

Fisnik Morina¹
Duresa Kilaj²
Sadri Alija³

NEXUS BETWEEN MACROECONOMIC FACTORS AND FINANCIAL DEVELOPMENT: EMPIRICAL EVIDENCE FROM TRANSITION COUNTRIES⁴

The main purpose of this study is to analyze how different macroeconomic factors have influenced the financial development of countries in transition as well as the effect of these factors on the volatility of the banking sector in these countries. Secondary data acquired and processed from yearly statistics reports of the World Bank, the International Monetary Fund, the OECD, the European Central Bank, Eurostat, and others were used to develop this research. In the analytical section of the literature review, numerous scientific papers by various authors that have examined the issue of financial development in the economies of various countries have been reviewed. This research covers data from 2005 to 2020, which will be examined using panel and time series econometric models.

*Based on the study's econometric findings, we can conclude that non-performing loans, natural resources, market liberalization, GDP per capita, inflation, and interest rates have a statistically significant impact on the financial development of transition countries by determining the amount of broad money and the volume of bank loans and deposits in these countries' financial systems. The empirical findings of this study will serve as good scientific and empirical evidence for future studies in the field of financial development and economic growth, as well as practical evidence for governments around the world in the form of strategic macroeconomic policies that will positively affect the financial development of countries in transition. In relation to essential conclusions, this research offers true and consistent findings. The studied period (2005-2020) offers a compelling time frame for making sound findings and recommendations. Keywords: financial development; economic growth; broad money; deposits; loans
JEL: G21; B22; E44; N2; O11*

¹ Prof. Ass. Dr. Fisnik Morina, Vice – Dean and Professor at Faculty of Business, University “Haxhi Zeka” – Peja, Kosovo, Post – Doc Research in Banking, Finance, Risk Management and Financial Institutions at the University of Graz and the University of Malta. Email: fisnik.morina@unhz.eu.

² MSc. Duresa Kilaj, Faculty of Business, University “Haxhi Zeka”, Peja, Kosovo. Ph.D. (cand) in Economics at South East European University, Tetovo, North Macedonia. Email: duresa.kilaj@unhz.eu.

³ Prof. Dr. Sadri Alija, Professor at Faculty of Business and Economics, South East European University – Tetovo, North Macedonia. Email: s.alijs@seeu.edu.mk.

⁴ This paper should be cited as: Morina, F., Kilaj, D., Alija, S. (2024). Nexus between Macroeconomic Factors and Financial Development: Empirical Evidence from Transition Countries. – *Economic Studies (Ikonomicheski Izsledvania)*, 33(2), pp. 3-26.

1. Introduction

Financial development can be defined as the process of enhancing the efficiency of allocating financial resources, monitoring capital and investment projects, promoting competition, and increasing the significance of the financial system (Huang, 2006). The size, structure, and efficiency of a financial system play a crucial role in determining economic development. One way to gauge such development is through market liberalization and financial liberalization. These processes aim to protect inefficient financial institutions and exert pressure for the reformation of the financial infrastructure, ultimately leading to a stable financial system. As a result, access to finance is enhanced, information asymmetry is mitigated, and adverse selection and moral hazard are reduced (Huang, 2006).

In the literature that examines the interaction between finance and economics, financial development is commonly regarded as a process involving the growth and enhancement of financial markets. This development is assessed through a combination of qualitative and quantitative indicators that capture aspects such as financial access, the performance of financial intermediaries and other financial institutions, and the legal regulatory framework that provides the operational foundation for financial institutions (Rama, 2016).

The development of the financial system encompasses the growth, efficiency, and stability of financial markets, as well as increased accessibility to these markets. This development brings various advantages to the economy. A well-developed and effectively managed financial market facilitates the allocation of savings towards profitable investments (Stiglitz & Weiss, 1983; Diamond, 1984), reduces information and agency costs, and promotes an efficient distribution of financial income (Greenwood, Jovanovic, 1990). Additionally, it helps lower the costs associated with corporate governance (Bencivenga & Smith, 2000).

The study aims to analyze the factors affecting financial development in countries undergoing transition. It will cover a time period of 16 years, specifically from 2005 to 2020. The study will focus on a panel of 10 countries in transition, utilizing panel data analysis techniques.

The structure of this paper will consist of several sections. In the first section, the paper will introduce the purpose and significance of the study, provide a concise overview of the methodology employed, and outline the expected results. The second section will present a literature review, drawing upon the works of contemporary authors in recent years. This section will provide a comprehensive overview of the relevant literature on the topic. In the third section, a meta-analysis will be conducted, synthesizing studies by authors from various countries who have analyzed the determinants of financial development in countries undergoing transition. This meta-analysis will contribute to a broader understanding of the factors influencing financial development in such contexts. The fourth section will focus on the research methodology. It will discuss the data sources utilized in the paper, analyze each variable included in the econometric models, and specify the econometric models employed for the analysis. The fifth section will present the empirical data and findings of the study, including the testing of hypotheses. This section will provide a detailed analysis of the results obtained from the data analysis. Finally, the paper will conclude with a section dedicated to summarizing the main conclusions drawn from the study, offering recommendations,

discussing the limitations of the research, exploring other implications derived from the findings, and listing the references used throughout the paper.

2. Literature Review

Financial development encompasses various dimensions, policies, and institutions that drive a country towards effective monetary intermediation, stable markets, and extensive integration within the economy. Seetanah (2009) underscored the crucial role of financial development in fostering economic growth. His study also emphasized the significance of factors that facilitate financial development. Previous empirical evidence has consistently demonstrated that financial development is influenced by multiple factors. By examining the methodologies employed by previous researchers, it is beneficial to conclude that financial development has a positive impact on economic growth (Seetanah, Ramessur, & Rojid., 2009).

Law and Demetriades (2006) employed several dynamic models to identify the factors influencing financial development. Their study analyzed data from 43 countries over a 21-year period, spanning from 1980 to 2001. The findings of their analysis led to the conclusion that market liberalization, investment rate, and interest rate are the most significant determinants of financial development. Additionally, the results indicated that trade and market capitalization played a more effective role in promoting financial development in middle-income countries compared to low-income countries (Demetriades, 2006).

Bist and Read (2018) conducted a study to examine the long-term relationship between financial development and economic growth. They employed panel data cointegration analysis and focused on 16 selected low-income countries, utilizing annual time series data spanning from 1995 to 2014. The findings derived from their OLS dynamic estimation indicate that financial development has a statistically significant positive impact on economic growth (Bist & Read, 2018).

The success of financial development is typically contingent on various factors. These include maintaining a stable macroeconomic environment, implementing appropriate regulations for the banking system in each country, and establishing an efficient, legal, and institutional financial market. While a high savings rate and increased investments are important, they alone do not guarantee the success of a financial system. The case of the Soviet Union serves as a pertinent example, where despite significant savings and investments, their allocation was not efficient or effective, resulting in suboptimal outcomes. A country's financial system plays a crucial role in ensuring that savings are utilized optimally, appropriately, and with careful analysis to minimize risk (Khalifaoui, 2015).

Several studies, including those by (McKinnon, 1973; Shaw, 1973; Fry, 1988) and (King & Levine, 1993), have examined the importance and contribution of banks to economic growth. Numerous researchers have also explored the relationship between financial development and economic growth, focusing on indicators such as the adjustment of financial development and economic growth (Srres et al., 2006), as well as the size and structure of the financial sector (Levine, 1997). These studies have provided evidence that underscores the connection

between financial development and economic growth. Moreover, these studies have utilized macro-level data, such as the ratio of financial size or external financing to GDP, and have found a significant and positive impact of financial development on economic growth. Additionally, they have highlighted the influence of financial development on capital accumulation through its effects on the savings rate (Pagano, 1933; Levine, 1997).

In their studies, many authors tried to analyze and investigate the effect of many macroeconomic and institutional factors on financial development. Many of them manage to identify a significant number of factors of financial development, which are as follows: inflation, trade openness, market capitalization, investment rate, interest rate, economic growth, level of gross income per capita of the population, natural resources, population level, religion, linguistic and ethnic characteristics, etc. The authors (Greenwood & Jovanovic, 1990) document that as the economy grows, the costs of financial intermediation decrease due to intense competition, promoting a greater degree of funds available for productive investment.

