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Does Economic Freedom Impact Economic Growth: Evidence from two Western Balkan Countries

Abstract: *In this paper we will present the results of our survey on economic freedom, and its impact on economic growth in Bosnia and Herzegovina and Republic of Croatia. To measure economic freedom we will use the Index of Economic Freedom published by the Heritage Foundation in cooperation with the Wall Street Journal. Our basic assumption is that increase of the economic freedom will lead to the real GDP growth. To test our assumption, we will use the regression analysis. We find that economic freedom has strong but different impact on GDP growth for both countries.*

Keywords: *Economic Freedom, the Index of Economic Freedom, economic growth*

Da li ekonomska sloboda utiče na privredni rast: primer dve zemlje zapadnog Balkana

Abstrakt: *U ovom radu prikazaćemo rezultate istraživanja o uticaju ekonomskih sloboda na ekonomski rast u Bosni i Hercegovini i Republici Hrvatskoj. Nivo ekonomskih sloboda mjerićemo Indeksom Ekonosmkih sloboda koji objavljuje Heritidž Fondacija u kooperaciji sa Vol Strit Žurnalom. Osnovna pretpostavka u našem radu je da će povećanje ekonomskih sloboda dovesti do rasta BDP-a. Da bi testirali našu pretpostavku koristićemo regresionu analizu. Rezultati do kojih smo došli pokazuju da rast ekonomskih sloboda ima snažan, ali i raztličit uticaj na rast BDP-a za obje zemlje.*

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Ključne riječi: *ekonomske slobode, indeks ekonomskih sloboda, ekonomski rast.*

1. Introduction

The absence of the economic growth will lead to the continued increase in poverty and hardship. In economic theory growth is very often presented as a function of changes in labor, capital, human capital, and technology. Nevertheless, one of the central debates in economics is which economic policies will have strongest influence on economic growth. The new research in economic theory 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). The Economic Freedom Index is an attempt to quantify the economic freedom. The Economic Freedom Index is reported annually in *Economic Freedom of the World* (Gwartney, et al 2002). Similarly, the Index of Economic Freedom (hereinafter EFI) is published by the Heritage Foundation in cooperation with the *Wall Street Journal* (O'Driscoll, et al, 2002).

We will conduct our analysis on two Western Balkan countries: Bosnia and Herzegovina (hereinafter B&H), and Republic of Croatia (hereinafter CR). Both countries in the past were part of socialistic economic systems and they had a central planning. After the war, these countries conducted privatization and transition to the market economy. CR has recently become a full member of the EU. In this paper we will determinate whether economic freedom causes the economic growth in these two countries. For the purpose of this paper we will use the data on EFI published by the Heritage Foundation. The only reason for using the index of the Heritage Foundation is because this index is provided for these two countries for time period of ten years and longer.

The paper is organized as follows. The second chapter will introduce the concept, definition and measurement of the Economic Freedom. The third chapter contains a survey of previous empirical research. The model specification and methodology are presented in the fourth chapter. The fifth chapter contains the data and obtained results. The sixth chapter includes discussion and conclusion.

2. Measurement and concept of the Economic Freedom

Economic freedom is a world composite index that attempts to characterize the degree to which an economy is a market economy, i.e. the degree to

which it entails the possibility of entering the 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 the political freedom concept or as the civil freedom concept. Generally speaking, government's action or control that interferes with individual autonomy and decisions limits economic freedom. The main goal of economic freedom is not simply an absence of government constraints or interventions, but the creation and maintenance of a mutual sense of liberty for all. The EFI consists of three fundamental principles of economic freedom: empowerment of the individual, non-discrimination, and open competition (Miler, et al 2014).The EFI 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 calculated from a number of sub-variables. All ten components of the EFI are graded on a scale from 0 to 100. Scores on these 10 components of the EFI are equally weighted and averaged to produce an overall economic freedom score for each economy[2].Table 1 contains data on the EFI for B&H and CR.

