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CURRENT TRENDS IN BANKING ACTIVITIES IN THE EU: ASSESSMENT OF FACTORS IMPACTING PROFITABILITY

ABSTRACT

The article examines current trends in banking activities within EU countries and their long-term impact on the banking sector. It focuses on the role of banks in the economic development of the EU at the present stage. The authors highlight the contribution of banks to economic growth through the mobilization and redistribution of financial resources. The study emphasizes that ensuring the stability and efficiency of the banking system in the EU is achieved through the harmonization and joint regulation of the financial market, which is a cornerstone of the European integration process. The identified modern trends in banking activities within the EU include: continuous improvement of the regulatory mechanism in the European Union; transformational and modernization processes in EU banking, aligning with global economic trends; and the development of online and digital banking. The authors conclude that the current stage of banking development involves a shift in banking technologies, the introduction of innovations, and changes in market behaviour models. Econometric modelling was conducted to assess the impact of factors on profitability levels. The most significant factors influencing the profitability of EU banks were identified as consolidated banking leverage and the growth rate of real GDP. The findings indicate a gradual decrease in profitability in the short term, with prospects for growth in the future. The model underwent all validation stages and demonstrated high predictive quality.

The object of the study is banking activities in EU countries and their influence on European economic development.

The subject of the study encompasses the theoretical and practical aspects of banking development in EU countries, modern banking trends, and future prospects.

Keywords: banking activity in EU, European financial market, profitability of banks, modernization of banks, online banking, Digital Bank, digitalization, bank leverage

JEL Classification: E42, F32, G20

INTRODUCTION

The relevance of studying current trends in banking activities within the European Union is driven by changes in the economic, technological, and regulatory environments that impact the development of the European financial sector. Like other countries worldwide, the EU is adapting to new challenges, such as digitalization, financial stability, modernization, and transformation, as well as the increasing demands for the resilience of the banking system in European countries. Competition in the European financial market is intensifying due to the rapid growth of FinTech companies and technological giants — BigTech — expanding their presence in the banking sector by offering payment services, investment opportunities, and other financial services. The competition from these companies forces traditional banks to update their business models, enhance digital solutions, and seek partnerships with technology companies.

The current state of bank development in the European market and the identification of their trends will facilitate the adaptation of the European financial system to new challenges associated with changes in the regulatory environment, modernization and

transformation, resilience (including environmental sustainability), digitalization, and cybersecurity. These trends create new opportunities for innovation in the financial sector and ensure the stable development of the EU economy during a period of global transformation.

LITERATURE REVIEW

The issue of banking trends in the EU is always relevant and has been explored over the past few decades in many works by European and other foreign experts.

Nicolas Charnay et al. analyze the development trends of banks in European countries and note that against the backdrop of a slight economic decline, the ratings of European banks remain stable due to reliable capitalization and liquidity, increased profitability, and high-quality assets (Charnay et al., 2024). The authors predict a slight decline in the profits of most European banks in 2024, an increase in risks, market fluctuations and instability, as well as new challenges such as cyber risks and the digital transition (GenAI). Among domestic experts, Kyrylenko S. analyzed banking trends through the example of retail banking in his research (Kyrylenko, 2019), where he revealed the current banking trends and the prospects for implementing various models and tools in Ukraine's banking sector. He emphasized artificial intelligence, the development of the banking ecosystem, and the "redefinition" of interaction channels and access to banking operations in his study.

In general, digitalization and digitization are considered among the key development trends in the banking and financial-credit sectors, including banks. Many scholars have addressed these trends, including the works of Nagavisweswararao Peratla (Nagavisweswararao, 2022), Fernandez-Bollo E. and others (Fernandez-Bollo et al., 2021), Pakhnenko O. and others (Pakhnenko et al., 2021), Hrytsenko L. and others (Hrytsenko et al., 2024), and Havryliuk J. and others (Havryliuk et al., 2021).

Additionally, representatives of the European Central Bank in the Financial Stability Review discuss trends and perspectives for the development of European banks (ECB, 2024). The authors emphasize that there is a potential risk of a deep recession in the near future. While such a risk exists, financial stability also depends on the ability to absorb shocks. Cyril Couaillier, Maria Dimou, and Conor Parle in the Financial Stability Review of the European Central Bank examine the distribution of banking capital and its implications for monetary policy (Couaillier et al., 2023).

The issue of researching the profitability factors of European banks is quite ambiguous and depends on the external environment and the development of the financial sector, which is constantly addressed in many works. For example, Joaquín Maudos analyzes profitability in the banking sector through the lens of a crisis, specifically how the income structure of European banks is interconnected with risk and profitability during a crisis (Maudos, 2017). In general, the author concludes that regulators in Europe have a positive impact on financial stability. Jacob A. Bikker and Jaap W. B. Bos, in their comprehensive work, emphasize that the study of bank profitability is relevant for bank management, financial markets, banking supervision, and academics (Bikker & Bos, 2005). This interest is driven by the growing consolidation in the banking sector, contemporary trends in banking activities, changes in EU regulatory policy, as well as the removal of borders both at the international level and with regard to specific financial products and sectors. According to the authors, the explanation (or changes) in bank profitability is an implicit or explicit subject of most banking literature. Paul Bochmann, Maciej Grodzicki, Heinrich Kick, Benjamin Klaus, and Cosimo Pancaro analyze key indicators of eurozone banks, assess capital costs, and highlight the uncertainty regarding the prospects of banking profits and asset quality, which could negatively affect financial stability in the eurozone in the long term (Bochmann et al., 2023). Dawood Ashraf and others, in their work, examine the income diversification of European banks and their role in banking stability. The authors conclude that high ownership concentration is associated with a higher risk of bankruptcy; "banks that engage in significant fee-based activities are financially more stable compared to banks that primarily generate income from traditional intermediation activities" (Ashraf, 2016).

