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## EMPIRICAL APPROACH OF THE ESTIMATION OF THE EFFECTS OF ECONOMIC FREEDOM ON ECONOMIC GROWTH IN WESTERN BALKANS

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**Abstract:** Nowadays, economic freedom it is seen as a catalyst for enhancing economic growth, which de facto will return to produce even more economic freedom in the economy. Certainly, there is no doubt about the significant direct and indirect effect of the economic freedom on the growth of both developed and developing countries, where empirical evidence claims a strong positive association among these two variables.

Thus, having into consideration the emphasizes of the research of this nexus in the past decade and the highlighted importance of the economic freedom in enhancing the economic growth, a panel of total 6 countries in the region of Western Balkans, for the time -period 2000 – 2022 has been conducted. In this regard, several techniques have been used, such as Ordinary Least Square, Fixed effects and Random effects model. Finally, the results reveal that there exists a strong negative association between economic freedom index and GDP per capita in these countries in the countries of Western Balkans, for the last two decades.

**Keywords:** Economic growth, Economic freedom, Fixed effects, Random effects, developing countries

### 1. INTRODUCTION

There is lots of debate regarding the effect of the economic freedom on economic growth, either in developed or developing countries and lots of authors have tried to analyse different cases with different indicators and different countries, suggesting conclusions regarding the positive and negative effects that economic freedom index has on the economic growth. Furthermore, the positive effects of the economic freedom on the country's growth has been suggested by many authors such as Heckelman (2000); Pääkkönen (2010); Wu (2011); Turedi (2013); Bayar and Atemiz (2015); Bayar (2016); Haydaroglu (2016); Gwartney et al. (2017); Zhang et al. (2018); Bergh and Bjornskov (2019); Brkic et al. (2020). Contrary to these authors, De Haan and Sturm (2000), Pitlik (2002) have found insignificant relationship between economic growth and economic freedom, whereas Weede and Kampf (2002) found that the level of economic freedom has no effect on economic growth. These divisions were made in the work of Berggren's (2003) who measured the economy of free and its impact on economic growth, emphasizing indicators such as its equality income, quality of life and human well-being (Hussain 2016).

Thus, the controversy results do still exist on the empirical literature regarding the nexus of economic freedom and economic growth, which leads to the attraction of the research interest of many scholars and academicians, in order to analyse these effects through different methodologies and different level of countries development. De facto, this also indicates that a single study in this direction will not help to resolve these debates or even to offer an explicit answer to the empirical controversial results that are placed in the literature recently regarding the relationship between economic freedom and economic growth. Therefore, the main objective of this research paper is to investigate the relationship of economic freedom index and economic growth in the countries of Western Balkans: Albania, Bosnia & Herzegovina, Montenegro, North Macedonia and Serbia for the last two decades. In addition, this paper tries to resolve and answer the following research question: Can economic freedom boost the economic growth in the Western Balkan countries?

In this regard, the structure of this paper is organized in the following way: the first part is dedicated to the introduction, where the main objective, research questions and used methodology has been explained, the second part is regarding the Literature review, where important and recent papers dealing with the relationship between economic freedom and economic growth, revealing different empirical results mainly due to the level of countries development and the policies that they are developing regarding the subcomponents of the economic freedom index. The third part is explaining the research methodology, where some techniques of panel regressions are listed such as OLS, Fixed and Random effects model, while the fourth section is about the empirical results of the analysis, where are interpreted the results from the empirical investigation of the nexus between economic freedom index and economic growth. Finally, the last part is dedicated to the conclusions and main recommendations that are coming due to the empirical results and findings.

