CREDIT ACTIVITY AND SAVINGS AS DETERMINANTS OF ECONOMIC GROWTH

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Abstract

The paper focuses on assessing the impact of private sector loans and gross savings on the level of economic growth across selected European regions with a special focus on the Western Balkans. Nineteen European economies were segregated in three regions - Western Europe, Southern Europe, and the Western Balkans. Especially important is the inclusion of the Western Balkans as a primary interest in this study, having in mind its specific socio-economic structure and the existing gap in the empirical literature. A fixed-effects panel regression analysis is utilized, with annual data for the period between 1990 and 2018. The benchmark model incorporates the two aforementioned independent variables, and nine control variables accounting for trade openness, international financial stability, final consumption, and investments. Overall results indicate that lending activity is a statistically insignificant determinant of economic growth, while the effect of savings is contrary. Its greatest impact is estimated in the Western-European countries with an especially weak link in the Western Balkans.

Keywords: loans, savings, economic growth, panel analysis, Western Balkan

1. Introduction

The impact of the financial sector on the economic environment has gained importance in recent decades. Through the traditional process of financial intermediation, banks support both the household and the corporate sector with the necessary funds. Most of those funds come from savings of those same economic agents, but banks successfully channel them to deficient agents in the economy through their lending activity. Theoretical foundations imply a positive linkage between lending activity, savings, and economic growth. While growth is a particularly vast area of study as it is impacted by every single economic decision we make, focusing on the financial aspects of it is of key interest in this research.

The persistence of disparities between the European economies is evident even today. Even though structurally and culturally different, the various system transitions are mainly responsible for unequal development. For example, Western-European countries are predominantly industrial economies with high levels of development and economic sustainability. On the contrary, the Western Balkan region was mostly dealing with a tough shift from a socialist into a modern-day market economy in the early 2000s. This implies that in the case of the latter region, the typical economic and financial theory may not be applicable. We aim to test this hypothesis. A good starting point of such a premise is the work of Moder and Bonifai (2017). The authors suggest that the Western Balkans region is poorly rated in terms of accommodative financing policy, with most of the focus put on the size, lifespan, and geographical location of firms when providing finances. Is the link between savings, loans and economic growth severed? Empirical research implications of these questions are provided in the latter sections of this article. Accounting for these structural alterations, our research paper aims at several model estimations, predominantly following the regional classification proposed by The World Bank (2020). Countries such as Albania, Bosnia and Herzegovina, Kosovo, Montenegro, The Republic of North Macedonia, and Serbia are classified in the Western Balkan region. The European Union is segregated into four independent regions out of which we make use of two in our analysis, Southern (Cyprus, Greece, Italy, Malta, Portugal, and Spain) and Western Europe (Austria, Belgium, France, Germany, Ireland, Luxemburg, and the Netherlands). The Southern region in the EU was in primary focus during the Great

Recession, as their banking systems were impacted the most. Countries like Greece, Italy, Portugal, Spain and partially Cyprus were all in the debt crisis and needed special attention, measures, and austerity. Traditional banking channels of supporting economic growth were severed in the period between 2008 and 2013, with this period being longer in individual cases depending on the severity and management of the debt crisis. On the other side, the Western Europe region acts as a role model with strong, highly developed and resilient banking sectors serving as a 'role model'. This study compares the overall conditions and interactions in the Western Balkans region and relates them to these two regional outliers in Europe.

In the theoretical works, it is a common premise to find a significant and direct relationship between private-sector lending and economic growth. Additionally, such lending potential generated by the national savings of households and firms is of key importance, indicating a strong link between these two economic components. Do credit activity and the level of savings significantly determine economic growth throughout Europe? Is there a positive linkage or a possible disparity is persistent? Are the present theoretical expectations always justified? The article aims at answering these research questions while also noting any potential disparities among different country groups.

This research explores the relationships of private-sector lending and savings with the level of economic growth in the 19 economies, divided into three separate groups depending on their economic, cultural, and development differences. The primary focus is on the Western Balkans region, as it has not been of great interest to previous studies. A panel regression with fixed effects is estimated as our benchmark model, besides the pooled OLS and random effects models, for the 1990-2018 period. Through a set-up of two independent variables such as domestic loans and gross domestic savings influencing the dependent variable of interest, the response of economic growth proxied through real GDP per capita is assessed. A cumulated impact of annual datasets is used. Nine control variables were added to our model, accounting for trade openness, international stability, final consumption, and investment. The article aims to test the conventional theory and pre-set postulates of a relationship between economic growth and the financial intermediation observed through lending activity and savings. Surprisingly, general results indicate rejection of the theoretical hypothesis where private sector lending exists as a significant determinant of economic growth, while domestic savings do promote larger growth with notable disparities among country groups. Such findings promote an important addition in the literature regarding this topic, providing a unique view on a larger sample of economies and thus estimating their behavior as a group and the inter-group differences. In an area with emerging economies, we ought to give an overview of how they differ from the far more developed Western and Southern-European partners. With this, we may draw a fine line between different economic environments and policy variations.