Financial development can indeed impact the rate of economic growth by considering the demographic structure of countries and by promoting productivity growth and capital efficiency. (Barra, Destefanis, & Lavadera, 2013) discovered in their research that countries with a younger population tend to have higher savings rates as a percentage of GDP compared to countries with an older population. Consequently, a financially developed economy with a higher savings rate is likely to experience greater growth (Levine, 1997). There is a compelling argument that a well-established and structured financial sector exerts a significant influence on economic growth, and the development of the financial sector can stimulate economic growth. The financial sector plays a crucial role in reducing transaction and information costs, as well as facilitating efficient resource allocation, which in turn promotes economic growth (Anderson, 2003).

Financial development can be assessed using various indicators, such as the depth, size, accessibility, and sustainability of the financial system. Additionally, examining the performance and activities of financial markets, banks, bond and stock markets, and other financial institutions can provide insights into financial development. A key observation is that countries with a higher degree of financial development tend to have a broader range of available financial services. A well-developed financial system offers the potential for higher returns with lower associated risks (Adnan, 2011).

The relationship between financial development and economic growth has been a subject of significant interest among researchers. Numerous studies have sought to analyze this relationship and understand the effects they have on each other. Various theorists have highlighted the role of financial development in enhancing the identification of investment opportunities, reducing investments in unproductive assets that are highly liquid, mobilizing savings, fostering technological innovation, and promoting risk-taking behaviour. Through these analyses, it becomes evident that financial development exerts a positive impact on economic growth (Levine, 1997). According to the author Xu (2000), who conducted the research, a multivariate vector-autoregressive method (VAR) was employed to analyze the effects of financial development on investment and domestic production in 41 countries between 1960 and 1993. Based on the obtained results, the hypothesis that financial

development causes economic growth and has minimal impact on it was rejected. There is strong evidence indicating that financial development is a significant factor in promoting economic growth, and investment also serves as a crucial channel through which financial development affects economic growth (Xu, 2000).

3. Meta-Analysis of Scientific Research

This section of the paper will review a series of articles. Subsequently, a meta-analysis of the research will be conducted, incorporating works from various authors who have examined similar topics to the one we have analyzed and will examine the findings derived from these studies.

Table 1. Meta-analysis of the research

Author	Year	Variables	Methods	Findings
(Takyi & Obeng, 2013)	1988-2010	GDP, Inflation, trade openness, GDP per capita, interest rate	Latency of the Autoregressive Distribution (ARDL)	Consistent with the empirical literature, the study has demonstrated that trade openness and GDP per capita are statistically significant factors influencing financial development in Ghana, with a positive effect. On the other hand, inflation and interest rates are also significant determinants of financial development, but they exert a negative impact, both in the long term and in the short term.
(Benyah, 2010)	1975-2006	M3, trade openness, financial openness and GDP	Fixed effect model	The results presented in this study indicate that trade openness is a statistically significant determinant of financial development in Africa and has a positive impact on it. However, financial openness and the GDP growth rate were found to be insignificant factors in the context of financial development.
(Baltagi, Demetriades, & Law, 2008)	1980-2003	Private credit, GDP per capita, Trade openness, financial openness	GMM model	The findings suggest that trade and financial openness have a positive association with increased negative trade expenditure. This implies that closed economies can benefit from opening their trade and capital accounts.
(Cojocaru, D, & Miller, 2012)	1990-2008	GDP, private credit, domestic credit, inflation, liquid liabilities, initial GDP	GMM model	The main conclusion that emerges is that credit to the private sector plays a significant and positive role in promoting economic growth. Additionally, domestic credit has positive effects as well.
(Aydin, Arbak, Naceur, & De Goren, 2015)	1985-2009	Credit to the private sector, bank deposits, stock market turnover, GDP per capita,	Random effects panel regressions and the Hausman test.	Based on the obtained results, it can be concluded that the majority of variables included in the model have a positive impact, except for inflation,

Morina, F., Kilaj, D., Alija, S. (2024). *Nexus between Macroeconomic Factors and Financial Development: Empirical Evidence from Transition Countries.*

Author	Year	Variables	Methods	Findings
		inflation, market openness index, investment portfolio and remittances		which has a negative impact. However, the results show that bank deposits have a more significant influence. Furthermore, having an open capital account seems to mitigate the inflationary effects.
(Raza, Shahzadi, & Akram, 2014)	1990-2012	Credit to the private sector, population growth, GDP, market openness, FDI, law and order index	Panel data, fixed effect model and random effect model	The findings indicate that credit to the private sector in all countries is influenced by factors such as population growth, real GDP growth, trade openness as a percentage of GDP, net direct investment as a percentage of GDP, and the dominance index of the law (represented as RL). All of these factors are significantly associated with economic growth.
(Adamopoulos, 2010)	1965-2007	GDP, general stock market index, private sector credit and industrial production index	Vector error correction model (VECM) and Granger causality tests.	Based on the results, it can be concluded that economic growth has a positive impact on stock market development and credit market development, particularly when considering the positive effect of industrial production growth on economic growth in the case of Ireland.
(Al-Malkawi, Marashdeh, & Abdullah, 2012)	1974-2008	GDP, financial size of the firm and private credit	ARDL Bound Testing Approach.	The results indicate a negative and statistically significant relationship between financial development, as measured by M2, and economic growth. Additionally, the findings suggest the presence of bidirectional causality between the two variables.
(Calderon & Liu, 2003)	1960-1994	M2, GDP, credit	Granger causality and panel data.	Based on the analysis conducted in 109 industrial and developing countries, it can be concluded that the indicators examined in the research have an impact on financial development.
(Shabbir, Jami, Bashir, Aslam, & Hussain, 2018)	1995-2015	Inflation, trade openness, market capitalization, investment rate and interest rate	Regression analysis and correlation analysis.	The empirical findings demonstrate that all variables, including inflation, trade openness, market capitalization, investment rate, and interest rate, have a significant impact on financial development.
Asratie-Mazengia, 2021	1980-2019	Inflation, reserve requirements, real exchange rate, interest rate, trade openness and GDP	Autoregressive Distributed Lag Model (ARDL).	Based on the obtained results, it is evident that the majority of variables have a positive impact on economic development and growth, while a smaller portion of variables have a negative impact.
(Ibrahim & Sare, 2018)	1980-2015	Private credit, domestic credit, trade openness, inflation,	Generalized system of moments rules.	The findings indicate that human capital has a strong influence on financial development. Moreover,

Author	Year	Variables	Methods	Findings
		GDP per capita, gross fixed capital formation and savings		trade openness has a more significant impact on private credit compared to domestic credit.
(Bhattacharya, 2003)	1970-1971 1998-1999	GDP dhe M3	OLS model	The results indicate that, during the period under review, it is M3, representing the development of the financial sector, that has influenced GDP rather than the other way around. In other words, the expansion of the financial sector has played a crucial role in driving economic growth.

Source: Data analyzed by the authors (2023).

4. Scientific Research Methodology and Specification of the Econometric Model

The primary objective of this study is to analyze the determinants of financial development in countries undergoing transition. The research will utilize secondary data obtained from reputable sources such as the World Bank, International Monetary Fund, OECD, European Central Bank, and others. Additionally, the empirical findings of various authors' studies on the determinants of financial development will be examined, along with relevant books by experts in the fields of finance, economics, and management. The study will employ panel data spanning a period of 16 years (2005-2020) and will be analyzed using econometric models to extract significant data. The paper's significance lies in its aim to provide real and sustainable results that can shed light on the determinants of financial development in transition countries. The study will encompass 10 countries in transition.

