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Does Economic Freedom impact Economic growth: Decomposing the Effects for Bosnia and Herzegovina

**Да ли економске слободе утичу на економски раст:
Декомпозиција ефеката за Босну и Херцеговину**

Summary

In this paper we will present the results of our survey on Economic Freedom, and impact of its individual categories on economic growth in the Bosnia and Herzegovina. To measure economic freedom we will use The Index of Economic Freedom published by the Heritage Foundation in cooperation with the Wall Street Journal. We find that economic freedom have a positive impact on GDP growth. Our result also indicates that individual categories of the Economic Freedom have a different impact on GDP growth.

Key words: *Economic Freedom, the Index of Economic Freedom, economic growth*

Резиме

У овом раду приказатићемо резултате испитивања о економским слободама и о утицају индивидуалних категорија економских слобода на економски раст у Босни и Херцеговини. Ниво економских слобода мјерићемо индексом економских слобода који одјављује „Херитиџ фондација“ у кооперацији

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са „Вол сїриї журналом“. Резулїаїи до којих смо дошли показују да расїї економских слобода има позиїиван уїицај на расїї БДП-а. Наши резулїаїи указују да индивидуалне кайїеїорије економских слобода имају различий уїицај на расїї БДП-а.

Кључне ријечи: економске слободе, индекс економских слобода, економски расїи.

Introduction

Economists from the very beginning of development of modern economic science addresses the problems of economic growth, increase national wealth and social well-being. Already from the title of most famous works of Adam Smith “Inquiry into Nature and Causes of the Welth of Nations”, we see that the main concern is increasing wealth and prosperity of the people. The theory of economic growth has developed especially in the second half of the twentieth century. Economic growth can be understood as standing “race” between human needs and possibilities of their satisfaction, where possibilities are trying to catch up with the needs. The economic growth is very often presented in economic theory as a result of changes in labor, capital, human capital, and technology. The economic theory is still unable to give a complete and exact specification of all variables having a significant impact on economic growth. From recently, the concept of economic freedom is promoted by several authors as a necessary condition and an effective mean to promote economic growth. The concept of economic freedom is based on the liberal ideas and its goal is to reduce to the minimum the role assigned to the government and to amplify that of the market and the private sector. Many authors in their studies are trying to confirm empirically the positive correlation between economic freedom and growth. There are two widely accepted indexes of economic freedom: the one developed by the Fraser Institute (Economic Freedom of the World Index), and another constructed by the Heritage Foundation in cooperation with the Wall Street Journal (Index of Economic Freedom). These two indexes are quite similar. Nevertheless, a single measure does not fully reflect the economic environment. Therefore, it is very important to investigate which components of the economic freedom indices are important for growth and the direction of these effects.

In this paper we will use the Index of Economic Freedom (here and after IEF) published by the Heritage Foundation in cooperation with the Wall Street Journal. For purpose of this work we will decompose the IEF and analyze the effects of each category in growth regressions using observations for Bosnia and Herzegovina (here and after BiH) The BiH was a part of the socialistic economic system with central planning. The BiH is still in the process of the EU integrations.

1. Measurement and concept of economic freedom

Adam Smith, the founder of modern economics, published his *Inquiry into the Nature and Causes of the Wealth of Nations* in 1776 and he attempted to answer a simple question: Why do some countries prosper? According to Smith countries become prosperous when they have good institutions that create favorable rules of the game-rules that encourage the creation of wealth. He found that an economy becomes prosperous when they use unregulated private markets to the greatest extent possible, with the government playing the important but limited role of protecting liberty, property, and enforcing contracts. For Adam Smith growth is a function of two types of factors. On one hand, he focused on the production factors, which are in the neoclassical tradition and focuses, especially on technological development and human capital (Aghion, Howitt, 1998). On the other hand, Smith outlines the importance of a proper institutional setting, i.e. an environment that supports growth. But, the main question is which policies will most contribute to the growth? The recent research in economic science on economic freedom solves this debate.

