ELIT
Economic Laboratory Transition Research Podgorica

Montenegrin Journal of Economics

Citation:

Hang, N.P.T. (2023), "Key Factors Affecting the Profitability of Commercial Banks during the Covid-19 in Vietnam", *Montenegrin Journal of Economics*, Vol. 19, No. 3, pp. 53-62.

Key Factors Affecting the Profitability of Commercial Banks during the Covid-19 in Vietnam

NGA PHAN THI HANG[1]

[1] Associate Professor, Science Management Department, University of Finance - Marketing (UFM), Vietnam, e-mail: phannga@ufm.edu.vn

ARTICLE INFO

Received May 25, 2022
Revised from June 25, 2022
Accepted July 26, 2022
Available online July 15, 2023

JEL classification: B26, F62, G20, G53

DOI: 10.14254/1800-5845/2023.19-3.4

Keywords:

Commercial, banks, management, Covid-19, pandemic, profitability.

ABSTRACT

From 2019 to now, the world economy, including Vietnam, has been seriously affected by the Covid-19 pandemic. The paper's main idea showed that the complicated and prolonged Covid-19 epidemic is causing many adverse effects on all economic and social aspects, including the banking industry. The implementation of social distancing to prevent and control the Covid-19 epidemic has partly influenced enterprises' production and business processes and reduced commercial banks' profitability. However, thanks to the promotion of digitization, the operation of credit institutions currently maintains stability, ensuring smooth and safe transactions and bringing profits. Data collection methods: the author collected data from 25 commercial banks listed on the stock exchange from 2009 to 2020 and 300 observations (balanced panel data) extracted from websites and the General Statistics Office of Vietnam. The subject and the goal of the research analyzed vital factors affecting the profitability of commercial banks and the impact Covid-19 epidemic on the profitability of commercial banks listed on the Vietnam stock market. Besides, the author used the method applied to the models analyzed quantitatively through regression to select the appropriate model, the generalized method of moments (SGMM) system. The research findings showed the business profitability of commercial banks in the context of the Covid-19 epidemic, and eight hypotheses were accepted with a 5% significance level. Finally, the research results gave management implications to enhance the profitability of commercial banks in Vietnam. Besides, the study value helps the Government and State Bank are not immune to adverse impacts, and several recommendations have been proposed to overcome these harmful effects.

INTRODUCTION

In this context, the Covid-19 pandemic is still complicated and unpredictable, causing significant impacts on Vietnam's economy, society, and commercial Banks. At the beginning of 2020, Vietnam witnessed unprecedented changes in decades due to the effects of the Covid-19 pandemic (Adegboye et al., 2020). The economy was severely affected by the stagnation of production and business, and many socio-cultural activities were also seriously affected. Enterprises face the problem of declining operations and reducing cash flow, especially in tourism, entertainment, automobiles, and retail. Millions of workers are short of or unemployed, a profound drop in income. Liquidity problems for households and businesses, coupled with increasing instability, have negatively impacted financial market performance, and this has also increased the risk of overdue debt for bank loans (Kumar & Bird, 2022). Therefore, the operation of the banking system is not immune to negative impacts.

Profitability is essential for banks to innovate and diversify products, effectively doing business (Khalfaoui & Derbali, 2021; Ramlan & Adnan, 2016). Besides, profitability is one of the critical measures to evaluate the financial results of commercial banks, considered based on a combination of business results and used resources. Therefore, assessing banks' profitability and considering influencing factors is not a new topic but has always been of interest to researchers, banking administrators, and executives. However, most previous studies often include the model while considering internal, industry, and macro factors. In particular, studies on the profitability of Vietnamese commercial banks had corporate governance factors. This study analyzes data related to Vietnamese commercial banks from 2009 to 2020. Hence, the general environment of the banking industry and macroeconomic conditions among the surveyed banks are the same. They did not include industry and macro variables in the research model as previous studies did.

