BALKAN FINANCIAL DEVELOPMENT AND ITS IMPACT ON ECONOMIC GROWTH: GRANGER CAUSALITY

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Abstract

This paper examines the relationship between financial development and economic growth for the six countries of the Western Balkan (Albania, Montenegro, North Macedonia, Kosovo, Bosnia and Herzegovina, and Serbia) for the period 2005–2019. To determine the direction of the causality between economic growth and financial development, we employed the vector autoregression VAR approach. Findings indicate evidence for the supply leading theory (Hurlin & Venet, 2008; McKinnon, 1973; Patrick, 1966; Shaw, 1973): financial development causes economic growth overall, especially when private credit was used as the proxy for it. Yet, we observed bi-directional links when financial development was proxied by broad money. Furthermore, interest spread affected economic growth. The findings also indicate a positive relationship between broad money and private credit taken together to GDP growth, but only in the first lag; in the second lag, the inverse effect of broad money and private credit on GDP growth became evident. On a comparative scale, private credit was found to have a bigger impact on GDP than broad money. We also observe that the banking system intermediaries have a significant role in spurring economic growth in the region.

Keywords: Panel Data Models, Financial Sector, Economic Growth, Finance, Balkans

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1. INTRODUCTION

The Balkan countries are making greater strides than ever before in terms of innovations and entrepreneurship (Licastro & Sergi, 2021). Creative and green economic developments are a priority of many of these nations now (Ndou, Schiuma, & Passiante, 2019). The fiscal stances of the Balkan states are still in a state of flux, despite attempts to bring in purpose and direction (Nenkova & Angelov, 2020). While they want to move past their recent history of slowdowns and suffering, it is important to understand the drivers of economic growth. The informal economy is still very strong and is the primary lifeblood, given the relatively underdeveloped institutional frameworks and governmental corruption (Mikulić, 2021). Yet, financial infusion, particularly foreign direct investment, is often called for as the panacea to economic development (Affandi & Malik, 2020; Jushi, Hysa, Cela, Panait, & Voica, 2021). The attempts at European Union (EU) integration brought topics such as inclusive development and the outreach of financial institutions to the forefront, too (Bonomi & Uvalic, 2019).

The influence of the financial sector on economic growth is widely debated in economic literature for over a hundred years. The banking

system is the one that prevents information asymmetry between lenders and borrowers, reduces transaction costs, monitors the managers, and provides financial resources in an inherently uncertain economic environment. Meanwhile, in the absence of an adequate institutional framework and/or in a specific economic context, the banking system can develop opportunistic behavior manifested by moral hazard and adverse selection, which is reflected in non-performing loans and inefficient allocation of resources.

The importance of the topic is shown by the scale and speed with which financial problems have spread to the economy after 2007. Financial development is typically measured by indicators related to the banking system as banks in transition economies have the absolute majority in financial intermediation. The link between financial development and economic growth has attracted wide attention in the last three decades and there have been many studies in this area. It has been claimed that financial development helps identify good investment opportunities, reduce the cost of production, mobilize savings, promote technological innovations, and encourage investors to be more risk-accepting (Levine, 1997). On the other hand, authors like Robinson (1952) have observed that "where the enterprise guides, finance follows" (p. 84). From this point of view, finance does not cause growth; finance responds to changing demands from the "real sector". It sounds like the relationships could be either way or both ways simultaneously, depending upon the broader economic context.

The structure of this paper is as follows. Section 2 reviews the relevant literature. Section 3 analyses the methodology that has been used to conduct empirical research on the relationship between financial development and economic growth in Central and Eastern Europe. Section 4 presents the analysis model and its results. Section 5 offers a broader discussion on the results and Section 6 concludes the study.

2. LITERATURE REVIEW

The importance of financial institutions in generating economic growth has been widely discussed in the literature. The following sections elaborate on this and prepare the ground for empirical design.

2.1. Financial development and economic growth

Early economists, such as Schumpeter (1934), identified banks' role in facilitating technological innovations through their mediation role. He believed that achieving this goal would be through efficient allocation of savings and the financing of promising start-up entrepreneurs. According to Schumpeter (1934), for Levine (1997), economic growth was a product of interaction between financial and real innovations. Hicks (1969) held the same view, stating that finances played a crucial role in industrializing developing countries.

