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ECONOMIC GROWTH AND INSTITUTIONAL QUALITY IN SOUTH EAST EUROPE

Ekonomski rast i kvalitet institucija u Jugoistočnoj Evropi

Abstract

The paper researched the causal relationship between institutional quality measures and real gross domestic product growth (GDP) on the South East European (SEE) countries in the period 1996-2016. To achieve the aim of this research the panel techniques (the Dumitrescu-Hurlin non-causality approach) were used. The SEE suffers from very poor control of corruption, as well as significant political instability, the weak rule of law and poor government effectiveness. Our results indicate that there is unidirectional homogeneous causality between political stability and real GDP growth. Control of corruption leads to government effectiveness. The rule of law leads to control of corruption, and government effectiveness to political stability. Additionally, there is a bidirectional homogeneous causality between the rule of law and political stability. Thus, the research found some empirical evidence that stronger institutional measures cause higher economic growth.

Keywords: *causality, economic growth, government effectiveness, corruption, political stability, rule of law*

Sažetak

U radu se istražuje uzročna veza između kvaliteta institucionalnih mera i realnog rasta bruto domaćeg proizvoda (BDP) u zemljama Jugoistočne Evrope u periodu 1996-2016. godina. Radi dostizanja postavljenog cilja istraživanja, korišćena je panel tehnika (Dumitrescu-Hurlin test). Teritorija Jugoistočne Evrope ima veoma lošu kontrolu korupcije, zatim značajnu političku nestabilnost, slabu vladavinu prava i slabu efikasnost vlade. Rezultati pokazuju da politička stabilnost homogeno uzrokuje rast realnog BDP, a da kontrola korupcije uzrokuje efikasnost vlade. Vladavina prava uzrokuje kontrolu korupcije, a efikasnost vlade utiče na političku stabilnost. Dodatno, postoji dvosmerna homogena uzročnost između vladavine prava i političke stabilnosti. Stoga, istraživanjem se dolazi do određenih empirijskih dokaza koji pokazuju da jače institucionalne mere dovode do višeg ekonomskog rasta.

Ključne reči: *uzročnost, ekonomski rast, efikasnost vlade, korupcija, politička stabilnost, vladavina prava*

Introduction

In the second half of the twentieth century, the economies of the South East European countries had different historical experiences regarding global economy. While countries such as Greece and the former Yugoslavia were relatively open and internationally integrated, Albania was almost completely isolated, which would further slow down its integration into international markets. With the end of the Cold War and the fall of the Berlin Wall, the state economy of most South East European countries collapsed rapidly [55, p. 645]. Industrial production and living standards have fallen, while unemployment and prices have risen. Thus, for example, many economies of the region recorded a decline in the gross domestic product (GDP) in the period 1990-91 in some cases by over 20 or even 30 percent. Unemployment rose from zero at the same time to over 10 percent, while inflation hit double or triple digits [43, p. 17]. Consequences of political upheaval and war conflict strongly influenced local economies at that time completely separated from world markets. International sanctions imposed deliberate isolation of Serbia and Montenegro. The Greek trade embargo against Macedonia in the dispute over the name of the country has effectively isolated this country for many years. Most of them found themselves on the European “super outskirts”, characterized by de-industrialization and high unemployment, ethnic and regional fragmentation, political turmoil and general instability [55, p. 651]. At the same time, the collapse of the Soviet Union hit Romania and Bulgaria. Almost overnight, a guaranteed trade partnership disappeared and it was replaced by fifteen young and economically weak states. In addition, most South East European countries were heavily indebted to Western banks and governments. Hungary had the largest debt per capita (over \$ 2,500) and over \$ 20 billion, while Bulgaria owed nearly \$ 10 billion. Unlike them, Romania paid off its external debt during the Ceausescu regime, but at the cost of total impoverishment of the population [43, p. 19]. Integration into international trade was interrupted, which led to a chronic balance of payment deficit. Low inflows of international capital as a consequence of the high risk of many countries dramatically slowed down

technological development and weakened international competitiveness. However, the socialist elite remained a powerful political group in the initial phase of the transition process in most transition countries, but its power was different in different countries, depending on whether they were in power alone or in coalitions with new democratic movements. The socialist elite or nomenclature which was in power, did not have the incentive to create institutions that would encourage competition, as this would reduce their economic power, which also slowed the economic development of many countries in the region [32], [15].