1. LITERATURE EMPIRICAL REVIEW

1.1 Return on assets (ROA)

Return on Assets (ROA) - known as the return on assets ratio, is an indicator that shows the correlation between a company's profitability compared to its assets. ROA tells us how efficiently a company uses its assets to profit (Garza-Garcia, 2012). The profitability analysis is a research process to evaluate the entire process and efficiency of business activities at the bank to clarify the quality of business activities and potential sources of income potential to be exploited. Propose plans and solutions to improve business profitability (Duraj & Moci, 2015).

1.2 The ratio of operating expenses to assets (OE)

Operating expenses include personnel costs, administrative management, depreciation, etc. This ratio evaluates the cost control of the bank. If this variable is higher, the bank's cost control is not reasonable, reducing efficiency (Eljelly, 2013). Optimizing operations, controlling costs well, and generating more revenue per dollar are increasingly effective indicators for banks(Athanasoglou et al., 2008). The control, reduction, and effective use of costs also play an essential role in the overall results achieved. Thus, the author gave hypothesis H1 below:

Hypothesis H1: There is a negative relationship between operating expenses to assets (OE) and return on assets (ROA).

1.3 Logarithm of total assets (SIZE)

This independent variable reflects the size of the bank, as the larger the size of the bank, enabling them to be equipped with more modern technology to be able to diversify services. Research results showed that income diversification negatively affects profitability (Albertazzi & Gambacorta, 2009). Therefore, this study also predicts that SIZE harms the dependent variable. Thus, the author gave hypothesis H2 following:

Hypothesis H2: There is a negative relationship between total assets (SIZE) and return on assets (ROA).

1.4 Liquidity ratio (LIQ)

Liquidity is an essential group of financial metrics used to determine a debtor's ability to repay a debt in the short term without raising external capital (Eyup et al., 2017; Tan & Floros, 2012). Liquidity ratios are an essential group of financial metrics used to determine a debtor's ability to repay a debt in the short term without raising external capital (Bougatef, 2017). The liquidity ratio measures a company's ability to meet its debt obligations and margin of safety by calculating metrics including current ratio, quick ratio, operating cash flow ratio high liquid asset to deposit ratio. Thus, the author gave hypothesis H3 following:

Hypothesis H3: There is a negative relationship between liquidity ratio (LIQ) and return on assets (ROA).

1.5 Leverage ratio (LEV)

The bank's leverage factor, represented by the leverage ratio, has a close relationship with the bank's capital adequacy (Linares-Mustarós et al., 2018). The greater the potential risk for banks with higher leverage, this factor requires the bank to have enough capital to cover potential losses without affecting creditors. Banks with high power are riskier than other banks, and shareholders will require an increase in profit ratio, resulting in increased leverage and having difficulty raising equity capital due to high capital costs. Therefore, the bank's leverage ratio and ROA inverse relationship (Mehta & Bhavani, 2017; Arellano, 2002). The study expects LEV to affect the profitability of commercial banks negatively. The author gave hypothesis H4 following:

Hypothesis H4: There is a negative relationship between leverage ratio (LEV) and return on assets (ROA).

1.6 Ratio of provision for credit risks to loans (LLR)

This variable had to assess the credit risk management of banks. Many previous studies have found evidence of the effect of this variable on profitability, but the trend of influence is quite different. Provision for credit risks is an amount set aside to provide for possible losses due to customers of a credit institution not performing their obligations as committed (Muriithi & Waweru, 2017; Singh et al., 2021). Provisions for credit risks are calculated according to the principal balance and recorded in the operating expenses of the credit institution. The author gave hypothesis H5 following:

Hypothesis H5: There is a positive relationship between the ratio of provision for credit risks to loans (LLR) and return on assets (ROA).

1.7 Gross domestic product growth (GDP)

The economic growth rate variable divided the difference between the current period's economic size and the previous period's economic size by the earlier period's economic size (Petria et al., 2015; Samad, 2015). Previous studies also show a positive relationship between GDP and ROA coefficient. Business results of commercial banks are often affected by macroeconomic factors. When assessing their impact on commercial banks' profitability, the GDP growth rate is usually (Durguti, 2020). 2020 is a year of great difficulties and challenges for the world economy, including Vietnam. Thus, the author gave hypothesis H6 following:

Hypothesis H6: There is a positive relationship between gross domestic product growth (GDP) and return on assets (ROA).