Ghandhi (1973) examined the impact of government intervention in the development of financial systems by concluding that government restrictions on the banking system (such as the setting of interest rates ceiling and direct interference in the lending process) negatively affect the development of the financial sector and undermine economic growth.

Patrick (1966) identified two possible lines between financial development and economic growth. The first line called "demand following" shows that the increase in demand for financial services depends on economic growth, trading, and the modernization of sectors of the economy.

The second line between financial development and economic growth is called "supply leading" (Patrick, 1966). Later, Hurlin and Venet (2008), McKinnon (1973), and Shaw (1973), among others, too proposed similar hypotheses. This link itself includes transferring resources from small-growth sectors towards high-growth sectors, promoting and supporting growth. This means that the creation of financial institutions and their services occurs before the demand for them and is precisely their development that stimulates economic growth. Patrick's (1966) two lines of thought have also been joined by another line of thought where the link between financial development and economic growth is a two-way link, where factors can also be causing each other.

2.2. Evidence from cross-sectional data and panel data

Various studies have used cross-sectional data and most of the studies support a positive relationship between financial development and economic growth (King & Levine, 1993; Demetriades & Hussein, 1996; Levine & Zervos, 1998; Rajan & Zingales, 1996; Khan & Senhadji, 2000; Lensink, 2001; Dawson, 2003; Liu & Hsu, 2006).

Other studies investigate the relationship between financial development and foreign direct investment (Hermes & Lensink, 2003) while Alfaro, Chanda, Kalemli-Ozcan, and Sayek (2004) state that financial markets gain from foreign direct investment (FDI) via factor productivity. Memon, Bhutto, Sadhwani, Bux, and Butt (2011) argue that financial development occurs through the channel of financial liberalization which affects economic growth in the South Asian Association for Regional Cooperation (SAARC) countries. Law and Demetriades (2006) points out that institutional quality significantly determines financial development. One of the drawbacks in these cross-sectional studies is they did not examine the direction of causality between economic growth and financial development.

Most panel data studies concluded a positive relationship between financial development and economic growth. Graff (1999) tests on a sample of 93 countries for the period between 1970 and 1990 (divided into subperiods of five years), the hypothesis that financial development is a determinant of economic growth. Financial development is measured by the share of resources that society spends on its financial operation (the share of resources a society devotes to running its financial system). Levine et al. (2000) use a panel study to find the existence of a causal relationship between financial development and economic growth. Using a panel of 77 countries for the period 1960–1995, they conclude that the increase in the banking sector

produces higher rates of economic growth and total factory productivity (TFP) growth.

Christopoulos and Tsionas (2004) use panel cointegration analysis in developing nation contexts to confirm unidirectional causality from finance development (FD) to economic growth. Human capital and foreign direct investment both have a major impact on economic growth, according to Asghar and Hussain's (2014) results that human capital and foreign direct investment both exert a strong impact on economic growth and the study found a bidirectional relationship between financial development and economic growth for four countries. Kiran, Yavuz, and Güriş (2009) argue that financial development has a positive and significant impact on economic growth utilizing panel data from 10 emerging nations for the period 1968–2007, using panel unit roots tests and Pedroni's panel cointegration techniques.

In their article, Jaffee and Levonian (2001) assess the state of banking system development in 23 transition economies of Central and Eastern Europe and the former USSR. For the period from 1993 to 2000, Koivu (2002) did an empirical study on 25 transition economies, including Romania, and found a substantial negative association between interest margin, on the one hand, and yearly GDP growth on the other. Fink, Haiss, and Vukšić (2006) used the production function model to examine the relationship between financial development and economic growth in nine transition nations from 1996 to 2000, including Romania. Taivan and Nene (2016) found that financial development must be accompanied by financial deregulation to boost economic growth. To generate economic growth in countries where demand follows supply, resources must be directed toward a developing financial sector.