Table 1. Economic Freedom in B&H and CR

Country	EFI in 1998	EFI in 2013	World rank in 2014	Percentage change of the EFI in 1998-2013
B&H	29,4	57,3	101	95%
CR	51,7	61,3	87	19%

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

B&H has a highest percentage change of the EFI. The reason for this is very low level of the EFI in post-war years. This was a time of country rebuilding after war devastations. Table 2 contains data on EFI components for B&H and CR.

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

Table 2 The EFI components in B&H and CR in 2013

	B&H	CR
property rights	20	40
freedom from corruption	32	40
fiscal freedom	83,2	75,4
government spending	26,9	48,7
business freedom	54,3	63
labor freedom	61,2	42,4
monetary freedom	79	81,1
trade freedom	86,4	87,5
investment freedom	70	75
financial freedom	60	60

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

B&H has the lowest score on property rights among selected countries. This rank means that private property is poorly 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 ex-propriation is common (Miler et al, 2014). According to the Heritage Foundation the most corrupted country is B&H. B&H is a country with very poor efficiency of government regulation of business. Its score on business freedom is the lowest in the region. CR is always ranked somewhere in the middle. It is obvious that the EU members have higher scores on all ten components.

3. Theoretical background

The Economic Freedom Index published by the *Economic Freedom of the World* 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. Many authors, like Gwartney, et al (Gwartney, et al 1999), de Haan, et al (de Haan, et al 2001) and Adkins, et al (Adkins, et al 2002), have found that the level of economic freedom at initial growth period does not contribute significantly to explanation of growth, but that positive changes

in economic freedom do so. The same result is obtained by Dawson (Dawson, 1998), Pitlik (Pitlik, 2002), and Weede, et al, (Weede, et al, 2002). However, other authors have 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). Some elements of The Economic Freedom Index published by *Economic Freedom of the World* contribute differently to economic growth. Carlsson, et al, (Carlsson, et al, 2002) finds that out of the seven groups of the Economic Freedom Index published by *Economic Freedom of the World* (in the version published in 2000), four are positively and statistically and 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). The most surprising are the two negative relationships detected, which imply that the smaller the size of government and the more freedom to trade with foreigners, the slower the growth rate.

Data on the EFI published by the Heritage Foundation/*Wall Street Journal* has been used widely in economic researches. The surveys that use the EFI published by the Heritage Foundation/*Wall Street Journal* finds that the average level of economic freedom precedes growth (Berggren, 2003). Kaseljević (Kaseljević, 2007) in his work examines the importance of economic freedom for the economic performance of 24 transition economies by running a panel analysis on a dataset for the period 1995-2004. The survey proves that there is a correlation between economic freedom, economic performance, and prosperity even in transition countries. When he has conducted the analysis with EFI published by the Heritage Foundation/*Wall Street Journal,* the results have showed even a stronger relationship than the study conducted using the Economic Freedom Index published by *Economic Freedom of the World.* Baletić, et al, (Baletić, et al 2007) investigate in their paper Croatia's institutional convergence to the EU. They simultaneously use data on the EFI published by the Heritage Foundation/Wall Street Journal and the data on the Economic Freedom Index published by the Economic Freedom of the World to evaluate Croatia's score over time and to compare it to the other EU countries. The results show different scores with both indices of economic freedom for Croatia. They conclude that both indices should be used with caution.

Engle (Engle, 2006) conducted a research on the correlation between the EFI published by the Heritage Foundation/Wall Street Journal and GDP per capita. The survey is based on twelve European transition countries that would either join the EU in 2004 or are in negotiations with the EU (TC-12 countries include eight countries that joined the EU in 2004: Latvia, Estonia, Lithuania, Poland, Czech Republic, Slovak Republic, Hungary, and Slovenia; as well as four countries that were in membership talks at that time Bulgaria, Romania, CR, and Turkey) compared to EU-15 members. The results show that average growth rate of the GDP per capita of the TC-12 countries is approximately 3,5% higher than growth rate of the EU-15 members. Engle also finds that the difference in overall economic freedom score between the EU-15 members and TC-12 countries decreased from 0.83 in 1996 (Warner, 2002) to 0.45 in 2006 (Engle, 2006). However, most important finding of this survey is that TC-12 countries will reach 90% of the EU-15 average GDP per capita within one generation if they keep up their growth rates.