AIMS AND OBJECTIVES

The aim of the article is to study and reveal current trends in banking activities within the European Union and to model the factors influencing profitability to ensure financial stabilization and mitigate economic shocks. Based on this goal, the research objectives are as follows:

- to identify the role of banks in the economic development of countries in the context of the current stage of global economic development;

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- to uncover current trends in banking activities in European countries;
- to model the assessment of the most significant factors influencing the return on assets (ROA) of the EU banking system as a key indicator of profitability;
- to forecast the future prospects of banking activities in the EU.

METHODS

Banks always play a significant role in the economies of countries around the world. They occupy a leading position in the development of industry and trade. Banks are among the key players in the financial market, ensuring its stable and efficient functioning.

The study of current trends in banking activities within the EU requires a comprehensive approach that considers various factors:

1. For this research, the works of European scholars and banking professionals reports from international rating institutions, the European Central Bank (ECB), and others have been reviewed.
2. Statistical data has been collected, which forms the basis for the analysis of banking activities in the EU and reveals the trends in banking.
3. A model has been developed to assess the impact of significant factors on the profitability of European banks, which is an important factor in monetary policy and financial stability.
4. Conclusions have been drawn regarding the peculiarities of banking activities within the EU, considering the modern characteristics of the development of this sector.

This approach provides a deeper understanding of the current trends in banking activity within the EU and the necessity of increasing bank profitability for the financial stability of the Eurozone and improving the competitiveness of European banks on the international stage.

Based on the collected statistical information and the analysis of factors influencing the profitability level of European banks, a multifactorial regression model has been developed:

$$Y = f(X1 \ldots Xn) \quad (1)$$

To build a multifactorial regression model, for forecasting capabilities and drawing conclusions, the E-Views software product was used, which is chosen for its capabilities in econometric modelling. During the construction of the model, factors that have the greatest impact on the profitability of banks, specifically through the return on assets (ROA) indicator, were tested. Therefore, the selection of E-Views is relevant due to its instrumental capabilities, which were required for the tasks of this research.

The author's hypothesis is that the profitability of banks is viewed not only through the lens of monetary and credit policy and financial stabilization but also through an adequate level of profitability, which will allow the creation of capital buffers to cover potential losses, thereby smoothing shocks to economic activity, as well as paying dividends and/or repurchasing shares. Profit can also be used for investments and increasing the competitiveness and resilience of banks to shocks. High profitability may indicate excessive leverage (bank leverage) and/or high risk, which could increase the risks to the bank's stability and the financial system (Bellia & Cousin, 2023). However, prolonged low profitability hampers monetary policy. In the easing cycle, it prevents banks from passing lower central bank rates onto bank lending rates, increasing credit volumes, and easing their credit standards. In a tightening cycle, prolonged low profitability may threaten the banks' ability to cope with the deteriorating creditworthiness of their counterparts and, ultimately, cover losses.

Thus, based on the constructed model, the impact of the selected most significant variables and the density of their relationship were tested. These variables include: (1) Consolidated bank leverage (national and foreign organizations, the multiple of assets to equity ratio), %; (2) Individuals using the Internet for online banking, %; (3) Growth rate of real GDP; (4) Number of employees in the European banking system, in millions of people; (5) Total volume of deposits as a percentage of bank assets. Among these, the most significant variables were selected for further analysis.

The statistical data for the analysis were taken for the period 2014-2022, thus the model includes 9 observations and has the following general form:

ROA = f (tGDP, BL) (2)

where, tGDP – the growth rate of real GDP [21], BL – consolidated bank leverage, national and foreign banks (the multiple of assets to equity ratio), % [19].

RESULTS

1. Current Trends of Banking Activities in the EU

The main contribution of banks to the economic development of the country should be determined in the following aspects:

1. Mobilization of savings and capital formation. Banks, by mobilizing savings, create capital necessary for the economic development of any country in the world.
2. Investment in financial and production goals. Mobilized savings are invested by banks for financial and productive purposes, leading to the redistribution of funds across different sectors of the economy, which increases their productivity.
3. Impact on the stability of the economy. With the effective redistribution of funds, banks influence the stability and growth rates of the country's economy.
4. Support for business credit needs. Banks meet the credit resource needs of businesses by creating conditions for banking credit, which increases production volumes, employment levels, and sales volumes, and thus contributes to faster economic growth.
5. Influence on the money supply and pricing policy. By changing banking rates, banks affect the country's money supply and play a role in developing an effective pricing policy for banking products and services.
6. By investing bank funds in government securities and providing short-term financing (buying treasury bills), banks thus provide long-term credit to the government, which can stabilize the economy and support economic growth.

