IMPACT OF THE GOVERNMENT SIZE ON ECONOMIC GROWTH IN THE WESTERN BALKAN COUNTRIES

Roberta Bajrami [*], Adelina Gashi [**], Kosovare Ukshini [*], Donat Rexha [*]

* AAB College, Pristina, the Republic of Kosovo
** *Corresponding author*, AAB College, Pristina, the Republic of Kosovo
Contact details: AAB College, St. Elez Berisha, No. 56, Fushë Kosovë Industrial Zone, Prishtina 10000, the Republic of Kosovo

OPEN ACCESS

How to cite this paper: Bajrami, B., Gashi, A., Ukshini, K., & Rexha, D. (2022). Impact of the government size on economic growth in the Western Balkan countries. *Journal of Governance & Regulation, 11*(1), 55–63. https://doi.org/10.22495/jgrv11i1art6

ISSN Print: 2220-9352
ISSN Online: 2306-6784

Received: 02.06.2021
Accepted: 11.01.2022

JEL Classification: B4, E020, E2
DOI: 10.22495/jgrv11i1art6

Abstract

The Keynesian theory states that economic growth is positively affected by government spending, while Classical theory states that economic growth is negatively affected by government spending, as is stated by neoclassical public choice theorists (Nyasha & Odhiambo, 2019). Based on these theories, many authors have carried out research on the impact of economic freedom on economic growth by analyzing various empirical cases. Bergh and Karlsson (2010) with the findings from his paper confirmed that the countries with the highest government size have an elevated growth in the globalization index of KOF and the Fraser Institute's economic freedom index. The main aim of this paper is to analyze the government size impact on the growth of the economy in the Western Balkan in the time period 2000–2017 according to Fraser Institute's data, incorporating the following econometric models: fixed and random effects, pooled ordinary least squares (OLS), and Hausman-Taylor IV. With these models, this paper analyzes a government size and its components: government enterprises and investment, government consumption, transfers, and subsidies. The results illustrate a relationship between the size of the government and the growth of the economy in the Western Balkans that is positive. 1% increase in government size affects 0.29% gross domestic product (GDP) growth per capita. According to the Hausman-Taylor instrumental variable, 1% growth of government consumption is affected by 0.69% the decline in GDP per capita. The growth rate of transfers and subsidies affects 0.17% of GDP growth per capita and 1% of government enterprises and investment affects 0.54% GDP growth per capita.

Keywords: Government Size, Economic Growth, Fraser Institute, Western Balkan

Authors' individual contribution: Conceptualization — R.B., A.G., K.U., and D.R.; Methodology — R.B.; Software — R.B.; Validation — A.G.; Formal Analysis — R.B.; Investigation — R.B. and D.R.; Resources — K.U. and D.R.; Data Curation — A.G. and K.U.; Writing — Original Draft — R.B., A.G., K.U., and D.R.; Writing — Review & Editing — R.B., A.G., K.U., and D.R.; Visualization — K.U. and D.R.; Supervision — R.B. and A.G.; Project Administration — R.B.

Declaration of conflicting interests: The Authors declare that there is no conflict of interest.

1. INTRODUCTION

So far there are many researchers who have tried to make the connection and impact between the size of the government and the growth of the economy by explaining the different indicators of measuring government size in relation to gross domestic product (GDP). On one hand, authors such as Kaldor

(1966), Ram (1986), Kormendi and Meguire (1985), Ghali (1998), Kolluri, Panik, and Wahab (2000), Karagianni and Pempetzoglou (2009), Herath (2010), Facchini and Melki (2011) have proven that government size positively affects the growth of economic, on the other hand, Landau (1983), Barro (1991), Smith and Wahba (1995), Ghura (1995), Guseh (1997), Knoop (1999), Fölster and Henrekson (1999, 2001), Sjöberg (2003), Pevcin (2004), Bergh and Karlsson (2010), Loto (2011) have proven that government size negatively affected economic growth and lastly, Lin (1994) and Ahmad and Ahmed (2005) have found a bilateral impact (positive and negative) on economic growth according to the time period of the analysis.

In the context of this paper, indicators for measuring the size of government by Fraser Institute were taken. According to this institute, the size of the government is determined by government consumption, transfers and subsidies, government investment, and tax revenue. Government consumption is calculated as general government consumption spending as a percentage of total consumption. Countries with a greater amount of government expenditures had lower ratings and vice versa. Transfers and subsidies are measured as general government transfers and subsidies as a share of GDP. The formula will generate lower ratings for countries with larger transfer sectors. For the purpose of constructing ratings that go from zero to ten, this research used government investment data as a part of total investment. Countries that received lower ratings were those countries with more government enterprises and government investment (Gwartney et al., 2020).

The paper analyzes the size of government from the three indicators of the Fraser Institute and does not analyze tax revenue and its subcomponents. The paper is oriented only towards the Western Balkan countries (Albania, Kosovo, Bosnia and Herzegovina, Croatia, Macedonia (North Macedonia), Montenegro, Serbia) and the time period of the analysis of the results is from 2000 to 2017.

This paper answers the questions:

RQ1: Does government size have a negative impact on economic growth?

RQ1a: Does government consumption have a positive impact on economic growth?

RQ1b: Do transfers and subsidies have a positive effect on economic growth?

RQ1c: Do government enterprises and investments have a negative effect on economic growth?

This paper confirms the following hypotheses:

H1: Government size has a negative and statistically substantial effect on growth.

H1a: Government consumption has a positive effect on economic growth.

H1b: Transfers and subsidies have a positive effect on economic growth.

H1c: Government enterprises and investment have a negative impact on economic growth.

