

Credit Risk, Capital Adequacy, Institutional Quality, and Bank Profitability: Evidence from Vietnamese Joint-Stock Commercial Banks

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Summarize: This article aims to investigate and analyze the determinants affecting the profitability of Vietnamese joint-stock commercial banks in the context of increasingly deep financial integration and digital transformation. Data were collected from 28 Vietnamese joint-stock commercial banks over the period 2018–2023. The study employs quantitative models to identify the true drivers of profitability within the banking system. The model includes the following independent variables: Expected Credit Losses; Total Assets; Bad Debt (BD); Non-Performing Loan Ratio (NPLs); Capital Adequacy Ratio (CAR); Loan-to-Deposit Ratio (LDR); Loan Growth (LG); Bank Size (SIZE); and Institutional Quality (INS). The results indicate that the capital adequacy ratio, bank size, loan-to-deposit ratio, institutional quality, and expected credit losses have positive effects on profitability (ROA), while the non-performing loan ratio exerts a negative effect. The remaining factors are found to have no statistically significant impact.

Keywords: Profitability; ROA; Vietnamese Joint-Stock Commercial Banks; Institutional Quality; Vietnam

Abstract

This article aims to identify and analyze the factors influencing the profitability of Vietnamese joint-stock commercial banks in the context of deepening financial integration and digital transformation. Data were collected from 28 joint-stock commercial banks over the 2018–2023 period. The study employs quantitative models to identify the true pillars of the system's profit. The model includes the following independent variables: Expected Credit Loss (ECL); Total Assets (TA); Bad Debt (BD); Non-Performing Loan ratio (NPLs); Capital Adequacy Ratio (CAR); Loan-to-Deposit Ratio (LDR); Loan Growth (LG); Bank Size (SIZE) and Institutional Quality (INS). The results indicate that the capital adequacy ratio, bank size, loan-to-deposit ratio, institutional quality, and expected credit loss have positive impacts, while the non-performing loan ratio has a negative impact on the Return on Assets (ROA); the remaining factors do not have a significant impact.

Keywords: Profitability; ROA; Commercial banks; Institutional quality; Vietnam

I. Introduction

In developing economies such as Vietnam, the commercial banking system plays a central role in allocating financial resources, supporting economic growth, and maintaining macroeconomic stability. As the capital market remains underdeveloped, banks continue to serve as the primary channel of financial intermediation for the economy. Therefore, bank profitability not only reflects the operational efficiency of individual credit institutions but also carries important implications for the stability of the entire financial system.

In recent years, the Vietnamese joint-stock commercial banking system has undergone significant changes under the impact of banking restructuring, the implementation of Basel II/III standards, digital transformation, and the effects of the COVID-19 pandemic. At the same time, the adoption of credit risk management practices aligned with IFRS 9 has substantially altered the recognition and management of credit losses in banking operations.

Previous studies on bank profitability have mainly focused on traditional determinants such as non-performing loans, liquidity, bank size, and capital adequacy ratios. However, studies examining the role of Expected Credit Losses (ECL) and institutional quality in explaining bank profitability in Vietnam remain relatively limited. In addition, empirical

evidence regarding the impacts of credit growth, liquidity, and bank capitalization remains inconclusive across prior studies.

Motivated by these practical considerations, this study aims to analyze the factors affecting the profitability of Vietnamese joint-stock commercial banks during the period 2018–2023. The study focuses on evaluating the roles of credit risk, capital capacity, liquidity, bank size, and institutional quality in influencing banking performance through the Return on Assets (ROA) indicator.

II. Literature Review and Research Hypotheses

Expected Credit Losses (ECL) represent a forward-looking provisioning measure under IFRS 9, requiring banks to recognize expected losses at an early stage, thereby increasing expenses and directly reducing net profits. According to Novotny-Farkas (2016) and Bushman & Williams (2012), although higher ECL provisions enhance risk transparency, they may exert downward pressure on profitability in the short run. Based on this reasoning, the following hypothesis is proposed:

H1 (-): Expected Credit Losses (ECL) negatively affect the Return on Assets (ROA) of Vietnamese joint-stock commercial banks.