1.8 Consumer price index (CPI)

The variable consumer price index indicates a country's inflation rate. Inflation reflects the devaluation of the currency, which will affect the nominal interest rate, impacting borrowers and making customers unable to repay their loans. In other words, high inflation can increase banks' credit risk because customers are more prone to default (Hirtle & Stiroh, 2007; Nuhiu et al., 2017). In recent months, inflationary pressures have increased, especially for food and food products, caused by supply disruptions, high savings, and accumulated losses due to high inflation, storms, and floods in many places across the country. Input food prices escalated with a reasonably high increase (Isayas, 2022; Yahya et al., 2017). Thus, the author gave hypothesis H7 following:

Hypothesis H7: There is a negative relationship between the consumer price index (CPI) and return on assets (ROA).

1.9 Covid-19 pandemic (Dummy)

In the Covid-19 pandemic, there are still complicated and unpredictable developments, causing significant impacts on Vietnam's socio-economic in general and the commercial banking sector in particular. The State Bank of Vietnam has issued many documents allowing commercial banks to restructure loan repayment terms, exempt or reduce loan interest, maintain the same debt group, and remove customer loan difficulties. The impact of the Covid-19 pandemic on the business results of the commercial banking system in general and ROA in particular (Isayas, 2022). Therefore, the author proposes the hypothesis H8 that there is a difference in ROA following:

Hypothesis H8: there is a significant difference in ROA affecting the Covid-19 pandemic.

The research model proposed includes eight independent variables and one dependent variable.

$$ROAit = \alpha + \beta 1OEit + \beta 2SIZEit + \beta 3LIQit + \beta 4LEVit + \beta 5LLRit + \beta 6GDPit + \beta 7CPIit + \beta 8Dummy$$

Table 1. Hypothesis for factors affecting the profitability of commercial banks in Vietnam

Variables	*Code*	*Estimated coefficient*	*Hypothesis*
Dependent variable	ROA	-	-
Independent variables	OE	$\beta 1 < 0$	There is a negative relationship between the ratio of operating expenses to assets (OE) and return on assets (ROA)
	SIZE	$\beta 2 < 0$	There is a negative relationship between the logarithm of total assets (SIZE) and return on assets (ROA)
	LIQ	$\beta 3 < 0$	There is a negative relationship between liquidity ratio (LIQ) and return on assets (ROA)
	LEV	$\beta 4 < 0$	There is a negative relationship between leverage ratio (LEV) and return on assets (ROA)
	LLR	$\beta 5 > 0$	There is a positive relationship between the ratio of provision for credit risks to loans (LLR) and return on assets (ROA)
	GDP	$\beta 6 > 0$	There is a positive relationship between gross domestic product growth (GDP) and return on assets (ROA)
	CPI	$\beta 7 < 0$	There is a negative relationship between the consumer price index (CPI) and return on assets (ROA)
	Dummy-Covid-19	$\beta 8 > 0$	There is a significant difference in ROA affecting the Covid-19 pandemic

Source: Author' s analysis results

The banking industry plays an essential role in economic development and growth. Table 1 shows that commercial banks operate in money, credit, and banking services, considered a particular type of financial institution of the market economy to promote economic development. Profitability is one of the general economic indicators to evaluate the business performance of banks. In Vietnam, globalization has enhanced the connection between countries in different economic fields.