2. Literature review

Modeling economic growth has always been a challenge. The banking sector plays a significant role in its determination. How can this connection be assessed depends on numerous factors and circumstances, as it remains one of the major challenges in academic work since the late 30s. Harrod (1939) and Domar (1946) propose a Keynesian approach in modeling economic growth focused on the levels of savings and capital, while Solow (1956) analyses long-term economic growth based on the neo-classical school of thought. Capital accumulation, labor, population, and productivity growth are some of the major components in creating the technological progress necessary for further economic growth. Interestingly, both approaches to the problem emphasize the necessity of capital with financial capital not being an exclusion. This is one of the main reasons why the largest accumulators of capital i.e., the commercial banks also need to be at attention. In line with this, it is worth mentioning that the

European private sector is far more dependent on loan financing, contrary to their counterparties in the USA. The underdeveloped capital markets, especially in Eastern and South-Eastern European countries, signal the importance of the banking sector and its lending activity as the biggest source of funds per se.

Traditional knowledge implies the ability of the banking sector in pooling savings and lending funds to both households and firms. Schumpeter (1934) emphasized the importance of banking institutions in achieving the desired economic growth, particularly through their lending function. Goldsmith (1969) studies the financial structure and estimates its influence on the growth levels as being direct. Moreover, financial intermediation is necessary for resolving the agent-principal problem and information asymmetry while lowering costs in finding the optimal deal between sufficient and insufficient economic agents (Leland and Pyle, 1977; Diamond, 1984). King and Levine (1993) suggest that banking performances, initially dependent on the level of financial intermediation, are of key significance in determining growth. The financial and real sectors should not be studied independently due to their extensive linkage. Easterly, Islam, and Stiglitz (2000) confirm that the central role of financial institutions in economic instability and downturn lies primarily in financial depth (measured by private credit to GDP). For example, Levine, Loayza, and Beck (2000) find that in less developed countries, greater financial development induces economic growth, whereas in highly developed economies this relationship flows in opposite direction after a certain point. Similar conclusions can be drawn from the works of Cecchetti and Kharroubi (2012). This implies that a certain limit exists on how much the financial sector can stimulate growth. Contrary to previous findings, Mukhopadhyay and Pradhan (2010) test the causality between financial and economic development in the case of seven Asian countries, utilizing a VAR model for the 1980-2010 period. As observed, no consensus is found between the level of financing and growth in the chosen developing economies, underpinning the previous findings. Prochniak and Wasiak (2016) believe that the development of the financial system is not pre-determining the level of economic growth, but the real demand is the main driving force. Further expansion of the financial sector may even reduce real growth, as it competes with the rest of the economy for an overall lack of resources. Efficient distribution of financial services through banks stimulates the total capital accumulation in the economy, which is imposed as a key component of economic development as previously mentioned. Savings and loans are intertwined and never completely independent of one another. General knowledge indicates that efficient resource distribution means pooling savings from different economic sectors and thus forming a base for expanding the level of investment in the economy (Lawrence, 2006; Moder and Bonifai, 2017). This creates a larger pool of available funds for the corporate and household sectors compared to less developed economies. The accumulation of savings plays a major role in our theoretical framework. Modern literature gradually declined views that banks are financial capital generators in the economy and loans are not determined by the level of savings (Hagemann, 2010). The expansion of both domestic and foreign investment, driven by the level of savings, can be observed as one of the key prerequisites in achieving higher levels of GDP growth. Banks' lending activity stimulates growth massively, however with potential hazards that extensive credit expansion may bring.

Often, studies include the financial structure as a determinant of output and investment growth, including their cyclical components. Independent variables such as bond markets, stock markets, and bank lending are commonly used, especially in the works of Bezooijen and Bikker (2017). Complex financial structures impose highly volatile investments and output growth, indicating more stable growth in less developed countries. In line with the credit expansion, a frequently used variable is the current account, which depending on the overall trade activity, may encourage economic development. Regularly, small and open economies, such as those located in the Western Balkans for example, exhibit a larger proportion of private

loans delegated for trade activity, which is why these two variables are sometimes linked. Variables like the amount of human capital, fiscal consumption, the rule of law are noted in the economic growth literature as important (Barro, 2003).

The case of the European Union (EU-27) is visited through the works of Leitao (2012). Through the dynamic panel framework, the author finds an interesting relationship of similar variables that are used in our model, in the context of supporting growth. Savings induce economic growth, while a negative relationship with credit expansion is noted. Żuk and Savelin (2018) note that the financial depth remains low on average throughout the whole Central, Eastern, and South-Eastern Europe compared to the EU-28. The investment rates in some countries suggest specific growth-oriented policies, through increasing labor productivity and accumulation of human capital and banking activity may not be the key driving force in our story. Misztal (2011) discusses such interactions and the existing differences between developed and developing economies.