## 2. LITERATURE REVIEW

There exist a numerous of studies that have been trying to analyze the relationship between economic freedom index and economic growth, in both developed and developing countries as well trying to investigate its nature as well as the impact of its subcomponents on the countries growth. Through the usage of different technique models as well as different indicators for measuring the economic freedom, many papers have been dealing with the investigation the nature and the effects of the subcomponents of the economic freedom index in the economy of different countries. In addition, in the literature we can divide the papers based on two approaches that have been taken into consideration for analysis: causal relationship between economic freedom index and economic growth and development as well as the nature of the relationship of the subcomponents of the economic freedom index and economic growth.

Islam (1996) was the first scholar that tried to analyze the relationship between economic freedom and economic growth, showing no existence of a robust relationship between these two variables. Further, Sturm and Haan (2001); De Haan et al (2006) also indicated the rejection of the robust significant relationship between economic freedom indicator and economic growth.

However, in the empirical literature there are plenty of papers that have claimed evidence for a strong positive relationship between economic freedom index and economic growth such as Pääkkönen (2010); Türedi (2013); Bayar and Atemiz (2015); Bayar (2016); Haydaroglu (2016); Gwartney et al. (2017); Zhang et al. (2018); Brkic et al. (2020); Bergh and Bjornskov (2021).

Although in the early stage, the effect of the economic freedom on the economic growth was treated based on the idea that economic freedom is a unidimensional concept, it was from the publication of the economic freedom index from the Fraser Institute when the dimension of the relationship between economic freedom and economic growth made a turnover, and where much of the recent research are based and coming from regarding the impact of the economic freedom and its main subcomponents on the growth of the country.

In addition, in Islamic countries the effect of the economic freedom on the level of economic development of these countries was investigated by Türedi (2013) by concentrating his research on 12 Islamic countries for the time period 1995 to 2010, claiming a strong relationship between economic freedom and economic growth of these countries.

Berkic et al (2020) have investigated the relationship between economic freedom and economic growth by using panel data for 20 European countries for 20 years time period, suggesting the change not the level of the economic freedom to be important factor for boosting economic growth in these countries. Furthermore, in their recent paper, Bergh and Bjornskov (2021) have also claimed a positive relationship between economic freedom and economic growth.

This paper also is part of these empirical evidence regarding the negative relationship between economic freedom index and economic growth, yet it gives also contribution to the literature in several aspects: firstly it applies several panel models in the research analysis, secondly it includes recent data for the last two decades by using economic freedom index data from the Fraser Institute, as well as emphasises the analysis in the developing countries covering the region of Western Balkans.

## 3. RESEARCH METHODOLOGY

The main objective of this research paper is to investigate the relationship between economic freedom index and economic growth for the last two decades within the countries of the Western Balkans. The empirical analysis is consisted of several techniques covering the panel data for the countries of Western Balkans region (excluding Kosovo).

In this regard, in order to test the impact of economic freedom as an overall indicator on economic growth, the following table presents the variables, including a brief explanation, acronym(s) and their source. Moreover, as a dependent variable we have GDP per capita in constant prices, which was used as an indicator for economic growth and the data were obtained from the World Bank, and as an independent variable we have economic freedom index as an overall indicator - obtained from the Fraser Institute.

*Table3.1. Variables and explanation.*

variable	Acronym	Source
<b>GDP per capita in constant prices</b>	Gdp_cap	World Bank
<b>Economic freedom index</b>	EFI	Fraser Institute

Source: authors source.

Furthermore, the following basic equation model has been taken into account:

$$Gdp\_cap = f[EFI] \quad (3.1)$$

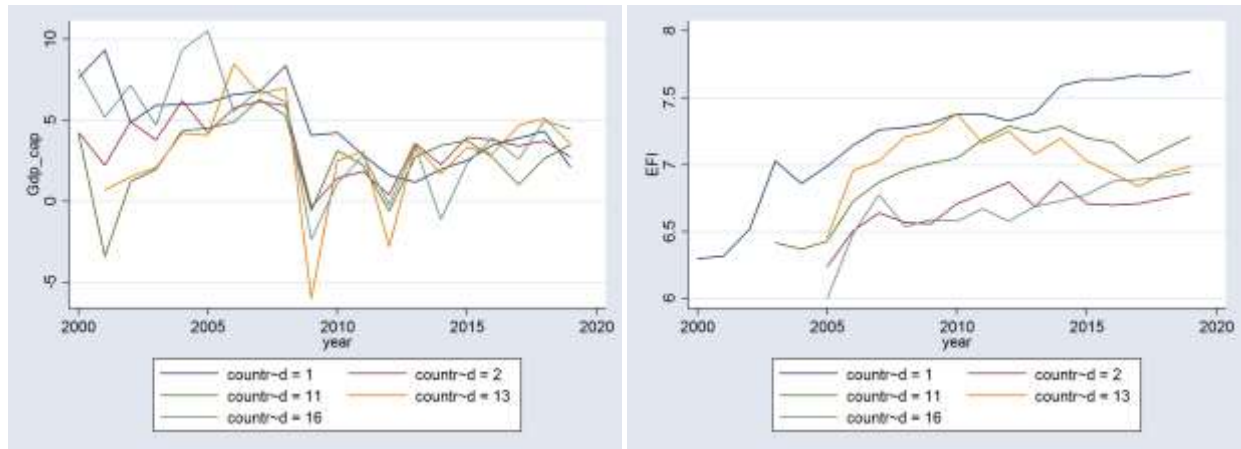
Where we have:

Gdp\_cap – representing the dependent variable, thus the GDP per capita

EFI – representing the independent variable, thus Economic Freedom Index

Furthermore, in order to have a graphical illustration of the above mentioned data, the following to graphs illustrate the trends of the GDP per capita in constant prices for the countries in Western Balkan region (excluding Kosovo) as well as the Economic freedom index for the same countries for th period 2000 – 2020.

**Graph3.1. GDP\_cap and EFI in Western Balkan region, excluding Kosovo ( 2000 – 2020)**



Source: World Bank and Fraser Institute official data.

In addition, the following table represent the descriptive statistics of the data included in the empirical analysis. As we can see, the number of observations for GDP per capita is 99, while for the indicator of economic freedom - EFI we have a total of 88 observations, for the countries of Western Balkans (excluding Kosovo) for the corresponding period 2001 - 2020. As for the average value of economic growth, the same is 3.62, while for economic freedom the average value is 6.93. The standard deviation of GDP per capita has marked the value of 2.73, while the same for economic freedom is 0.36. Regarding the minimum and maximum value of GDP per capita, they are -5.99 and 10.48, respectively. The minimum value of economic freedom is 6, while the maximum value is 7.7, as reflected in the following table.

**Table3.2. Descriptive statistics**

variables	obs	mean	Stand dev	Min value	Max value
Gdp_cap	99	3.62	2.73	-5.99	10.48
EFI	82	6.93	0.36	6	7.7

Source: authors calculations.

#### 4. EMPRICIAL FINDINGS

Having into consideration the main objective of this paper, as well as the research question, this section reveals the results from the empirical analysis, by conducting several panel models such as: OLS, Fixed and Random effects model. In addition, the Hausman Taylor test has been employed to determine which of the models is appropriate in this analysis.

The following table presents the results of the OLS model, which was carried out in order to test the impact of economic freedom in the countries Western Balkans, for the relevant period 2000 - 2020. As we can see in the model, the indicator included as an independent variable is Economic Freedom Index - EFI, data taken from the Fraser Institute, while as a dependent variable for economic growth we have GDP per capita in constant prices – Gdp\_cap. Moreover, as we can see from the presented results, there is a significant negative relationship between

economic freedom and economic growth in this region, for the corresponding period 2000 - 2020. Moreover, with the increase of one point of economic freedom, the growth economic will decrease by 1.78 points. Moreover, such a significant result is also evidenced by the value of  $p=0.025$ , which is lower than the critical value of  $p=0.005$ , as well as by the value of  $t$ , which is higher than the critical value of  $t = 2.25$  (95 confidence level). Moreover, the value of  $R^2 = 0.597$ , which means that 59.7 percent of the change in the dependent variable, namely GDP per capita or economic growth, can be explained through the change in the independent variable, namely economic freedom.