2. METHODOLOGY AND DATA

Research objectives Factors affecting the profitability of commercial banks in Vietnam
↓
Relevant theoretical Basis and domestic and foreign research related to the profitability of commercial banks in Vietnam
↓
Qualitative research - The author collects data from from 25 commercial banks listed on the stock exchange from 2009 to 2020 related to the research objectives - Develop a discussion outline and conduct in-depth interviews with 11 experts in banking - Analyze and discuss survey results, compared with previous studies related to the profitability - Discover the factors and check the results of qualitative
↓
Quantitative research - The models were analyzed quantitatively through OLS, FEM, REM, and SGMM regression to select the appropriate model. - Perform tests to ensure the estimate's robustness and unbiasedness. The paper used SGMM to overcome the disadvantages of the model. - Measure the level of impact of factors. - Check the goodness of fit of the model.
↓
Discuss results and recommendations The author proposes management implications to enhance the profitability of commercial banks in Vietnam

Figure 1. A research process for factors affecting the profitability of commercial banks in Vietnam

Source: Author's process

The research method of the article is a combination of qualitative research methods and quantitative research methods. Secondary data such as return on total assets, indicators affecting ROA, and information had audited financial statements of Vietnamese commercial banks (Almaqtari et al., 2018; Aman et al., 2014).

The data relating to the banking industry, and macro data, including GDP, CPI collected from the State Bank of Vietnam General Statistics Office of Vietnam.

Data were entered into Excel and Stata 14.0 software to perform a comparative analysis of absolute and relative numbers to see changes in the research criteria. There are preliminary assessments on the relationship of factors to the ROA of commercial banks (Menicucci & Paolucci, 2016; Hair et al., 2021). Secondary data on Vietnamese commercial banks were collected from 25 commercial banks from 2009 to 2020.

3. EMPIRICAL RESULTS

3.1 Analysis of descriptive statistics for factors affecting the profitability of commercial banks in Vietnam

Table 2. Descriptive statistics for factors affecting the profitability of commercial banks in Vietnam

Variable	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*
Roa	300	0.010	0.011	0.001	0.084
Oe	300	0.137	0.015	0.093	0.178
Size	300	7.932	0.511	6.522	9.173
Liq	300	0.186	0.093	0.045	0.610
Lev	300	11.307	5.013	2.008	33.113
Llr	300	0.009	0.006	0.001	0.050
Gdp	300	5.927	1.127	2.910	7.080
Cpi	300	5.910	4.604	0.630	18.58
D	300	0.083	0.276	0.000	1.000

Source: Authors collected and processed from Stata 14.0

Table 2 shows descriptive statistics on ROA and other indicators from 2009 to 2020 of 25 joint-stock commercial banks in Vietnam. The highest return on assets (ROA) average is 8.4 percent and 0.1 percent, respectively. In addition, the standard deviation of return on assets does not fluctuate much.

3.2 Analysis of factors affecting the profitability of commercial banks in Vietnam

Table 3. Factors affecting the profitability of commercial banks in Vietnam by Pooled OLS model

Roa	*Coef.*	*Std. Err.*	*t*	*P>t*	*VIF*	*1/VIF*
Oe	-0.760	0.064	-11.80	0.000	3.46	0.29
Size	-0.014	0.002	-7.300	0.000	3.58	0.28
Liq	-0.034	0.007	-4.990	0.000	1.43	0.70
Lev	-0.001	0.000	-3.230	0.001	2.17	0.46
Llr	0.306	0.090	3.390	0.001	1.30	0.77
Gdp	0.003	0.001	3.260	0.001	4.20	0.24
Cpi	-0.001	0.000	-3.420	0.001	1.83	0.54
D	0.008	0.004	2.120	0.034	4.23	0.24
C	0.223	0.022	10.13	0.000	-	-

Source: Authors collected and processed from Stata 14.0

Table 3 showed that all factors affect commercial banks' profitability in Vietnam with a significance level of 0.05. In addition, the multicollinearity test results VIF < 10. There is no sign of multicollinearity. Pooled OLS is a regression model in which all coefficients are constant over time and according to the individual characteristics of each individual. The data set had space and time but only estimated the conventional OLS model. This method will consider the effect of personal characteristics of each individual to be the same, besides that, although the OLS regression method had the best, unbiased, efficient linear estimator (BLUE). The results of model testing according to Pooled OLS shown above.