Kichler and Haiss (2009) conducted a comprehensive study in which they investigated the interdependence of the financial sector — growth ("the finance growth nexus") in a sample of 10 countries in Central and Eastern Europe, including Romania, for the period from 1999 to 2006. Cojocaru, Hoffman, and Miller (2011) found a substantial positive association between loans to the private sector (as a percentage of GDP) and GDP growth in 25 Central and Eastern Europe (CEE) and Commonwealth of Independent States (CIS) nations from 1990 to 2008, as well as a negative relationship between interest rate spread and GDP. Singh (1997), Andersen and Tarp (2003), Ayadi, Arbak, Naceur, and Groen (2015), and Ductor and Grechyna (2015), on the other hand, provided data and arguments for an inverse relationship between financial development and economic growth.

3. METHODOLOGY

Using time series data for six Western Balkan countries designated as upper-middle-income economies by the World Bank from 2005 to 2019, this research empirically explores the causal relationship between financial development and economic growth. Albania, Montenegro, North Macedonia, Kosovo, Bosnia and Herzegovina, and Serbia are the Western Balkan countries. The data utilized are quantitative time series data as specified by World Bank statistics and the "Financial Development and Structure Dataset" (Beck, Demirgüç-Kunt, & Levine, 2019). At the macroeconomic level, secondary data collecting is used.

The annual percentage of economic growth is the dependent variable of this study. Financial development measurements and other control variables are the independent variables.

Financial development is intended to be measured through financial assets such as:
1) broad money growth (M2 growth annual %);
2) domestic credit to the private sector (private credit % GDP);
3) interest rate spread quantitative indicators (lending rate minus deposit rate, %);
4) nonperforming loans (% total loans).

For the testing of the causal relation, the highly variable model will be written in the form of a general vector model, a dependent variable, and other independent variables:

Model 1

$$Y_{i,t} = \propto_0 + \propto_1 BM_{i,t} + b_1 IntSpr_{i,t} + \varepsilon_{i,t} \qquad (1)$$

$$Y_{i,t} = \propto_0 + \propto_1 PC_{i,t} + b_1 IntSpr_{i,t} + \varepsilon_{i,t} \qquad (2)$$

where, $Y_{i,t}$ is real GDP growth in country i and year t; $BM_{i,t}$ is the ratio of broad money to GDP or private credit to GDP; $PC_{i,t}$ is used as a measure of financial development, respectively; $IntSpr_{i,t}$ is the interest spread as %; error term $\varepsilon_{i,t}$ is the value of cross-sectional or period-specific effects (random or fixed); i indicates the country on which to make regression (Albania, Montenegro, North Macedonia, Kosovo, Bosnia and Herzegovina, or Serbia); t indicates the year (2005–2019).

Because the goal of this study is to discover the link between financial development and economic growth, co-integrating analysis and error correction processes were used (a methodology that has been used in previous literature to simulate these relationships).

For certain missing years from 2005 to 2019, the data were collected from the Financial Development and Structure dataset and the World Bank's World Development Indicators. The analysis method employed is econometric modeling utilizing EViews software. This software enables data analysis in a panel system, containing a combination of time periods and series of data for several entities. At various stages of the empirical investigation, the panel unit root test, panel cointegration tests, and panel causality tests were used.

Several unit root tests are based on econometric literature. First, we tested the stationary test of the data via unit root test at level and if needed we will try stationarity of variables even at first difference, via summary tests:
1) Levin–Lin–Chu t*;
2) Im–Pesaran–Shin (IPS) W-stat (Im, Pesaran, & Shin, 2003);
3) augmented Dickey–Fuller test (ADF)-Fisher chi-square (Maddala & Wu, 1999);
4) Phillips-Perron (PP)-Fisher chi-square;
5) Hadri Z-stat.

Because it rejects the premise of homogeneity of autoregressive coefficients and is based on an ADF test conducted for each nation in the panel by assuming that the error term is serially

correlated, IPS is regarded as a more advanced unit root test (Asghar & Hussain, 2014). Like the IPS unit root test, the ADF-Fisher test provided by Maddala and Wu (1999) assumes heterogeneous autoregressive coefficients and is based on p-values of unit root derived for each cross-sectional unit by ADF regression. The unit root hypotheses are formally stated below:

H1₀: There is no unit root between variables.
H1: There is a unit root between variables.

For analyzing the causality between variables, this study uses another version of the Granger causality test developed by Venet and Hurlin (2001) and the Kao residual cointegration test.