**Table 4.1. Results of the OLS model testing the impact of economic freedom on economic growth in Western Balkans, for the time period 2000 – 2020.**

<i>Dependent variable</i>	$\beta$	<i>Standard dev.</i>	<i>t</i>	<i>P&gt; t </i>
<b>Gdp_cap</b>				
<b>EFI</b>	-1.78	0.793	-2.25	0.025
<i>Obs</i>	82			
<i>Prob &gt; F</i>	0.027			
<i>R-squared</i>	0.597			
<i>Adj R-squared</i>	0.479			
<i>Root MSE</i>	2.613			

Source: author's calculations

In addition, the following table presents the results of the Fixed and Random effect models as well as the Hausman test, to accept which of these two models is more suitable for this analysis, respectively for testing the impact of economic freedom on economic growth of the countries in the Western Balkan for the time period 2000-2020.

Moreover, the total number of observations is 82, while the number of groups is 5. Based on the results of the Hausman test, the value of  $p=0.000$ , indicating that from the fixed and random effect models, it is suggested the random model effects as the appropriate model for this analysis. Moreover, based on this model, there is a significant negative relationship between economic freedom and economic growth in this countries for the corresponding period 2000 - 2020. Respectively, with 1 point increase in economic freedom, economic growth would decrease by 1.92 points.

**Table 4.2. The results of Fixed and Random effects model**

	<b>FIXED EFFECTS model</b>	<b>RANDOM EFFECTS model</b>
<b>Gdp_cap – dependent variable</b>		
<b>EFI –independent variable</b>	-3.84	-1.92
<b>p &gt;   t  </b>	(0.000) *	(0.016)**
<b>Observation</b>	82	82
<b>Nr. of groups</b>	5	5
<b>F test</b>	0.001	
<b>Chi 2</b>		0.016
<b>Model</b>	FE	RE
<b>testparm</b>	F( 4, 76) = 4.35 Prob > F = 0.0032	
<b>Breusch and Pagan Lagrangian multiplier test</b>		chibar2(01) = 5.76 Prob > chibar2 = 0.01

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<b>Hausman test</b>	
<b>chi2(1)</b>	18.36
<b>Prob&gt;chi2</b>	0.000

**Note: (\*) statistically significant at the 1% level (\*\*) statistically significant at the 5% level, (\*\*\*) statistically significant at the 10% level.**

Source: authors calculations.

## 5. CONCLUSIONS

As a basic right of every person, economic freedom grants them with the right to control their own work and property, where they are free to work, produce, consume and invest in any way they might wish. In addition, it is a fact that economic freedom can bring greater prosperity to one country. Until now, there is no model for sustainable economic growth in countries in transition, without having consequences on macroeconomic indicators. The reason for such instability lies on the crossroad of all economic and political barriers. Contrary, economic freedom contains almost all macroeconomic indicators that influence the country's economic growth.

Taking into account the role and importance of economic freedom for the country's economic growth, the main purpose of this paper is to determine the impact of economic freedom on the economic growth of Western Balkan countries (excluding Kosovo) for the time spin 2000 – 2020, by utilizing specified panel models such as: OLS, Fixed and Random effect models. In addition, Hausman Taylor test was conducted in order to determine the appropriate model among them.

The results of all models claim a strong negative relationship between economic freedom and economic growth for the Western Balkan region, for the last two decades (2000 – 2020). Further, based on the results of the Hausman Taylor test, the findings indicate the Random effect model to be as appropriate among the other models for this analysis. Such results imply several recommendations for policy-makers, in addressing the need that indicators of economic freedom should be encountered in the policy reforms as important determinants of economic growth. They should reset policies and programs in order to improve the economic freedom environment and to be put on the centre not on the sidelines as it happened in the past. In addition, indicators of economic freedom should be considered as a crucial tool in the fight against hunger, poverty, employment and the well-being of country.