Economic freedom means the degree to which a market economy is in place, where the central components are voluntary exchange, free competition, and protection of persons and property (Gwartney, et al, 2002, 5). Economic freedom is the condition in which individuals can act with maximum autonomy and minimum obstruction in the pursuit of their economic livelihood and greater prosperity (Miler, et al 2014). Economic freedom is a composite that attempts to characterize the degree to which an economy is a market economy - that is, the degree to which it entails the possibility of entering into voluntary contracts within the framework of a stable and predictable rule of law that upholds contracts and protects private property, with a limited degree of interventionism in the form of government ownership, regulations, and taxes (Berggren, 2003). The concept of economic freedom is not same as a political freedom concept or as a civil freedom concept. As Friedrich Hayek observed: "To be controlled in our economic pursuits means to be controlled in everything" (Hayek, 1994). The economically free society means that each person controls the fruits of his or her own labor and initiative. In an economically free society success or fail of every individual depends on their individual efforts and abilities. The institutions of a free and open market society do not discriminate either against or in favor of individuals based on their race, ethnic background, gender, class, family connections, or any other factor unrelated to individual merit (Miler, et al 2014). The allocation of resources for production and consumption is based on free competition. It means that every individual or firm gets a fair chance to succeed. In generally, all government action that interferes with individual autonomy and decisions limits economic freedom. The IEF does not mean an anarchy, or total

absence of government intervention. The economic freedom means the creation and maintenance of a mutual sense of liberty for all. As all individuals enjoy the benefits of the economic freedom, in turn, they have a responsibility to respect the economic rights and freedoms of others within the rule of law. The highest forms of economic freedom should provide an absolute right of property ownership; full freedom of movement for labor, capital, and goods; and an absolute absence of coercion or constraint of economic activity beyond that which is necessary for the protection and maintenance of liberty itself (Miler, et al 2014).

The IEF consists three fundamental principles of economic freedom: empowerment of the individual, non-discrimination, and open competition (Miler, et al 2014). *The IEF published by the Heritage Foundation contains ten economic freedoms, which are grouped into four broad categories or pillars of economic freedom (Miler, et al, 2014):*

1. Rule of Law (property rights, freedom from corruption);
2. Limited government (fiscal freedom, government spending);
3. Regulatory efficiency (business freedom, labor freedom, monetary freedom);
4. Open markets (trade freedom, investment freedom, financial freedom).

These ten components are graded from 0 (no economic freedom) to 100 (full economic freedom). Scores on these 10 components of economic freedom, which are calculated from a number of sub-variables, are equally weighted and averaged to produce an overall economic freedom score for each economy² (Miler, et al, 2014).

Table 1

Economic Freedom in selected countries

Country	IEF in 1998	IEFI in 2013	World rank in 2014	Percentage change of the IEF in 1998-2013
BiH	29,4	57,3	101	95%
Serbia	46,6	58,6	95	26%
Croatia	51,7	61,3	87	19%
Slovenia	60,7	61,7	74	2%
Montenegro	N/A	62,6	68	N/A
Bulgaria	45,7	65	61	42%
Romania	54,4	65,1	62	20%

Source: <http://www.heritage.org/index/explore>

² More information is available at www.heritage.org/research/features/index/.

Table 1 presents data on IEF for selected countries. These countries were all a part of socialistic economic system with central planning. The best rank in 2014 has a Bulgaria, than follows Romania, Montenegro and Slovenia. These countries, with exception of Montenegro, are full UE members. The lowest ranking countries are Croatia, Serbia and BiH. Table 2. contains data on IEF components for selected countries.

Table 2
The IEF components for selected countries in 2013

	BiH	Bulgaria	Croatia	Montenegro	Romania	Serbia	Slovenia
property rights	20	30	40	40	40	40	60
freedom from corruption	32	33	40	40	36	33	59
fiscal freedom	83,2	94	75,4	92,4	87,9	84,2	65,7
government spending	26,9	64,2	48,7	41,5	62,2	40,3	22,3
business freedom	54,3	73,6	63	72,7	70,4	60,2	80,7
labor freedom	61,2	74,8	42,4	71,4	63,5	70,4	40,4
monetary freedom	79	78,6	81,1	79,9	74,7	65,3	81,6
trade freedom	86,4	86,8	87,5	83	86,8	77,9	86,8
investment freedom	70	55	75	55	80	65	70
financial freedom	60	60	60	50	50	50	50

Source: <http://www.heritage.org/index/explore>

The BiH has lowest protection of property rights. This score means that private property is weakly protected, the court system is so inefficient and corrupt that outside settlement and arbitration is the norm, property rights are difficult to enforce, judicial corruption is extensive and expropriation is common (Miler, et al, 2014). According to the Heritage Foundation the most corrupted country is BiH. The BiH has a very poor efficiency of government regulation of business. Its score on business freedom is lowest in the region. Countries, members of the EU have a have higher scores on all ten components. The Croatia is somewhere in the middle between the EU members and countries with lowest ranks.