Total assets (TA) reflect the scale advantages of banks, enabling them to reduce average operating costs and diversify risks more effectively. Studies by Demirgüç-Kunt (1999) and Vü and Nahm (2013) indicate that larger asset bases improve profitability through resource optimization and operational efficiency. Based on this argument, the following hypothesis is proposed:

H2 (+): Total Assets (TA) positively affect the Return on Assets (ROA) of Vietnamese joint-stock commercial banks.

Bad debt (BD) reflects realized credit losses that have been written off from the balance sheet. A high level of bad debt forces banks to allocate additional resources for debt resolution and directly reduces income-generating assets, thereby negatively affecting profitability. According to Foos et al. (2010), excessive credit expansion may create a “credit growth trap,” leading to a decline in future profitability due to the accumulation of problematic loans. Based on this reasoning, the following hypothesis is proposed:

H3 (-): Bad Debt (BD) negatively affects the Return on Assets (ROA) of Vietnamese joint-stock commercial banks.

The non-performing loan ratio (NPLs) reflects the current level of credit risk. A high NPL ratio creates a “double burden” by simultaneously reducing interest income and increasing debt management and recovery costs. Athanoglou, Brissimis, and Delis (2008) argue that credit risk is one of the most important determinants of bank profitability, as rising risk levels may weaken banking performance. Based on this argument, the following hypothesis is proposed:

H4 (-): Non-Performing Loans (NPLs) negatively affect the Return on Assets (ROA) of Vietnamese joint-stock commercial banks.

A high capital adequacy ratio (CAR) acts as a financial buffer that enables banks to absorb losses and reduce funding costs by strengthening confidence in financial stability. Early studies such as Bourke (1989), as well as later studies by Sufian and Habibullah (2009), document a positive relationship between CAR and profitability. Keeley (1990) further argues that highly capitalized banks tend to avoid excessive risk-taking in order to preserve long-term value. Based on this reasoning, the following hypothesis is proposed:

H5 (+): The Capital Adequacy Ratio (CAR) positively affects the Return on Assets (ROA) of Vietnamese joint-stock commercial banks.

The Loan-to-Deposit Ratio (LDR) reflects the trade-off between profitability and liquidity. Sufian (2011) and Trujillo-Ponce (2013) find a positive effect when banks efficiently allocate funds into profitable lending activities. In contrast, Dietrich and Wanzenried (2011) argue that an excessively high LDR increases liquidity risk during crisis periods, thereby negatively affecting profitability. Based on these mixed findings, the following hypothesis is proposed:

H6 (+/-): The Loan-to-Deposit Ratio (LDR) has a bidirectional effect on the Return on Assets (ROA) of Vietnamese joint-stock commercial banks.

Loan Growth (LG), measured by the annual percentage change in total outstanding loans, reflects the expansion of banks' primary earning assets. Although rapid credit growth may enhance short-term profitability, it may also create long-term

risks. Foos, Norden, and Weber (2010) describe this phenomenon as a “credit growth trap,” whereby relaxed lending standards eventually lead to substantial credit losses within two to four years. Based on this argument, the following hypothesis is proposed:

H7 (+/-): Loan Growth (LG) affects the Return on Assets (ROA) of Vietnamese joint-stock commercial banks.

Bank size (SIZE), commonly measured by the natural logarithm of total assets, is a standard control variable in empirical models of bank profitability. Studies by Demirgüç-Kunt and Huizinga (1999), Pasiouras and Kosmidou (2007), Athanasoglou et al. (2008), as well as Goddard, Molyneux, and Wilson (2004), consistently find a positive relationship between bank size and profitability indicators, reflecting economies of scale and stronger market power among larger banks. Based on this argument, the following hypothesis is proposed:

H8 (+): Bank Size (SIZE) positively affects the Return on Assets (ROA) of Vietnamese joint-stock commercial banks.