From the review of the literature, we find that in most of the current research works the effects and size of government are positive in the developing country and negative in the developed country, on the other hand, all Western Balkan countries that were a part of this research, are or have been in the transition phase from which investments in the public enterprise were lower. From this, the motivation behind this paper becomes investigating whether there is a positive or negative relationship between government size and economic growth while recognizing the complex nature of economic enterprise in the Western Balkans.

There are two main aspects in which this research differs from other research works. Firstly, there is no research that takes into account the impact of government size on the economic growth in the Western Balkans or research carried out based on m the indicators set by the Fraser Institute for economic freedom, and secondly, the methodology and information used in this research are different from other research. One of the following has been used in every research so far: ordinary least squares (OLS) econometric methods, fixed effect, random effect, etc. In contrast to other research, the method of Hausman-Taylor IV has been used for the current research as well.

Section 1 of this paper presents a detailed description of the research problem, research purpose, research questions, and research hypotheses. In Section 2 of the paper, the literature review on the effect of government size on economic growth is presented, which shows the empirical findings of various authors about the relationship between these two variables and their subcomponents. Section 3 presents the methodology and data description, where the specification of econometric models such as fixed and random effects, OLS, and Hausman-Taylor IV and pre-and post-estimation tests are done. In Section 4 of the paper, the empirical findings and the confirmation of the hypotheses are shown, while the last Section 5 concludes the paper and gives recommendations.

2. LITERATURE REVIEW

The Keynesian theory asserts that government spending positively affects economic growth, whereas classical, neoclassical public choice theorists maintain that government spending negatively affects economic growth due to the blocking effect, which occurs when government spending shifts private sector investment because of resource constraints. As a result, the two have a negative association (Nyasha & Odhiambo, 2019).

The positive effect of government size, according to Kaldor (1966), is greater in "low-income countries" than in "high-income ones". The positive relationship between economic growth and government size is documented in this research. Because of the high factor of total productivity in the 1960s, the external marginal effect is positive.

A positive and strong association exists between "public spending" and the rate of GDP growth, according to Ram (1986), Kormendi and Meguire (1986). The growth rate of GDP, total government expenditures, investments, imports, and exports are among the factors examined in Ghali's (1999) paper for OECD nations. The findings reveal positive associations between government size and growth.

For countries of the G-7, Kolluri et al. (2000) investigates the link between government spending and GDP from 1960 to 1993. The empirical findings

in this study reveal that government revenue as well as expenditure have a long-term elastic connection.

Ghose and Das (2013) found that the government size positively and significantly affects economic growth. In order to conduct this study, the researchers measured the total general consumption expenditure of a government as a percentage of GDP, government size, gross capital formation as a percentage of GDP, domestic investment, with GDP per capita as a representative of the growth of the economy. This study was conducted for 19 developing countries during 1970–2006, by employing testing of panel co-integration and estimating the parameters using the method of dynamic ordinary least square. According to Fölster and Henrekson (2001), the size of government has a positive effect in developing countries, but a negative impact in developed countries. The results of this study for rich OECD countries demonstrate that the size of the estimated coefficients indicate that increasing the expenditure ratio for 10 percent will reduce the growth rates by 0.7–0.8 percent. Government consumption and taxes were used to calculate the size of the government.

Al-Katout and Bakir (2019) conducted a study in 42 different states and divided these states into two groups. In this study, the first group suggested a positive and statistically significant relationship between government spending and GDP per capita which is in line with the economic theory, i.e., a 1% increase in government spending in the country positively affects GDP per capita for 0–16%, whereas in the second group where income per capita is lower, there is a positive and statistically significant relationship, which is consistent with the economic theory. A 1% increase in government spending has a 0.15% positive effect on the country's GDP per capita.

Barro (1991), alternatively, looked at 98 countries from 1960 to 1985 in his paper. The results of this research suggest that there are no substantial correlations between government investment and economic growth. The ratio of the consumption expenditure of the government to GDP is adversely connected to the private investment ratio to GDP and the growth of GDP. Government consumption causes distortions, for instance, high tax rates, but it does not offer a compensatory stimulus for investment and growth.

In a study of 23 OECD nations, Gwartney, Lawson, and Holcombe (1998) discovered adverse associations between the size of government and economic development. The variables in this paper were measured using the government ratio consumption to gross domestic product.

Carlsson and Lundström (2002) discovered a substantial influence of government size, with a negative coefficient, showing that the size of government affects economic growth. According to the estimated size, a unit of index growth decreases the typical growth rate by about 0.5 points (percentage). The robust test indicates that the variable is valid. As a result, there is a significant link between the loss of economic freedom and growth. Most past research works have identified a positive or insignificant connection, so this conclusion is somewhat surprising.

In their study, Hansson and Henrekson (1994) found that a ten percent increase in total government spending reduces the overall factor productivity growth rate by 0.92 percent each year. A corresponding rise in consumer spending of the government would reduce the annual rate of growth by 1.4 percent. According to Abrams (1999), a 1% rise in government spending (+ 1, e.g., 20 to 21) would result in a 0.39 percent increase in unemployment (e.g., 7 to 7.39).

Between 1960 and 1985, Guseh (1997) investigated how economic growth can be affected by the size of a government. For 59 developing nations, Guseh employed a fixed-effects model. The model's findings revealed there is a negative relationship between government size and economic growth. In non-democratic socialist economies, these effects are three times as strong as in democratic market economies. As a result, a 1% increase in government size has a 0.143 percent negative effect on economic growth, whereas a 10% increase has a 0.74 percent negative impact.

Bergh and Karlsson (2010) looked at the relationship between government size and economic development in wealthy OECD nations from 1970 to 2005. In this study, models such as the Bayesian method and the OLS approach were applied. It has been demonstrated through these models that the government size has a detrimental effect on economic growth. The findings show that concentrating on institutional qualities, namely, economic freedom and globalization, can eliminate the detrimental effects of taxation and government spending. Furthermore, the findings in this paper revealed that nations with the largest governments have higher growth rates in the globalization index of KOF and the Fraser Institute's index for economic freedom.