4. Model and methodology

For purpose of this survey we chose the following equation (de Haan, et al, 1999):

$$Y_i = \beta_1 + \beta_2 M_i + \beta_3 EFI_i + \beta_4 Z_i + \varepsilon \tag{1}$$

Where Y_i is average growth rate of GDP for country i, M_i is a vector of standard economic explanatory variables for country i, EFI_i is the Index of Economic Freedom for country I, Z_i is a vector of up to three additional economic explanatory variables, which may be related to economic growth. The vector M_i consists of the basic set of economic variables: initial level of GDP, average investment share to GDP, and secondary-school enrollment. These three variables were added to the model based on findings of Levine, et al (Levine, et al, 1992). Vector Z_i consists of the following variables: average population growth, the average ratio of real government consumption to GDP, the average inflation rate (hereinafter CPI), and the average ratio of export and import to GDP. Baumol, et al (Baumol, et al. 1989) suggests that population growth can enhance growth. Therefore, the population growth is added to the regression. The ratio of government consumption to GDP is added to the regression based on Barro's results (Barro, 1991).Barro included this variable in his growth equations and found that government consumption had a significantly negative effect. The inflation rate was added to the regression because Fischer (Fischer, 1993) and Barro (Barro, 1995) found it to be strongly correlated with growth. Openness is increased since Romer (Romer, 1989) and Feder (Feder, 1982) proved that open economics grow faster. In our survey

we will exclude the secondary-school enrollment and population growth due to insufficient data.

5. Data and results

Data on the EFI are collected from The Heritage Foundation (http://www.heritage.org/), and data on GDP growth, CPI, Investment share and Government consumption are collected from World Economic Outlook Database (http://www.imf.org/). Data on openness are collected from World Trade Organization (http://stat.wto.org/). Aggregated data are presented in Table 3.

Table 3 The Aggregated data for B&H and CR

B&H				
	Mean	Std	Min	Max
EFI	49,32	7,63	36,60	57,5
GDP growth	3,22	2,89	-2,91	6,25
Investment % of GDP	23,61	4,87	15,78	28,42
CPI rate	2,83	2,45	-0,38	7,43
Government consumption % of GDP	49,05	3,78	45,49	59,59
Openness	93,84	7,37	84,89	104,90
CR				
	Mean	Std	Min	Max
EFI	54,70	3,48	50,7	61,1
GDP growth	2,10	3,79	-6,94	5,37
Investment % of GDP	25,60	3,89	20,34	31,33
CPI rate	2,95	1,35	1,04	6,06
Government consumption % of GDP	42,49	1,28	40,54	44,99
Openness	87,65	5,34	75,84	93,30

Source: Author calculation

Average data are very similar for both countries. B&H has a higher standard deviation than CR. Their extreme values are also very similar, except for gov-

ernment consumption and openness. Government consumption is almost 60% of GDP and openness almost 105% of GDP in B&H, compared to approximately 45% of government consumption and 93% of openness in CR.

First step in the analysis is to perform correlation between model components for CR and B&H. Results are presented in Table 4.

Table 4 Correlation between model components

	EFI	I	CPI	GC	OPP
CR					
EFI	1.000.000	-0.821910	-0.095466	-0.040709	-0.557660
I	-0.821910	1.000.000	0.470363	-0.401463	0.654542
CPI	-0.095466	0.470363	1.000.000	-0.790833	0.355477
GC	-0.040709	-0.401463	-0.790833	1.000.000	-0.322273
OPP	-0.557660	0.654542	0.355477	-0.322273	1.000.000
B&H					
EFI	1.000.000	-0.726195	0.217017	-0.119199	0.709543
I	-0.726195	1.000.000	0.036482	0.010138	-0.276818
CPI	0.217017	0.036482	1.000.000	0.237198	0.560703
GC	-0.119199	0.010138	0.237198	1.000.000	-0.301912
OPP	0.709543	-0.276818	0.560703	-0.301912	1.000.000

Source: Author calculation

For CR there is a high correlation between the EFI and investments, investments and openness and between CPI and government consumption. For B&H there is a high correlation between the EFI and investments and between the EFI and openness. Most common way to correct this correlation is transformation of the variables. Here we will replace following variables EFI, GC and OPP with their first logarithmic difference. The results are presented in Table 5.