Our research builds upon pre-existing empirical findings. Our firm belief is that by focusing on different sets of unique variables we control additional factors that might explain the unobserved variance in previous models. Furthermore, adequate analysis of the Western Balkan region and its European counterparties is necessary but unfortunately scarce, so far. Applying this approach, we pay specific attention to the least developed but especially cohesive integral part of Europe.

3. Methods

As mentioned in the introduction, we aim to test the previous knowledge of European countries and even extend the existing framework by adding a whole set of potential EU candidates. By doing so, in our analysis of the 1990-2018 period, we obtained our annual data from the World Bank Database i.e. from the World Development Indicators Database. Furthermore, we grouped 19 European economies in three regional groups according to The World Bank classification (2020), which shows structural differences, i.e. Western Europe, Southern Europe, and Western Balkans.

3.1 Empirical background

Before our model estimation, it is necessary to overview key variables of interest and traditionally, through data visualization, to depict their relations and differences between our three groups of European countries, with our primary focus put on the Western Balkan region. As an integral part of generating economic growth, financial components such as the level of lending to the private sector and savings often are observed as predetermined in their impact. Usually, they are evaluated alongside other factors endogenous and exogenous factors. Private sector lending differs throughout Europe but is one of the dominant components in providing finances for corporations. Considering the level of development between the countries, we can observe in Figure 1 that lending is slightly higher in more developed economies (in terms of GDP per capita). What is more obvious are the differences in GDP per capita throughout groups, making our approach adequate and thus desirable. Savings, however, portray stable and mild differences, not exhibiting any specific outliers in the data. Southern and Western-European countries are similar in terms of loans and savings indicators, logically due to being an integral part of the EU. Countries with a low level of GDP per capita have lower lending rates, but after a certain breakpoint (average income of $20,000), such differences are far less drastic. Due to such data, the Western Balkan region often is compared to the Central and Eastern-European block of countries. This study, by comparing the Western Balkan region to the more developed European regions, may prove beneficial in comparing banking system

importance and answer some important questions regarding the catching-up process. We observe that higher developed economies have also higher rates of private sector lending. Through correlation analysis for all 19 countries, we found a mild relationship of 0.4 points between the level of domestic loans to the private sector (as a percentage of GDP) and the real GDP per capita. A significantly stronger relationship is observed with gross national savings (as a percentage of GDP), with a correlation coefficient estimated at 0.84.

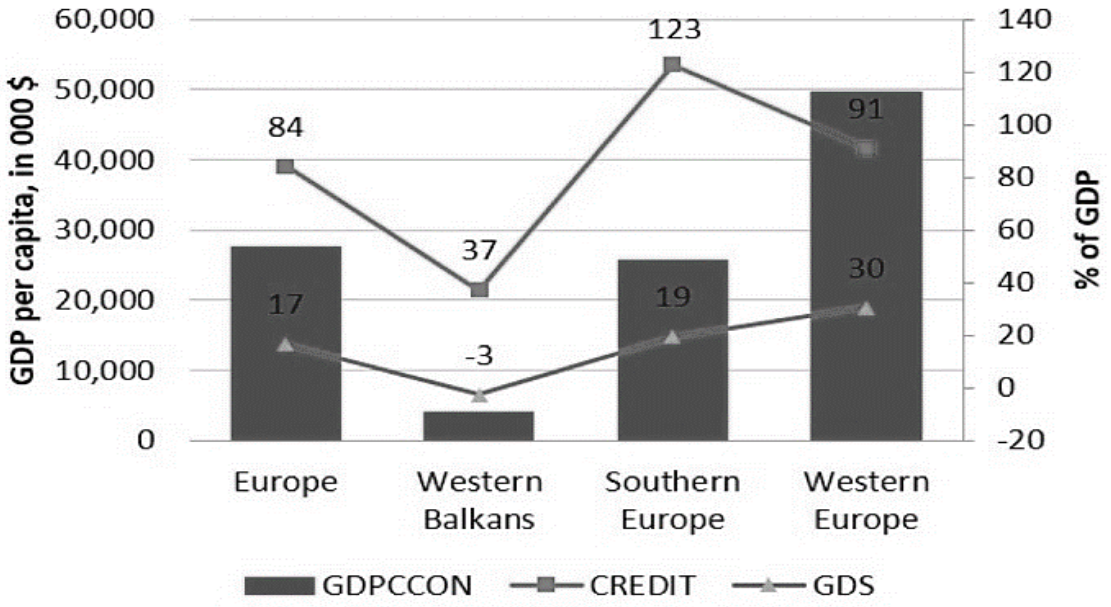


Figure 1. Average levels of GDP per capita, loans and gross savings in the EU and by regions
Source: The World Bank – World Development Indicators; Authors' work