It should be noted that it is in the conditions of harmonization and joint regulation of the financial market that the stability and efficiency of the banking system in the EU are ensured, and this is one of the foundations of the process of European integration. In the opinion of the authors, the current trends in banking activity in the EU are:

1. Continuous improvement of the regulatory mechanism. The EU constantly pays attention to supervision and risk management practices, and reliable regulation of banking activities. This, in turn, confirms the EU's desire to promote stable and sustainable development of the banking sector, which in turn has a positive impact on ensuring financial stability and sustainable economic growth of the European economy. The driver for the creation of the European Banking Union (Figure 1) was the global financial crisis of 2007-2008, which led to the development of an approach to a single centralized mechanism for the application of banking law. The pillars of the EBU are directed at addressing the challenges and impacts on banking activities, including asymmetric shocks, financial imbalances, real convergence issues, fiscal homogeneity problems, and redistributive conflicts (Koziuk, 2016, p. 16-19).
2. Transformational and modernization processes in banking activities in the EU in accordance with the current global economic trends. Much has been achieved in strengthening banks and transformation processes in EU banking activities, and measures are continuously being taken to identify and eliminate gaps. However, according to Charles Enoch, "the measures taken in the EU are insufficient to strengthen the banking system" (Enoch, 2013, p.459). Many banking experts and European scholars focus on solving the following key tasks (Nagavisweswararao, 2022): improvement of business rules in banking activities in line with the requirements of the time; implementation of digital technologies in the era of the digital economy; renewal and modernization of banking systems in line with the trends of digitalization and digitization; transition of the banking system from batch mode to real-time mode, updating banking programs according to current trends; and compliance with dynamic regulatory requirements of the modern world.

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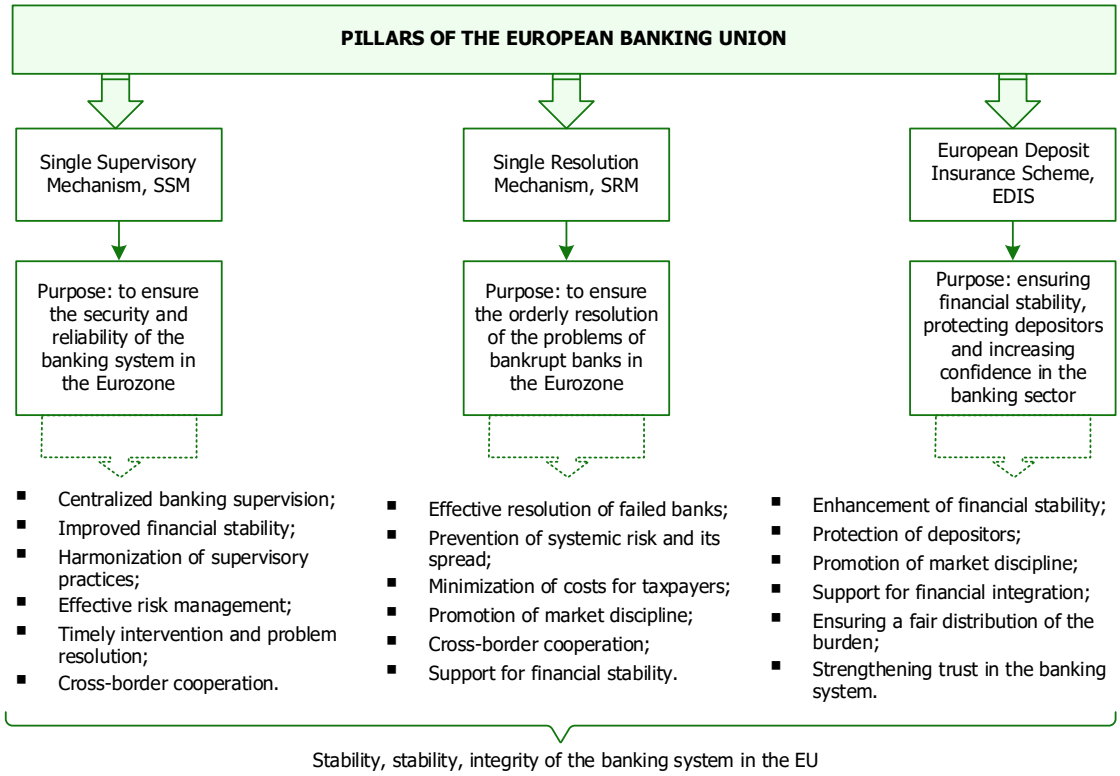

Figure 1. Pillars of the European Banking Union. *(Source: author's development based on Banking union, 2024)*

3. Development of online/digital banking. It is important to note that not all banks are able to implement digital service offerings. At the same time, it is worth reconsidering how banks will interact with their customers to ensure optimal revenue. The establishment of a digital bank is shown in Figure 2.