This transformation almost completely solves correlation problem, except for high correlation between logarithmic values of openness and government consumption for CR.

Table 5 Corrected correlation between model components

CR					
	DLOG(EFI)	I	CPI	DLOG(OPP)	DLOG(GC)
DLOG(EFI)	1.000.000	-0.278911	-0.459533	0.298034	0.118206
I	-0.278911	1.000.000	0.480301	-0.144511	-0.144767
CPI	-0.459533	0.480301	1.000.000	-0.066093	-0.266563
DLOG(OPP)	0.298034	-0.144511	-0.066093	1.000.000	-0.729344
DLOG(GC)	0.118206	-0.144767	-0.266563	-0.729344	1.000.000
B&H					
	DLOG(EFI)	I	CPI	DLOG(OPP)	DLOG(GC)
DLOG(EFI)	1.000.000	-0.077556	-0.124189	0.195657	0.517253
I	-0.077556	1.000.000	-0.027661	0.073240	-0.095969
CPI	-0.124189	-0.027661	1.000.000	0.342243	0.082628
DLOG(OPP)	0.195657	0.073240	0.342243	1.000.000	-0.102144
DLOG(GC)	0.517253	-0.095969	0.082628	-0.102144	1.000.000

Source: Author calculation

Second step is to use equation (1) and apply corrected data for both countries. For CR we get the following results:

Dependent Variable: Y
Method: Least Squares
Date: 03/31/14   Time: 10:36
Sample (adjusted): 2003 2012
Included observations: 10 after adjustments
Y=C(1)+C(2)*I+C(3)*DLOG(EFI)+C(4)*CPI+C(5)*DLOG(OPP)

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-16.18637	2.157651	-7.501850	0.0007
C(2)	0.839623	0.086782	9.675075	0.0002
C(3)	-64.56258	12.53251	-5.151607	0.0036
C(4)	-1.132825	0.269224	-4.207736	0.0084
C(5)	44.36992	4.315946	10.28046	0.0001

R-squared	0.974651	Mean dependent var	1.462400
Adjusted R-squared	0.954371	S.D. dependent var	4.139164
S.E. of regression	0.884160	Akaike info criterion	2.898495

Sum squared resid	3.908693	Schwarz criterion	3.049788
Log likelihood	-9.492475	Hannan-Quinn criter.	2.732527
F-statistic	48.06128	Durbin-Watson stat	2.379844
Prob(F-statistic)	0.000352		

Source: Author calculation

This is the restricted model. The variable dlog(GC), which is referred to the first logarithmic difference of government consumption (C6), is excluded from regression due to very high correlation with the first logarithmic difference of openness, and because its coefficient is not significantly different from zero (C(6)=0, p value for F and Chi-square statistic in Wald test is 0,54 and 0,5, respectively). The reported R-squared is 0.95 and all coefficients are statistically significant at the 10% significance level. Probability for the F statistic for overall model is very small, which only confirms previous statement. Wald test for joint significance of all regressor reports p value for F and Chi-square statistic 0.0004 and 0.0000, respectively. We conclude that variables in restricted model do have a jointly significant effect on our dependent variable.