Notable outlier countries are Cyprus (with a loans-to-GDP ratio at 198%), followed by Spain with 135% of GDP, and Portugal with 131% of GDP. It is worth mentioning that these countries were more or less all part of the financial crisis critical zone, with various measures and packages for financial stability imposed. Therefore, observing such high rates of lending is not too much of a surprise. On average, for the entire dataset, credit activity stands at 84% of GDP and gross savings at 17%. Disparities between groups are also notable, where the Southern group has an average lending rate of 123% of GDP, while in the Western Balkans it is only 37%. The Western Balkan countries differ substantially in each category compared to the other regions in the analysis, indicating the lower levels of development of the financial sectors. Moreover, this indicates that a catching-up process is inevitable and should be achieved through closer EU integration of the Western Balkan countries. Otherwise, the so-called natural catching-up will be insignificant and too slow. The gradual development of the respective financial sectors is present but lacks in exponential growth such as other EU economies, mostly due to the arguably weak monetary systems, smaller pool of available funds at disposal and the real economic opportunities and conditions. Mean values are depicted in Figure 2.

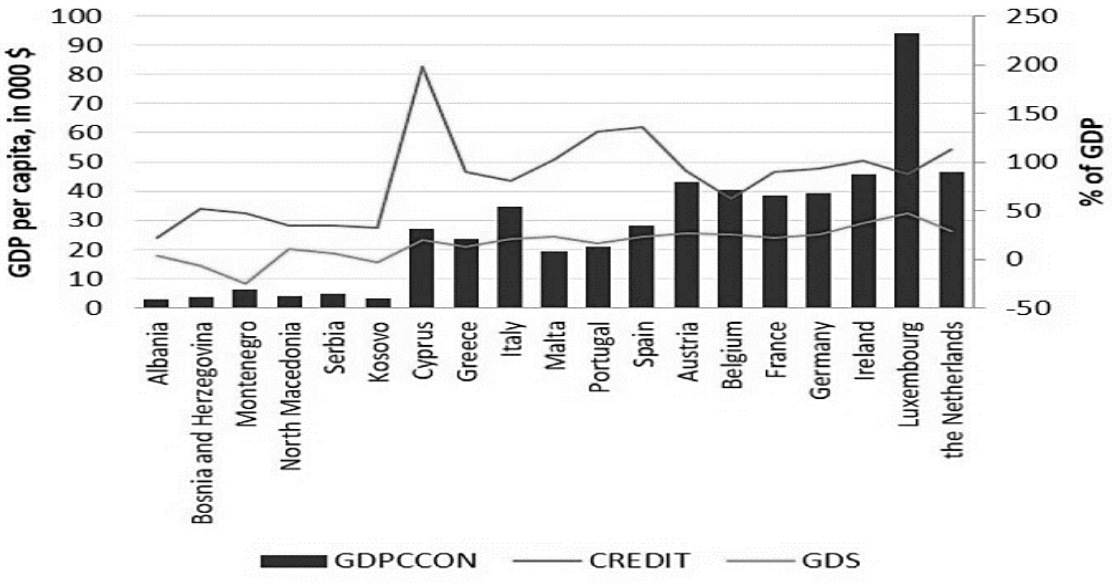


Figure 2. Average levels of GDP per capita, loans and gross savings per countries
Source: The World Bank – World Development Indicators; Authors' work

According to the observed data, we can even base our analysis between European and non-European countries depending on the cumulative effects of domestic savings and lending activity. In line with the previously stated, South-European countries are included due to their high lending activity i.e., indebtedness of the private sector, contrary to the conservatism present in Western Europe. Moreover, Western Balkan countries are of high interest to us as the next region to be integrated into the EU. The benefits of joining the European Union are evident through higher levels of income and financial intermediation in the economy. Additionally, the gradual joining to the Eurozone will help boost these categories through greater financial integration, higher competition in the financial sector achieved through capital liberalization and free fluctuations between labor markets.

3.2 Econometric model

This study employs the panel regression approach with estimates obtained through the fixed effects approach. Both main hypotheses forming the objective of the research indicate a direct and significant impact of loans to the private sector and gross savings on economic growth, respectively. The dependent variable of interest is the national economic growth, with its proxy being the real GDP per capita (measured in constant prices of 2010 USD). As crucial independent variables, whose impact on economic growth targeted in our research, the loans and gross domestic savings were included. Having in mind the complexity of the specific area of research, we passionately believe that the inclusion of a set of control variables will support us towards more adequate and unbiased modeling while marginalizing the share of unexplained in total variability. Control variable sets account for four specific areas of interest i.e., trade openness, international stability, final consumption, and investment.