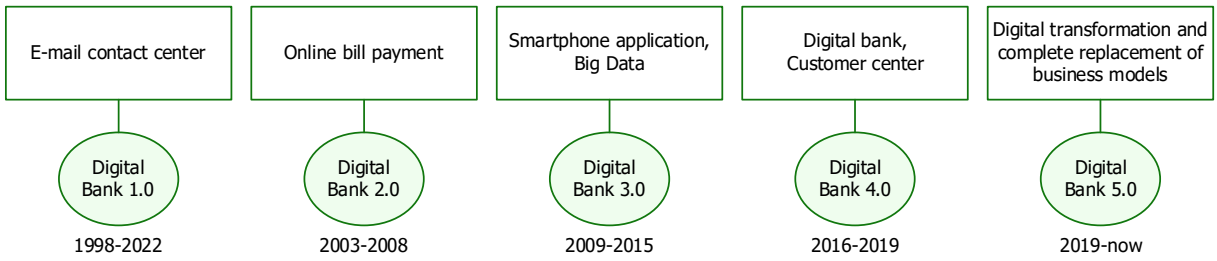

Figure 2. Formation, development and transformation of Digital Bank. *(Source: author's development based on Report: Palgrave Studies in Financial Services Technology, 2021; Suluk, 2023)*

It should be emphasized that the digitalization of banking brings many advantages for both banks and their customers [36]. In particular, for banks, digitalization provides the following advantages: reduction of operating costs, time savings, optimization of monitoring, effective risk management, high variability of banking products for customers, and improvement of the quality of banking services. For bank customers, digitalization of banking allows for more secure banking operations, as well as reducing the time between transactions. It should be noted that the number of digital users in the European banking sector has increased by 23% since the beginning of the pandemic (ECB, 2021). Customers mainly contact banks through online channels. In EU countries, we observe an increase in the number of people who conduct transactions through online channels, so according to data for 2021, 59.7% of the population aged 16-74 used the Internet for their own banking transactions (Statista) (Figure 3). Moreover, based on our forecasts, the number of people using online channels is expected to continue increasing (Statista).

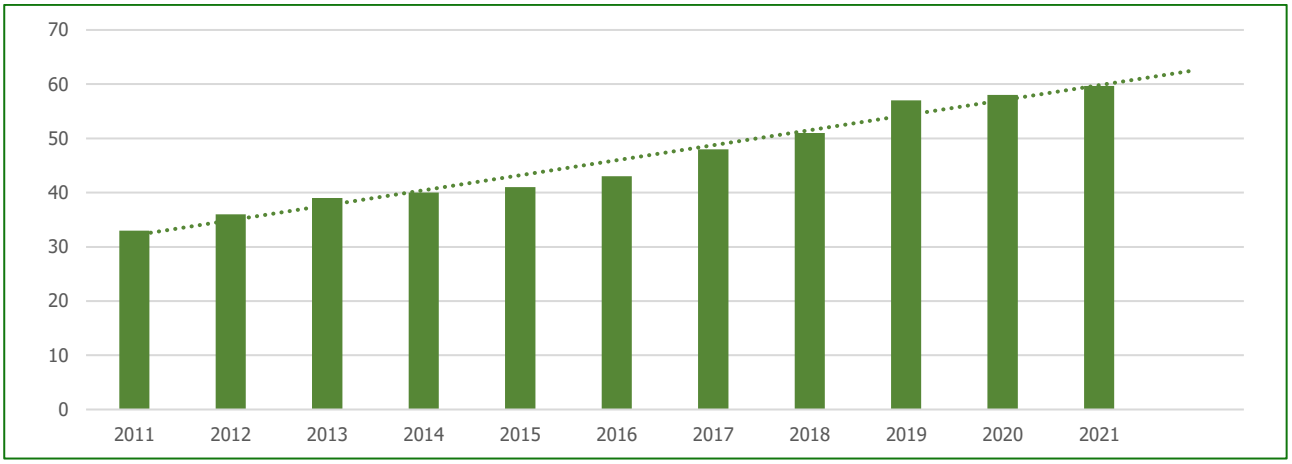

Figure 3. Share of individuals using online banking in the European Union (EU-28) from 2011 to 2021, %. *(Source: author's development based on Tkalenko & Onoprienko, 2024)*

It is important to highlight that digitalization and digital transformation in the banking sector have significantly impacted this industry in recent years, not only in EU countries. However, the digitalization process is often hindered not by technology, but by traditional banking culture, which causes many financial institutions to lag behind in implementing breakthrough digital innovations. In this regard, one of the main links between digitalization and digital optimization in banking is the process of interaction with customers.

