and medium-sized ones, should enter the mobilization race of capital and thus increase the lending rate. A higher interest rate on loans will raise the borrowers' mortgage burden, leading to a rise in NPLs. In fact, the Federal Reserve System (FED) agreed to lift interest rates in the period 2015–2017, and the global interest rate rose for the USD. The need to import firms has had a significant effect, especially those whose debts are popular in this currency, increasing corporate liabilities and struggling to repay loans and reduce bank lines. A variety of research in the Tunisian banking sector, such as Abid, Ouertani, and Zouari-Ghorbel (2014), Messai and Jouini (2013) are in line with this finding of our study. Abid, Ouertani, and Zouari-Ghorbel (2014) further indicated that NPLs in Tunisia may be vulnerable to shifts in interest rates and floating levels.

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3.2.2. Factors negatively affecting NPLs

Return on assets (ROA)

The results of the report resulted in a return on investment, which had a considerable and negative impact on NPLs. This means that an increase in bank output will result in the reduced NPL debt. Nevertheless, ROA-calculated bank profitability is seen as a "center of survival" for increasing the financial sector's reputation, bank value and comprehensive change. The theoretical point may be that an effective bank wants to diversify resources, sustain profitability, enhance quality control, effectively handle credit operations and efficiently minimize bad debts. A bank with a higher level of profitability will also extensively improve its human capital. It thus improves the productivity of loans and reduces the NPL ratio. The studies, like Messai and Jouini (2013), which entail a survey of 85 banks in Italy, Greece, and Spain, explicitly endorse this result. According to Abid, Ouertani, and Zouari-Ghorbel (2014), ROE measured bank performance is negatively associated with NPLs.

Credit growth (CGR)

As Table 5 shows, the influence of credit development on NPLs can be negative and important. This suggests that greater credit growth in the banking sector will lead to an increase in NPLs. This study can be answered by saying that bank lending is mainly focused on invention, manufacturing, real estate, agriculture, and rural areas. The State Bank of Vietnam has flexibly used monetary policy tools to balance the economy, fuel economic development, and thus allowed the banking system in general and joint-stock commercial banks in particular, to expand the standard of credit. Consequently, unsuccessful companies should not be allowed to lend, while funding for successful initiatives becomes more favored. It helps borrowers to function efficiently and lead to increased income, thus charging the bank's principal and interest if required, helping to minimize bad debt. This result is supported by the previous postulations presented in this paper that the banking system requires more NPLs if the credit growth is high, as in a study by Vithessonthi (2016) in Japan.

CONCLUSION

In the case of a developed country, this study empirically explored the roots of nonperforming loans with the involvement of banks. Using 200 banks surveyed on the Hanoi Stock Exchange and Ho Chi Minh City Stock Exchange over a 10-year period, and using the methodology of pooled ordinary minimum squares, in particular applying robustness screening, the research results offered valuable details on the factors behind NPLs from a variety of aspects such as bank exact information and macroeconomic features. Statistics reveal that a bank has three specific variables, namely NPLs from the earlier year, asset returns, and credit growth, and only one macro factor, such as interest rates, that have a statistically important impact on NPLs. Indeed, bad debts of the former period will have a favorable impact on bad debts of the present day. Improved profitability and credit development in banks often lead to a reduction in NPLs. Higher interest rates would have an important and optimistic effect on NPLs in terms of macroeconomic characteristics but no influence on GDP growth and inflation.

POLICY IMPLICATIONS AND RESTRICTION

Vietnam's banking sector income dropped dramatically during the period 2012–2015 due to poor lending loans and an economic downturn. However, the banking industry has made enormous strides in growing distressed loans and improving structures for lending. Since 2012, the central bank has been grappling with National Assembly Resolution No. 42/2017/QH14 to recover bad debts from monetary institutions. In this paper, it should be remembered that NPLs have had a significant impact not only on government policies in general but also on bank managers. An increase in NPLs in Vietnamese banks, companies, and borrowers may have difficulty obtaining bank loans to finance business and growth.

That would make the economy more resilient to growth. Below are some of the legislative implications for the Vietnamese banking sector and state banks.

With respect to commercial banks, NPLs of the prior year have a constructive impact on NPLs of the next year, and joint-stock commercial banks must monitor their management of credit risk according to the number of assets, which is the overtime heavy. This can be done by strengthening the risk reduction and monitoring processes, learning from global banks with strong experience in risk management. Indeed, they ought to conduct a thorough analysis to monitor the borrowers' willingness to successfully repay loans before credit is given. Likewise, Vietnam's banking sector needs to create a task force to handle debt systematically and logically while retaining an income-hazard balance. If lenders pay off their loans late due to bankruptcy or lack of cooperation, banks will collaborate along with reasonable authorities to handle them in compliance with regulations.

As for the State Bank of Vietnam, which will introduce a series of measures to help banks minimize bad debt, allowing the economy to grow slowly and stably throughout the deep integration associated with technology transformation 4.0, any additional steps will include the following.

First, the State Bank will provide an aggressive monetary strategy to handle inflation sustainably, both helping to improve the developing market and to reduce bad debt. The State Bank aims to encourage banks to adopt a policy of joint interest rates, as well as lower rates, to enable loan premiums to be lowered and bad debts excluded. Besides, the restructuring of the financial sector is a special and important activity for the State Bank, while the State Bank should recommend that the Government allow foreign banks to invest in domestic banks through a common room with effective management methods, with a view to support bank management and, in particular, risk management, thus allowing Vietnamese banks to develop their managers.

Second, the State Bank of Vietnam requires close cooperation with joint-stock commercial banks to effectively develop frameworks and policies to cope with long-term bad debts and public openness in dealing with bad debts, to be prepared to remove or integrate weak-performing banks out of the business to alleviate bad debts and minimize uncertainty in the domestic financial field. The State Bank ultimately proposed to the government to create an Asset-Backed Security (ABS) regulatory structure that would allow banks to merge smaller bad debts into one company, transforming financial assets into high liquidity securities, leading to a decline in bad debts, typically like in China and Korea.

There may be some methodology for this work. This study focuses exclusively on the era of joint-stock commercial banks in 2008–2017 and does not include all banks. The study would expand the scope of analysis scope in subsequent reports, primarily targeting joint-stock banks and non-equalized banks over a longer period of time.

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