Trade openness (TRADE) presented through the ratio of total trade to GDP. By doing so, we account for the especially dominant trade activity in small economies, which are present in Europe. We expand the set of trade openness factors by the exports (EXPORT) and the current account balance (CAB) as complementary control variables. International stability is explored through the inclusion of the real foreign exchange rate (REEXHART), and the price changes in the economy i.e., the inflation (INFGDP), hereafter presented as the GDP deflator. The final consumption set of variable is expressed through the consolidated government final

consumption, furthermore presented as GVFCE. Through their inclusion, we ought to induce a demand-driven background in economic growth, which is deemed crucial. At last, the set of investment control variables includes the gross fixed capital formation (GFIXCAFOR), and foreign direct investments (FDI) as a traditionally noteworthy variable (e.g., Radulescu et al., 2019). By including both domestic and foreign investments, we account for this particularly important capital flow, which is often closely intertwined with the overall level of economic development, and thus growth. Theoretically, more developed economies should attract and generate a larger proportion of investments compared to their developing counterparts, formulating a significant bond with the level of GDP growth. Additionally, we include the level of unemployment (UN). Even though a broader set of factors might attribute to explaining growth, they are deliberately omitted, as we want to maintain the most parsimonious model and not repeat any previous research regarding this topic. Variable summation is presented in Table 1, including the appropriate model notation, measurement, and expected impact on the regressand.

Table 1. Model variables

Notation	**Variable**	**Expected sign**
GDPCCON	GDP per capita (constant 2010 USD)	+
CREDIT	Loans to private sector (% of GDP)	+
GDS	Gross national savings (% of GDP)	+
TRADE	Trade openness (% of GDP)	+
CAB	Current account balance (% of GDP)	-
EXPORT	Exports of goods and services (% of GDP)	+
REEXHRAT	Real effective foreign exchange rate (2010 = 100)	-
INFGDP	Inflation, GDP deflator (annual rate of change)	+
GVFCE	Government final consumption (% of GDP)	+
GFIXCAFOR	Gross fixed capital formation (% of GDP)	+
FDI	Foreign direct investments, net inflows (% of GDP)	+
UN	Unemployment, total (% of labor force, national estimates)	-

Source: The World Bank - World Development Indicators

Since our main goal is estimating the most parsimonious model for our research, we conduct a partial correlation analysis between the variables. By omitting variables that exhibit a remarkably high or exceptionally low correlation between each other, we will solve the problem of multicollinearity, which is prerequisite number one in multivariate regression analysis. If the correlation is close to 1 or if $r < 0.1$, then we exclude such variables from the model. When estimating the general European model, due to multicollinearity we exclude the variable EXPORT, as well as CAB, REEXHRAT и FDI. For the Western Balkans model, EXPORT as well as CAB (due to very low correlation) are omitted. For the South-European model, we omit EXPORT, TRADE, CAB, REEXHRAT, GVFCE, and the FDI. The Western-European model excludes TRADE, EXPORT, and GVFCE.

A panel test of stationarity is conducted to determine the order of integration of our variables, as well as noting the presence of any structural breaks or extreme outliers in the data. Stationarity tests check for the presence of a unit root and the Augmented Dickey-Fuller and Phillips-Perron tests were conducted. To ensure data stationarity, first order integrated variables need to be differenced. Furthermore, some of the countries exhibit extremes in individual data, especially during the 90s, a period characterized by political and economic

turbulence. The following data were omitted from further analysis: the real effective exchange rate of North Macedonia is removed for the 1993-2018 period. The inflation rate was detached in the cases of Albania (1990-1997), North Macedonia (1991-1995), Serbia (1996-2002), Bosnia and Herzegovina (1996-2000), and Kosovo (2001-2005). For the final government consumption, the data for Albania (1990-1992) is excluded. Outlying data for the foreign direct investments implied omission for Cyprus (2008-2018), Malta (2004-2012), and Luxembourg (2007, and 2017-2018). Unemployment rates for 1991 and 2005 were removed in our model for Bosnia and Herzegovina and Montenegro, respectively. Consequently, an unbalanced panel regression model is estimated. Overall results from the unit root tests indicate that most of the variables are stationary at difference, and the results are shown in Table 2.

Table 2. Order of integration of the model variables

Variable	**Europe**		**Western Balkans**		**Southern Europe**		**Western Europe**	
	ADF	PP	ADF	PP	ADF	PP	ADF	PP
GDPCCON	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)
CREDIT	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)
GDS	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)
TRADE	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)
CAB	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)
EXPORT	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)
REEXCHRAT	I(1)	I(1)	/	/	I(1)	I(1)	I(1)	I(1)
INFGDP	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)
GVFCE	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)
GFIXCAFOR	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)
FDI	I(0)	I(0)	I(1)	I(1)	I(0)	I(0)	I(0)	I(0)
UN	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)	I(1)

Note: Unit root test were conducted at the 5% significance level.
Source: Authors' work