Table 4. Factors affecting the profitability of commercial banks in Vietnam by FEM model

Roa	*Coef.*	*Std. Err.*	*t*	*P>t*	*[95% Conf.*	*Interval]*
Oe	-1.02	0.08	-13.46	0.00	-1.17	-0.87
Size	-0.01	0.00	-2.27	0.02	-0.01	0.00
Liq	-0.05	0.01	-6.07	0.00	-0.07	-0.03
Lev	0.00	0.00	-4.32	0.00	0.00	0.00
Llr	0.44	0.10	4.26	0.00	0.23	0.64
Gdp	0.00	0.00	2.49	0.01	0.00	0.00
Cpi	0.00	0.00	-4.19	0.00	0.00	0.00
D	0.00	0.00	0.76	0.45	0.00	0.01
C	0.214	0.029	7.410	0.000	0.157	0.271

Source: Authors collected and processed from Stata 14.0

Table 4 shows the results of the FEM model regression. In which ROA is the dependent variable, the remaining variables are independent. The results showed Oe, Size, Liq, Lev, Llr, Gdp, Cpi và Dummy (D) affecting ROA at a 5% significance level. However, including the Dummy (D) factor does not affect ROA with a significance level of 5%. In addition, the author's Xtserial test shows that the FEM model with Prob > F = 0.0000 (<0.05) accepts H1, so the FEM model also has autocorrelation. The author continues to run the regression model according to REM as follows.

Table 5. Factors affecting the profitability of commercial banks in Vietnam by REM model

Roa	*Coef.*	*Std. Err.*	*t*	*P>t*	*[95% Conf.*	*Interv]*
Oe	-0.88	0.07	-12.62	0.00	-1.01	-0.74
Size	-0.01	0.00	-5.93	0.00	-0.02	-0.01
Liq	-0.04	0.01	-5.49	0.00	-0.06	-0.03
Lev	-0.00	0.00	-3.56	0.00	-0.00	0.00
Llr	0.37	0.10	3.89	0.00	0.19	0.56
Gdp	0.00	0.00	3.52	0.00	0.00	0.01
Cpi	-0.00	0.00	-4.10	0.00	-0.00	0.00
D	0.01	0.00	2.15	0.03	0.00	0.02
C	0.24	0.02	9.73	0.00	0.19	0.29

Source: Authors collected and processed from Stata 14.0

Table 5 shows that all factors affect commercial banks' profitability in Vietnam with a significance level of 0.05. In addition, the author tests Xtserial for the REM model with Prob > F = 0.0000 (<0.05) value, which accepts H1 so the REM model also has autocorrelation and Prob > chi2 = 0.0000 (< 0.05) accepts H1 so that the REM model has the phenomenon of variable error variance. Thus, the author has analyzed three different model estimation methods. The results show that the FEM and REM models do not have the phenomenon of multicollinearity, but the phenomenon of self-correlation and variance of the error occurs. There are three common models in Stata table data: OLS, Fixed effect model, and random effect model. We need to find the most suitable model among the three models above when running the model in the Hausman test to choose between the fixed-effect model FEM and the random effect model REM. Hausman FEM REM:

Test: Ho: difference in coefficients not systematic

chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 25.15, Prob>chi2 = 0.0015

(V_b-V_B is not positive definite).

Table 6. Factors affecting the profitability of commercial banks in Vietnam by SGMM model

Roa	*Coef.*	*Std. Err.*	*t*	*P>t*	*[95% Conf.*	*Interv]*
Oe	-0.88	0.07	-12.62	0.00	-1.01	-0.74
Size	-0.01	0.00	-5.93	0.00	-0.02	-0.01
Liq	-0.04	0.01	-5.49	0.00	-0.06	-0.03
Lev	-0.00	0.00	-3.56	0.00	-0.00	0.00
Llr	0.37	0.10	3.89	0.00	0.19	0.56
Gdp	0.00	0.00	3.52	0.00	0.00	0.01
Cpi	-0.00	0.00	-4.10	0.00	-0.00	0.00
D	0.01	0.00	2.15	0.03	0.00	0.02
C	0.24	0.02	9.73	0.00	0.19	0.29

Source: Authors collected and processed from Stata 14.0

Table 6 shows the model results at the 1% significance level. In the three models, the author can select the appropriate model three models Pooled OLS, FEM, and REM, by testing the hypothesis violations. In addition, the impact of the Covid-19 pandemic variable (Dummy) on the ratio of profit after tax to total assets (ROA) of Vietnamese joint-stock commercial banks in the period 2009 - 2020 is positive and has an estimated coefficient. quantity is 0.01 with a standard error of 0.00 (p = 0.00).