Banking technologies are changing, innovations are being introduced into banking activities, and the banking sector itself is evolving. Table 1 presents the main indicators of the EU banking sector. The analysis of this table allows the following conclusions:

1. The number of banks is declining; since 2002, this decline has been happening yearly. The number of credit institutions has dropped by 23.8% during the last eight years.
2. The number of bank personnel is declining in tandem with the decline in the number of financial organizations. Therefore, according to data from 2021, there were 2.149 million bank employees, compared to 2.486 million in 2014. This represents a 13.6% decrease over eight years.
3. We observe a trend of a decrease in the number of credit institution branches by 8.3% and the number of subsidiaries in the EU by 37.7% over the last eight years to 2022. Data from 2021 shows that Germany, the most developed nation in Europe, has the most banks (27.46%), followed by Poland (11.48%), Austria (-8.93%), Italy (8.68%), and France (7.58%) (Saravia, 2022, p. 4).
4. We also see a slight increase in bank assets and return on capital in the EU, as well as a rise in the total volume of deposits in EU banks, which is a result of increased public confidence and trust in regulatory bodies.
5. We observe a small growth in EU bank assets and return on capital.

Table 1. Some Indicators of Banking Activity in EU Countries. *(Source: author's development based on EBF, 2024; Onoprienko, 2023; Saravia, 2022)*

Indicators	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Number of credit institutions in the EU, units	6906	6688	6241	5880	5698	5581	5441	5263	5075	4927
Number of employees in credit organizations, million people	2.486	2.452	2.414	2.371	2.296	2.265	2.219	2.174	2.152	2.153
Number of internal branches in the EU, thousand units	192.8	187.9	179.3	173.1	162.9	155.6	146.4	138.4	132.7	129.4
Total volume of deposits in EU banks as a share of total banking assets, %	52.5	53.3	53.1	56.2	57.2	57.1	59.3	61.0	58.0	57.1
Total assets of banks in the EU (Eurozone), %	31.2	30.8	30.9	30.4	30.9	32.4	35.2	36.7	39.0	39.1
Return on equity in the EU, %	3	3	5	3	6	5	2	6	7	9

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The trend of decreasing banking institutions, including subsidiaries and branches, has been observed since the global financial crisis. Bank consolidation has led to a higher market concentration. At the same time, it is bank consolidation that has provided an impetus and new opportunities to increase the efficiency of banking activities. The most visible sign of this trend is concentration and consolidation through bank mergers and acquisitions (Krulova, 2020, p.118).

The banking market is becoming increasingly concentrated, and a third of its banking groups – mostly the smallest banks – have disappeared since the global financial crisis. At the same time, the banking sector continues to develop and implement measures to increase profitability, combat excess capacity, and reduce physical banking infrastructure and a large number of small banks (Gardo & Klaus, 2019).

2. Econometric Modelling: Forecasting THE Profitability OF EU Banks

Banks play a key role in monetary policy, and their financial condition is crucial for monetary policy, economic activity, and overall economic growth. In the eurozone, the European Central Bank (ECB) has emphasized the importance of adequate profitability for monetary policy and highlighted that low profitability can raise concerns about financial stability [11;12]. An evaluation of banking activities in the EU can be conducted through the analysis of profitability indicators (Table 2). Bank profitability is usually measured and calculated using profitability ratios without risk adjustments - Return on Assets (ROA) or Return on Equity (ROE), with ROE being influenced by the companies' leverage. There are also risk-adjusted profitability indicators, such as Risk-Weighted Return on Assets (RORWA), or operating profit over risk-weighted assets.

Table 2. The Most Significant Factors Affecting the Return on Assets of Banks in the EU. *(Source: author's development based on Bellia & Cousin, 2023; Eurostat)*

obs	ROA	tGDP	BL
2014	0.22	1.6	16.9
2015	0.3	2.3	15.6
2016	0.26	2	15.2
2017	0.41	2.8	14
2018	0.46	2.1	14.1
2019	0.38	1.8	14.2
2020	0.12	-5.6	14.7
2021	0.46	6	14.6
2022	0.49	3.6	14.6

The analysis of the significance of the factors allowed for the construction of the following regression equation:

$$ROA = C(1) * tGDP + C(2) * BL + \varepsilon \quad (3)$$

where, C (1, 2, ... n) – the regression coefficients for the selected variables, ε – the vector of random deviations.

Based on the selected most significant and verified factors, a correlation matrix was constructed, which allows for establishing the strength of the relationship between the chosen variables. There is a strong positive correlation between the return on assets (ROA) of European banks and the real GDP growth rate, and a moderate negative correlation (correlation coefficient of 55%) between the return on assets of European banks and consolidated banking leverage (Table 3). The results of the regression analysis of ROA are presented in Table 4.

Table 3. Correlation matrix. *(Source: authors development by the Multiple Regression procedure in eViews)*

	ROA	tGDP	BL
ROA	1	0.7929	-0.5538
tGDP	0.7929	1	-0.0632
BL	-0.5538	-0.0632	1

Table 4. Results of Regression Analysis of ROA. *(Source: authors development by the Multiple Regression procedure in eViews)*

Variable	Coef.	Std. Er.	t-Stat.	Prob.
tGDP	0.031069	0.005700	5.450245	0.0016
BL	-0.069829	0.019279	-3.622045	0.0111
C	1.326042	0.288165	4.601674	0.0037
R-squared	0.883505	Mean depen. var		0.344444
Adj. R-squar.	0.844673	S.D. depend. var		0.126700
S.E. of regr.	0.049934	Akaike info crit.		-2.895017
Sum sq. resid	0.014961	Schwarz criterion		-2.829276
Log likelihood	16.02758	Hannan-Quinn criter.		-3.036887
F-statistic	22.75211	Durbin-Watson stat		1.882640
Prob(F-statistic)	0.001581			