Institutional quality (INS) is measured using the Worldwide Governance Indicators (WGI), including Rule of Law, Control of Corruption, Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, and Regulatory Quality. Strong institutions help protect creditors’ rights, improve the enforcement of collateral claims, reduce transaction costs, and safeguard property rights. Based on this theoretical foundation, the following hypothesis is proposed:

H9 (+): Institutional Quality (INS) positively affects the Return on Assets (ROA) of Vietnamese joint-stock commercial banks.

III. Research Model and Methodology

3.1. Research Model

The research model is specified as follows:

$$ROA_{it} = \beta_0 + \beta_1 ECL_{it} + \beta_2 TA_{it} + \beta_3 BD_{it} + \beta_4 NPL_{it} + \beta_5 CAR_{it} + \beta_6 LDR_{it} + \beta_7 LG_{it} + \beta_8 SIZE_{it} + \beta_9 INS_{it} + \epsilon_{it}$$

The study employs panel data from 28 Vietnamese joint-stock commercial banks over the period 2018–2023. Financial data were collected from the audited consolidated financial statements of the banks, while institutional quality data were obtained from the Worldwide Governance Indicators (WGI) published by the World Bank.

Dependent Variable	Definition	Measurement
ROA	Return on Assets	Profit after tax / Total assets
Independent Variables	Description	Measurement
ECL	Expected Credit Losses	Credit risk provisioning expenses / Total outstanding loans
TA	Total Assets	Total bank assets
BD	Bad Debt	Total bad debts (Group 3 + 4 + 5)
NPLs	Non-Performing Loan Ratio	$(\text{Total non-performing loans} / \text{Total outstanding loans}) \times 100\%$
CAR	Capital Adequacy Ratio	$(\text{Equity capital} / \text{Risk-weighted assets}) \times 100\%$
LDR	Loan-to-Deposit Ratio	$(\text{Total outstanding loans} / \text{Total customer deposits}) \times 100\%$
LG	Loan Growth	$((\text{Outstanding loans in year } t - \text{Outstanding loans in year } t-1) / \text{Outstanding loans in year } t-1) \times 100\%$
SIZE	Bank Size	$\ln(\text{Total assets})$
INS	Institutional Quality	Rule of Law, Control of Corruption, Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality

3.2. Research Methodology

This study employs a mixed-methods approach, in which the qualitative method is used to establish the theoretical framework and develop the research hypotheses, while the quantitative method plays the dominant role. Panel data from Vietnamese joint-stock commercial banks during the period 2018–2023 were processed using the Stata 17 software through descriptive statistics, correlation analysis, and panel data regression techniques. The Breusch–Pagan and Hausman tests were employed to determine the most appropriate estimation model. In addition, the Feasible Generalized Least Squares

(FGLS) method was applied to address heteroskedasticity and autocorrelation issues, thereby enhancing the reliability and robustness of the empirical results.

IV. Research Results

Descriptive Statistics

Table 1 shows that the average value of ROA is 1.24%, reflecting the relatively stable profitability of Vietnamese joint-stock commercial banks during the study period. The average non-performing loan ratio (NPLs) is 1.72%, while the average capital adequacy ratio (CAR) reaches 8.61%, indicating that most banks maintained capital levels that complied with regulatory safety requirements. In addition, the variables ECL, TA, and BD exhibit relatively large standard deviations, suggesting considerable differences in operational scale and credit risk exposure among the banks included in the research sample.

```
. xtset ID YEAR
```

```
Panel variable: ID (strongly balanced)
Time variable: YEAR, 2018 to 2023
Delta: 1 unit
```

```
. summarize ROA ECL TA BD NPLs CAR LDR LG SIZE INS
```

Variable	Obs	Mean	Std. dev.	Min	Max
ROA	168	.012377	.0084417	-.0072	.0365264
ECL	168	-3.25e+12	6.12e+12	-2.95e+13	7.58e+11
TA	168	3.47e+14	4.34e+14	2.08e+13	2.21e+15
BD	168	4.06e+12	4.97e+12	2.23e+11	2.51e+13
NPLs	156	1.722756	.8703063	.62	6.24
CAR	168	.0860924	.0307815	.0415043	.1709897
LDR	168	.9173344	.2244316	.0017784	1.428194
LG	168	14.77886	7.133054	-12.75978	44.63938
SIZE	156	5.328974	.486222	4.35	6.35
INS	168	-.3724452	.0356267	-.434	-.3370697