2. Theoretical background

The Economic Freedom Index (here and after EFI) developed by Fraser Institute is used more extensively in academic contexts mostly because the Heritage Foundation index goes back only to 1995. Robert Barro (Barro, 1991, 1994) finds a positive correlation between economic freedom and economic growth. Aggregate indices can camouflage a true link that can exist between freedom and

growth (Bengtsson et al., 2005; Heckelman and Stroup, 2000). Some components of Economic Freedom Index contribute differently to the economic growth. According to Carlsson and Lundström (2002) four out of seven EFI components are positively and statistically significantly related to growth (economic structure and use of markets, freedom to use alternative currencies, legal structure and security of ownership, and freedom of exchange in capital markets), two are negatively and statistically significantly related to growth (the size of government and international exchange/freedom to trade with foreigners), and one is not statistically significantly related to growth (monetary policy and price stability). Ayal and Karas (1998) finds that six components have a positive and significant effect.

The findings in many surveys proves that the level of economic freedom at the beginning of the growth period do not significantly impact the growth. They find that positive changes in economic freedom do have a significant impact to the growth (Gwartney, et al, 1999, de Haan, et al, 2001 Adkins, et al, 2002). Dawson (Dawson, 1998), Pitlik (Pitlik, 2002), and Weede, et al, (Weede, et al, 2002) have obtained the same results. In other surveys, the authors found that the initial level of economic freedom is positively related to growth (Ali 1997; Easton, et al, 1997; Goldsmith 1997; Wu, et al, 1999; Hanson 2000; Heckelman, et al, 2000; Ali, et al, 2001, 2002; Carlsson, et al, 2002; Scully 2002;). Nevertheless the findings of a positive effect of the initial level of economic freedom are generally weaker than those indicating a positive effect of increases in economic freedom, and in several cases the level effect appears statistically significant only if the change in economic freedom is also included as a variable (Berggren, 2003).

Kašeljević (Kašeljević, 2007) conducted analysis on 24 transition economies by running a panel analysis on a dataset for the time period 1995-2004. In his work he used the IEF (constructed by the Heritage Foundation in cooperation with the Wall Street Journal) and the EFI (constructed by Fraser Institute). The survey proves that there is a relationship between economic freedom, economic performance, and prosperity even in transition countries, and impact is even stronger in the case of IEF (constructed by the Heritage Foundation in cooperation with the Wall Street Journal). Baletić (Baletić, et al, 2007), similarly as Kašeljević, use the both indices (IEF and EFI) to evaluate Croatia's institutional convergence to the EU. The results show different scores with both indices of economic freedom for Croatia. They conclude that both indices should be used with caution.

3. Model and methodology

For purpose of this survey we chose the following equations (Carlsson, et al, 2002, Derbel, et al, 2011):

$$\begin{aligned}\text{Log}(Y_i) &= \beta_1 + \beta_2 \log(\text{INV}_i) + \beta_3 \text{dlog}(\text{IEF}_i) + \varepsilon \\ \text{Log}(Y_i) &= \beta_1 + \beta_2 \log(\text{INV}_i) + \beta_3 \text{dlog}(\text{IEF}_{1i}) + \\ &+ \beta_4 \text{dlog}(\text{IEF}_{2i}) + \beta_5 \text{dlog}(\text{IEF}_{3i}) + \beta_6 \text{dlog}(\text{IEF}_{4i}) + \varepsilon \\ \sum_{n=1}^4 \text{IEF}_{ni} &= \text{IEF}_i\end{aligned}$$

