The Impact of Financial Intermediation on Economic Growth: An Econometric Analysis for the Western Balkan Countries

Duresa Kilaj,[1] Fisnik Morina,[2] Argjent Berisha[2]
[1] South East European University, Faculty of Business and Economics, Tetovo, North Macedonia
dk32331@seeu.edu.mk
[2] University "Haxhi Zeka", Faculty of Business, Peja, Kosovo
fisnik.morina@unhz.eu, argjent_94@outlook.com

This paper aims to study the impact of financial intermediation on the economic growth of the Western Balkan countries. For the implementation of this paper, we will use secondary data. For data collection, we will focus on the reports of the World Bank, IMF and Eurostat. In terms of literature review, we will use materials provided by various scientific works focused on the field of financial economics, conference materials, various books, etc. The analyzed period will be 10 years. Based on the empirical results obtained from this paper, we can say that credit and inflation have not affected financial intermediation on the economic growth of the Western Balkan countries during the years 2013 - 2022. While the interest rate and deposits have had a positive impact. Through the results obtained, we say that the results of this study will serve as good scientific and empirical evidence for future studies to be conducted in the field of financial economics. This paper presents real and consistent results regarding the relevant conclusions. The analyzed period (2013-2022) is a compelling period for drawing competent conclusions and recommendations.

DOI
https://doi.org/10.18690/um.epf.5.2025.7

ISBN
978-961-286-984-7

Keywords:
financial intermediation, economic growth, financial institutions, interest rate, deposits

JEL:
E31, F43, F22

University of Maribor Press

1 Introduction

In this research, we will analyze how financial intermediation affects economic growth in the Western Balkan countries. We will focus on the importance of financial institutions, capital markets, and financial market infrastructure in promoting investment, developing important economic sectors, and improving sustainable conditions and inclusive economic growth in this region.This study aims to provide an in-depth analysis of the complex links between financial intermediation and economic development in the Western Balkans, highlighting the challenges and opportunities for the future of these countries in the context of regional integration and the global impact of financial markets.The role of financial intermediation in economic growth has been widely recognized in many different research studies. The main engines of economic growth, capital and total factor productivity, can be stimulated and influenced by finance. Financial intermediaries favor savings and reduce the transaction costs associated with capital accumulation. By allocating funds to the most productive initiatives and keeping an economic eye on them, financial intermediaries play a critical role in increasing total factor productivity (Yusifzada & Mammadova, 2015).

The paper is divided into four sections. The first part includes the literature review, the second part includes the scientific methodology and the specification of the econometric model. The third part includes the statistical analysis and findings of the study, while the last part includes the conclusions and discussions of this study.

2 Literature review and meta-analysis

Financial intermediation has been the subject of study for many years. It has been said many times that financial intermediation plays a very important role in the economic development of a country because it is crucial in channeling funds to productive users, promoting economic development and improving opportunities for income distribution and poverty reduction. Credit is a large amount of money that a bank gives to a citizen, or society, etc., at their request, on condition that it is returned in installments within a certain time (Hadëri, 2006).

A financial intermediary acts as a middleman between two parties to a financial transaction, such as a commercial bank, an investment bank, a mutual fund, or a pension fund. Financial intermediaries provide a number of benefits to the consumer, including security, liquidity, and economies of scale inherent in banking and asset management. While in certain areas, such as investing, advances in technology threaten to eliminate the financial intermediary (Chen, 2020). Author (Pagano, 1993) explains three channels through which financial development can affect economic performance. First, financial intermediaries improve the efficiency of investment. Second, efficient financial systems reduce transaction costs and increase savings as a result. Third, financial sector development can increase or decrease savings. Much of the literature on economics has addressed how financial institutions can influence the acceleration of economic expansion. Several years earlier, (Schumpeter, 1934) used the function of the banking industry as an intermediary to identify how it finances technological advances. Schumpeter explained how this goal could be achieved by identifying and financing business owners who have innovative concepts and creative production techniques to efficiently distribute savings. Levine (1997) and Schumpeter (1934) argued that economic progress resulted from the interaction between financial and real advances. The importance of financial markets and financial intermediaries for economic growth was emphasized by Schumpeter. This view was supported by (Hicks, 1969) who argued that financial resources were necessary for developing countries to industrialize.