The analysis of Table 4 showed the following results:

1. The positive ROA relationship with tgdp has a coefficient of 0.03, and the inverse relationship with BL has a coefficient of -0.07.
2. The R^2 regression value indicates how well the selected factors are related to the return on assets (ROA) of European banks. R^2 = 88.3%, which shows that ROA depends on the factors we have selected, indicating a strong relationship. It is worth noting that there are other quantitative and qualitative factors affecting ROA. Additionally, the adjusted R^2 = 84.5%, which is also at a quite high level. Thus, the selected factors are significant and strongly explain their impact on the potential growth of the return on assets of European banks in the future.
3. In the model, we set the generally accepted significance threshold - 5-10%. The results showed that the F-statistic = 0.001, i.e., the probability of accepting the null hypothesis is almost 0. The growth rate of real GDP, the probability for tgdp is 0.1%, and for BL, the consolidated banking leverage is 1.1%. These outcome data fully agree with the established significance level, which is less than 5%, and the constant at the 0.3% level is statistically significant.
4. The Durbin-Watson criterion allows for testing the equation for first-order autocorrelation. The value of the DW criterion lies between 0 and 4. In the built model, DW is 1.88. The DW statistic helps to identify significant (critical) points d_l and d_u. At a significance level α = 5% for 9 observations and 2 variables, 0.629 < DW < 1.699. At a more stringent significance level α = 1% for 9 observations and 2 variables, 0.408 < DW < 1.389. Therefore, overall, we have a negative correlation: in our case, DW > d_u, which means the null hypothesis (H_0) is accepted.
5. The Akaike Information Criterion (AIC) and Schwarz Information Criterion (BIC) are used to compare models. The lower the value of these criteria in comparison with other models, the better the model is considered. In this case, these criteria are AIC = -2.89 and BIC = -2.82.

A higher-order (second-order) autocorrelation test was also performed using the Breusch-Godfrey test, which involves testing the null hypothesis. This test confirmed the absence of higher-order (second-order) autocorrelation concerning random deviations, allowing the acceptance of the null hypothesis (H_0).

Another step in testing the model's adequacy and reliability is the examination for heteroscedasticity, based on tests such as White, Breusch-Pagan-Godfrey, Glejser, ARCH, and Harvey (Table 5).

Table 5. Model Adequacy and Reliability Check. *(Source: authors development by the Multiple Regression procedure in eViews)*

Test	F-statistic	Prob. F	Obs*R-squared	Prob. Chi-Square
White	0.532224	F(5,3) 0.7492	4.230628	(5) 0.5167
Breusch-Pagan-Godfrey	0.363329	F(2,6) 0.7097	0.972238	(2) 0.6150
Glejser	0.720097	F(2,6) 0.5244	1.742124	(2) 0.4185
ARCH	0.545743	F(1,6) 0.4879	0.666990	(1) 0.4141
Harvey	1.773156	F(2,6) 0.2483	3.343365	(2) 0.1879

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The analysis of Table 5 indicates that all tests are successful and confirm the likelihood of accepting the null hypothesis. All probabilities obtained during the heteroskedasticity tests are greater than 5%, so it is possible to accept H0: test White Prob. F (5, 3) = 74.9%; test Breusch-Pagan-Godfrey Prob. F (2, 6) =70.9%; test Glejser Prob. F (2, 6) =52.4%; test ARCH Prob. F (1, 6) =48.8%; test Harvey Prob. F (2, 6) =24.8%.

Descriptive statistics of the model are presented in Table 6, and in general, they confirm the normality and adequacy of the constructed model:

1. 69.4% is an indicator that exceeds the established significance level, indicating the probability of accepting the null hypothesis and its value is confirmed by a normal distribution.
2. In the model, the Skewness indicator shows the asymmetry of the residuals' distribution in the regression model – how much the distribution deviates from a normal distribution. In the constructed model, the Skewness value of -0.48 indicates that the residual distribution is skewed to the left, but overall, the distribution is quite symmetrical.
3. The Kurtosis value is 1.99, indicating a sharp-peaked distribution. Since the value is not large, the distribution is close to normal.
4. The Jarque-Bera statistic tests the hypothesis of normal distribution of the regression model's residuals. In the constructed model, the Jarque-Bera value is 0.72, which suggests that the residuals of the regression model are close to a normal distribution. The residuals will have a symmetric and normal distribution, provided that the value of the Jarque-Bera statistic is close to zero, which is a generally accepted fact.