3.3 Result discussion

First of all, Managerial implications for the Government: (1) The Government, ministries, and localities need to speed up the effective implementation of solutions to support businesses and people to overcome the difficulties of the Covid-19 epidemic in terms of taxes, social security packages, and legal procedures. Besides, administrative procedures speed up the disbursement of public investment capital. (2) It is necessary to mobilize and effectively use resources, ensure a balance of resources to deploy support packages for employees, ensure social security, and support appropriate production and business. It is necessary to support the right target groups according to the Government's regulations. Identifying the right people is very important to avoid abuse, both from the management agency and the beneficiaries. In this way, we promote the effectiveness of support packages to help people and businesses overcome difficulties, restore production, and ensure revenue to repay bank loans.

According to Decision No. 32/2020/QD-TTG dated October 19, 2020, of the Prime Minister amending and supplementing many articles of Decision No. 15/2020/QD-TTG dated April 24, 2020, of the Prime Minister, The Government stipulates the implementation of policies to support people facing difficulties due to the Covid-19 pandemic and the Government's Resolution No. 68/NQ-CP dated July 1, 2021, on many policies to support workers, and employers facing difficulties due to the Covid-19 pandemic; In the spirit of the Government's direction, ministries, departments, and branches have urgently researched, developed, and issued specific guiding documents in each field they are in charge of, commercial banks continue to implement sound policies to support businesses combined with the General Department of Taxation to extend tax payment and land rent for those affected by the epidemic; exemption or reduction of taxes, fees, and charges for affected subjects, contribute to removing difficulties for production and business, ensuring social security. The relevant agencies shall guide the temporary suspension of social insurance payments for those affected by the pandemic. Without calculating interest and penalty for late payment according to their competence and provisions of law, consider the appropriate time to pay trade union dues, contributing to removing difficulties for businesses and organizations.

Limitations: this paper aims to overcome the limitations and weaknesses and minimize errors. This paper enriches more reliable data for evaluating factors affecting the ROA coefficient. New authors should carry out further research, including (1) The following study needs to collect more complete data sets of all domestic and commercial banks, including joint-stock commercial banks, state-owned commercial banks, joint-venture commercial banks, and commercial banks with 100% foreign capital. (2) Further research needs to collect data from 2009 to 2021 to ensure the generalizability of the development process of commercial banks and the strong impact of the ongoing covid-19 pandemic. (3) Further research needs to add many other factors affecting the ROA of Vietnamese joint-stock commercial banks, such as exchange rate, net profit margin, and return on equity.

CONCLUSIONS

The main findings of the present study are commercial banks face many difficulties and challenges. Due to the epidemic, many businesses could not pay their debts, leading to an increase in the bad debt ratio, affecting the operational safety of the commercial banking system. Therefore, not only affecting credit demand, but the Covid-19 epidemic also significantly affected credit quality and profitability. By the end of 2020, Commercial banks' bad debt at 25 listed banks was at more than VND 97,280 billion, an increase of 31% compared to the end of 2019.

Compared with other studies on the industries directly affected by the Covid-19 epidemic, the banking industry initially suffered minor damage. But in fact, the deterioration of this industry is not light when about 70% of the total income of commercial banks still comes from interest income. If credit growth is unpromoted, the bank will fall into double difficulties when it lacks the primary source of revenue to make up for the shortfalls due to debt freezing, rescheduling, and provisioning for old and new debts. Meanwhile, loosening lending conditions is very risky. Therefore, the synchronous implementation of solutions; flexibly and effectively operating policies to facilitate minimizing the impact of the Covid-19 epidemic on the banking industry is meaningful in the current period.