Authors such as (Barra, Destefanis, & Lavadera, 2013), (Takyi & Obeng, 2013), (Romer P., 1990) (Shabbir, Jami, Bashir, Aslam, & Hussain, 2018) (Valickova, Havranek, & Hovarth, 2015) (Adamu & Kargo, 2011) (Elsherif, 2015) (Astratie, 2021) er authors analyzed in their studies the determinants of financial development and economic growth. The countries in transition that will be analyzed are: Kosovo, Albania, Macedonia, Russia, Serbia, Bosnia and Herzegovina, Ukraine, Armenia, Azerbaijan and Montenegro.

This study utilizes panel data and incorporates various variables to construct three econometric models, with separate hypotheses formulated for each model. The validity of these hypotheses is assessed through the application of several statistical tests, including linear regression, random effects, fixed effects, Hausman-Taylor regression, GMM model (Arellano-Bond estimation), Generalized Estimating Equations (GEE model), ARCH-GARCH model, and Nelson's E-GARCH model. These tests are employed to verify the accuracy and reliability of the hypotheses in question.

Research Questions:

1. How have GDP per capita, interest rates, inflation, non-performing loans, natural resources and market liberalization affected the broad money of countries in transition?
2. What effect have GDP per capita, interest rates, inflation, non-performing loans, natural resources and market liberalization had on bank loans in countries in transition?

3. What is the impact of GDP per capita, interest rates, inflation, non-performing loans, natural resources and market liberalization on bank deposits in countries in transition?

The hypotheses of this study are as follows:

H1: Non-performing loans, natural resources and inflation have negatively affected the broad money of countries in transition.

H2: GDP per capita, interest rates and market liberalization have positively influenced the broad money of countries in transition.

H3: Non-performing loans, natural resources, inflation and interest rates have negatively affected bank loans in countries in transition.

H4: GDP per capita and market liberalization have positively influenced bank loans in countries in transition.

H5: Non-performing loans, GDP per capita, inflation and interest rates have had a positive impact on bank deposits in countries in transition.

H6: Natural resources and market liberalization have adversely affected bank deposits in bank deposits of countries in transition.

Table 2. Description of the variables included in the econometric model

Variables	Description of variables	Data source
Dependent variable (Y)	Broad Money (M2)	World Bank Annual Reports (2005 – 2020)
Independent variable (X ₁)	Loans (L)	World Bank Annual Reports (2005 – 2020)
Independent variable (X ₂)	Deposits (D)	World Bank Annual Reports (2005 – 2020)
Independent variable (X ₃)	Non-performing Loans (NPL)	World Bank Annual Reports (2005 – 2020)
Independent variable (X ₄)	Natural Resources (NR)	World Bank Annual Reports (2005 – 2020)
Independent variable (X ₅)	Market Liberalization (ML)	World Bank Annual Reports (2005 – 2020)
Independent variable (X ₆)	Gross domestic product per capita (GDP per cap)	World Bank Annual Reports (2005 – 2020)
Independent variable (X ₇)	Inflation (INF)	World Bank Annual Reports (2005 – 2020)
Independent variable (X ₈)	Interest Rate (IR)	World Bank Annual Reports (2005 – 2020)

Source: Data analyzed by the authors (2023).

The econometric models of this study are as follows:

Model 1:

$$M2 = \beta_0 + \beta_1 NPL_t + \beta_2 NR + \beta_3 ML_t + \beta_4 GDP\ cap_{it} + \beta_5 INF_t + \beta_6 IR + \gamma_{it} \quad (1)$$

Model 2:

$$L = \beta_0 + \beta_1 NPL_t + \beta_2 NR + \beta_3 ML_t + \beta_4 GDP\ cap_{it} + \beta_5 INF_t + \beta_6 IR + \gamma_{it} \quad (2)$$

Model 3:

$$D = \beta_0 + \beta_1 NPL_t + \beta_2 NR + \beta_3 ML_t + \beta_4 GDP\ cap_{it} + \beta_5 INF_t + \beta_6 IR + \gamma_{it} \quad (3)$$

Where:

M2 – Broad money

L – Loans

D – Deposits

NPL – Non-performing loans

NR – Natural resources

ML – Market liberalization

GDP per cap – Gross domestic product per capita

INF – Inflation

IR – Interest rate

γ – stochastic variables (other factors not considered in the model)

i – code dhe *t* – time period

The main independent variable in this study is NPL (Non-Problem Loans).

Non-performing loans represent a significant risk indicator for banks, highlighting the burden of bad debts in credit risk management. When assessing this risk, banks need to differentiate between on-balance-sheet and off-balance-sheet assets. The variable of non-performing loans was also included in the author's study, emphasizing its importance in understanding the financial health and risk exposure of banks (Khalifaoui, 2015).

The second independent variable in this study is natural resources

Natural resources are widely recognized as a significant and influential factor impacting the pace of financial development in countries endowed with such resources. Authors such as Bhattacharyya, Holder (2014) and H.L. (2011) have included this variable in their research, highlighting its importance in understanding the relationship between natural resource abundance and financial development.

The third independent variable in this study is market liberalization

Market liberalization refers to the process of removing or reducing restrictions and barriers to the free exchange of goods and services among nations. These barriers encompass tariffs, such as duties and surcharges, as well as non-tariff barriers like regulations and licensing quotas. Numerous authors, including (Astratie, 2021; Shabbir, Jamil, Bashir, Aslam, & Hussain, 2018), and many others, have examined market liberalization as a variable in their scientific research. This variable has been extensively analyzed to understand its impact on trade, economic growth, and the overall development of nations.

The fourth independent variable in this study is GDP per capita

GDP per capita, or gross domestic product per capita, serves as a crucial indicator of economic performance and is frequently utilized as a general measure of average living

standards or economic well-being, despite some acknowledged limitations. It is calculated by dividing a country's GDP by its population. This variable has been analyzed in the papers of authors such as (Takyi & Obeng, 2013; Baltagi, Demetriades, & Law, 2008; Ibrahim & Sare, 2018). These authors have examined the relationship between GDP per capita and various economic phenomena, shedding light on its significance in understanding and assessing the economic conditions and standards of living within different countries.

The fifth independent variable in this study is inflation

Inflation refers to the general increase in the price level within a country and serves as an indicator of macroeconomic instability. Economies with high inflation rates are likely to have smaller, less active, and less efficient banks, which can contribute to financial crises. This variable has been analyzed by various authors in their research, including (Demirgüç-Kunt & Detragiache, 2005; Astratie, 2021; Bittencourt, 2011).

The sixth independent variable in this study is the interest rate

The interest rate represents the cost that a lender imposes on a borrower, typically expressed as a percentage of the principal amount borrowed. It can take various forms, such as a nominal interest rate, a real interest rate, or the prevailing interest rate in the market. This variable has also been included in the research conducted by authors such as (Astratie, 2021; Shabbir, Jamil, Bashir, Aslam, & Hussain, 2018).

5. Econometric Analysis and Study Findings

In the subsequent section of this paper, we will analyze the econometric analysis specific to countries in transition. This analysis will involve examining descriptive statistics, conducting correlation analysis, and utilizing various econometric models that have previously been applied in the analysis of developing economies. Our objective is to test hypotheses and address the research questions posed in this study. To achieve this, we will process all the obtained results using the STATA program, as our data consists of secondary data. By employing rigorous statistical techniques and econometric models, we aim to generate meaningful insights into the dynamics of financial development in transition countries.

Table 3. Descriptive statistics for the first econometric model for countries in transition

Variables	Obs.	Mean	Std. Deviation	Minimum	Maximum
M2	160	48.56	17.35	0	90.1
NPL	160	10.14	11.85	0	59.8
NR	160	5.56	9.18	0	42
ML	160	83.32	23.61	0	138.6
GDP per cap	160	3.09	5.63	-15.2	33
INF	160	4.74	5.94	-2.4	48.7
IR	160	5.20	7.36	-12.9	47.9

Source: Authors' calculations in the Stata program (2023).

Based on the table above, we observe that broad money has the highest average value of 48.56, while GDP per capita has the lowest average value of 3.09. The standard deviation is highest for market liberalization, with a value of 23.61, and lowest for GDP per capita, with a value of 5.63. Additionally, we have provided information on the minimum and maximum values as well as the number of observations, which is 160 for all variables.