Table 1: Descriptive Statistics Results of Quantitative Variables in the Model

(Source: Author's calculations based on Stata output)

Correlation Analysis

The correlation coefficients among the variables in the model are all below 0.8. ROA is positively correlated with TA, BD, CAR, LDR, LG, SIZE, and INS, while it is negatively correlated with ECL and NPLs. In addition, the correlation coefficients among the independent variables are not excessively high, indicating that the model does not suffer from serious multicollinearity problems.

```
. corr ROA ECL TA BD NPLs CAR LDR LG SIZE INS
(obs=156)
```

	ROA	ECL	TA	BD	NPLs	CAR	LDR	LG	SIZE	INS
ROA	1.0000									
ECL	-0.0547	1.0000								
TA	0.1279	-0.7785	1.0000							
BD	0.1253	-0.8942	0.7886	1.0000						
NPLs	-0.0342	-0.3374	-0.0097	0.3778	1.0000					
CAR	0.3996	-0.0128	-0.1210	0.0175	0.1753	1.0000				
LDR	0.0745	-0.2812	-0.0007	0.1961	0.2767	0.1197	1.0000			
LG	0.0218	0.2128	-0.1223	-0.2090	-0.1885	0.0603	-0.0400	1.0000		
SIZE	0.3804	-0.4055	0.5313	0.5040	-0.1318	-0.0488	-0.0674	-0.1037	1.0000	
INS	0.0802	-0.0099	-0.0498	-0.1053	-0.1282	-0.0315	-0.0017	-0.1498	-0.0135	1.0000

Table 2: Correlation Matrix of Variables in the Model

(Source: Author's calculations based on Stata output)

```
. reg ROA ECL TA BD NPLs CAR LDR LG SIZE INS
```

Source	SS	df	MS	Number of obs	=	156
Model	.003872114	9	.000430235	F(9, 146)	=	9.66
Residual	.006499898	146	.00004452	Prob > F	=	0.0000
				R-squared	=	0.3733
				Adj R-squared	=	0.3347
Total	.010372013	155	.000066916	Root MSE	=	.00667

ROA	Coefficient	Std. err.	t	P> t	[95% conf. interval]
ECL	5.38e-16	2.21e-16	2.43	0.016	1.01e-16 9.75e-16
TA	4.54e-18	2.60e-18	1.75	0.083	-6.01e-19 9.68e-18
BD	6.91e-17	3.02e-16	0.23	0.819	-5.28e-16 6.66e-16
NPLs	.000525	.0008566	0.61	0.541	-.0011678 .0022179
CAR	.1138478	.0179404	6.35	0.000	.0783913 .1493042
LDR	.0052947	.0026643	1.99	0.049	.0000292 .0105602
LG	.000032	.0000777	0.41	0.681	-.0001216 .0001856
SIZE	.0073871	.0014191	5.21	0.000	.0045826 .0101917
INS	.0303292	.015956	1.90	0.059	-.0012055 .0618638
_cons	-.0311238	.0101718	-3.06	0.003	-.0512267 -.0110209

Table 3: Regression Results of ROA Using the OLS Model

(Source: Author's calculations based on Stata output)

```
. xtreg ROA ECL TA BD NPLs CAR LDR LG SIZE INS, re
```

Random-effects GLS regression	Number of obs	=	156
Group variable: ID	Number of groups	=	26
R-squared:	Obs per group:		
Within = 0.3314	min =		6
Between = 0.2543	avg =		6.0
Overall = 0.2652	max =		6
	Wald chi2(6)	=	.
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	.