In their research, Carlsson and Lundström (2002) observed negative and statistically significant correlations between government size and GDP. According to the estimated size, a unit of index growth reduces the average growth rate by about 0.5 points (percentage). The variable passes the robust test, indicating that there is a substantial link between economic freedom and its decline.

In his paper, Ahmed (1986) observed that permanent differences in government spending result in large crowding out of private spending, leading to a negative wealth effect. Like Ahmed (1986), Grier and Tullock (1989) observed that increasing government consumption as a percentage of GDP had a severe negative effect. The coefficient of -0.32 is highly significant, implying that when an increase in government growth of one standard deviation occurs, the average GDP growth is reduced by 0.39 percentage points.

Taxes and government spending, according to Bassanini and Scarpetta (2002), affect growth directly and indirectly through investment. A direct drop of around 0.3 percent in output per capita could be associated with an elevation of roughly one percentage point in tax pressure, e.g., two-thirds of what was detected in the OECD sample during the past decade. When the effect of investment is considered, the overall decrease is around 0.6–0.7 percent.

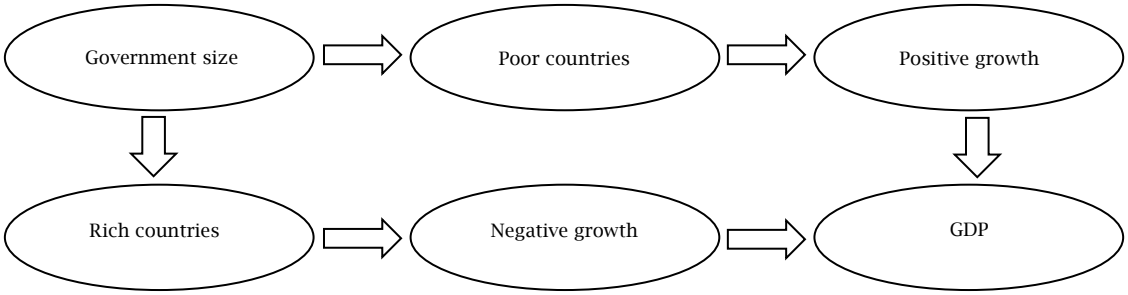
A simulation by Carlstrom and Gokhale (1991) revealed that increasing government spending

from 13.7 to 22.1 percent of gross national product (GNP) (as they have done for the last forty years) resulted in a 2.1 percent long-term reduction in output. This figure represents a standard estimate of the effect of permanently increasing government consumption on output. Bajrami, Tafa, and Hoxha (2020) discovered that government spending is positively signed, meaning that an elevation in government spending leads to a statistically insignificant increase in GDP (Bajrami, et al., 2020). Investment expenditures increase the private sector's future output.
As a result, expenditures are divided into two categories: investment expenditures and consumption expenditures. The investment expenditures used in this study are economics, education and social security expenditures that are classified as investment expenditures, while culture, environment, general public services, and health expenditures are classified as consumption expenditures (Lee, Won, & Jei, 2019).

Many studies have found positive and negative effects between government investment and developing government enterprises. The effects of these depend on the study of various indicators of public investment and political circumstances in the country.

Castelnovo, Del Bo, and Florio (2019), Shaheer, Yi, Li, and Chen (2019), Huat (2016), Bartel and Harrison (2005), Bozec, Breton, and Côté (2002), and Bozec, Dia, and Breton (2006) do not conclude that public enterprises positively or negatively affect economic growth. They list the advantages and disadvantages in their performance which then have a negative effect on economic growth. Among the most noted disadvantages is the low financial performance. Furthermore, Plane (1992), and Gylfason, Herbertsson, and Zoega (2001) confirm that the relationship between economic growth and investment in public enterprises is negative, while Fowler and Richards (1995) and Doamekpor (2003) conclude that public enterprises do not have any significant impact on economic growth. Contrary to the aforementioned studies, Fournier (2016) found positive long-term links between economic growth, public investment, and labor productivity. The research was done for OECD countries where the findings show that elevating the public investment share in total government spending generates substantial growth gains.

Figure 1. Government size and GDP: Non-linear relationship



On average, poor countries are smaller. As a result, there is a positive relationship between the size of the government and economic growth.

On the other hand, public sectors of rich countries are larger on average. Hence, the relationship between the size of the government and economic growth is not as positive as it is in poor countries and can even turn negative.

3. METHODOLOGY

This section offers a detailed outline of the methodology employed during the process of designing and carrying out the research under three main headings: data issues, choice of variables and statistical techniques.

This research was done by relying on data from various sources. A panel data set from seven Western Balkan countries for the 2000 to 2017 period was used in this study. Data set also included government consumption, transfers and subsidies, government investment, size of government and gross domestic product per capita. Macroeconomic variables were collected from the World Bank, International Monetary Fund (IMF) and Fraser Institute.

Inference of model parameters with greater precision implies more degrees of freedom that are frequently seen in panel data and more varieties of samples than cross-sectional data which may be perceived as a panel with $T = 1$, or time series data which is a panel with $N = 1$. As a result, the efficiency of econometric model estimations is improved.

3.1. Statistical techniques

Longitudinal or panel data sets are pieces of data that include both time series and cross sections. Panel data sets are better for cross-sectional analysis and are often wide but short (in terms of the number of observations made throughout time) (Hamaker & Wichers, 2017). The challenge of assessing panel data is centred on unit heterogeneity (Bilgili, Koçak, Bulut, & Kuloğlu, 2017). The fundamental framework is a form regression:

$$Y_{it} = X_{it}\beta + Z_i\pi + \varepsilon_{it} \quad (1)$$

where $X_{it}\beta$ is the k vector of strictly exogenous time-varying regressors, but there is no constant term. The individual effect or heterogeneity is $Z_i\pi$ where Z comprises a constant term and a set of individual or group-specific variables (Chudik, Pesaran, & Yang, 2018). Two cases are considered.