In the following table, we will analyze the correlation among all the factors included in the research, illustrating the relationships that exist between these variables.

Table 4. Correlation analysis for the first econometric model for countries in transition

Variables	M2	NPL	NR	ML	GDP per cap	INF	IR
M2	1.0000						
NPL	0.1840	1.0000					
NR	-0.3708	-0.2447	1.0000				
ML	0.2172	0.1495	-0.0975	1.0000			
GDP per cap	-0.2391	-0.1054	0.3262	0.1394	1.0000		
INF	-0.2346	0.2439	0.3082	0.0163	-0.0050	1.0000	
IR	-0.0193	-0.2107	0.0006	-0.0842	-0.0769	-0.1319	1.0000

Source: Authors' calculations in the Stata program (2023).

From the table, it can be observed that the Pearson correlation between M2 and problem loans is 0.1840, indicating a very weak positive correlation between these two variables. The correlation value between M2 and natural resources shows a weak negative correlation at -0.3708, suggesting that as natural resources increase, M2 tends to decrease.

The correlation between M2 and market liberalization shows a weak positive correlation of 0.2172. This suggests that as market liberalization increases, there is a tendency for broad money to increase as well, as it allows for greater trade and income generation. Regarding the correlation between M2 and GDP per capita, we observe a weak negative correlation of -0.2391. This implies that as GDP per capita increases, there is a tendency for M2 to decrease.

The Pearson correlation value between M2 and inflation is -0.2346, indicating a weak negative correlation. This suggests that as inflation increases, there is a tendency for M2 to decrease. The correlation between M2 and the interest rate shows a very weak negative correlation of -0.0193. This implies that as the interest rate increases, there is a slight tendency for broad money to decrease.

In the following section, we will analyze the econometric results for the six statistical tests that were applied in this research. Each of these tests holds significant importance for our study.

$$M2 = \beta_0 + \beta_1 NPL + \beta_2 RN_{it} + \beta_3 LT + \beta_4 GDPcap_{it} + \beta_5 INF_{it} + \beta_6 NI_{it} + \gamma_{it}$$

$$M2_{it} = \beta_0 42.99 - 1.9339 NPL_{it} - 0.3118 RN_{it} + 0.1515 LT_{it} - 0.6430 GDPcap_{it} - 0.7896 INF_{it} - 0.2661 NI_{it} + \gamma_{it}$$

Table 5. Econometric results and empirical findings for the first econometric model for transition countries

Variables	Linear Regression	Random Effects – GLS Regression	Fixed-Effects Regression	Hausman – Taylor Regression	GEE Model	GMM Model
M2	-	-	-	-	-	-
NPL	-1.933903* (0.092)	0.0077061 (0.908)	.0058478 (0.929)	.0012574 (0.985)	.0068349 (0.913)	-.111658** (0.016)
NR	-0.3118567** (0.055)	-.3758886 ** (0.021)	-.3787969** (0.027)	-.3529939** (0.031)	-.3769803** (0.016)	-.3124256** (0.016)
ML	0.1515058 *** (0.006)	.403221*** (0.000)	.4160889*** (0.000)	.4084714*** (0.000)	.4087635*** (0.000)	.1571579 *** (0.023)
GDP per cap	-.6430325 *** (0.008)	-.6868812 *** (0.000)	-.6913366 *** (0.000)	-.6940067*** (0.000)	-.68881*** (0.000)	-.3875169 *** (0.000)
INF	-.789643 *** (0.003)	-.4744555*** (0.000)	-.4697356*** (0.000)	-.4680584*** (0.000)	-.4723487*** (0.000)	-.3435212 *** (0.000)
IR	-.2661773 (0.165)	.001406 (0.990)	.0101224 (0.928)	.0131985 (0.905)	.0052631 (0.961)	-.0693799 (0.332)
Const.	42.9904*** (0.000)	21.50387 *** (0.000)	20.54484 *** (0.000)	32.37643*** (0.001)	21.03237*** (0.000)	
R Square	0.2467	0.5567	0.5569			
Adj.R ²	0.2168	0.1814	0.1786			

Explanation: P-values are shown in parentheses: *** indicates statistical significance at the level of 1%; ** indicates statistical significance at the 5% level, and * indicates statistical significance at 10%.

Source: Authors' calculations in the Stata program (2023).

From the obtained data, we see that the largest number of variables have turned out to be significant at the levels of statistical significance of 1%, 5%, and 10%. The interpretation of our results will be done through linear regression.

β_0 – If all other factors are held constant, the value of the loan is expected to be 42.99 units. This statement is deemed correct since the significance value (P-value = 0.000 < 0.01) indicates statistical significance at the chosen level.

β_1 – If NPLs increase by one unit holding all other factors constant, then M2 will decrease by -1.933 units. This statement is correct as the significance value (P-value = 0.091 < 0.10) is at the level of statistical significance.

β_2 – If natural resources increase by one unit, holding all other factors constant, M2 will decrease by -0.311 units. The statement is correct since the significance level is within the confidence interval because 0.055 < 0.05.

β_3 – If market liberalization increases by one unit holding all other variables constant, then M2 will increase by 0.1515 units. This statement is correct as the significance value is at the level of statistical significance (P-value = 0.006 < 0.001). The positive and significant relationship between market liberalization and financial development indicates greater trade growth than a country. Trade with foreign countries also increases foreign exchange which boosts the economy as well as develops the banking sector.

β_4 – If GDP per capita increases by one unit holding all other variables constant, then M2 will decrease by -0.6430 units. The statement is correct as the significance value $0.008 < 0.001$ is at the level of statistical significance

β_5 – If inflation increases by one unit, holding all other factors constant, M2 will decrease by -0.7896 units. The statement is correct as the significance value (P-value = $0.003 < 0.001$) is at the level of statistical significance. The negative relationship between inflation and financial development is an important element for the performance of the financial economy since price stability is a basic element for financial development. Moderate inflation rates with little volatility create bankruptcy problems for financial institutions, as they do not engage in price wars to maximize their deposits. So, the high rate of inflation slows down the progress in financial development.

β_6 – If the interest rate increases by one unit, holding all other factors constant, then M2 will decrease by -0.2661 units. This statement is not correct since the significance values (P-value = $0.165 > 0.05$) are not at the appropriate level of confidence.

The table below will analyze descriptive statistics for the second econometric model for countries in transition.

Table 6. Descriptive statistics for the second econometric model for countries in transition

Variables	Obs.	Mean	Std. Deviation	Minimum	Maximum
L	160	38.98	21.21	0	87.3
NPL	160	10.14	11.85	0	59.8
NR	160	5.56	9.18	0	42
ML	160	83.32	23.61	0	138.6
GDP per cap	160	3.09	5.63	-15.2	33
INF	160	4.74	5.94	-2.4	48.7
IR	160	5.20	7.36	-12.9	47.9

Source: Authors' calculations in the Stata program (2023).

In this table, we can observe that our sample consists of 160 observations. The table provides information on the average value, standard deviation, minimum value, and maximum value for each variable. These statistics help us understand the central tendency, variability, and range of values within the dataset. Furthermore, the table indicates that the correlation analysis will be conducted for the variables included in the study for the second econometric model in transition countries. This analysis aims to explore the relationships and associations between these variables.

Based on the obtained results, it can be observed that there are relationships between all the variables. The correlation between credit and non-performing loans is very weak, with a positive correlation coefficient of 0.0512. This indicates a slight positive association between these two variables. On the other hand, the correlation between credit and natural resources is negative, indicating a weak negative correlation coefficient of -0.2283. This suggests that as the level of natural resources increases, the level of loans tends to decrease. These correlation values provide insights into the relationships between the variables under

consideration and can help in understanding their interdependencies in the context of the second econometric model for transition countries.