1) Pedroni panel test;
2) Kao panel test;
3) fully-modified ordinary least squares (FMOLS) cointegration test;
4) likelihood-based panel test (Larsson, Lyhagen, & Löthgren, 2001).

The hypotheses associated with cointegration are formally stated below:

H1₀: There is no cointegration among variables.
H1: There is cointegration among variables.

If the variables are stationary at level, we can say there is no long-run relationship between variables, and we go to a simple VAR for coefficient identification. With a VAR model, we can identify various equations, and then we can test for the significance of variables by examining the p-values. This model means "everything causes everything", however, the number of estimated parameters makes the model difficult to interpret. The multi-equation model is represented as below:

Model 2

$$Y_{i,t} = \mu + \sum_{i,t=1}^{i,t=n} \beta_{i,t} \, Y_{i,t-1} + \varepsilon_{it} \quad (3)$$

where,
$Y_{i,t}$ is a $(m \times 1)$ vector of I(0) variables;
μ is a $(m \times 1)$ vector of constants;
$\beta_{1,1} \dots \beta_{i,t}$ are $(m \times m)$ matrices of parameters;

ε_{it} is a $(m \times 1)$ vector of normally distributed error terms.

For a joint cause of the variables, we test for a Wald test when the coefficient of first and second lags of financial development can jointly cause economic growth.

$$H1_0: C = C = 0$$
$$H1: C \neq C \neq 0 \quad (4)$$

Accepting the null hypotheses, we conclude that there is a joint causations of variables of lag 1 and 2 to the dependent variable. The last step is to study the causality relationship between financial development and economic growth, in order to identify which theory fits better for Western Balkan. For this, the Granger causality test is run, a theory developed by Venet and Hurlin (2001) and Kao residual cointegration test.

About alternative methods, for panel data, procedures such as pooled ordinary least squares (OLS) as well as random-effects model (REM) and fixed-effects model (FEM) are used. REM helps identify that the differences in the level of financial development are smaller between countries and larger over time. This is the case mostly in transition countries (Koivu, 2002), such as Western Balkan countries. We must use the Hausman test to accomplish FEM or REM test, but this can be part of another paper.

4. RESULTS

The authors first ran the summary and Hadri test at a level for individual intercept and intercept + trend, with automatic selection of Schwarz info criterion by the software. The results of both unit root tests show that all the selected series GDP, broad money, Int spread, and private credit are stationary at a level only with intercept, because after the test of intercept + trends, the results show no significance of the trends, because trends tend to make the variables not stationary. The results of all the tests are presented below in Table 1.

Table 1a. Results of unit root test at level (Individual intercept)

At level/Individual intercept	Levin–Lin–Chu t*	Im–Pesaran–Shin W-stat	ADF–Fisher chi-square	PP–Fisher chi-square	Hadri Z-stat Null hypotheses: Stationarity
GDP growth	0.000*	0.002*	0.006*	0.007*	0.19
Broad money	0.000*	0.000*	0.000*	0.002*	0.001*
Private credit	0.009*	0.001*	0.000*	0.000*	0.003*
Interest spread	0.000*	0.000*	0.000*	0.000*	0.000*

Table 1b. Results of unit root test at level (Individual intercept + trends)

At level/Individual intercept + trends	Levin–Lin–Chu t*	Im–Pesaran–Shin W-stat	ADF–Fisher chi-square	PP–Fisher chi-square	Hadri Z-stat Null hypotheses: Stationarity
GDP growth	0.000*	0.001	0.138	0.210	0.233
Broad money	0.000*	0.682	0.000	0.000	0.002
Private credit	0.000*	0.426	0.000	0.000	0.000
Interest spread	0.000*	0.0096	0.000	0.000	0.003

*Note: * rejection of the null hypothesis at 1%.*

Having confirmed by applying the panel unit root test that our variables are stationary at a level I(0), just for the individual intercept, this means there's no long-run relationship, a short-run

relationship may exist and no need for cointegration estimation. But, as said above, we may need to investigate for causality between them. Granger

causality test can be directly done at the level form data without any transformation.

We test for autoregression VAR analyses and then test for Granger causality. From the VAR result, we can say that most of the expected results from the literature are suitable for the variable at first lag.