For fixed effects, Z_i is unobserved, but correlated with X_{it} and estimators of β are biased (Brüderl & Ludwig, 2015). For random effects, there

is unobserved heterogeneity which is assumed to be uncorrelated with X_{it}, then:

$$Y_{it} = X_{it}\beta + E[Z_i\pi] + \{ Z_i\pi - E[Z_i\pi] \} + \varepsilon_{it} \quad (2)$$

$$Y_{ij} = X_{it}\beta + \alpha + u_i + \varepsilon_{it} \quad (3)$$

This random effect method states that u_i is a random element unique to a group that, despite being random, stays constant for that group through time (Greene, 2005).

Fixed effects posits that changes in the constant term can represent differences across units of observation (Leszczensky & Wolbring, 2019). Each α_i is estimated:

$$Y_i = X_i\beta + i\alpha_i + \varepsilon_i \quad (4)$$

The least square dummy variable (LSDV) model (Zulfikar, 2018) can be obtained by:

$$Y = X\beta + D\alpha + \varepsilon \quad (5)$$

This is a classic regression model that does not require any new methodology or tests to analyse. In effect, for each group, simply put, we regress Y on X and a dummy variable. Naturally, if there are too many groups, it will cause computing difficulties.

An unbalanced panel is created when data is missing (Baltagi & Liu, 2020). The required adjustments are straightforward. The sample size for a balanced panel is $n = mT \times \sum T_i$ with an uneven panel. As a result, rather than calculating group averages based on a sample size of n, each group must have its own sample size T_i.

Individual effects that are unobserved may be associated with the included variables using the fixed effects model. The unit differences are afterward represented as changes in the constant term (Giesselmann & Schmidt-Catran, 2020). This is appropriate when the individual effects are not related to the regressors. The advantage of this method is that it significantly decreases the parameters' numbers that must be estimated. The cost is the risk of inconsistency in estimations if the estimation is incorrect (Kutlu, Tran, & Tsionas, 2019). We reformulate the fundamental model to account for random effects:

$$Y_{it} = X_{it}\beta + (\alpha + u_i) + \varepsilon_{it} \quad (6)$$

The mean of the unobserved heterogeneity, $E(Z_i\pi)$, has now become a single constant term. u_i is the heterogeneity of chance that is unique to the observation of t (t means "time") and remains constant across time. For instance, in a firm study, it is the elements that we cannot measure that remain unique to that firm.

To determine whether the random effects are unaffected by the right-hand side variables, Hausman and Taylor (1981) invented the specification test. This is a broad test that can be used to compare any two estimators. The test is based on the idea that if the right-hand side variables and the random effects have no association, both fixed and random effects are consistent estimators, but fixed effects are inefficient (this is the assumption with random effects).

3.2. Model specification

Stata 13 software was utilized for statistical analysis. On a panel data set of seven Western Balkan countries from 2000 to 2017, pooled OLS, fixed effect, and random effect regression analyses were used. The base model used for the current study was as follows:

$$Y_{it} = f(X_{1it,}, X_{2it}, X_{3it}, X_{4it}) \quad (7)$$

Here, $Y_{it} = j^{th}$ GPD per capita in period t; $X_{1it} = j^{th}$ government consumption in period t; $X_{2it} = j^{th}$ transfers and subsidies in period t; $X_{3it} = j^{th}$ government investment in period t; $X_4it = j^{th}$ size of government in period t.

The model's exact specifications were as follows:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \varepsilon_{it} \quad (8)$$

Hausman and Taylor (1981) presented a two-step instrumental variable approach that is 1) faster than the within estimator and 2) captures the effects of time-invariant variables that are lost in the within the transformation.

4. EMPIRICAL RESULTS AND ANALYSIS

In this research, pooled OLS, fixed effect and random effect panel model were used to determine the determinants of economic growth. Table 1 below reviews the regression results of the model that were assessed by using pooled least squares with a fixed and random effect estimator.

Table 1. Result of the pooled OLS, fixed and random effect models

GDP per capita	*Pooled OLS Model 1*	*Fixed effect Model 2*	*Random effects Model 3*	*Hausman-Taylor instrumental variable Model 4*
X_1	-0.2324053 (0.177)	-0.3230397 (0.142)	-0.2324053 (0.174)	-0.6920887 (0.026)
X_2	0.3302423 (0.013)	0.3201967 (0.131)	0.3302424 (0.012)	0.1741237 (0.053)
X_3	-0.1170961 (0.321)	-0.1067224 (0.583)	-0.1170961 (0.319)	0.542381 (0.094)
X_4	0.2045607 (0.256)	0.092511 (0.628)	0.2045607 (0.254)	0.21471122 (0.035)
Observation	124	124	124	123
Model	Pooled OLS	FE	RE	Hausman-Taylor IV
Hausman test		4.91 (0.2969)		
R2	0.0627	0.0627	0.0884	

From Table 1, Model 1 implies that the size of government is statistically insignificant at a 5% significance level, but the government size positively affects the economic growth. Model 2 also indicates that the government size is statistically insignificant at a 5% significance level, but x4 negatively affects economic growth. Model 3 indicates that the size of the government is statistically insignificant at a 5% level of significance, but the size of the government positively affects the economic growth. According to the Hausman test, the random effect is preferable because the p-value of 0.2561 is larger than 0.05. According to Hausman-Taylor instrumental variable model, a 1% of increase of government size impacts with 0.21% growth of GDP per capita. The results are in accordance with Kaldor (1966), Ram (1986), Kormendi and Meguire (1985), Ghali (1998), Kolluri et al. (2000), Karagianni and Pempetzoglou (2009), Herath (2010), Facchini and Melki (2011), Ghose and Das (2013).