ROA	Coefficient	Std. err.	z	P> z	[95% conf. interval]
ECL	3.09e-16	1.45e-16	2.13	0.033	2.51e-17 5.92e-16
TA	1.73e-18	2.34e-18	0.74	0.460	-2.85e-18 6.31e-18
BD	2.30e-16	1.90e-16	1.21	0.226	-1.42e-16 6.03e-16
NPLs	-.0017567	.0006918	-2.54	0.011	-.0031126 -.0004008
CAR	.0558352	.0201998	2.76	0.006	.0162444 .0954261
LDR	.0086534	.0032486	2.66	0.008	.0022863 .0150204
LG	-.0000537	.0000497	-1.08	0.280	-.0001512 .0000437
SIZE	.0082596	.0023125	3.57	0.000	.0037273 .012792
INS	.0194013	.007837	2.48	0.013	.0040411 .0347615
_cons	-.0331781	.0126699	-2.62	0.009	-.0580106 -.0083456
sigma_u	.0065198				
sigma_e	.00316588				
rho	.80920095	(fraction of variance due to u i)			

Table 4: Regression Results of ROA Using the REM Model

(Source: Author's calculations based on Stata output)

```

Fixed-effects (within) regression      Number of obs   =    156
Group variable: ID                    Number of groups =    26

R-squared:                            Obs per group:
  Within = 0.3436                      min =          6
  Between = 0.1841                     avg =         6.0
  Overall = 0.2003                      max =          6

corr(u_i, Xb) = -0.3702                F(9,121)       =    7.04
                                        Prob > F        =    0.0000
    
```

ROA	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
ECL	2.40e-16	1.55e-16	1.55	0.125	-6.73e-17	5.47e-16
TA	6.33e-19	2.59e-18	0.24	0.808	-4.50e-18	5.77e-18
BD	3.18e-16	1.99e-16	1.59	0.113	-7.69e-17	7.13e-16
NPLs	-.0022717	.0007398	-3.07	0.003	-.0037364	-.0008071
CAR	.0324182	.0228517	1.42	0.159	-.0128229	.0776593
LDR	.0100352	.0038644	2.60	0.011	.0023845	.0176858
LG	-.0000708	.000051	-1.39	0.167	-.0001716	.0000301
SIZE	.0108956	.0033043	3.30	0.001	.0043539	.0174374
INS	.0176202	.0078577	2.24	0.027	.0020638	.0331766
_cons	-.0462053	.0171541	-2.69	0.008	-.0801663	-.0122443
sigma_u	.00739662					
sigma_e	.00316588					
rho	.84516694 (fraction of variance due to u_i)					

F test that all u i=0: F(25, 121) = 21.10 Prob > F = 0.0000

Table 5: Regression Results of ROA Using the FEM Model

(Source: Author’s calculations based on Stata output)

```

. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

ROA[ID,t] = Xb + u[ID] + e[ID,t]

Estimated results:
      _____
      |          Var          SD = sqrt(Var)
      |-----|-----|
      | ROA          .0000669          .0081802
      | e             .00001           .0031659
      | u             .0000425          .0065198
      |-----|-----|

Test: Var(u) = 0
           chibar2(01) = 196.35
           Prob > chibar2 = 0.0000
    
```

Table 6: Breusch–Pagan Test Results

(Source: Author’s calculations based on Stata output)

Autocorrelation Test

To examine autocorrelation in the panel data, the Wooldridge test was employed. The test results indicate that F(1,25) = 13.210 with a p-value of 0.0013, which is lower than the 5% significance level. Therefore, the null hypothesis (H0) is rejected, indicating the presence of first-order autocorrelation in the model.

```
. xtserial ROA ECL TA BD NPLs CAR LDR LG SIZE INS
```

```
Wooldridge test for autocorrelation in panel data
```

```
H0: no first-order autocorrelation
```

```
F( 1, 25) = 13.210
```

```
Prob > F = 0.0013
```

Table 7: Autocorrelation Test Results

(Source: Author's calculations based on Stata output)

Regression Results

The regression results estimated using the Feasible Generalized Least Squares (FGLS) method indicate that the model is statistically significant overall, with Prob > chi2 = 0.0000. The independent variables in the model are capable of explaining variations in the Return on Assets (ROA) of Vietnamese joint-stock commercial banks during the study period.