ACKNOWLEDGEMENTS

The author thanks all lecturers and rector of the University of Finance - Marketing, Ho Chi Minh City, Vietnam

REFERENCES

Adegboye, O.A., Adeshina, I.., Ezra, G. (2020), “Early transmission dynamics of novel coronavirus (Covid-19) in Nigeria”, *International Journal of Environmental Research and Public Health*, Vol. 17, No. 9, pp. 1-10, doi: 10.3390/ijerph17093054.

Albertazzi, U., Gambacorta, L. (2009), “Bank profitability and the business cycle”, *Journal of Financial Stability*, Vol. 5, No. 4, pp. 393-409, doi: 10.1016/j.jfs.2008.10.002.

Almaqtari, F.A., Al-Homaidi, EA., Tabash, M. I., Farhan, N.H. (2018), “The determinants of profitability of Indian commercial banks: A panel data approach”, *International Journal of Finance & Economics*, Vol. 24, No. 1, pp. 1-18, doi: 10.1080/23322039.2018.1548072.

Aman, I., Tariq, W., Usman, M., Mir, H.Z. (2014), “Determinants of commercial banks profitability: Empirical evidence from Pakistan”, *International Journal of Accounting and Financial Reporting*, Vol. 4, No. 2, pp. 1-22, doi: 10.5296/ijafr.v4i2.5939.

Arellano, M. (2002), “Sargan's instrumental variables estimation and the generalized method of moments”, *Journal of Business & Economic Statistics*, Vol. 20, No. 4, pp. 450-459, doi: 10.1198/073500102288618595.

Athanasoglou, P.P., Brissimis, S.N., Delis, M.D. (2008), “Bank specific, industry-specific and macroeconomic determinants of bank profitability”, Journal of International Financial Markets, Institutions and Money, Vol. 18, No. 2, pp. 121-136, doi: 10.1016/j.intfin.2006.07.001.

Bougatef, K. (2017), “Determinants of bank profitability in Tunisia: Does corruption matter?”, Journal of Money Laundering Control, Vol. 20, No. 1, pp. 70-78, doi: 10.1108/JMLC-10-2015-0044.

Duraj, B., Moci, E. (2015), “Factors influencing the bank profitability – empirical evidence from Albania”, *Asian Economic and Financial Review*, Vol. 5, No. 3, pp. 483-494. doi: 10.18488/journal.aefr/2015.5.3/102.3.483.494.

Durguti, E.A. (2020), “Challenges of Banking Profitability in Eurozone Countries: Analysis of Specific and Macroeconomic Factors”, *Naše gospodarstvo/Our Economy*, Vol. 66, No. 4, pp. 1-10, doi: 10.2478/ngoe-2020-0019.

Eljelly, A. (2013), “Internal and external determinants of profitability of Islamic banks in Sudan: Evidence from panel data”, *Afro-Asian Journal of Finance and Accounting*, Vol. 3, No. 3, pp. 222-240, doi: 10.1504/AAJFA.2013.054424.

Eyup, L., Niyazi, T., Nurcan, O. (2017), “Effect of the asset quality on the bank profitability”, *International Journal of Economics and Finance*, Vol. 9, No. 7, pp. 60-68, doi: 10.5539/ijef.v9n7p60.

Garza-Garcia, J.G. (2012), “Does market power influence bank profits in Mexico. A study on market power and efficiency”, *Applied Financial Economics*, Vol. 22, No. 1, pp. 21-32, doi: 10.1080/09603107.2011.595681.

Hair, J., Anderson, R., Tatham, R., Black, W. (2021), *Multivariate data analysis with readings*, US: Prentice-Hall: Upper Saddle River, NJ, USA.

Hirtle, B.J., Stiroh, K.J. (2007), “The return to retail and the performance of US banks”, *Journal of Banking & Finance*, Vol. 31, No. 4, pp. 1101-1133, doi: 10.1016/j.jbankfin.2006.10.004.