Table 7. Correlation analysis for the second econometric model for countries in transition

Variables	L	NPL	NR	ML	GDP per cap	INF	IR
L	1.0000						
NPL	0.0512	1.0000					
NR	-0.2283	-0.2447	1.0000				
ML	0.2411	0.1495	-0.0975	1.0000			
GDP per cap	-0.3689	-0.1054	0.3262	0.1394	1.0000		
INF	0.0042	0.2439	0.3082	0.0163	-0.0050	1.0000	
IR	-0.1031	-0.2107	0.0006	-0.0842	-0.0769	-0.1319	1.0000

Source: Authors' calculations in the Stata program (2023).

The Pearson correlation between credit and market liberalization is a weak positive correlation of 0.2411, so with the growth of the market, we also have an increase in credit. This is because the market is expanding and financial means are needed, and we can do this by lending credit to banks. The correlation value between credit and GDP per capita is -0.3689, so we have an average negative correlation, whereas GDP per capita increases, credit decreases.

The correlation value for credit and inflation presents a very weak negative correlation of 0.0042, where the increase in inflation causes the increase in credit, but at a very low level. The correlation between credit and the interest rate is a weak negative correlation of -0.1031, and with the increase in the interest rate, the level of credit decreases because individuals' interest in getting credit decreases due to high-interest rates.

The following table will present the econometric results for the six statistical tests analyzed in the research and for the second econometric model for countries in transition.

$$\text{Kredit}_{it} = \beta_0 + \beta_1 \text{NPL}_{it} + \beta_2 \text{RN}_{it} + \beta_3 \text{LT}_{it} + \beta_4 \text{GDPcap}_{it} + \beta_5 \text{INF}_{it} + \beta_6 \text{NI}_{it} + \gamma_{it}$$

$$\text{Kredit}_{it} = -0.5614 \text{NPL}_{it} - 0.2591 \text{RN}_{it} + 0.1122 - 0.5449 \text{GDPcap}_{it} + 0.1825 \text{INF}_{it} + 0.2408 \text{NI}_{it} + \gamma_{it}$$

Analyzing the data in Table 8, we see that most of the variables included in the model are significant, with the exception of natural resources and inflation, which are not significant at the 1%, 5%, and 10% confidence levels. Our coefficients will be interpreted through the GMM model.

β_1 – If NPLs increase by one unit, holding all other factors constant, then NPLs will decrease by -0.56 units. The statement in our case is correct, as the significance value (P-value = 0.000 < 0.001) is at the level of statistical significance. Non-performing loans are those that negatively affect a financial institution, such as banks, causing them problems and, in some cases, preventing them from giving more loans.

Table 8. Econometric results and empirical findings for the second econometric model for transition countries

Variables	Linear Regression	Random Effects – GLS Regression	Fixed-Effects Regression	Hausman – Taylor Regression	GEE Model	GMM Model
L	-	-	-	-	-	
NPL	-.1396636 (0.320)	-.259736* (0.061)	-.2715143** (0.059)	-.2696157** (0.054)	-.2579203** (0.059)	-.56141*** (0.000)
NR	-.1898119 (0.339)	.1589556 (0.614)	.3236262 (0.381)	.1498006 (0.643)	.1397638 (0.647)	-.2591288 (0.265)
ML	.2626791 *** (0.000)	.523831*** (0.000)	.5575335 *** (0.000)	.5237365 *** (0.000)	.5184282*** (0.000)	.1122215* (0.076)
GDP per cap	-1.511381*** (0.000)	-1.511471 ** (0.000)	-1.547691*** (0.000)	-1.508378 *** (0.000)	-1.507346*** (0.000)	-.5449*** (0.001)
INF	-.0698886 (0.827)	-.1302383 (0.645)	-.1308764 (0.648)	-.1305044 (0.646)	-.1294414 (0.642)	.1825097 (0.237)
IR	-.3869334 (0.101)	.1306009 (0.575)	.2239148 (0.358)	.1289693 (0.583)	.117895 (0.606)	.24084* (0.082)
Const.	26.81106 *** (0.000)	1.912005 (0.825)	-1.918159 (0.801)	1.026724 (0.933)	2.500035 (0.763)	
R Square	0.2464	0.3681	0.3698			
Adj.R ²	0.2165	0.1664	0.1426			

Explanation: P-values are shown in parentheses: *** indicates statistical significance at the level of 1%; ** indicates statistical significance at the 5% level, and * indicates statistical significance at 10%.

Source: Authors' calculations in the Stata program (2023).

β_2 – If natural resources increase by one unit and we continue to hold other variables constant, then credit will decrease by -0.25 units. The statement is not correct as the significance level is not in the confidence interval (P-value = 0.265 > 0.10).

β_3 – If market liberalization increases by one unit while holding other factors constant, credit will increase by 0.1122 units. The statement is correct because the P-value (0.076 < 0.10) is at the level of statistical significance. It is known that when the circulation of the domestic market increases, even more financial means are needed for the operation and growth of that market, so the share of credit growth is also affected.

β_4 – If GDP per capita increases by one unit and we continue to hold other variables constant, then credit will decrease by -0.54 units. This statement is correct because the significance value (P-value = 0.001 < 0.05) is at the level of statistical significance. The impact of GDP per capita shows that the more production expands within a country's economy, the more financial resources will be provided by domestic banks to the productive sectors, which will increase the level of development of the financial sector. This means that the level of production per person will drive the level of development of the financial sector within the country since the allocation of resources for productive purposes is vital for the growth of production. The more capital accumulated within the member states, the more funds will be used by banking institutions in the form of loans.

β_5 – If inflation increases by one unit, holding all other factors constant, then the credit will increase by 0.1825 units. This statement is not correct because the P-value of 0.237 > 0.10 is not at the level of statistical significance.

β_6 – If the interest rate increases by one unit while holding other variables constant, then the loan will increase by 0.24 units. The statement is correct because (P-value = 0.082 < 0.10) the significance value is at the level of statistical significance. In cases where interest rates rise more, banks tend to also increase the levels of loans that have a lot of leverage in terms of profit from interest rates.

The following tables will analyze the data extracted from descriptive statistics for the third econometric model for countries in transition.

Table 9. Descriptive statistics for the third econometric model for countries in transition

Variables	Obs.	Mean	Std. Deviation	Minimum	Maximum
D	160	5.615	4.136723	0	18.3
NPL	160	10.14463	11.8514	0	59.8
NR	160	5.561635	9.181123	0	42
ML	160	83.32	23.61848	0	138.6
GDP per cap	160	3.0925	5.639378	-15.2	33
INF	160	4.749686	5.947746	-2.4	48.7
IR	160	5.20125	7.364029	-12.9	47.9

Source: Authors' calculations in the Stata program (2023).

We further see that the variable with the highest mean in the third model is non-performing loans (10.14463), continuing with the standard deviation, where the market liberalization variable has the highest standard deviation (23.61848) and the variable with the highest maximum value is market liberalization (138.6).

Table 10. Correlation analysis for the third econometric model for countries in transition

Variables	D	NPL	NR	ML	GDP per cap	INF	IR
D	1.0000						
NPL	0.1604	1.0000					
NR	0.3837	-0.2447	1.0000				
ML	-0.0837	0.1495	-0.0975	1.0000			
GDP per cap	0.0423	-0.1054	0.3262	0.1394	1.0000		
INF	0.4955	0.2439	0.3082	0.0163	-0.0050	1.0000	
IR	0.1193	-0.2107	0.0006	-0.0842	-0.0769	-0.4555	1.0000

Source: Authors' calculations in the Stata program (2023).

From the data presented in the tables, we see that we have a portion of the Pearson correlation analysis for our variables. The correlation between deposits and non-performing loans is a weak positive correlation of 0.1604, because as non-performing loans increase, the level of deposits increases because banks are reluctant to lend because of problems with those loans and therefore decide to keep them in the form of deposits for a while. The Pearson correlation value between deposits and natural resources is 0.3837, i.e., an average positive correlation where the increase in natural resources also increases the level of deposits.

Deposits and market liberalization have a very weak negative correlation (-0.0837) because, with the growth of the market, the level of deposits decreases due to the fact that money is

released into circulation due to the market and is not kept in the form of deposits. The correlation value for deposits and GDP per capita is 0.0423, a very weak positive correlation.