Table 6. Descriptive statistics of the model. *(Source: authors development by the Multiple Regression procedure in eViews)*

	ROA	tGDP	BL
Mean	0.344444	1.844444	14.87778
Median	0.380000	2.100000	14.60000
Maximum	0.490000	6.000000	16.90000
Minimum	0.120000	-5.600000	14.00000
Std. Dev.	0.126700	3.103269	0.917575
Skewness	-0.484149	-1.483634	1.231034
Kurtosis	1.996095	5.124999	3.608405
Jarque-Bera	0.729535	4.995114	2.411977
Probability	0.694358	0.082286	0.299396
Sum	3.100000	16.60000	133.9000
Sum Sq. Dev.	0.128422	77.04222	6.735556
Observations	9	9	9

The next step in the modelling process is to check the constructed model for explanatory power and its quality. We will verify how well the most significant factors, tGDP (gross domestic product growth) and BL (bank leverage), reflect the potential for growth (or reduction) in the return on assets (ROA) of banks (Figure 4) and assess the forecasting quality of the model (Figure 5).

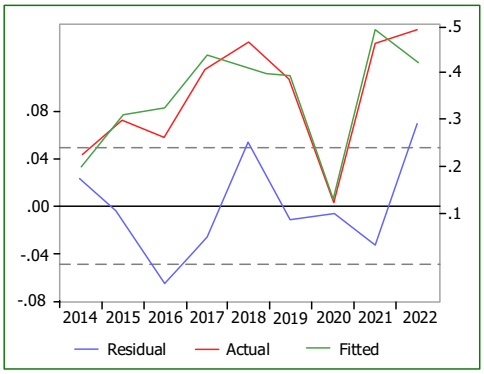

Figure 4. Explanatory ability of the model.

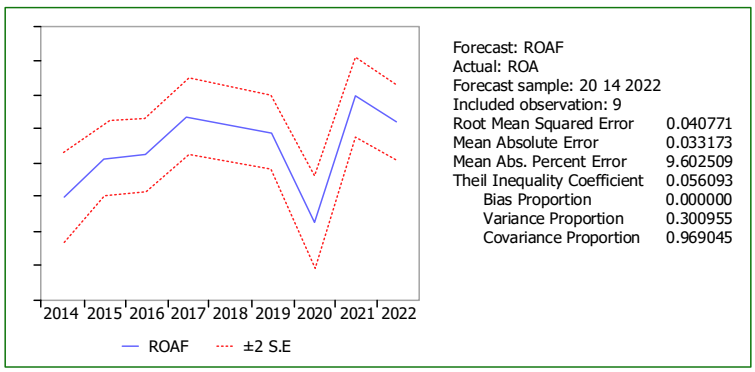

Figure 5. Forecast of ROA.

The main indicator, MAPE = 9.6%, confirms the high accuracy of the forecast, and thus the high quality of the forecast in the constructed model. The average percentage error between the predicted and actual values is less than 10%. In the short-term perspective, the forecast shows a trend toward a decline in the return on assets (ROA) of banks in the EU. Since the onset of COVID-19, the lowest level of return on assets in banks was observed in 2020, during the period under study. The decline in return on assets in EU banks is influenced by several types of risks: the slow recovery of the European economy after the 2008 financial crisis and COVID-19; a slowdown in the influx of funds from clients; capital risk; and currency risk, related to wars (specifically, the current war in Ukraine).

Therefore, we have an equation that is statistically significant, with a high coefficient of determination:

$$ROA = 0.0310*tGDP - 0.0698*BL + 1.3260 \quad (4)$$

The multiple regression model for the dependence of return on assets on selected factors (independent variables) has successfully passed the testing. All checks and tests confirm the correctness of this model for banks in the EU.

DISCUSSION

Our research focused on three key trends in the development of banking activities: the improvement of banking regulatory mechanisms, transformation and modernization in banking operations, and the growth of online banking in the EU.

Regarding the regulatory mechanisms of banking activities, many researchers and representatives of various European institutions primarily view banks as entities that promote financial stability, respond promptly to crises, and protect depositors and investors. However, the balance between regulation (rigid or flexible) and banks' competitiveness and profitability remains a subject of debate. Excessive regulation can stifle banks' willingness to invest in digital innovations and other technological opportunities. The challenges of rigid regulation—such as those outlined in the Basel Accords and the EU's Single Supervisory Mechanism—are discussed in the work of Prof. Silvia Allegrezza and Olivier Voordecers (Allegrezza & Voordecers, 2015).

Many experts approach the role of transformational and/or modernization processes in banking activities differently. In our view, in the era of digitization and digitalization, modernizing the banking system will enhance banks' operational efficiency, lead to scalability and flexibility in their operations, provide access to cutting-edge technological capabilities, and promote more effective customer-oriented policies. We agree with Charles Enoch's opinion that "the measures taken in the EU are insufficient to strengthen the banking system" (Enoch, 2013, p.459). For instance, many banks still operate on outdated core platforms configured by internal and external IT teams. At the same time, the balance between digitization—which is both a trend and a necessity for banks—and security policies (cyberattacks, data breaches, etc.) remains a contentious issue. Numerous studies and international institutions have highlighted the importance of addressing these challenges.