Table 1: Meta-analysis of research

Author	Year	Title	Methodology	Finding
(Azege, 2004)	1970-2003	The Impact of Financial Intermediation on Economic Growth: An Analysis for Nigeria	Correlation analysis	Based on data, approximately 30% of Nigeria's GDP growth over the years has come from the banking sector's credit allocation to the economy, according to data analysis in this research.
(Seven & Yetkiner, 2016)	1991-2011	Financial intermediation and economic growth: Does income matter?	Panel data	The evidence suggests that financial development positively impacts economic growth in low- and middle-income countries. In high-income countries, the effect is detrimental.

Author	Year	Title	Methodology	Finding
(Ibrahim, 2012)	1970-2010	Financial Intermediation and Economic Growth in Nigeria	Time series Data	The comprehensive results of the study show that financial intermediation contributes to economic growth in Nigeria. This study shows that the years 2004 to 2007 were considered anomalous during the last ten years of the study. During this period, credit to the private sector grew at high rates, while the capacity utilization rate grew at the slowest average annual growth rate.
(Atindéhou., Jean Pierre, & Edoh Kossi, 2005)	1961-1997	Financial intermediation and economic growth: evidence from West Africa	VAR analysis	Based on the results, we see that for all financial factors considered, there is no causal relationship between economic development and any of the three countries analyzed. Mauritania shows some elasticity because economic growth seems to be affected by all financial factors.
(Orenuga & Oyedokun, 2022)	1970-1980	Financial intermediation and economic growth in developing countries	Panel data	Both channels of financial intermediation are important in developing countries; financial depth, which is the ratio of financial aggregates to GDP, only stimulates economic growth in low-income developing countries; in high-income countries it has no effect.
(Hao, 2006)	1985-1999	The development of financial intermediation and economic growth: The Chinese experience	The GMM model	According to econometric findings, the development of financial intermediation in China has two impacts on the country's economic growth: first, it replaces state budget allocations with credit and second, it mobilizes household savings. However, because credit is distributed inefficiently through financial intermediaries, credit growth does not stimulate growth.
(Sebuhuzu & Harold, 2017)	1996-2010	Financial Intermediation and Economic Growth:	Panel data	The study finds a cointegrated relationship between financial intermediation and economic growth in Rwanda, with private sector credit and liquidity

Author	Year	Title	Methodology	Finding
		Evidence from Rwanda		shocks driving output fluctuations. Strengthening the financial sector can boost economic growth.
(Emmanue & Odum, 2019)	1986-2017	The Effect of Financial Intermediation on the Economic Development of Nigeria	Autoregressive Distributed Lag (ARDL) technique.	From the research we say that lending to the private sector does not stimulate economic growth. The reason for this may be interest rates that can negatively affect economic growth. Therefore, it is suggested to reduce interest rates to increase the performance of the productive sectors of the economy.

Source: Data analyzed by authors (2025)

3 Methodology

The purpose of this study is to analyze the impact of financial intermediation on economic growth in the countries of the Western Balkans. To carry out the research, it will use secondary data provided by reliable sources from the World Bank, the International Monetary Fund and others. Also, in the literature review part, we will focus on the works of different authors on the determinants of financial development, together with relevant books by experts in the fields of finance, economics and management. Also, we will focus on various international conferences, numerous reports and safe resources from the Internet. The study will use panel data covering a 10-year period (2013-2022). For data processing we will use the STATA software program. The importance of the paper lies in its aim to provide real and consistent results that can shed light on financial intermediation and economic growth. The data will be processed in the STATA program and to prove the validity of the hypotheses of this study, we will apply the following statistical tests: descriptive statistics, linear regression, random effect, fixed effect, Hausman - Taylor regression, GMM, Arellano Bond Valuation Model, Generalized Valuation Equations (GEE Model).