The correlation between deposits and inflation is an average positive correlation of 0.4955, where with the increase in inflation we have an increase in deposits. Because inflation causes the value of money to fall, individuals prefer to keep their money in the form of deposits rather than invest in times of inflation. The Pearson correlation value between deposits and the interest rate is positive at 0.1993, so we have a very weak positive correlation between these two variables.

The table below presents very clearly the econometric results for the third econometric model and will show the impact of each variable on deposits.

$$Deposits_{it} = \beta_0 + \beta_1 NPL_{it} + \beta_2 RN_{it} + \beta_3 LT_{it} + \beta_4 GDPcap_{it} + \beta_5 INF_{it} + \beta_6 NI_{it} + \gamma_{it}$$

$$Deposits_{it} = \beta_0 6.3745 + 0.1851 NPL_{it} + 0.01851 RN_{it} - 0.0441 LT_{it} + 0.0074 GDPcap_{it} + 0.2580 INF_{it} + 0.1436 NI_{it} + \gamma_{it}$$

In the following, we will present the econometric results which will be commented on by Fixed – Effects Regression where most variables are significant at the 1%, 5% and 10% confidence level.

β_0 – If all other factors are constant, then the value of the deposit will be 6.37 units. The statement is correct since the values are within the confidence interval (P-value = 0.002 < 0.01).

β_1 – If non-performing loans increase by one unit, holding other variables constant, then deposits will increase by 0.01851 units. The statement is correct because the significance value is at the level of statistical significance (P-value = 0.025 < 0.05).

β_2 – If natural resources increase by one unit while holding all other factors constant, deposits will increase by 0.018 units. The statement is correct because the significance value is within the preferred range (P-value = 0.052 < 0.10).

β_3 – If market liberalization increases by one unit, keeping other variables constant, then deposits will decrease by -0.044 units. This statement is correct, as the significance value (P-value = 0.003 < 0.01) is at the level of statistical significance.

β_4 – If GDP per capita increases by one unit while holding other factors constant, deposits will increase by 0.0074 units. The statement is not correct as the significance value is not at the level of statistical significance (P-value = 0.873 > 0.10).

β_5 – If inflation increases by one unit while holding other variables constant, then deposits will increase by 0.2580 units. This statement is correct, as the significance value is at the level of statistical significance (P-value = 0.000 < 0.001).

β_6 – If the interest rate increases by one unit while holding other variables constant, deposits will increase by 0.1436 units. The statement is correct because the significance value is in the confidence interval (P-value = 0.002 < 0.010).

Table 11. Econometric results and empirical findings for the third econometric model for transition countries

Variables	Linear Regression	Random Effects – GLS Regression	Fixed-Effects Regression	Hausman – Taylor Regression	GEE Model	GMM Model
D	-	-	-	-	-	
NPL	.0626754*** (0.008)	.0601119** (0.010)	.0185155 (0.025)	.0330986 (0.185)	.0320979 (0.185)	-.0207641 (0.257)
NR	.1066693*** (0.001)	.1111789*** (0.001)	.0185155** (0.052)	.1117305** (0.038)	.1256105** (0.013)	.0951717** (0.024)
ML	-.0117003 (0.288)	-.0143203 (0.207)	-.0441201*** (0.003)	-.0367785*** (0.007)	-.034878*** (0.008)	-.0160963 (0.185)
GDP per cap	.0211707 (0.663)	-.0160951 (0.736)	.0074737 (0.873)	.009517 (0.834)	.0054271 (0.902)	.0056601 (0.849)
INF	.3953349*** (0.000)	.3753006*** (0.000)	.2580042*** (0.000)	.2770426*** (0.000)	.2815766*** (0.000)	.1264334*** (0.000)
IR	.2309547*** (0.000)	.2177598*** (0.000)	.1436711*** (0.002)	.1499682*** (0.000)	.1561375*** (0.000)	.0787551*** (0.004)
Const.	2.224557** (0.031)	2.622205** (0.014)	6.374545*** (0.000)	4.228463** (0.016)	5.334828*** (0.000)	
R Square	0.4569	0.1740	0.2117			
Adj.R ²	0.4353	0.4562	0.3638			

Explanation: P-values are shown in parentheses: *** indicates statistical significance at the level of 1%; ** indicates statistical significance at 5% level, and * indicates statistical significance at 10%.

Source: Authors' calculations in the Stata program (2023)

6. Econometric Results of Nelson's E-Garch Model for Countries in Transition

Below are the econometric results of the Nelson E-Garch statistical test for countries in transition. Through this econometric model, it will be analyzed whether non-performing loans have influenced the volatility of financial development, bank loans, and bank deposits in countries in transition. We will continue to try to answer how non-performing loans and other determining factors have affected the volatility of broad money in countries in transition.

Table 12. Econometric results of Nelson's E-Garch model between non-performing loans and financial development for countries in transition

Z-Score	Coef.	Std. Error	Z	P> z	95% Conf. Interval	95% Conf. Interval
NPL	.6893401	.0220162	31.31	0.000	.6461891	.732491
cons.	41.32941	.2662377	155.22	0.000	40.80759	41.85122
ARCH L1.	1.499238	.1993422	7.52	0.000	1.108534	1.88941
EARCH L1.	2.29766	.2779191	8.27	0.000	1.752948	2.842371
E-GARCH (L1)	.4817554	.0624605	7.71	0.000	.3593351	.6041757
E-GARCH (L2)	.622679	.0518426	12.01	0.000	.5210694	.7242887
cons.	.0022809	.3161598	0.01	0.994	-.6173809	.6219427

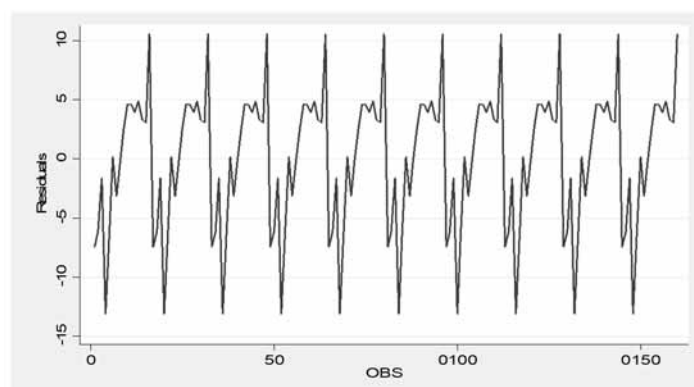
Source: Authors' calculations in the Stata program (2023).

According to the econometric results of the statistical test, we can conclude that we have a positive and significant correlation ($P\text{-value} = 0.000 < 0.05$). So, with the increase in non-performing loans, we also have an increase in the instability of financial development in countries in transition.

In the time constant (L1), we have a positive and significant correlation of $0.000 < 0.05$. When NPLs in 2019 increase by one unit, then broad money volatility in 2020 increases by 0.48 units. This econometric result shows that the countries in transition have not made an effective use of problem loans, and therefore we have come to increase the instability of financial development and decrease the monetary base.

Such an effect also exists in the constant (L2), where we have a positive and significant correlation of $0.000 < 0.05$. When non-performing loans increase by one unit, then the volatility of financial development increases by 0.62 units. This economic phenomenon shows that the transition countries in the dynamic time lag (L2) have had problems with the management of non-performing loans, and as a result, the rate of non-performing loans has increased in these countries, which has automatically caused an increase in the share of volatility in financial development.

Figure 1. Volatility of time series data for variable Z-Score and financial development for countries in transition



Source: Authors' calculations in the Stata program (2023).

In the following we will try to answer the question, how did non-performing loans and other determining factors influence the volatility of loans in transition countries?

From the obtained results, we can conclude that non-performing loans affect the decline in the value of financial development. So, with the increase in non-performing loans, the volatility of bank loans in transition countries increases by $0.00 < 0.05$.