The following formula was used to calculate the GDP growth:

$$GDP\_GROWTH\_ = C(1) * GDP\_GROWTH\_(-1) + C(2) * GDP\_GROWTH\_(-2) + C(3) * BROAD\_MONEY(-1) + C(4) * BROAD\_MONEY(-2) + C(5) * PRIVATE\_CREDIT(-1) + C(6) * PRIVATE\_CREDIT(-2) + C(7) * INT\_SPREAD(-1) + C(8) * INT\_SPREAD(-2) + C(9) \tag{5}$$

From Table 2 of the estimation method only C3, C4, C5, C6, C8, and C9 are significant. Variables of *DM* and *PC* that represent financial development (FD) are positively connected, respectively, in the first lag, respectively, by broad money (BM) and private credit (PC) positively affect economic growth. The coefficient shows that when a 1 unit increase in private credit (-1), GDP increases by 0.12 units. While 1 unit increase in broad money (-1) affects GDP to increase by 0.05 units. This shows that financial development has a low impact on economic growth in these countries due to the fact of not having a developed functional financial system. Interest spread in the first lag is more suitable with results but is insignificant (Table 1), while interest spread (-2) affect positively GDP with a coefficient of 0.09. Also, BM, at the second lag, negatively affects GDP growth (-0.067). While PC, in the first lag, affects GDP positively (0.12), while in the second lag, it affects GDP in a negative way (-0.18). We can conclude that in short term, especially in the first lag, the results are as expected.

The model is significant with a probability of F-statistics of 0.000 and with a low R-squared of 59% and Durbin–Watson of 1.8 revealing there are no autocorrelations between variables in the equation.

$$GDP\_GROWTH\_ = C(3) * BROAD\_MONEY(-1) + C(4) * BROAD\_MONEY(-2) + C(5) * PRIVATE\_CREDIT(-1) + C(6) * PRIVATE\_CREDIT(-2) + C(8) * INT\_SPREAD(-2) + C(9) \tag{6}$$

Table 2. Private credit and GDP growth

Results	Coefficient	P-value
C3	0.05	0.0034
C4	-0.067	0.0001
C5	0.12	0.0037
C6	-0.18	0.0001
C8	0.09	0.0178
C9	5.7	0.0001
Prob. (F-statistic)		0.000
R-squared	0.59	
Durbin–Watson	1.8	

$$BROAD\_MONEY = C(10) * GDP\_GROWTH\_(-1) + C(11) * GDP\_GROWTH\_(-2) + C(12) * BROAD\_MONEY(-1) + C(13) * BROAD\_MONEY(-2) + C(14) * PRIVATE\_CREDIT(-1) + C(15) * PRIVATE\_CREDIT(-2) + C(16) * INT\_SPREAD(-1) + C(17) * INT\_SPREAD(-2) + C(18) \tag{7}$$

Refering to equation (7), private credit affects positively broad money in the first lag (0.12) and negatively in the second lag (-0.18). The model is significant with a probability of F-statistics of 0.000 and with a high R-squared of 94% and Durbin-Watson of 1.86 revealing there are no autocorrelations between variables in the equation (8).

From Table 3, of the estimation method only C12, C13, C14, C15, and C18 are significant.

$$BROAD\_MONEY = C(12) * BROAD\_MONEY(-1) + C(13) * BROAD\_MONEY(-2) + C(14) * PRIVATE\_CREDIT(-1) + C(15) * PRIVATE\_CREDIT(-2) + C(18) \tag{8}$$

Table 3. Private credit and broad money

Results	Coefficient	P-value
C12		
C13	-	0.0001
C14	0.12	0.0037
C15	-0.18	0.0001
C18	0.09	0.0178
Prob. (F-statistic)		0.000
R-squared	0.94	
Durbin–Watson	1.857	

$$PRIVATE\_CREDIT = C(19) * GDP\_GROWTH\_(-1) + C(20) * GDP\_GROWTH\_(-2) + C(21) * BROAD\_MONEY(-1) + C(22) * BROAD\_MONEY(-2) + C(23) * PRIVATE\_CREDIT(-1) + C(24) * PRIVATE\_CREDIT(-2) + C(25) * INT\_SPREAD(-1) + C(26) * INT\_SPREAD(-2) + C(27) \tag{9}$$

BM affects PC positively in the first lag with a significant coefficient of 0.207 and negatively with -0.19 in the second lag according to equation (9). GDP affects the PC positively in the first lag with a significant coefficient of 0.63. The model is significant with a probability of F-statistics of 0.000

and with a high R-squared of 88% and Durbin–Watson of 2.01 revealing there are no autocorrelations between variables in the equations (9) and (10) (Table 4).