For B&H we get the following results:

Dependent Variable: Y
Method: Least Squares
Date: 03/31/14   Time: 12:33
Sample (adjusted): 2001 2012
Included observations: 12 after adjustments
Y=C(1)+C(2)*I+C(3)*DLOG(EFI)+C(4)*CPI

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-8.376765	2.898465	-2.890069	0.0202
C(2)	0.432426	0.117431	3.682401	0.0062
C(3)	13.28025	6.669606	1.991159	0.0816
C(4)	0.437166	0.235955	1.852753	0.1010

R-squared	0.700778	Mean dependent var	3.115000
Adjusted R-squared	0.588570	S.D. dependent var	2.990182
S.E. of regression	1.917988	Akaike info criterion	4.401632
Sum squared resid	29.42943	Schwarz criterion	4.563268
Log likelihood	-22.40979	Hannan-Quinn criter.	4.341789
F-statistic	6.245329	Durbin-Watson stat	2.377686
Prob(F-statistic)	0.017197		

Source: Author calculation

This is also the restricted model. Variables dlog(GC) and dlog(OPP), which are referred to the first logarithmic difference of government consumption and the first logarithmic difference of openness (c(5) and c(6) respectively), are excluded from regression. Reason is that their coefficients are not statistically different from zero. Wald test confirms this statement (c(5)=0, c(6)=0 p value for F and Chi-square statistic in Wald test is 0.4 and 0.34 respectively). The reported R-squared is 0.58 and all coefficients are statistically significant at the 10% significance level. Probability for the F statistic for overall model and Wald test proves that variables in restricted model do have a jointly significant effect on our dependent variable (Wald test for joint significance of all regressor reports p value for F and Chi-square statistic 0.017 and 0.0003 respectively).

6. Discussion and conclusion

For the both countries the EFI has a very strong, but different impact on the GDP growth. For CR, growth rate of the EFI (the first logarithmic difference is approximately equal to the growth rate) has a very strong negative impact in GDP growth rate. Increase in the EFI growth rate by 1% will cause decrease of GDP growth rate by approximately 64%. The possible reason for this can be the World financial and economic crisis. By 2008, the GDP growth rate for CR was positive, while average GDP growth rate was -2.8% after 2008. In the same period the EFI continued to grow. This strong inverted relation can be a consequence of the opposite direction of these variables. Nevertheless, if we analyze these two variables for the period 2000-2008, we will also find a negative relationship, only less intensive. The more likely reason for this is change in the economic and legal system in CR. CR is a ful member of the EU. During the last decade CR was making changes in its economic and legal system on its way to the EU. It simply takes time for the economy to adjust to the new economic and legal system in the EU. Therefore, the growth rate of the EFI has a negative impact on the GDP growth rate. The CPI also has a negative impact on the GDP growth rate. Variables which have a positive impact on the GDP growth rate are openness and investments. Openness has a very high positive impact on the GDP growth rate. Reason for this can be structure of import and export, or simply similar pattern of these two variables. Investments have a very small impact on the GDP growth rate. This can be a consequence of unfavorable investments structure (more investments in service and public sector, than in real sector of the economy).

For B&H all variables have a positive impact on the GDP growth rate. Strongest impact was provided by the EFI growth rate. B&H is a country with the lowest score on property rights in the region, the highest corruption, and with very poor efficiency of government regulation of business. None of this is

favorable for the GDP growth. B&H has a high score on investment and trade freedom which is favorable for the GDP growth. Also, GDP growth rate for the period 2008-2012 is higher than in CR, approximately -0,4% annually. After the war, B&H economy was going through privatisation and transition to market economy. Competition and free market led to GDP growth. However, transitional economies are fertile ground for corruption. For all these reasons the EFI has a strong positive impact on the GDP growth rate. If B&H can increase its score on property rights, corruption and government regulation of business, it would lead to even higher GDP growth rate. Small impact of investments is probably caused with unfavorable structure of investments. For the Republic of Srpska, approximately 33% of total investments go to the public administration. The investment share of the public administration in the Republic of Srpska is equal to the investment share of the real sector of the economy (Borovic, et al 2013).We believe that investment structure for B&H is similar to the investment structure of Republic of Srpska, due to political organization of B&H and its entities.

Even though presented model indicates that the EFI growth has a negative impact on GDP growth rate for CR, we believe that CR will in time, as a full member of the EU, exploit all benefits of economic freedom in the EU. B&H is starting its way to the EU membership and we believe that positive changes in economic and legal system will only lead to higher GDP growth.

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