In the constant (L1), we have a positive and significant correlation ($P\text{-value} = 0.000 < 0.05$). Therefore, if non-performing loans increase by one unit, then the value of bank loan volatility will increase by 0.71 units. Based on this, we say that countries in transition have not had an adequate policy for the management of problem loans, and this has resulted in an increase in the instability of small loans.

Table 13. Econometric results of Nelson's E-Garch model between non-performing loans and bank loans for countries in transition

Z-Score	Coef.	Std. Error	Z	P> z	95% Conf. Interval	95% Conf. Interval
NPL	-.3617398	.0078309	-46.19	0.000	-.377088	-.3463916
cons.	51.08706
ARCH L1.	2.261413	.294789	7.67	0.000	1.683637	2.839189
EARCH L1.	4.152617	.440956	9.42	0.000	3.288359	5.016874
E-GARCH (L1)	.7134858	.072826	9.80	0.000	.5707481	.8262234
E-GARCH (L2)	-.0832269	.1690017	-0.49	0.622	-.4144641	.2480103
E-GARCH (L3)	.4484542	.1388322	3.23	0.001	.1763482	.7205603
E-GARCH (L4)	-.0122881	.0481043	-0.26	0.798	-.1065708	.0819945
E-GARCH (L5)	-.4014008	.2395052	-1.68	0.094	-.8708224	.0680209
cons.	1.452908	1.458118	1.00	0.319	-1.404951	4.310766

Source: Authors' calculations in the Stata program (2023).

Such an effect also exists in the constant (L3), where we have a positive and significant correlation of $0.001 < 0.05$. So, when non-performing loans with dynamic time delay (3) increase by one unit, then the volatility value of bank loans will increase by 0.44 units, which is not a good situation for transition countries.

It will continue with the question of how non-performing loans and other determining factors have affected the volatility of deposits in countries in transition?

Table 14. Econometric results of Nelson's E-Garch model between non-performing loans and bank deposits for countries in transition

Z-Score	Coef.	Std. Error	Z	P> z	95% Conf. Interval	95% Conf. Interval
NPL	.682653	.0275418	2.48	0.013	.0142843	.1222463
cons.	5.287741	.4331654	12.21	0.000	4.438752	6.613673
ARCH L1.	-.1619336	.1553748	-1.04	0.297	-.4664626	.1425954
EARCH L1.	1.231135	.2108666	5.84	0.000	.8178445	1.644426
E-GARCH (L1)	.0337822	.130326	0.26	0.795	-.2216521	.2892165
E-GARCH (L2)	-.7934372	.1439486	-5.51	0.000	-1.075571	-.5113031
cons.	.3787113	.8950604	0.42	0.672	-1.375575	2.132997

Source: Authors' calculations in the Stata program (2023).

From the results obtained from Nelson's E-Garch model, we can conclude that non-performing loans affect the increase in volatility value. So, with the increase in non-performing loans, the volatility of bank deposits increases by $0.013 < 0.05$.

In the constant (L2), there is a negative and significant correlation of $0.000 < 0.05$. When non-performing loans in the dynamic time lag period (2) increase by 1 unit, then bank deposits will decrease by -0.79 units in the current period. According to this econometric result, we can conclude that for this period, the countries in transition have faced bad administration of problem loans, which has also influenced the increase in the volatility of bank deposits.

7. Conclusions and Recommendations

Financial development plays an important role in economic development. Financial development promotes and stimulates economic growth through the accumulation of physical capital and technological advancement by increasing the rate of savings, providing investment information, optimizing the allocation of capital, mobilizing and pooling savings, and facilitating and encouraging foreign capital inflows. From our analysis, it was clearly understood that financial development is a very important element for every country in the world. From the research done, it was noticed that countries in transition attach great importance to financial development and are committed to this part. Since the purpose of our research was to analyze the determinants of financial development for countries in transition, we tried to consider in the study the variables that would best help us get an answer for our study. Also, during this research, three econometric models were built, and for each econometric model, separate analyses were made to reach the answer we wanted at the end of the research.

The findings of the study for countries in transition show that for the first econometric model only the GDP per capita variable has a positive impact on broad money and is significant at the 1%, 5% and 10% levels, while non-performing loans and natural resources, market liberalization, inflation and interest rate have negatively affected broad money and are not significant. In the second econometric model where bank loans are the dependent variable, market liberalization is significant and has a positive impact on bank loans. While GDP per capita, non-performing loans, natural resources, inflation and interest rates had a negative impact on bank loans. While in the last econometric model where the dependent variable is bank deposits, the variables GDP per capita, non-performing loans, natural resources, inflation and interest rate positively affected bank deposits and were significant at the 1%, 5% and 10% levels. While market liberalization negatively affected bank deposits in countries in transition. From all the results and analysis obtained from this research, we had the opportunity to see the value and importance of each variable included in the research and to see how they influenced each other and the weight they had on financial development. In some cases, we had the opportunity to see how some of the variables had started to fall in recent years due to the situation from the COVID-19 pandemic that has hit the world and damaged it in many aspects and this was also observed in our study. However, these countries must choose the right policies that help them eliminate these barriers and strengthen the economy. Regarding the recommendations that we will give in this paper, there are some that we believe are important for these countries, and they are: Through this study, it is recommended that the governments of different countries around the world design strategic macroeconomic policies that will positively affect the financial development of countries in transition. Likewise, the other recommendation would be for the governments of these countries to pay more attention to the development of the financial system, competition, increased efficiency, and the proper distribution of financial resources in these countries because it will positively affect financial development and the function of sustainability more than economic growth. It is recommended that state institutions promote increased financial and economic development for countries in transition, as all countries have been hit economically by many factors caused by the COVID-19 pandemic. Another recommendation is for banks to be careful about interest rates so as not to raise them to an unbearable level

for individuals because this is hurting them. Also, be more careful with the part about problem loans because these have caused problems with the performance of banks and broad money.

Non-performing loans have negative effects on the financial development of transition countries. These effects have a negative impact on the banking sector, the country's economy, and foreign investments. Non-performing loans reduce the availability of loans for individuals, businesses, and investment projects. This can stagnate economic activity, hinder new investments, and affect the increase in unemployment. Non-performing loans weaken the banking system of a country. Banks facing risky creditors must limit their lending and may need to increase reserves for expected losses. This can weaken the financial situation of banks and bring uncertainty to the banking system. In some cases, non-performing loans in the banking sector can lead to the extension of financial and economic crises. In these situations, governments may be forced to intervene to control the situation and rescue banks that are in difficulty. This increases the state's debt and slows down economic development. Non-performing loans usually lower the confidence of investors in the financial markets of a country. This can result in low inflows of foreign direct investment and excessive speculation, which negatively affect the stability of the financial market. The main recommendations for managing non-performing loans and improving the financial development of countries in transition are as follows: strengthening supervision and transparency, the country's authorities must strengthen the supervision of the financial sector and ensure a climate of transparency in the market. This helps identify risks early on and prevent non-performing loans. Implementation of regulatory and risk management policies: banks and financial institutions must accurately implement regulatory policies and manage credit risk. Responsibility for creditors and investors must be essential to avoiding the outbreak of financial crises. Promotion of financial education and financial management: education of citizens and businesses in the field of finance and financial management is crucial. This helps increase awareness and better cope with credit and financial risk. Encouragement of investment in infrastructure: continuous investment in infrastructure helps increase economic activity and improve the financial situation. This type of investment also creates opportunities for a return on investment and sustainable economic growth. Support for productive and innovative sectors: governments and other institutions must support productive and innovative sectors to help diversify the economy and increase competitiveness. By implementing the above recommendations, countries in transition can better cope with the challenges of non-performing loans and improve financial stability, economic growth, and sustainable development.