Where $\log Y_i$ is logarithmic value of average growth rate of GDP for country i , $\log \text{INV}$ is logarithmic value of investment share in GDP for country i . These variables are often significant in growth and are almost standard in this type of models. The $\text{dlog}(\text{IEF})$ is the first logarithmic difference of the average value of the Index of Economic Freedom for country i . The $\text{dlog}(\text{IEF}_1)$ refers to the first logarithmic difference of the Rule of Law (property rights, freedom from corruption); $\text{dlog}(\text{IEF}_2)$ refers to the first logarithmic difference of **Limited government** (fiscal freedom, government spending); $\text{dlog}(\text{IEF}_3)$ refers to the **Regulatory efficiency** (business freedom, labor freedom, monetary freedom); and $\text{dlog}(\text{IEF}_4)$ refers to the **Open markets** (trade freedom, investment freedom, financial freedom). In first step we will analyse the effect of economic freedom on GDP growth using an overall index of economic freedom and equation (1). In the next step we decompose the economic freedom index into the components constructing the index and apply model (2).

4. Data and results

Data on the IEF are collected from The Heritage Foundation (<http://www.heritage.org/>), and data on GDP growth and investment share are collected from World Economic Outlook Database (<http://www.imf.org/>). Descriptive statistics for period 2000-2013 are presented in Table 3. Investment share is in percentages.

Average growth rate for the BiH is 3% annually and average investment share is 23% annually. The first step on our analysis is to perform correlation between model (1) and (2) the BiH. Results are presented in Table 4 and Table 5.

Table 3*Descriptive statistics for BiH*

	BiH			
	Mean	Std.	Min	Max
IEF	49,32	7,63	36,60	57,5
GDP growth (Y)	3	2,89	-2,91	6,25
Investment (INV)	23,01	4,59	15,78	28,42
IEF ₁ (Rule of Law)	3,57	1,29	2	5,2
IEF ₂ (Limited government)	10,25	2,21	6,69	13,4
IEF ₃ (Regulatory efficiency)	18,11	1,76	15,14	20,12
IEF ₄ (Open markets)	17,94	3,22	12,76	21,6

Source: Author calculation

Table 4*Correlation between model (1) components*

	BiH	
	DLOG(IEF)	LOG(I)
DLOG(IEF)	1.000.000	-0.049903
LOG(I)	-0.049903	1.000.000

Source: Author calculation

Table 5*Correlation between model (2) components*

	BiH				
	LOG(I)	DLOG(IEF1)	DLOG(IEF2)	DLOG(IEF3)	DLOG(IEF4)
LOG(I)	1.000.000	0.139111	-0.094896	-0.058334	0.045827
DLOG(IEF1)	0.139111	1.000.000	0.050713	0.362261	-0.251335
DLOG(IEF2)	-0.094896	0.050713	1.000.000	0.833446	0.443401
DLOG(IEF3)	-0.058334	0.362261	0.833446	1.000.000	0.536976
DLOG(IEF4)	0.045827	-0.251335	0.443401	0.536976	1.000.000

Source: Author calculation

There is no correlation between components for model (1). For model (2) there is correlation between $dlog(IEF_2)$ and $dlog(IEF_3)$. The second step is to use model (1) and (2) and apply data. We get the following results:

Model (1)

$\text{Log}(Y_i) = \beta_1 + \beta_2 \log(\text{INV}_i) + \beta_3 \text{dlog}(\text{IEF}_i) + \varepsilon$	
	t-statistic
$\beta(1) = 4,319785$	(50,55518)
$\beta(2) = 0,100458$	(3,642557)
$\beta(3) = 0,112865$	(1,634986)
adjusted R ² =0,52,	
S. E. of regression = 0,02	
Wald test for joint significance of all regressor reports p value for F and Chi-square statistic 0,0095 and 0,0005 respectively. F-statistic for overall model reports p value at 0,0094. We conclude that all variables do have a jointly significant effect on our dependent variable at 5% significance level. White test for heteroscedasticity reports p value for Chi-Square statistic at 0,7, therefore we can not reject the null hypothesis that there is no heteroscedasticity. Breusch-Godfrey Serial Correlation LM test reports p value for Chi-Square test at 0,5, therefore we can not reject the null hypothesis of no serial correlation up to lag order 1. Jarque-Bera test reports p value at 0,74, therefore we can not reject the null hypothesis of a normal distribution of the residuals.	