Also, from Table 1, Model 1 indicates that in terms of statistics, government consumption is not significant at a 5% level of significance but significant at a 10% level. Government consumption has a negative impact on economic growth. Model 2 also indicates that government consumption is statistically insignificant at a 5% level of significance, but government consumption has a negative impact on economic growth, Model 3 indicates that government consumption is statistically insignificant at a 5% level of significance, but government consumption has a positive impact on economic growth. The Hausman test indicates that the fixed effect is better since the p-value of 0.0428 is less than 0.05.

From Table 1, Model 1 indicates that transfers and subsidies are statistically insignificant at a 5% level of significance but transfers and subsidies positively affect economic growth. Model 2 also indicates that transfers and subsidies are statistically insignificant at a 5% level of significance, but transfers and subsidies positively affect economic growth. Model 3 indicates that transfers and subsidies are statistically insignificant at a 5% level of significance, but transfers and subsidies positively affect economic growth. According to the Hausman test, the random effect is better since the p-value of 0.20 is bigger than 0.05. The results are in line with Ram (1986) and Ghali (1998).

The R-square values of 0.0627 and 0.0084 indicate that about 6.27% and 0.84% of the overall variation in economic growth is explained by a combination of factors such as government consumption, transfers and subsidies, government investment as well as the size of government.

Lastly, from Table 1, Model 1 indicates that government investment is statistically insignificant at a 5% level of significance, but government investment negatively affects economic growth. Model 2 similarly indicates that government investment is statistically insignificant at a 5% level of significance, but government investment has a negative impact on economic growth, Model 3 indicates that government investment is statistically insignificant at a 5% significance level, but government investment negatively affects economic growth. The random effect is preferable according to the Hausman test as the p-value of 1.41 is larger than 0.05. The results are in line with Barro (1991).

The matrix correlation indicates that there is a weak link between economic growth, government consumption, transfer and subsidies and size of government. Also, there is a negative relationship between economic growth and government investment. There is a strong relationship between government consumption and transfer and subsidies, government investment and size of government. In the same vein, there is a fairly strong link between transfer and subsidies, government investment and size of government. Finally, a relatively strong link between government investment and government size can be observed.

5. CONCLUSION

This study proves that government size affects economic growth in the Western Balkans for the period 2000–2017 according to the Fraser Institute's data, incorporating the following econometric models: pooled OLS, fixed and random effects and Hausman-Taylor IV.

The Western Balkan countries analyzed in this paper are developing countries where most of them have not yet passed the transition phase and many of them have a high impact on the size of government by public enterprises, government consumption, and subsidies, as a consequence, the result of this paper becomes positive when it comes to the relationship between these variables. This result is important for future research in finding a level at which the government size will have a positive effect and after that level, the impact will be negative.

The analysis of the results in this paper has two main limitations. Initially, not all indicators that determine the size of government were taken into measurement, hence, the analysis includes variables like government consumption, transfers and subsidies, government enterprises, and investment and does not analyze the last component of government size which deals with taxes, and secondly, the paper is mainly focused on the variables defined by Fraser Institute for economic freedom and factors according to other institutions have not been analyzed.

According to the results of Hausman-Taylor instrumental variable, pooled OLS, fixed and random effects, it is confirmed that the government size positively and significantly increases the relation to GDP per capita. The Hausman test suggests that the random effect is preferable as the p-value of 0.2561 is bigger than 0.05. According to Hausman-Taylor instrumental variable model, a 1% of increase of government size impacts growth of GDP per capita with 0.21%. The results are consistent with Kaldor (1966), Ram (1986), Kormendi and Meguire (1985), Ghali (1999), Kolluri et al. (2000), Karagianni and Pempetzoglou (2009), Herath (2010), Facchini and Melki (2011).

At a 5% level of significance, government consumption is statistically insignificant, but at a 10% level of significance, it is significant. Consumption by the government has a detrimental influence on economic growth. The results are in line with Hansson and Henrekson (1994) who found that a ten percent rise in overall government

spending would reduce total factor productivity growth by 0.92 percent per year, and other authors as well (Abrams, 1999; Ahmed, 1986; Grier & Tullock, 1989; Landau, 1983; Barro, 1991; Devarajan et al., 1996; Nurudeen & Usman, 2010; Ndambiri et al., 2012; Fölster & Henrekson, 1999, 2001).

According to the pooled OLS model, fixed and random indicates that government investment negatively affect economic growth but the results are insignificant. The impact is positive and the results are statistically significant at 10% according to the Hausman-Taylor instrumental variable model. Transfers and subsidies are statistically insignificant at a 5% significance level but transfers and subsidies positively affect economic growth. The results are in line Ram (1986) and Ghali (1998).

The majority of recent scientific studies published in peer-reviewed journals have demonstrated that there is a positive relationship between overall government size and economic growth in developing countries. This agrees sharply with experts like Lindert (2004) and Madrick (2009), who have claimed that there is no compromise between economic progress and government expansion in book-length assessments. When economic growth is the policy goal there are two types of outcomes that are usually observed: 1) directly taxing incomes is worse than indirectly doing so, and 2) social transfers which include human capital are worse than public investment and, if anything, encourages growth. As a result, the findings in this study imply that government needs to decrease in order for growth to expand. By reorganizing taxes and spending, it is possible to boost growth while for a particular government size, lowering the negative outcomes on growth. Moreover, countries gravitate toward institutions that complement one another. Many analysts have stressed that the Balkan welfare state can be viewed as an economic model characterized by a distinctive combination of institutions.