Inflation has significant effects on the financial development of transition countries. If the level of inflation is controlled and stable, there are some advantages, but when inflation is high and unstable, there are negative consequences that can deeply impact the economies of these countries. The central banks of transition countries should use careful and predictable monetary policies to control inflation and maintain the stability of the currency's value. The use of monetary policy instruments such as interest rates and bank reserves helps to prevent excessive inflation. Governments should pursue responsible fiscal policies, control budget deficits, and follow sustainable public debt strategies. Financial institutions and experts should closely monitor inflation and identify its sources. This monitoring helps identify the factors influencing inflation and take appropriate measures to control it. Market liberalization

attracts foreign direct investments as it creates a favourable environment for investors in countries in transition. This increase in foreign investments can help modernize infrastructure, develop different economic sectors, and boost employment. Market liberalization can increase competition, making companies more efficient and offering better and cheaper products and services. This can benefit consumers and lead to economic growth. An important aspect of market liberalization is preventing market dominance by large and monopolistic companies. This can be achieved through antitrust policies and by promoting healthy competition in the market. In some cases, market liberalization may negatively affect different economic sectors, leaving them at risk of losing competitiveness. Therefore, it's essential for governments to support vital sectors to progress and stimulate their development. For countries in transition with abundant natural resources, the extraction and sale of these resources can bring in increased revenue for the state. This can aid in financing infrastructure projects, public services, and other investments in the economy. It is crucial for countries in transition to diversify their economies and not rely solely on natural resources. This means developing other economic sectors such as technology, manufacturing, tourism, etc. to avoid the risks of an undiversified low economy. Transition countries must use their revenues from natural resources carefully and sustainably. These revenues should be wisely invested in infrastructure projects, education, healthcare, and other economic sectors to improve overall development in transitional countries.

References

- Adamopoulos, A. (2010). Financial development and economic growth an empirical analysis for Ireland. – *International Journal of Economic Sciences and Applied Research*, 30(5), pp. 75-88.
- Adamu, P., Kargo, S. (2011). Financial development and economic growth in Sierra. – *Journal of Monetary and Economic Integration*, 9(2), pp. 30-61.
- Adnan, N. (2011). Measurement of Financial Development: A Fresh Approach. 8th International Conference on Islamic Economics and Finance.
- Al-Malkawi, H., Marashdeh, H. A., Abdullah, N. (2012). Financial Development and Economic Growth in the UAE: Empirical Assessment Using ARDL Approach to Co-integration. – *International Journal of Economics Finance*, 4(105).
- Anderson, S. (2003). The Influence and Effects of Financial Development on Economic Growth an Empirical Approach. CHR. Michelsen Institute development Studies and Humana Rights.
- Astratie, M. (2021). Determinants of financial development in Ethiopia: ARDL approach. – *Cogent Economics and Finance*, 9(1).
- Aydin, R., Arbak, E., Naceur, S., De Goren, P. (2015). Determinants of financial development across the mediterranean. – Springer International Publishing Switzerland, pp. 159-181.
- Baltagi, B., Demetriades, P., Law, S. (2008). Financial Development and Openness: Evidence from Panel Data. – Center for Policy Research, 60.
- Barra, C., Destefanis, S., Lavadera, L. G. (2013). Regulation and the Crisis: The Efficiency of Italian Cooperative Banks," CSEF. CSEF Working Papers 338, Center for Studies in Economics and Finance (CSEF).
- Bencivenga, V., Smith, B. (2000). Financial Intermediation and Endogenous Growth. – *Review of Economic Studies*, 58, pp. 195-209.
- Benyah, K. (2010). The determinants of financial development: A focus on Africa countries. Jonkoping International Business School.
- Bhattacharya, P. S. (2003). Financial development and economic growth in India: 1970-1971 to 1998-1999. – *Applied Finance Economics*, 13(12), pp. 925-29.
- Bhattacharyya, S., Holder, R. (2014). Do natural resource revenues hinder financial development? The role of political institutions. – *World Development*, 57, pp. 101-113.
- Bist, J., Read, R. (2018). Financial development and economic growth: Evidence from a panel of 16 African and non-African low-income countries. – *Cogent Economics and Finance*, 6(1).

Morina, F., Kilaj, D., Alija, S. (2024). Nexus between Macroeconomic Factors and Financial Development: Empirical Evidence from Transition Countries.

- Calderon, C., Liu, L. (2003). The direction of causality between financial development and economic growth. – *Journal of development economics*, 72(1), pp. 321-334.
- Cojocaru, L., D. H. S., Miller, J. (2012). *Financial Development and Economic Growth in Transition Economies: Empirical Evidence from the CEE and CIS Countries*. USA: Department of Economics, University of Delaware.
- Demetrades, L. a. (2006). *Money and Capital in Economic Development*. Washington, D.C. Brookings Institution.
- Demirgüç-Kunt, A., Detragiache, E. (2005). Cross-country empirical studies of systemic bank distress: A survey. Retrieved from World Bank.
- Diamond, W. D. (1984). Financial Intermediation and Delegated Monitoring. – *The Review of Economic Studies*, 51(3), pp. 393-414.
- Elsherif, A. (2015). The determinants of financial development: empirical evidence from Egypt. – *The Macrotheme Review*, 4(3), pp. 69-87.
- Fry, M. (1988). *Money, Interest and Banking in Economic Development*. The John Hopkins University Press.
- Greenwood, J., Jovanovic, B. (1990). Financial Development, Growth and this Distribution of Income. – *Journal of Political Economy*, 98(5), pp. 1067-1107.
- H. L., B. T. (2011). Finance and Oil: Is there a resource curse in financial development?. – Discussion Paper, Retrieved from Tilburg University.
- Huang, W. (2006). Emerging markets financial openness and financial development. – Discussion Paper (6).
- Ibrahim, M., Sare, Y. (2018). Determinants of financial development in Africa.
- Khalfaoui, H. (2015). The determinants of financial development: empirical evidence from developed and developing countries. – *Applied Economics and Finance*, 2(4), pp. 1-9.
- Khan, A., Qayyum, A., Sheikh, S. (2005). *Financial Development and Economic Growth: The Case of Pakistan*. – Munich Personal Repec Archive, pp. 819-837.
- King, R., Levine, R. (1993). Finance, entrepreneurship, and growth: Theory and evidence. – *Journal of Monetary Economics*, 32, pp. 513-542.
- Levine, R. (1997). *Financial Development and Economic Growth: Views and Agenda*, *Finance and Growth: Theory and Evidence*.
- McKinnon, R. (1973). *Money and capital in economic development*. Washington. Brookings Institution.
- Pagano, M. (1933). Financial markets and growth: An overview. – *European Economic Review*, 37, pp. 613-622.
- Rama, A. (2016). Analysis of the relationship between financial development and economic growth. – *Research Department*, 20(79).
- Raza, H., Shahzadi, H., Akram, M. (2014). Exploring the Determinants of Financial Development (Using Panel Data on Developed and Developing Countries). – *Journal of Finance and Economics*, 2(5), pp. 166-172.
- Romer, P. (1990). Endogenous Technological Change. – *Journal of Political Economy*, 94(5), pp. 1002-1037.
- Seetanah, B., Ramessur, S., Rojid, S. (2009). Financial Development and Economic Growth: New Evidence from a sample of island economies. – *Journal of Economic Studies*, 36(2), pp. 127-134.
- Shabbir, B., Jami, L., Bashir, S., Aslam, N., Hussain, M. (2018). *Determinants of Financial Development. A Case Study of Pakistan*.
- Shaw, E. (1973). *Financial deepening in economic development*. New York: Oxford University Press.
- Sres, A., Kobayakawa, S., Slok, T., Vartia, L. (2006). *Regulation of Financial Systems and Economic Growth*. Available at SSRN.
- Stiglitz, E. J., Weiss, A. (1983). Incentive Effects of Terminations: Applications to the Credit and Labor Markets. – *The America Economic Review*, 73(5), pp. 912-927.
- Takyi, P., Obeng, C. (2013). Determinants of financial development in Ghana. – *International Journal of Development and Sustainability*, 2(4), pp. 2324-2336.
- Valickova, P., Havranek, T., Hovarth, R. (2015). *Financial development and economic growth: A meta-analysis*.
- Xu, Z. (2000). Financial Development, Investment, and Economic Growth. – *Economic Inquiry*, 38, pp. 331-344.