The research questions of this research are:

1. How does credit, deposits, inflation and interest rate affect the GDP of Western Balkan countries?

2. How does credit affect the economic growth of the countries of the Western Balkans?
3. How does the interest rate affect investments and the economic development of the countries of the Western Balkans?

The hypotheses of this paper are constructed in this way:

H0: Financial intermediation does not affect economic growth in Western Balkan countries.
H1: Financial intermediation affects economic growth in Western Balkan countries.

Table 2: Description of the variables included in the econometric models

Variables	Description of variables	Data source
Dependent variable (Y)	Gross Domestic Product (% GDP)	Annual Reports of the BankWorld (2013-2022)
Independent variable (X1)	Domestic credit to the private sector (% of GDP) (C)	Annual Reports of the BankWorld (2013-2022)
Independent variable (X2)	Inflation, consumer prices (annual %) (I)	Annual Reports of the BankWorld (2013-2022)
Independent variable (X3)	Real Interest rate (annual %) (IR)	Annual Reports of the BankWorld (2013-2022)
Independent variable (X4)	Bank deposits to GDP (annual %) (D)	Annual Reports of the BankWorld (2013-2022)

Source: Data analyzed by the authors (2025)

The econometric model that will be used in this study is specified as follows:

$$GDP = \beta_0 + \beta_1 C + \beta_2 I + + \beta_3 IR + \beta_4 D + \gamma it$$

4 Results

In the chapter, the results will be presented through econometric analysis, where in this part the hypotheses presented in the research will be tested and we will try to get answers to the research questions presented earlier. Initially, descriptive statistics, linear regression, fixed effect model, random effect model, Hausman Taylor Estimation, GEE Model and GMM Model will be analyzed in this part. All these results will be extracted through the STATA program.In the following table, descriptive statistics will be presented for the variables included in the research,

where the part of observations, the average, the standard deviation, the minimum and the maximum of the variables will be analyzed.

Table 3: Descriptive statistics for the variables included in the econometric model

Variables	Obs.	Mean	Std.Deviation	Minimum	Maximum
GDP	70	2.957143	4.192905	-15.3	13.8
Loans	70	48.53857	8.591693	33	68.3
Inflation	70	2.095714	3.249278	-1.1	14.2
Deposits	65	4.002646	.171474	3.634951	4.347694
Interestrate	43	1.399159	.7407248	-1.203973	2.433613

Source: Author's calculations in Stata (2025)

Based on the data obtained from descriptive statistics, we can observe that the sample of our work is of 70 observations, as for the average, we see that the variable with the highest average is credit. If we analyze the part of the standard deviation, we can notice that we have the highest value of the standard deviation in the credit variable as well, in the part of the minimum value is the inflation variable, and as for the maximum value, again the loan has the highest value.

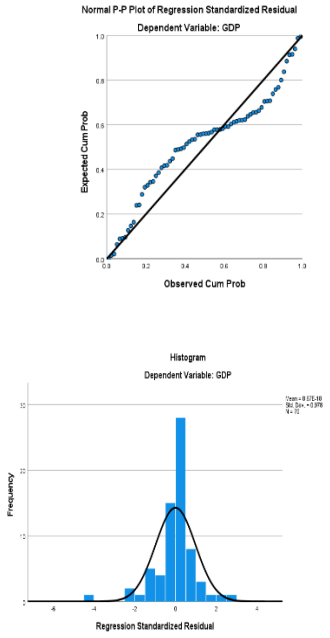

Figure 2: Graphic representation of the histogram
Source: Authors' calculations in Stata (2025)

Based on the graphical representation of the histogram, we see that between the dependent variable of GDP and the independent variable there is a normal distribution of these variables included in the analysis.

$$GDP = \beta_0 48.06739 + \beta_1 -.0987749 + \beta_2 .8647457 + \beta_3 -1.560745 + \beta_4 9.810035 + \gamma it$$