Isayas, Y.N. (2022), “Determinants of banks’ profitability: Empirical evidence from banks in Ethiopia”, *Cogent Economics & Finance*, Vol. 10, No. 1, pp. 1-15, doi: 10.1080/23322039.2022.2031433.

Khalfaoui, H.A., Derbali, A. (2021), “Money creation process, banking performance and economic policy uncertainty: evidence from Tunisian listed banks”, *International Journal of Social Economics*, Vol. 48, No. 8, pp. 1175-1190, doi: 10.1108/IJSE-12-2020-0784.

Kumar, V., Bird, R. (2022), “Factors influencing the profitability of banks in India and China”, *Applied Economics Letters,* Vol. 29, No. 5, pp. 371-375, doi: 10.1080/13504851.2020.1869153.

Linares-Mustarós, S., Coenders, G., Vives-Mestres, M. (2018), “Financial performance and distress profiles. From classification according to financial ratios to compositional classification”, *Advances in Accounting*, Vol. 40, pp. 1-10, doi: 10.1016/j.adiac.2017.10.003.

Mehta, A., Bhavani, G. (2017), “What determines banks' profitability? Evidence from emerging markets-the case of the UAE banking sector”, *Accounting and Finance Research*, Vol. 6, No. 1, pp. 77-88, doi: 10.5430/afr.v6n1p77.

Menicucci, E., Paolucci, G. (2016), “The determinants of bank profitability: empirical evidence from European banking sector”, *Journal of Financial Reporting and Accounting*, Vol. 14, No. 1, pp. 86-115, doi: 10.1108/JFRA-05-2015-0060.

Muriithi, J.M., Waweru, K.M. (2017), “Liquidity risk and financial performance of commercial banks in Kenya”, *International Journal of Economics and Finance*, Vol. 9, No. 3, pp. 256-265, doi: 10.5539/ijef.v9n3p256.

Nuhiu, A., Hoti, A., Bektashi, M. (2017), “Determinants of commercial banks profitability through analysis of financial performance indicators: Evidence from Kosovo”, *Journal of Business: Theory and Practice*, Vol. 18, No. 2, pp. 160-170, doi: 10.3846/btp.2017.017.

Petria, N., Capraru, B., Ihnatov, I. (2015), “Determinants of banks’ profitability: evidence from EU 27 banking systems”, *Procedia Economics and Finance*, Vol. 20, pp. 518-524. doi: 10.1016/S2212-5671(15)00104-5.

Ramlan, H., Adnan, M.S. (2016), “The profitability of Islamic and conventional banks: Case study in Malaysia”, *Procedia Economics and Finance*, Vol. 35, No. 2015, pp. 359-367, doi: 10.1016/s2212-5671(16)00044-7.

Samad, A. (2015), “Determinants of bank profitability: Empirical evidence from Bangladesh commercial banks”, *International Journal of Financial Research*, Vol. 6, No. 3, pp. 173-179, doi: 10.5430/ijfr.v6n3p173.

Singh, S.K., Basuki, B., Setiawan, R. (2021), “The effect of non-performing loans on profitability: empirical evidence from Nepalese commercial banks”, *Journal of Asian Finance, Economics and Business*, Vol. 8, No. 4, pp. 709-716, doi: 10.13106/JAFEB.2021.vol8.no4.0709.

Tan, Y., Floros, C. (2012), “Bank profitability and GDP growth in China: A note”, *Journal of Chinese Economic and Business Studies*, Vol. 10, No. 3, pp. 267-273, doi: 10.1080/14765284.2012.703541.

Yahya, A.T., Akhtar, A., Tabash, M.I. (2017), “The impact of political instability, macroeconomic and bank-specific factors on the profitability of Islamic banks: An empirical evidence”, *Investment Management and Financial Innovations*, Vol. 14, No. 4, pp. 30-39, doi: 10.21511/imfi.14(4).2017.04.