The findings reveal that the non-performing loan ratio negatively affects bank profitability, reflecting that increasing credit risk reduces interest income while simultaneously increasing provisioning costs. This result is consistent with the "bad management hypothesis" proposed by Berger and DeYoung (1997).

The results also show that the Capital Adequacy Ratio (CAR) positively affects ROA, with a regression coefficient of 0.11388478 and statistical significance at the 1% level. This finding suggests that banks maintaining strong capital capacity are better able to absorb risks and improve profitability performance. The result is consistent with the studies of Bourke (1989) and Sufian & Habibullah (2009).

The Loan-to-Deposit Ratio (LDR) positively affects ROA, with a coefficient of 0.0052947 and statistical significance at the 5% level. This finding reflects that the efficient utilization of mobilized funds for lending activities may contribute to higher bank profitability. The result is consistent with the findings of Trujillo-Ponce (2013).

Bank Size (SIZE) also has a positive effect on ROA, with a coefficient of 0.0073871 and significance at the 1% level. This implies that larger banks are generally able to benefit from economies of scale, optimize operating costs, and diversify income sources more effectively. The result is consistent with the studies of Demirgüç-Kunt and Huizinga (1999), as well as Pasiouras and Kosmidou (2007).

Institutional Quality (INS) also positively affects ROA, with a coefficient of 0.0303292 and significance at the 5% level. This result indicates that a transparent and effective institutional environment helps reduce transaction costs, improve governance efficiency, and support the stable development of banking activities.

Expected Credit Losses (ECL) exhibit a positive effect on ROA, with a coefficient of 5.38e-16 and statistical significance at the 5% level. This finding suggests that proactive provisioning under IFRS 9 may help banks strengthen credit risk management and improve asset quality over the long term.

In addition, Total Assets (TA) are only significant at the 10% level, implying that the impact of scale may not be particularly strong in the short run. Meanwhile, the remaining variables, including BD, NPLs, and LG, are statistically insignificant because their p-values exceed the 5% significance level. This indicates that there is insufficient evidence to confirm that these factors significantly affect the profitability of Vietnamese joint-stock commercial banks during the study period.

```
. xtgls ROA ECL TA BD NPLs CAR LDR LG SIZE INS
```

Cross-sectional time-series FGLS regression

Coefficients: generalized least squares
Panels: homoskedastic
Correlation: no autocorrelation

```
Estimated covariances = 1          Number of obs = 156
Estimated autocorrelations = 0      Number of groups = 26
Estimated coefficients = 7          Time periods = 6
Log likelihood = 565.3399           Wald chi2(6) = 83.17
                                   Prob > chi2 = 0.0000
```

	ROA	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
	ECL	5.38e-16	2.14e-16	2.52	0.012	1.19e-16	9.58e-16
	TA	4.54e-18	2.52e-18	1.80	0.071	-3.92e-19	9.48e-18
	BD	6.91e-17	2.92e-16	0.24	0.813	-5.03e-16	6.42e-16
	NPLs	.000525	.0008286	0.63	0.526	-.0010991	.0021491
	CAR	.1138478	.0173559	6.56	0.000	.0798309	.1478647
	LDR	.0052947	.0025775	2.05	0.040	.000243	.0103465
	LG	.000032	.0000752	0.43	0.671	-.0001154	.0001793
	SIZE	.0073871	.0013728	5.38	0.000	.0046964	.0100778
	INS	.0303292	.0154362	1.96	0.049	.0000748	.0605835
	_cons	-.0311238	.0098403	-3.16	0.002	-.0504105	-.0118371

Table 8: Regression Results Using the FGLS Method

(Source: Author's calculations based on Stata output)

V. Conclusion and Implications

5.1. Conclusion

The study findings indicate that bank profitability is simultaneously influenced by both internal factors and the institutional environment. In particular, credit risk ($\beta = -0.0022717$) negatively affects profitability, while bank size, the Capital Adequacy Ratio (CAR), and institutional quality exert positive and statistically significant effects on bank profitability. Variations in liquidity and credit growth reflect the trade-off between profitability and risk. The research findings provide important practical implications for improving banking performance in the context of the post-COVID-19 period and increasing international financial integration.