Depending on the previously stated, the fixed effects panel regression model can be presented as

$$Y_{it} = \alpha_i + \mathrm{B}X_{it} + u_{it} \tag{1}$$

for a country set $i = 1, 2, 3, \dots, N$ at time period $t = 1, 2, 3, \dots, T$, represented through Y_{it} as the dependent variable, α_i as the unobserved time-invariant heterogeneity across individuals correlated to the regressors, where B is a (k x 1) matrix of coefficients to be estimated, X_{it} is the time-variant (1 x k) regressor vector (both individual and control), and u_{it} is a Gaussian error term with zero mean and stable variance. The benchmark full-variable model is:

$$\begin{aligned} \Delta gdpccon_{it} = {} & \beta_0 + \beta_1 \Delta CREDIT_{it} + \beta_2 \Delta GDS_{it} + \beta_3 \Delta TRADE_{it} + \beta_4 \Delta CAB_{it} \\ & + \beta_5 \Delta EXPORT_{it} + \beta_6 \Delta REEXCHART_{it} + \beta_7 INFGDP_{it} \\ & + \beta_8 \Delta GVFCE_{it} + \beta_9 \Delta GFIXCAFOR_{it} + \beta_{10} FDI_{it} + \beta_{11} \Delta UN_{it} \\ & + u_{it} \end{aligned} \tag{2}$$

where lower cased variable notations indicate logarithmic transformations. The model is estimated for the complete set of data for all countries of interest, as well as segregated in regions. Having in mind that we deal with panel data, econometric analysis enables us to take

three approaches in model estimation i.e., pooled OLS, fixed effects, or random-effects model. The choice of the appropriate estimator is tested through statistical test design for this specific question, such as the Hausman and the Likelihood test. The prior approach tests for the null hypothesis of random effects model adequacy, contrary to the alternative hypothesis favoring the fixed effects approach. In the latter, the null hypothesis favors pooled OLS, with the alternative hypothesis favoring the fixed effects model. The typical methodological approach follows random-effects model estimation and conducting the Hausman test in the first stage. If the null hypothesis is rejected, we continue with the fixed effects model, testing it once more through the Likelihood ratio. However, if the null hypothesis cannot be rejected during the Hausman test, we conclude that the random effects approach is adequate. After the choice of appropriate model estimation, control variables that are proven to be insignificant are gradually omitted, until the most parsimonious, yet substantial model is estimated. Due to its insignificance in our European model, the inflation is excluded (INFGDP); in the Western Balkans model, we do so with the variables INFGDP, FDI, and UN, while for Western Europe we exclude the CAB, GFIXCAFOR, and the FDI variables. Additionally, after each omission of control variables, the changes in the key independent variables were followed, to check their robustness. Furthermore, since each country in the sample has its unique characteristics and environment, heteroscedasticity might occur when modeling. Consequently, a correction of the standard errors of the estimates using the method of covariance correction (White cross-section) is employed, lowering the negative side effects of heteroscedasticity. However, if the model does not serve for forecasting and constructing confidence bands, this approach can be avoided with caution. At the very end, each model was further tested through diagnostics tests, such as the F-statistics, Jarque-Bera, and the Durbin-Watson statistics.

4. Results

The results obtained are especially intriguing. As observed, all proposed fixed effects panel regression models are statistically significant due to the high levels of the F-statistics. The highest adjusted coefficient of determination is estimated in the Western-European model of countries, with 87% of the total variability explained by the model. The statistically least representative model is for the Western Balkans group with explained variability of 35%. This can be due to the specific economic developments of the countries in the observation period as well as a probable omission of important variables. Individual model results are depicted in Table 3. Common diagnostic tests were conducted to check model relevance and stability. The first and the second model do not exhibit statistically significant normal distribution at the 1% level, contrary to the third and fourth models. Residuals are normal at 5% level. Problems with autocorrelation and partial correlation are not persisting. The estimated residuals were also tested for the presence of unit roots, checking for their stationarity with no intercept and trend at their level. Since they are all observed to be stationary, we conclude that the model is relevant. Worth noting are the results from the Hausman and Likelihood ratio tests. The first two models indicate the adequacy of the fixed effects approach. However, for the South-European and Western-European models, more suitable would be the pooled OLS approach. Since it does not account for individual country specifications and it does not differ much in the goodness-of-fit estimates, we face modeling limitations but proceed with using fixed effects as a benchmark model for all four groups. Besides the omission of the export variable due to the high correlation with the trade openness, we further removed control regressors that were deemed statistically insignificant.

For the European model, loans to the private sector do not depict a statistically significant impact on economic growth even though this relationship is observed to be direct, as theoretically expected. On the other side, savings do have a significant and direct influence,

even at the 1% level. From the set of control variables, only the unemployment and the final consumption of the government show an inverse relationship with the dependent variable i.e., GDP per capita. While the impact of unemployment is explanatory for itself, the intriguing influence of government consumption needs further elaboration. Usually, government consumption should create a multiplier effect, mostly if it tackles key structures through the feedback process like the labor force. Greater consumption and expenditure by the central government would lead to a fall in unemployment and growth stimulation. However, in rare cases, it can have a negative impact, largely if the period under consideration is turbulent (as in the 90s and 00s for the Western Balkans, and the crisis period overall). Moreover, in specific cases like the Western Balkans, such problems that oppose theoretical foundations may be due to debatable usage of fiscal budgets and low levels of productivity in capital investments with large shares of administration wages and other expenditures. A typical reason behind such drivers is the great proportion of social expenditures in government budgets, overshadowing the importance of productive capital expenditures as a number one determinant of economic growth. Those problems need to be addressed as soon as possible by the authorities, as excessive fiscal spending only creates marching government debt which is especially evident in the latest period with the COVID-19 pandemic.