The unique combination of institutions,as well as the resulting distinctive relations between them are significant economic performance determinants. For various levels of government sizes, Balkan welfare states appear to be able to deliver strong growth rates. This is not to suggest that low-tax nations cannot raise taxes without damaging growth, or that Kosovo is immune to the many techniques used by high taxes to interfere with the economy. A more insightful reading is that the analysis is missing something that explains how Kosovo mix high taxation with great economic development. This study proposed two justifications: compensation through policies that are growth-friendly and advantages from historically high levels of trust (lack of anxiety), but both are at best theoretical, with dubious policy consequences. Even while the issue over whether there is a link between growth and total government size in developing nations is established to a degree, research on policy change, institutions, and growth is moving at a breakneck pace.

REFERENCES

1. Abrams, B. A. (1999). The effect of government size on the unemployment rate. *Public Choice*, *99*(3), 395–401. https://doi.org/10.1023/A:1018349411246
2. Ahmad, N., & Ahmed, F. (2005). Does government size matter? A case study of D-8 member countries. *Pakistan Economic and Social Review*, *43*(2), 199–212. Retrieved from https://www.jstor.org/stable/25825273
3. Ahmed, S. (1986). Temporary and permanent government spending in an open economy: Some evidence for the United Kingdom. *Journal of Monetary Economics*, *17*(2), 197–224. https://doi.org/10.1016/0304-3932(86)90028-0
4. Al-Katout, F., & Bakir, A. (2019). The impact of economic freedom on economic growth. *International Journal of Business and Economics Research*, *8*(6), 469–477. https://doi.org/10.11648/j.ijber.20190806.27
5. Arellano, M. (2003). *Panel data econometrics*. https://doi.org/10.1093/0199245282.001.0001
6. Bajrami, R., Tafa, S., & Hoxha, F. (2020). The impact of public debt on economic growth in the Republic of Kosovo. *Journal of Economics and Sustainable Development, 11*(18), 59–66. https://doi.org/10.7176/JESD/11-18-06
7. Baltagi, B. H., & Liu, L. (2020). Forecasting with unbalanced panel data. *Journal of Forecasting, 39*(5), 709–724. https://doi.org/10.1002/for.2646
8. Barro, R. J. (1990). Government spending in a simple model of endogeneous growth. *Journal of Political Economy*, *98*(5, Part 2), S103–S125. https://doi.org/10.1086/261726
9. Barro, R. J. (1991). Economic growth in a cross section of countries. *The Quarterly Journal of Economics*, *106*(2), 407–443. https://doi.org/10.2307/2937943
10. Bassanini, A., & Scarpetta, S. (2002). The driving forces of economic growth: Panel data evidence for the OECD countries. *OECD Economic Studies*, *2002*(33), 9–56. https://doi.org/10.1787/eco_studies-v2001-art10-en
11. Bartel, A. P., & Harrison, A. E. (2005). Ownership versus environment: Disentangling the sources of public-sector inefficiency. *The Review of Economics and Statistics, 87*(1), 135–147. https://doi.org/10.1162/0034653053327595
12. Bergh, A., & Henrekson, M. (2011). Government size and growth: A survey and interpretation of the evidence. *Journal of Economic Surveys*, *25*(5), 872–897. https://doi.org/10.1111/j.1467-6419.2011.00697.x
13. Bergh, A., & Karlsson, M. (2010). Government size and growth: Accounting for economic freedom and globalization. *Public Choice*, *142*(1), 195–213. https://doi.org/10.1007/s11127-009-9484-1
14. Bilgili, F., Koçak, E., Bulut, Ü., & Kuloğlu, A. (2017). The impact of urbanization on energy intensity: Panel data evidence considering cross-sectional dependence and heterogeneity. *Energy, 133*, 242–256. https://doi.org/10.1016/j.energy.2017.05.121
15. Bozec, R., Breton, G., & Côté, L. (2002). The performance of state-owned enterprises revisited. *Financial Accountability & Management*, *18*(4), 383–407. https://doi.org/10.1111/1468-0408.00158
16. Bozec, R., Dia, M., & Breton, G. (2006). Ownership-efficiency relationship and the measurement selection bias. *Accounting & Finance*, *46*(5), 733–754. https://doi.org/10.1111/j.1467-629X.2006.00194.x
17. Brüderl, J., & Ludwig, V. (2015). Fixed-effects panel regression.In H. Best, & C. Wolf (Eds.), *The Sage handbook of regression analysis and causal inference* (pp. 327–357). https://doi.org/10.4135/9781446288146.n15