Many foreign (Enoch 2013; Pestovska, 2021; Damen, 2023; Suluk, 2023) and domestic scholars emphasize (Kyrylenko, 2019; Havryliuk, et.al, 2021) the association of the digitalization of the financial and credit sector with the rapid growth of online banking and fintech companies, which have achieved significant success and continue to expand. These entities create additional competition for traditional banks. New players offer banking services faster and at lower costs, challenging the conventional banking model. As a result, at the current stage of their development, all banks are compelled to keep pace with technological advancements by implementing technologies such as artificial intelligence, blockchain, and cloud computing, while maintaining compliance with European regulatory requirements. Digital banking products offered by traditional banks can enhance their competitiveness and improve profitability levels.

There is also ongoing debate about whether banks should collaborate with fintech companies or view them as competitors (Damen, 2023; Gambacorta et al., 2022; Pestovska, 2021). Partnering with fintech actors can accelerate innovation, but it carries the risk that traditional banks may lose control over customer relationships or become dependent on external technologies.

CONCLUSIONS

Banks play a key role in the monetary policy of any country. In the article, the authors identify the role of banks, which includes mobilizing savings, redistributing funds between sectors, influencing economic stability, and driving economic growth rates. Current trends in banking activity within the EU are highlighted, including continuous improvements in

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regulatory mechanisms, transformational and modernization processes in banking operations, and the development of online/digital banking.

Bank profitability is one of the important factors that contributes to ensuring the financial stability not only of banks but also of the entire economy. Among the key profitability indicators is the return on assets (ROA). The authors found that in the European economy, the most significant impact on the profitability of EU banks' assets is the consolidated banking leverage and the growth rate of real GDP. A multiple regression model of ROA dependence on selected factors (independent variables) was successfully tested. All verifications and tests confirm the accuracy of this model for EU banks. The equation is statistically significant, with a high coefficient of determination at 88.3%. The analyzed model demonstrates a high level of quality, is adequate, and is fully acceptable for future forecasting, with a deviation of 9.6% from actual values.

The model, built using banking performance indicators in the EU over the period 2014–2022, revealed the following:

1. The GDP growth rate has a positive coefficient, indicating that an increase in GDP leads to higher ROA—for every 1% increase in GDP growth, ROA rises by 0.0310 units.
2. Bank leverage has a negative coefficient, indicating that for every unit increase in bank leverage, ROA decreases by 0.0698 units. This effect would indicate that the return on assets exceeds the return on capital. This reflects the idea that higher leverage may reduce profitability due to increased risk or interest obligations.
3. Interaction of factors. If GDP growth increases while bank leverage decreases, ROA will rise significantly, as both factors exert a combined influence on ROA.

Further research will be related to the analysis of the impact of other external and internal factors on the level of profitability and development of the banking system in the EU, which were not disclosed in this study, in particular, such as macroeconomic factors - interest rates, inflation rate, as well as effective asset management, capital adequacy, etc. This technique is effective and allows you to influence the profitability of banks, thus contributing to the financial stability of European economies.

ADDITIONAL INFORMATION

AUTHOR CONTRIBUTIONS

All authors have contributed equally.

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CONFLICT OF INTEREST

The Authors declare that there is no conflict of interest.

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СУЧАСНІ ТРЕНДИ БАНКІВСЬКОЇ ДІЯЛЬНОСТІ В ЄС: ОЦІНКА ВПЛИВУ ФАКТОРІВ НА РІВЕНЬ ПРИБУТКОВОСТІ

У статті розглянуті сучасні тренди банківської діяльності в країнах ЄС та їхній вплив на банки в перспективі. У досліджені акцентована увага на ролі банків в економічному розвитку країн ЄС на сучасному етапі. Автори визначили внесок банків в економічний розвиток країн через мобілізацію та перерозподіл коштів. А також наголосили на тому, що забезпечення стабільності й ефективності банківської системи в ЄС відбувається в умовах гармонізації та спільного регулювання фінансового ринку і є однією з основ процесу європейської інтеграції. До сучасних трендів банківської діяльності в ЄС відносено: постійне вдосконалення регуляторного механізму в Європейському Союзі; трансформаційні та модернізаційні процеси в банківській діяльності ЄС відповідно до сучасних тенденцій розвитку світової економіки; розвиток онлайн / цифрового банкінгу. Автори дійшли висновку, що на сучасному етапі розвитку банківської діяльності відбувається зміна банківських технологій, упроваджують новації в банківську діяльність, змінюється модель поведінки банківської діяльності на ринку. Проведене економетричне моделювання щодо оцінки впливу факторів на рівень прибутковості, де найбільш значущими факторами впливу на рентабельність банків у ЄС було визначено консолідований банківський леверидж і темп зростання реального ВВП, показало на сьогодні повільне зменшення, а на перспективу зростання рентабельності європейських банків. Модель пройшла всі стадії перевірки та має високу прогнозну якість.

Об’єктом дослідження є банківська діяльність у країнах ЄС, яка здійснює вплив на європейський економічний розвиток. Предметом дослідження є теоретичні та практичні аспекти розвитку банківської діяльності в країнах ЄС, банківські сучасні тренди та перспективи.

Ключові слова: банківська діяльність у ЄС, європейський фінансовий ринок, прибутковість банків, модернізація банків, онлайн-банкінг, Digital Bank, цифровізація, банківський леверидж

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