Credit expansion surprisingly is an insignificant variable in all our models, opposed to savings, especially in Western Europe compared to the other regions of interest. According to previous research, there is a significant positive impact of credit activity on growth, but some authors take a contrary stance suggesting caution in possible financial crisis follow-up (Arcand et al., 2012; Żuk and Savelin, 2018). One of the reasons for these results is that the interval of analysis grasps the Great Recession, having both aggressive lending activities and downward corrections to such developments. Besides, the credit channel was severely impaired in the Eurozone in transmitting monetary policy, and even though a substantial proportion of funds was made available through the ECB. Commercial banks failed to distribute it to the private sector but chose to fill in debt holes. That implies that even though a direct relationship is detected in three out of four models, the impact is marginal and insignificant. Such results reject our hypothesis (even the theoretical expectation) of a direct and significant impact of credit expansion on overall growth in the economy. In line with the works of Żuk and Savelin (2018), one of the shortcomings is the especially low levels of GDP growth in the post-crisis period. This does not necessarily imply that the theoretically set hypothesis of direct relationship between credit expansion and growth is false, but rather weakened due to a distinct set of factors and conditions. Worth mentioning here is the work of Rousseau and Wachtel (2002) which emphasizes the diminishing effect of financial depth, leading to a conclusion that the relationship between loans to the private sector and GDP growth is insignificant between the 1965-2005 period, in line with our research results. Especially high significance is noted in the impact of savings on growth, the largest being in Western Europe (0.013% average increase for a 1% increase in savings, ceteris paribus), and the lowest in the Western Balkans (0.003% average increase for a 1% increase in savings, ceteris paribus). Model results imply that we can accept the initially set hypothesis that savings do promote economic growth. Hassan et al. (2011) note that high-income OECD countries experience a quickly fading growth when a shock to gross savings is applied. Even though a two-way causality was found of loans and savings to GDP, they were not deemed as important as trade, fiscal policy impact, and inflation. Domestic savings are observed to be significantly linked with foreign direct investments (Aghion et al., 2006), with the effect being larger in less developed countries.

Our focus is however the Western Balkans region. Besides the direct and significant impact of savings on GDP per capita in the Western Balkans, trade openness and gross fixed capital formation are directly linked with the levels of growth at the 5% and 1% levels, respectively. As the Western Balkan economies are classified as small and open economies, trade activity is

an important domain of generating growth. As can be observed, more countries are open to trade integration with the neighboring and European partners (as they are the dominant trade partners). Short-term policies are unsustainable to be repeatedly conducted throughout years and they can only bring inconsistent adjustments. Such development should be attained through higher rates of both domestic and foreign investments since the culture of maintaining savings at stable rates of growth is already present. Moreover, we believe that relaxing credit conditions would be of great interest to all parties, as commercial banks in the region are well-capitalized. The potential hazards of a credit boom are thus limited but not excluded, as it can act as a two-edged sword. A rising concern in the Western Balkan region is the growing popularity of financial institutions that provide quick-access loans based on a weak assessment of the credit risk. As they target predominantly the households, supervisors should pay specific attention to restrict any potential indebtedness spiral between low-income individuals. Additionally, as a relevant component with a positive impact on economic growth, policy creators should deal with the question of employment. In theory higher rates of employment account for higher rates of growth near the GDP potential and here we confirm such a relationship. Through job-creating policies and targeting youth unemployment (which is a significant problem in the region), Western Balkan governments can support growth on a wider scale. An especially successful measure in supporting the domestic currency in a moderately euroized economy is the presence of higher required reserve rates for foreign deposits. Such a measure dissimulates savings in foreign currency, mainly in euros, as it becomes too costly for banks on their liability side in the balance. For a similar overview on this question, we suggest the work of Popović and Erić (2018).

Table 3. Coefficient estimates of the fixed effects panel regression

	Europe	**Western Balkans**	**Southern Europe**	**Western Europe**
	Fixed effects model			
C	0.012314*	0.026777*	0.003492	0.008252*
DCREDIT	0.000076	0.00062	-0.000063	0.000193
DGDS	0.006074*	0.003688**	0.004331*	0.013659*
DTRADE	0.000647*	0.001177**	-	-
DGVFCE	-0.00636*	-0.004181*	-	-
DGFIXCAFOR	0.002995**	0.004153*	0.003510*	-
DUN	-0.006126*	-	-0.009394*	-0.00902*
INFGDP	-	-	0.003056*	-
AR(1)	0.223182***	-	0.378284*	0.352417*
$\bar{R}^2$	0.57	0.35	0.79	0.87
F-statistic	16.8*	7.2*	32,08*	73.5*
Durbin-Watson	1.94	2.04	2.1	2.06
Jarque-Bera	574*	175*	4.67***	4.74***
Hausman test	26.1*	12.4**	10.1***	4.6
Likelihood ratio	1.9**	2.5**	0.85	0.89

*Note: *, **, and *** indicate statistical significance at the 1%, 5% and 10% level, respectively*

Source: Authors' calculations

The South European region also portrays the insignificant impact of credit activity in the private sector, opposing the influence of savings. Furthermore, in the works of Arcand et al.