18. Carlsson, F., & Lundström, S. (2002). Economic freedom and growth: Decomposing the effects. *Public Choice*, *112*(3–4), 335–344. https://doi.org/10.1023/A:1019968525415
19. Carlstrom, C. T., & Gokhale, J. (1991). Government consumption, taxation, and economic activity. *Federal Reserve Bank of Cleveland Economic Review, 27*(3), 18–29. Retrieved from https://www.clevelandfed.org/newsroom-and-events/publications/discontinued-publications/economic-review/1991-economic-review/er-1991q3-government-consumption--taxation--and-economic-activity.aspx
20. Castelnovo, P., Del Bo, C. F., & Florio, M. (2019). Quality of institutions and productivity of state-invested enterprises: International evidence from major telecom companies. *European Journal of Political Economy*, *58*, 102–117. https://doi.org/10.1016/j.ejpoleco.2018.10.005
21. Chudik, A., Pesaran, M. H., & Yang, J.-C. (2018). Half-panel jackknife fixed-effects estimation of linear panels with weakly exogenous regressors. *Journal of Applied Econometrics, 33*(6), 816–836. https://doi.org/10.1002/jae.2623
22. Devarajan, S., Swaroop, V., & Zou, H.-F. (1996). The composition of public expenditure and economic growth. *Journal of Monetary Economics, 37*(2), 313–344. https://doi.org/10.1016/S0304-3932(96)90039-2
23. Doamekpor, F. K. (2003). A structural analysis of the value-added effects of enterprises: A re-assessment. *International Journal of Comparative Sociology*, *44*(2), 129–154. https://doi.org/10.1177/002071520304400202
24. Facchini, F., & Melki, M. (2011). *Optimal government size and economic growth in France (1871–2008): An explanation by the State and market failures* (CES Working Paper No. 2011.77). Retrieved from https://halshs.archives-ouvertes.fr/halshs-00654363/document
25. Fölster, S., & Henrekson, M. (1999). Growth and the public sector: A critique of the critics. *European Journal of Political Economy, 15*(2), 337–358. https://doi.org/10.1016/S0176-2680(99)00010-5
26. Fölster, S., & Henrekson, M. (2001). Growth effects of government expenditure and taxation in rich countries. *European Economic Review*, *45*(8), 1501–1520. https://doi.org/10.1016/S0014-2921(00)00083-0
27. Fournier, J.-M. (2016). *The positive effect of public investment on potential growth* (OECD Working Paper No. 1347). Retrieved from https://www.oecd-ilibrary.org/economics/the-positive-effect-of-public-investment-on-potential-growth_15e400d4-en
28. Fowler, P. C., & Richards, D. G. (1995). Test evidence for the OECD countries, 1965–85: The relationship between the size of the public enterprise sector and economic growth. *International Journal of Social Economics, 22*(3), 11–23. https://doi.org/10.1108/03068299510079821
29. Ghali, K. H. (1997). Government spending and economic growth in Saudi Arabia. *Journal of Economic Development*, *22*(2), 165–172. Retrieved from http://www.jed.or.kr/full-text/22-2/Ghali.PDF
30. Ghali, K. H. (1998). Public investment and private capital formation in a vector error-correction model of growth. *Applied Economics, 30*(6), 837–844. https://doi.org/10.1080/000368498325543
31. Ghali, K. H. (1999). Government size and economic growth: Evidence from a multivariate cointegration analysis. *Applied Economics*, *31*(8), 975–987. https://doi.org/10.1080/000368499323698
32. Ghose, A., & Das, S. (2013). Government size and economic growth in emerging market economies: A panel co-integration approach. *Macroeconomics and Finance in Emerging Market Economies, 6*(1), 14–38. https://doi.org/10.1080/17520843.2012.697075
33. Ghura, D. (1995). Macro policies, external forces, and economic growth in Sub-Saharan Africa. *Economic Development and Cultural Change*, *43*(4), 759–778. https://doi.org/10.1086/452185
34. Giesselmann, M., & Schmidt-Catran, A W. (2020). Interactions in fixed effects regression models. *Sociological Methods & Research*. Advance online publication. https://doi.org/10.1177/0049124120914934
35. Greene, W. (2005). Fixed and random effects in stochastic frontier models. *Journal of Productivity Analysis*, *23*(1), 7–32. https://doi.org/10.1007/s11123-004-8545-1
36. Grier, K. B., & Tullock, G. (1989). An empirical analysis of cross-national economic growth, 1951–1980. *Journal of Monetary Economics*, *24*(2), 259–276. https://doi.org/10.1016/0304-3932(89)90006-8
37. Guseh, J. S. (1997). Government size and economic growth in developing countries: A political-economy framework. *Journal of Macroeconomics*, *19*(1), 175–192. https://doi.org/10.1016/S0164-0704(97)00010-4
38. Gwartney, J., Lawson, R., & Holcombe, R. G. (1998). *The size and functions of government and economic growth.* Washington, WA: Joint Economic Committee. Retrieved from http://ohu.people.ysu.edu/articles/govt_size_economic_growth.pdf
39. Gwartney, J., Lawson, R. A., Hall, J. C., Murphy, R., Berggren, N., McMahon, F., & Nilsson, T. (2020). *Economic freedom of the world: 2020 annual report* (Fraser Institute Report). Retrieved from https://www.fraserinstitute.org/studies/economic-freedom-of-the-world-2020-annual-report
40. Gylfason, T., Herbertsson, T. T., & Zoega, G. (2001). Ownership and growth. *The World Bank Economic Review*, *15*(3), 431–449. https://doi.org/10.1093/wber/15.3.431
41. Hamaker, E. L., & Wichers, M. (2017). No time like the present: Discovering the hidden dynamics in intensive longitudinal data. *Current Directions in Psychological Science, 26*(1), 10–15. https://doi.org/10.1177/0963721416666518
42. Hansson, P., & Henrekson, M. (1994). A new framework for testing the effect of government spending on growth and productivity. *Public Choice*, *81*(3–4), 381–401. https://doi.org/10.1007/BF01053239
43. Hausman, J. A., & Taylor, W. E. (1981). Panel data and unobservable individual effects. *Econometrica, 49*(6), 1377–1398. https://doi.org/10.2307/1911406
44. Herath, S. (2010). *The size of the government and economic growth: An empirical study of Sri Lanka* (SRE-Discussion Paper No. 2010/05, WU Vienna University of Economics and Business). Retrieved from https://epub.wu.ac.at/2962/
45. Hsieh, E., & Lai, K. S. (1994). Government spending and economic growth: The G-7 experience. *Applied Economics*, *26*(5), 535–542. https://doi.org/10.1080/00036849400000022
46. Huat, C. B. (2016). State-owned enterprises, state capitalism and social distribution in Singapore. *The Pacific Review, 29*(4), 499–521. https://doi.org/10.1080/09512748.2015.1022587
47. Husnain, M. I. (2011). Is the size of government optimal in Pakistan? *Journal of Economics and Economic Education Research*, *12*(2), 41–49. Retrieved from https://www.researchgate.net/publication/278244186_Is_the_size_of_government_optimal_in_Pakistan