From Table 4, of the estimation, only C19, C21, C22, C23, and C24 are significant.

$$PRIVATE\_CREDIT = C(19) * GDP\_GROWTH\_(−1) + C(21) * BROAD\_MONEY(−1) + C(22) * \\ BROAD\_MONEY(−2) + C(23) * PRIVATE\_CREDIT(−1) + C(24) * PRIVATE\_CREDIT(−2) \tag{10}$$

Table 4. Broad money and private credit

Results	Coefficient	P-value
C19	0.63	0.012
C21	0.207	0.000
C22	-0.19	0.000
C23	1.28	0.004
C24	-0.32	
Prob. (F-statistic)		0.000
R-squared	0.88	
Durbin-Watson	2.01	

The only interest in the first and second lags are significant and affect each other in the short run according to the equation (11).

$$INT\_SPREAD = C(28) * GDP\_GROWTH\_(−1) + C(29) * GDP\_GROWTH\_(−2) + C(30) * \\ BROAD\_MONEY(−1) + C(31) * BROAD\_MONEY(−2) + C(32) * PRIVATE\_CREDIT(−1) + C(33) * \\ PRIVATE\_CREDIT(−2) + C(34) * INT\_SPREAD(−1) + C(35) * INT\_SPREAD(−2) + C(36) \tag{11}$$

Table 5. Interest spread, GDP growth, broad money, and private credit compounded relationship

Results	Coefficient	P-value
C34	0.81	0.000
C35	0.13	0.000
Prob. (F-statistic)		0.000
R-squared	0.97	
Durbin–Watson	2.32	

The joint significance was assessed through the Wald test.

In stage 1, it addresses the question of whether BM (-1) and BM (-2) can jointly cause GDP.

$$H_0: C3 = C4 = 0 \\ H1: C3 \neq C4 \neq 0 \tag{12}$$

Table 6. Wald test result 1

Test statistic	Value	df	Prob.
Chi-square	17.2	2	0.0002

The Wald test result with a p-value = 0.0002, meaning that we reject H_0, accepting that BM jointly influences GDP.

In stage 2, it addresses the question of whether PC (-1) and PC (-2) can jointly cause GDP.

$$H_0: C5 = C6 = 0 \\ H1: C5 \neq C6 \neq 0 \tag{13}$$

Table 7. Wald test result 2

Test statistic	Value	df	Prob.
Chi-square	17.34	2	0.0002

The Wald test result with a p-value = 0.0002, meaning that we reject H_0, accepting that PC jointly influences GDP.

In stage 3, it addresses the question of whether GDP growth jointly affects PC.

$$H_0: C(19) = C(20) = 0 \tag{14}$$

Table 8. Wald test result 3

Test statistic	Value	df	Prob.
Chi-square	8.6	2	0.0135

The P-value = 0.0135 greater than 0.05, we do reject H_0, meaning that GDP jointly does affect PC.

In stage 3, it addresses the question of whether GDP growth jointly affects BM.

$$H_0: C(10) = C(11) = 0 \tag{15}$$

Table 9. Wald test result 4

Test statistic	Value	df	Prob.
Chi-square	1.38	2	0.5

P-value = 0.5 greater than 0.05, we do not reject H_0, meaning that GDP jointly does not affect BM.

According to the Granger method, rather than testing whether X causes Y, we must test whether X forecasts Y. The meaning of causality is different, in this sense. In other words, the aim is to test the castability of one of the variables based on our knowledge of the other variable (Eita, 2007). Rejection of the null hypothesis implies that current and past lagged values of financial development help predict current values of economic growth. Also, the opposite is used to test if economic growth causes financial development.