(2012) the paradox of 'too many finances' shows up. It may be persistent in the European economies, as financial depth increases and the ratio of loans-to-GDP steadily reaches 80-100%, the marginal effect on growth gradually decreases reaching even negative rates. The existence of such an environment may be the key to why we face counter-theoretical model estimates. When analyzing the Southern-European economies, we include the gross fixed capital formation, unemployment, and inflation as control variables and omit others due to insignificance. Capital formation and inflation both imply a direct and significant relationship, similar in their impact on GDP per capita. Results indicate that savings have the strongest effect on growth in Western Europe, and the weakest in the Western Balkans. A valid question arising at this point is why is it so? We firmly believe that such results is attributed to the overall economic developments and financial sector complexity, which in the cases of developed European regions offers a wider range of available funds and services. In the Western Balkan region, however, the rigidities presence in terms of available funds and services is notable. In line with theories of economic growth, domestic savings produce investments, which lacks in countries with low GDP per capita, i.e. the Western Balkans region. Structural imbalances are present in the European Union even today. Such discrepancies are emphasized when compared to the Balkan region, with wider gaps beginning to surface after 2008. The insignificance of the credit channel in determining economic growth may signal a need for structural change in the financing approach. Credit expansion should be stimulated in terms of providing a greater money turnover in the economy but through a careful prudent approach in locating the potential risks. While domestic savings indeed provide the fundamental background for capital investments, less developed economies should proactively focus on accumulating new foreign investment, rather than the regular reinvestment practice that stirs up activity. Moreover, capital shortages usually induce financial instability on a national level, with expensive debt accumulation. In the end, a possible 'hole in the bucket' is the nonproductive usage of loans. As the private sector faces financial difficulties in maintaining operability, a larger proportion of the approved loans are for current activities rather than capital investment.

Through modeling, we faced off a set of limitations that we feel are worth mentioning. First off, it is the small number of countries per different regions. Model estimation with number of parameters larger than the number of countries is impossible with the random effects approach. That being said, to overcome such problems, when estimating the significance of the random effects model through the Hausman test, from the initial (benchmark) model we omit any insignificant variables. This limitation does not apply to the general European model. For the European and Western Balkan models, the residuals are not normally distributed, which causes evident problems if the model is used for forecasting and estimating confidence bands. The third limitation is the low adjusted coefficient of determination for the Western Balkans model, which indicates moderate model adequacy and explanation of the entire theoretical setup. Limitations like these do not have an overall significant impact on the credibility of the results and are more or less technicalities that can be addressed through additional analysis or perhaps different modeling (ex. vector autoregressions or two-stage least squares estimator of the instrumental variables in the panel regression).

5. Conclusions

This research revisits the problem of whether loans to the private sector and savings impact economic growth. By including 19 European countries segregated in three regions and one general model, we conduct a panel regression analysis with fixed effects. Overall results indicate that the theory is perhaps inconsistent in explaining the impact of credit expansion on growth if the post-crisis period is included in the analysis. As we note, such impaired links may be due to overall financial development, non-productive usage of loans, bank conservatism,

and the rough period of re-adjustment after the economic and financial crisis. However, we find that gross savings are significantly inducing economic growth in all of the estimated country groupings. According to the initially set hypotheses, the first one regarding the impact of credit activity is insignificant in all cases. Contrary, the second one exhibits high significance for the European, Western-European, Southern-European, and Western Balkan models. It is worth mentioning that savings induce growth much more in Western Europe compared to the Western Balkans counterpart, mainly due to the higher rates of overall economic investments. Furthermore, different sets of control variables and their impacts were observed. Trade openness, government final consumption, and gross fixed capital formation emerge as significant in affecting economic growth in both the general European and Western Balkans model. Unemployment is significant only in the Southern and Western-European models, with the expected indirect relationship. Inflation is only relevant and significant in the South-European economies of interest. The Western Balkan region as of today cannot precisely lean on the EU integration to get a boost in economic growth. Such category should be targeted within each country, mainly through sustainable fiscal policies of higher capital investments, foreign direct investment attraction, productive consumption, resilient fiscal budget and unemployment targeting measures – especially the youth one. Monetary authorities should target the component of savings rather than loans, as very high credit expansion may lead to a potential financial crisis as we have seen during the Great Recession. Furthermore, the overall importance of financial intermediaries diminishes gradually through time, as alternative forms of financing and investing emerge. That being said, policy creators should be concerned about the overall risk and exaggerated lending, while targeting specific country factors outside the financial sector that generate the growth in present times.

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