Source: Author calculation

Model (2)

$\text{Log}(Y_i) = \beta_1 + \beta_2 \log(\text{INV}_i) + \beta_3 \text{dlog}(\text{IEF}_{1i}) + \beta_4 \text{dlog}(\text{IEF}_{2i}) + \beta_5 \text{dlog}(\text{IEF}_{3i}) + \beta_6 \text{dlog}(\text{IEF}_{4i}) + \varepsilon$	
	t-statistic
$\beta(1) = 4,302696$	(7,951354)
$\beta(2) = 0,107580$	(3,855126)
$\beta(3) = -0,027527$	(-0,973920)
$\beta(4) = 0,052208$	(1,815311)
$\beta(6) = -0,003242$	(-0,031173)
adjusted R ² =0,54,	
S. E. of regression = 0,019,	
Wald test for joint significance of all regressor reports p value for F and Chi-square statistic 0,033 and 0,012 respectively. F-statistic for overall model reports p value at 0,033. We conclude that all variables do have a jointly significant effect on our dependent variable at 5% significance level. Glejser test for heteroscedasticity reports p value for Chi-Square test at 0,8, therefore we can not reject the null hypothesis that there is no heteroscedasticity. Breusch-Godfrey Serial Correlation LM test reports p value for Chi-Square test at 0,88, therefore we can not reject the null hypothesis of no serial correlation up to lag order 1. Ramsey RESET test reports p value over 0,2, therefore we can not reject the null hypothesis that the functional form of the model is correctly specified. Jarque-Bera test reports p value at 0,48, therefore we can not reject the null hypothesis of a normal distribution of the residuals.	

Source: Author calculation

Model (2) is the restricted model, variable $d\log(\text{IEF}_3)$ is excluded from regression due to very high correlation with the $d\log(\text{IEF}_2)$, and because the omitted variable test for $d\log(\text{IEF}_3)$ reports p value for F and Chi-square statistic at 0,82 and 0,75, and therefore we can not reject the null hypothesis that significance of this omitted variable is zero.

5. Discussion and conclusion

For BiH growth of the IEF has a positive impact on GDP growth. The intensity of this impact is almost the same as it is for the investments share. But, more important is the effect of the individual categories of the IEF on the GDP growth. We find that two out of three categories are in negative correlation with GDP growth. Rule of Law (property rights, freedom from corruption) and Open markets (trade freedom, investment freedom, financial freedom) are negatively correlated to the GDP growth. The second category, which is referred to Limited government (fiscal freedom, government spending) is positively correlated to the GDP growth. Other surveys find that legal structure and open markets have a positive impact on GDP growth, and that government spending has a negative impact on GDP growth. The reason for such difference in our findings can be simply a different methodology for computing the index. Even so, different methodology does not mean a different essence of these categories. More likely reason for this is a specific environment in BiH with postwar privatisation and currency board. In the Republic of Srpska the GDP growth is funded through service sector and one third of total investments is invested in public administration (Pucar, et al, 2013). We assume that these conditions are the same across the BiH. It seems that increase of corruption and government spending will lead to higher GDP growth.

High corruption and low level of property rights are consequence of postwar transition and privatisation. The postwar transition and privatisation are very often a fertile ground for corruption. We believe that negative correlation between IEF_1 (Rule of Law) and GDP growth is a result of very low level of Rule of Law, which is consequence of inefficient transition, privatisation and inefficient market system.

Our market is wide open for import due to CEFTA agreement, overrated exchange rate and underdeveloped economy. BiH import is almost twice higher than its export. The BiH has score 60 on Financial Freedom. It means **significant government interference**, the central bank is not fully independent, and its supervision and regulation of financial institutions are somewhat burdensome. All this combined lead to decrease of GDP, and therefore we have a negative correlation.

We believe that significant increase of Rule of Law can only lead to higher GDP growth, despite the model predictions. But currency board and international agreements are constantly present, and their presence can limit the GDP growth. BiH can, under this circumstances increase its Rule of Law and Regulatory Efficiency, which will make its real sector more productive, and decrease its bureaucracy. This cycle of events will lead to increase of the IEF and to real GDP growth.

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