5.2. Implications

For commercial banks, in order to optimize profitability and mitigate potential risks, strengthening capital capacity should be regarded as a top strategic priority. To achieve this objective, banks should maintain capital adequacy ratios at optimal levels, closely comply with international standards such as Basel II and Basel III and integrate capital management with efficient asset allocation. In addition, credit risk management should be transformed toward a more proactive and forward-looking approach through the application of IFRS 9 and the Expected Credit Loss (ECL) provisioning model. This would enable banks to improve asset quality screening and identify non-performing loans at an early stage for timely resolution. Furthermore, instead of pursuing mechanical expansion in scale, Vietnamese joint-stock commercial banks should focus on enhancing asset efficiency. Liquidity management should also become more flexible by maintaining loan-to-deposit ratios at prudent levels and actively diversifying revenue sources to reduce excessive dependence on traditional lending activities.

For state regulatory authorities, improving institutional quality is a key factor in enhancing the efficiency of the banking system through the strengthening of legal frameworks, contract enforcement, and financial transparency. At the same time, regulators should shift their focus from controlling the scale of credit growth toward supervising credit quality in order to prevent systemic risks, while also promoting the comprehensive implementation of IFRS 9. Finally, regulatory policies should be designed with greater flexibility and clearer differentiation, taking into account the scale and risk profiles of different groups of credit institutions.

REFERENCES

- [1.] Athanasoglou, P. P., Brissimis, S. N., et al. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *Journal of International Financial Markets, Institutions and Money*, 18(2), 121-136, <http://dx.doi.org/10.1016/j.intfin.2006.07.001>
- [2.] Berger, A. N., & DeYoung, R. (1997). Problem loans and cost efficiency in commercial banks. *Journal of Banking & Finance*, 21(6), 849-870.
- [3.] Bourke, P. (1989). Concentration and other determinants of bank profitability in Europe, North America and Australia. *Journal of Banking & Finance*, 13(1), 65-79.
- [4.] Bushman, R. M., & Williams, C. D. (2012). Accounting discretion, loan loss provisioning, and discipline of banks' risk-taking. *Journal of Accounting and Economics*, 54(1), 1-18.
- [5.] Demirgüç-Kunt, A., & Huizinga, H. (1999). Determinants of commercial bank interest margins and profitability: Some international evidence. *World Bank Economic Review*, 13(2), 379-408.
- [6.] Dietrich, A., & Wanzenried, G. (2011). Determinants of bank profitability before and during the crisis: Evidence from Switzerland. *Journal of International Financial Markets, Institutions and Money*, 21(3), 307-327.
- [7.] Foos, D., Norden, L., & Weber, M. (2010). Loan growth and riskiness of banks. *Journal of Banking & Finance*, 34(12), 2929-2940.
- [8.] Keeley, M. C. (1990). Deposit insurance, risk, and market power in banking. *American Economic Review*, 80(5), 1183-1200.
- [9.] Novotny-Farkas, Z. (2016). The interaction of the IFRS 9 expected loss approach with supervisory rules and implications for financial stability. *Accounting in Europe*, 13(2), 197-227.
- [10.] Pasiouras, F., & Kosmidou, K. (2007). Factors influencing the profitability of domestic and foreign commercial banks in the European Union. *Research in International Business and Finance*, 21(2), 222-237.
- [11.] Sufian, F., & Habibullah, M. S. (2009). Bank specific and macroeconomic determinants of bank profitability: Empirical evidence from the China banking sector. *Frontiers of Economics in China*, 4(2), 274-291.
- [12.] Trujillo-Ponce, A. (2013). What determines the profitability of banks? Evidence from Spain. *Accounting & Finance*, 53(2), 561-586.
- [13.] Vu, H. T., & Nahm, D. (2013). The determinants of profit efficiency of banks in Vietnam. *Journal of the Asia Pacific Economy*, 18(4), 615-631.