## REFERENCES

- Ayal, E. B., & Karras, G. (1998). Components of economic freedom and growth: An empirical study. *The Journal of Developing Areas* 32: 327–38.
- Bayar, Y. (2016). Impact of openness and economic freedom on economic growth in the transitional economies of European Union. *South-Eastern Europe Journal of Economics* 14: 7–19.
- Bennett, D.L. (2016). Subnational Economic Freedom and Performance in the United States and Canada. *Cato Journal* 36: 165–85.
- Bergh, A., & Bjørnskov, C. (2021). "[Does economic freedom boost growth for everyone?](#)," *Kyklos*, Wiley Blackwell, vol. 74(2), pages 170-186, May.
- Brkić, I., Gradojević, N., & Ignjatijević, S. (2020). "The Impact of Economic Freedom on Economic Growth? New European Dynamic Panel Evidence" *Journal of Risk and Financial Management* 13, no. 2: 26. <https://doi.org/10.3390/jrfm13020026>
- De Haan, J., & Sturm, J.-E. (2000). On the relationship between economic freedom and economic growth. *European Journal of Political Economy* 16: 215–41. [CrossRef] De Haan, Jakob, Susanna Lundstrom, and Jan-Egbert Sturm. 2006. Market-oriented institutions and policies and economic growth: A critical survey. *Journal of Economic Surveys* 20: 157–91
- De Haan, J., & Sturm, J.-E. (2000). On the relationship between economic freedom and economic growth. *European Journal of Political Economy* 16: 215–41.
- Fraser Institute Annual Report. (2021). <https://www.fraserinstitute.org/studies/economic-freedom-of-the-world-2021-annual-report>
- FraserInstitute.<https://www.fraserinstitute.org/economicfreedom/graph?geozone=world&countries=ALB,BIH,MKD,MNE,SRB&page=graph&area1=1&area2=1&area3=1&area4=1&area5=1&type=line&min-year=1970&max-year=2020>
- Gwartney, J.D., Lawson, R., & Hall, J. (2017). *Economic Freedom of the World: 2017 Annual Report*. Vancouver: the Fraser Institute.

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- Haydaroglu, C. (2016). The Effect of Foreign Direct Investment and Economic Freedom on Economic Growth: The Case of BRICS Countries. *Research in World Economy* 7: 1–10.
- Heckelman, J.C. (2000). Economic freedom and economic growth: A short-run causal investigation. *Journal of Applied Economics* 3: 71–91.
- Islam, S. (1996). Economic freedom, per capita income and economic growth. *Applied Economics Letters* 3: 595–97.
- Nadeem, M. ., Jun, Y. ., Akhtar, T. ., Dong, W. ., & Niazi, M. . (2019). Does Really Economic Freedom Matter for Growth in South Asia? Empirical Evidences from Pre-Economic Crises and Post-Economic Crises Period. *Asian Economic and Financial Review*, 9(1), 52–63. <https://doi.org/10.18488/journal.aefr.2019.91.52.63>
- Pääkkönen, J. (2010). Economic freedom as driver of growth in transition. *Economic Systems* 34: 469–79.
- Türedi, S. (2013). The Effect of Economic Freedom on Economic Growth: A Panel Data Analysis for 12 Islamic Countries. *International Research Journal of Finance and Economics* 107: 154–62.
- Wu, C. (2011). Economic freedom, economic growth, and China. *Chinese Economy* 44: 104–19.
- Zhang, F., Hall, J., & Feng, Y. (2018). “Does Economic Freedom Affect the Production Frontier? A Semiparametric Approach with Panel Data.” *Economic Inquiry* 56(2): 1380-1395.