Table 10 presents Granger causality test results. Running the Dumitrescu–Hurlin panel causality test we conclude as below:

Table 10. Granger causality test results for Y = F (Int, Financial proxy)

Causation	Results	P-value
Bidirectional	Broad money to GDP GDP to broad money	0.000 0.002
Unidirectional	Private credit to GDP	0.000
Bidirectional	Private credit to broad money Broad money to private credit	0.000 0.000
Unidirectional	Interest spread to GDP Interest spread to private credit	0.000 0.000

As seen in the table above, there is bidirectional causality between financial development and GDP growth when financial development is represented as broad money. When financial development is represented as private credit, there is unidirectional causation to GDP, implying that while both BM and PC can affect GDP, only BM is caused by GDP, with no private credit. As a result, while financial development can totally cause GDP, GDP can only partially cause it. In terms of the other variables, we can say that PC and BM are bidirectionally causal, and interest spread can cause GDP and PC. As a result, it is critical to remember that the amount of interest spread influences the level of private lending, leading the economy to suffer.

5. DISCUSSION

This study looked at the link between financial development and economic growth in six Western Balkan countries from 2005 to 2019. Our findings support the supply leading theory: financial development leads to unidirectional links in economic growth, but there were bidirectional links when financial development was represented by broad money and unidirectional links when financial development was represented by the private credit variable. Interest spreads also have an impact on economic growth. According to the VAR test, broad money and private credit have a positive association with GDP only in the first lag, whereas wide money and private credit have a negative influence on GDP growth in the second lag. According to the unit root test, there was no lengthy cointegration connection between variables since the variables were stationarized. Rather than broad money, private credit has a significant impact on GDP. Furthermore, the interest spread variable is important only in the second lag, resulting in a hiatus in the positive association between GDP growth and interest rates. We can't infer a large, long-run cointegration because of the non-developing financial system and short-time series, but we may look for a short-run link between variables that indicate financial development and economic growth. The fact that intermediaries via the financial system are significant because they generate economic growth and vice versa is crucial.

According to Cojocaru et al. (2011), financial development, as measured by credit growth (0.05) and private credit (0.12) in the first lag, has a favorable impact on economic growth. This demonstrates that, in many nations, financial development has a limited influence on economic growth due to the lack of a developed and functional financial sector. One reason might be the endogenous character of private credit, especially given the data were connected without delay for the same year (Dudian & Popa, 2013). Mehl,

Vespro, and Winkler (2006) and Hagmayr, Haiss, and Sümegi (2007) identify a considerable negative effect of private credit easy for South-Eastern European nations, indicating that the financial sector's influence is dependent on the quality of the economic environment. Because the Western Balkans are part of the SEEC, there are commonalities in findings, but only in second lags. A low degree of financial intermediation in the nations studied might also explain the unfavorable effect. To boost the flow of credit to the private sector and increase these nations' financial depth, greater attention must be paid to their financial structures.

6. CONCLUSION

In terms of culture and history, Balkan countries are often very similar (Licastro & Sergi, 2021). Their economies are like the extent the which economic development is embedded in this shared culture and history. While remarkable differences are likely given the different political paths these countries took, the Western Balkan countries share a lot more in common. In fact, regional economic integration is currently a top priority for these countries (Golemi & Muço, 2020). Understanding the role of finance in economic development and vice versa, treating this region as the unit of analysis thus makes sense. Also, certain underlying factors that impact the whole region, such as climate change and the urge to align or join the EU, mean that these countries act in similar ways despite inherent contradictions among them (Cierco Gomes, 2019). The proliferation of decentralized currencies and associated systems may further unify these countries. Cryptos have robust potential in the Balkans, according to Oxford Analytica (2022). There is a greater level of conversation these days not only about developing national payment systems but also about their interoperability (Boskov, Radjenovic, & Davcev, 2018).

Finance and economic development are interrelated and go hand in hand with each other. Governments must strengthen the financial sector and take necessary efforts to ensure a strong long-term link between financial development and economic growth in order to achieve long-term economic growth. More financial integration and improved financial institutions will be required to implement these objectives.

In a future study, we will also add other characteristics that help increase the economy, such as FDI and trade openness. FDI helps establish better financial intermediation by introducing technological advances and new products. These variables together with wide money, with a stronger lending policy (private credit), would benefit and influence better the economy.

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