48. Kaldor, N. (1966). *Causes of the slow rate of economic growth of the United Kingdom: An inaugural lecture*. London, the UK: Cambridge University Press.
49. Karagianni, S., & Pempetzoglou, M. (2009). Evidence for non-linear causality between public spending and income in the European Union countries. *Journal of Applied Business Research*, *25*(1), 69–82. https://doi.org/10.19030/jabr.v25i1.1049
50. Knoop, T. A. (1999). Growth, welfare, and the size of government. *Economic Inquiry*, *37*(1), 103–119. https://doi.org/10.1111/j.1465-7295.1999.tb01419.x
51. Kolluri, B. R., Panik, M. J., & Wahab, M. S. (2000). Government expenditure and economic growth: Evidence from G7 countries. *Applied Economics, 32*(8), 1059–1068. https://doi.org/10.1080/000368400322110
52. Kormendi, R. C., & Meguire, P. G. (1985). Macroeconomic determinants of growth: Cross-country evidence. *Journal of Monetary Economics, 16*(2), 141–163. https://doi.org/10.1016/0304-3932(85)90027-3
53. Kutlu, L., Tran, K. C., & Tsionas, M. G. (2019). A time-varying true individual effects model with endogenous regressors. *Journal of Econometrics, 211*(2), 539–559. https://doi.org/10.1016/j.jeconom.2019.01.014
54. Landau, D. (1983). Government expenditure and economic growth: A cross-country study. *Southern Economic Journal*, *49*(3), 783–792. https://doi.org/10.2307/1058716
55. Lee, J. C., Won, Y. J., & Jei, S. Y. (2019). Study of the relationship between government expenditures and economic growth for China and Korea. *Sustainability*, *11*(22), 6344. https://doi.org/10.3390/su11226344
56. Leszczensky, L., & Wolbring, T. (2019). How to deal with reverse causality using panel data? Recommendations for researchers based on a simulation study. *Sociological Methods & Research*. Advance online publication. https://doi.org/10.1177/0049124119882473
57. Lin, S. A. Y. (1994). Government spending and economic growth. *Applied Economics*, *26*(1), 83–94. https://doi.org/10.1080/00036849400000064
58. Lindert, P. (2004). Social spending and economic growth. *Challenge, 47*(4), 6–16. https://doi.org/10.1080/05775132.2004.11034254
59. Loto, M. A. (2011). Impact of government sectoral expenditure on economic growth. *Journal of Economics and International Finance*, *3*(11), 646–652. Retrieved from https://academicjournals.org/journal/JEIF/article-abstract/56985495810
60. Madrick, J. (2009). Big government's return. *Regulation*, 55. Retrieved from https://heinonline.org/HOL/LandingPage?handle=hein.journals/rcatorbg32&div=27&id=&page=
61. Ndambiri, H. K., Ritho, C., Ng'ang'a, S. I., Kubowon, P. C., Mairura, F. C., Nyangweso, P. M., ... Cherotwo, F. H. (2012). Determinants of economic growth in Sub-Saharan Africa: A panel data approach. *International Journal of Economics and Management Sciences, 2*(2), 18–24. Retrieved from https://www.hilarispublisher.com/open-access/determinants-of-economic-growth-in-subsaharan-africa-a-panel-data-approach-2162-6359-2-121.pdf
62. Nurudeen, A., & Usman, A. (2010). Government expenditure and economic growth in Nigeria, 1970–2008: A disaggregated analysis. *Business and Economics Journal, 2010*(4), 1–11. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.452.650&rep=rep1&type=pdf
63. Nyasha, S., & Odhiambo, N. M. (2019). The impact of public expenditure on economic growth: A review of international literature. *Folia Oeconomica Stetinensia*, *19*(2), 81–101. https://doi.org/10.2478/foli-2019-0015
64. Pevcin, P. (2004). Economic output and the optimal size of government. *Economic and Business Review for Central and South-Eastern Europe*, *6*(3), 213–227. Retrieved from https://www.proquest.com/openview/a807209685165803dcd030465a4403c5/1?pq-origsite=gscholar&cbl=44642
65. Plane, P. (1992). Productive efficiency of public enterprises: A macroeconomic analysis based on cross-section estimation of a neoclassical production function. *Applied Economics*, *24*(8), 833–844. https://doi.org/10.1080/00036849200000052
66. Ram, R. (1986). Government size and economic growth: A new framework and some evidence from cross-section and time-series data. *The American Economic Review*, *76*(1), 191–203. Retrieved from https://www.jstor.org/stable/1804136
67. Romer, P. M. (1986). Increasing returns and long-run growth. *Journal of Political Economy*, *94*(5), 1002–1037. https://doi.org/10.1086/261420
68. Shaheer, N., Yi, J., Li, S., & Chen, L. (2019). State-owned enterprises as bribe payers: The role of institutional environment. *Journal of Business Ethics*, *159*(1), 221–238. https://doi.org/10.1007/s10551-017-3768-z
69. Sjöberg, P. (2003). *Government expenditures effect on economic growth: The case of Sweden 1960–2001* (Bachelor's thesis, Luleå University of Technology). Retrieved from https://www.diva-portal.org/smash/get/diva2:1022053/FULLTEXT01.pdf
70. Smith, P., & Wahba, J. (1995). *The role of public finance in economic development: An empirical investigation* (Economic Research Forum Working Paper No. 9508). Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.865.3987&rep=rep1&type=pdf
71. Zulfikar, R. (2018). *Estimation model and selection method of panel data regression: An overview of common effect, fixed effect, and random effect model*. https://doi.org/10.31227/osf.io/9qe2b