Table 4: Econometric results and empirical findings of the study

Variablat	Linear Regression	Random Effects – GLS Regression	Fixed – Effects Regression	Hausman – Taylor Regression	GEE Model	GMM Model
GDP	-	-	-	-	-	-
Loans	-.0987749 (0.144)	-.0987749 (0.136)	-.6989152 (0.004)**	-.4724482 (0.009)**	-.0614614 (0.077)*	-1.045368 (0.000)***
Inflation	.8647457 (0.152)	.8647457 (0.143)	1.293724 (0.039)**	1.258286 (0.035)**	.1209602 (0.784)	1.110983 (0.057)**
Interest rate	-1.560745 (0.071)**	-1.560745 (0.063)**	-1.370628 (0.156)	-1.505059 (0.101)	-.5019236 (0.478)	-.5130925 (0.498)
Depozits	-9.810035 (0.027)**	9.810035 (0.022)**	-12.25491 (0.227)	-14.15431 (0.128)	-3.713612 (0.050)**	-13.63079 (0.149)
Const.	48.06739 (0.009)**	48.06739 (0.006)**	86.38403 (0.030)**	86.71609 (0.022)**	20.92214 (0.020)**	30.12865 (0.002)**

Source: Authors' calculations in Stata (2025)

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

Based on the econometric results in the table above, we can conclude that some of the independent variables are significant at the 1%, 5% and 10% levels. For interpretation purposes we will base on the Random Effects GLS model, where in this regression the results are better.

β0 - If all other factors are constant, then GDP will be 48.06739 units.

β1 – If private sector credit increases by one unit holding all other variables constant then GDP will decrease by -.0987749 units. This statement is not correct as it is not within the 5% confidence interval, because (p-value = 0.136>0.05). If we analyze it from an economic aspect, we can say that the increase in credit for the private sector can stimulate investment and consumption, allowing businesses to expand and improve their production capacities, as well as consumers to increase their spending

on goods and services. This increase in investment and consumption can lead to increased economic activity and job creation, contributing to overall GDP growth.

β2 – If inflation increases by one unit, holding all other variables constant, then GDP will increase by 0.8647457 units. This statement is not correct as it is not within the 5% confidence interval, because (p-value = 0.143>0.05). If inflation increases, GDP can be negatively affected. Increased inflation leads to higher prices for goods and services, which can reduce consumer purchasing power and reduce consumption. In addition, increased costs for businesses can reduce profits and reduce new investment. This combination of reduced consumption and investment can slow economic growth and lead to a decrease in GDP.

β3 – If the interest rate increases by one unit, holding all other variables constant, then GDP will decrease by -1.560745 units. This statement is correct because the significance value is within the 10% confidence interval, because (p-value = 0.063<0.10). Increasing interest rates makes it more expensive for consumers and businesses to obtain credit, reducing consumer spending and business investment. This reduces aggregate demand in the economy, slowing economic activity. In general, increasing interest rates tends to slow economic growth and reduce GDP.

β4 - If deposits increase by one unit, holding all other variables constant, then GDP will increase by 9.810035 units. This statement is correct since the significance value is within the 5% confidence interval, because (p-value = 0.022<0.05). An increase in bank deposits improves the liquidity of financial institutions, enabling them to provide more credit to businesses and consumers. An increase in credit can encourage businesses to invest in expanding production capacities and increasing individual consumption, leading to an increase in economic activity.

5 Conclusions and discussion

The topic of the impact of financial intermediation on the economic growth of the Western Balkan countries is important for understanding how to improve the financial infrastructure and stimulate economic development in the region.

From the analyses conducted and the results obtained, we can conclude that financial intermediation has a positive impact on economic growth and that the base hypothesis (H1) in this case is accepted and H0 is rejected. From the tests conducted through the STATA program, we noticed that some of the variables were related to each other and some of them were not. Credit and inflation were two of the variables that did not have much impact on economic growth. This is as a result of various economic factors. Credit for the private sector has not had much impact because those loans that businesses receive do not directly affect economic growth because most businesses receive those loans to justify to the state that they are in credit and should not burden us with many obligations. While the interest rate and the deposit rate had a positive impact on the economic growth of the Western Balkan countries. Overall, the results were acceptable for the period analyzed, given that there was also a lack of data in some countries.In the Western Balkan countries, financial intermediation has played an important role in facilitating access to financial resources for businesses and individuals. Intermediation has improved access to credit and stimulated economic activity by supporting investment and consumption. However, there are major challenges that hinder the full potential of financial intermediation in these countries, such as the lack of financial market infrastructure, low property registration, and weak financial management standards in financial institutions. Investments in the development of financial infrastructure and increased transparency in financial systems will help address these challenges and increase the impact of financial intermediation on the long-term economic growth of these countries.

During this research, we also encountered some limitations such as the lack of data for some countries which affected the reduction of the sample of the work and the lack of research of this nature for the Balkan countries. But we conclude that the results of our work are original and reliable,through the obtained results, we say that the results of this study will serve as good scientific and empirical evidence for future studies that will be carried out in the field of financial economics. The results of this study will serve as practical evidence for the governments of different countries of the world regarding the part of financial development and financial intermediation of a country, how to design strategic macroeconomic policies that will positively affect the financial development of economies. of the countries of the Western Balkans.

References

Atindéhou., R. B., Jean Pierre, G., & Edoh Kossi, A. (2005). Financial intermediation andeconomic growth: evidence from Western Africa,. *Applied Financial Economics, 15*(11), 777-790. doi:DOI: 10.1080/09603100500108030

Azege, M. (2004). The Impact of Financial Intermediation on Economic Growth: The Nigerian Perspective. *SSRN*, 27. doi:https://dx.doi.org/10.2139/ssrn.607144

Chen, J. (2020, September 23). *Financial Intermediary: What It Means, How It Works, Examples*. Retrieved from Investopedia: https://www.investopedia.com/terms/f/financialintermediary.asp

Emmanue, l. I., & Odum, A. N. (2019). Effect of Financial Intermediation on Economic Development of Nigeria. *IOSR Journal of Economics and Finance (IOSR-JEF), 10*(1), 23-32. doi:e-ISSN: 2321-5933, p-ISSN: 2321-5925

Hadëri, S. (2006). *Paraja, bankat dhe tregjet financiare*. Tiranë: Kristalina- KH.

Hao, C. (2006). Development of financial intermediation and economic growth: The Chinese experience. *China Economic Review, 17*(4), 347-362. doi:https://doi.org/10.1016/j.chieco.2006.01.001

Hicks, J. (1969). *A theory of Economic History*. London Oxford: Clarendon Press.

Ibrahim, S. (2012). Financial intermediation and economic growth in Nigeria. *British Journal of Arts and Social Sciences, 4*(1), 1-9. doi:DOI: 10.12691/jfe-4-1-1

Levine, R. (1997). Financial Development And Economic Growth: Views And Agenda. *Journal of Economic Literature, 35*(2), 688-726.

Orenuga, B., & Oyedokun, G. E. (2022). FINANCIAL INTERMEDIATION AND NIGERIAN ECONOMIC GROWTH. *International Journal of Social Sciences and Management Review, 5*(1), 132-148. doi:ISSN 2582-0176

Pagano, M. (1993). Financial markets and growth: An overview. *European Economic Review, 37*(2-3), 613-622. doi:https://doi.org/10.1016/0014-2921(93)90051-B

Schumpeter, J. (1934). he Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business Cycle, translated from the German by Redvers Opie. *Journal of Comparative Research in Anthropology and Sociology, 3*(2), 12.

Sebuhuzu, G., & Harold, N. (2017). Financial Intermediation and Economic Growth: Evidence from Rwanda. *Journal of Economic and Financial Sciences, 7*(1), 1622180. doi:10.1080/23322039.2019.1622180

Seven, Ü., & Yetkiner, H. (2016). "Financial intermediation and economic growth: Does income matter?,. *Economic Systems, Elsevier, 40*(1), 39-58. doi:DOI: 10.1016/j.ecosys.2015.09.004

Yusifzada, L., & Mammadova, A. (2015). Financial intermediation and economic growth. *William Davidson Institute Working Paper Number 1091*, 1-30. doi:http://dx.doi.org/10.2139/ssrn.2600191