After the year 2000 and democratic changes in Croatia and Serbia, the EU has become much more engaged in the whole region, so the Europeanization of both political and economic strategies has replaced the former independent national economic development programs. The huge influx of international assistance was followed by consultants in the field of international politics who dramatically influenced national and local policies. However, according to Bartlett [6], this process of policy transfer was not consistent because it reflected the various non-compliant views of European representatives on the ground. Since the year 2000, economies, especially those of the Western Balkans, have experienced a period of slight recovery except for Slovenia [30]. Economic growth was relatively significant in comparison with the previous decade, with an average of about 4 percent per year from 2000 to 2006. The average real GDP growth rose to 6 percent in 2007, before returning to about 4.5 percent in 2008. Nevertheless, despite this temporary economic growth, the region of Southeast Europe still includes some of the poorest countries in Europe. In 2006, Bosnia and Herzegovina had the lowest income per capita, while in Albania, Macedonia, Montenegro and Serbia it was slightly better. Croatia was better positioned, with more than three times higher income per capita in comparison with Bosnia and Herzegovina [6, p. 23]. Although there are also new EU member states among them, along with formerly associated Greece, due to great difficulties in linking with the global economy, they are still considered to be the outskirts of Europe in relation to the countries of Western Europe.

This paper aims to examine the causal relationship between institutional quality measures and GDP growth

in the SEE countries. The research was conducted using the real gross domestic product as the dependent variable, and government effectiveness, control of corruption, political stability, and the rule of law as independent variables. This paper lies in the hypothesis that there is a causal relationship between institutional quality and gross domestic product growth in SEE countries. The causal relationship between selected variables is investigated using the Dumitrescu-Hurlin non-causality approach for the period from 1996 to 2016. Although there are economic studies that explore the causal link between institutional variables and economic growth for different countries of the world, studies of this type of causality for the countries of South-Eastern Europe are very rare and are reduced to examining a smaller number of institutional variables. The contribution of this paper is the research of causality between examined variables (four institutional variables and GDP) in SEE countries. In general, our research shows some empirical evidence that stronger institutional measures cause higher economic growth.

Apart from the introductory (first) section, the paper consists of four parts. A literature overview is presented in the second section. The third section explains our research methodology. The fourth section contains results and discussions. The conclusion is presented in the fifth section.

Literature Review

Many previous economic studies have examined the relationship between political stability, corruption, government effectiveness, and other institutional variables and economic growth. Relying on this kind of general research, we decided to present some empirical evidence on the factors that influence the economic growth of the countries of South East Europe in the given period.

Aixalá and Fabro [2] tested institutional variables looking to find out which one is the most appropriate in the growth model, depending on the income levels of countries. Their results show that for the rich countries, the rule of law is fundamental, while for the poor, it is the control of corruption. Chong and Calderon [11] examined the causal link between institutional measures and economic growth. It turned out that the poorer the

country the longer it awaits the improvement of institutional measures, thus strengthening the impact of these measures on economic growth. However, they also point to the existence of reverse causality, or to the fact that economic growth affects the increase in the quality of institutional measures. Similarly, Glaeser et al. [33] empirically test the causal link between the quality of institutions and economic growth. They find that human capital is a more fundamental source of growth than institutions. They also claim that poorer countries get out of poverty due to good policies, which subsequently increases the quality of their political institutions. In their empirical analysis Knack and Keefer [44] conclude that different institutional measures, such as increasing the efficiency of bureaucracy, property rights and political stability of the country, have a positive statistically significant relation to the economic performance of the country. The authors who investigated the relationship between institutional factors and economic growth are Aparicio et al. [4], Young and Sheehan [58], Lee et al. [45]. Esfahani and Ramírez [28] develop a structural model that includes institutional and economic factors that mediate in the infrastructure-GDP interactions. The results show that institutional measures that give credibility and effectiveness to government policy play a particularly important role in the process of economic growth through investment in infrastructure. The effects of this model indicate that countries can achieve much in improving investment and performance in infrastructure, but that requires institutional and organizational reforms that are more important than the simple design of infrastructure projects. Evans and Rauch [29] emphasize the importance of a good bureaucracy for the country's economic growth and suggest that policymakers should pay great attention to building better bureaucracies. They claim that further research in social sciences is needed on variations in how to organize state bureaucracy. Yanovskiy and Shulgin [57] found significant positive interdependencies between democracy indicators and economic growth. Efendic and Pugh [26] utilized dynamic panel analysis to investigate the relationship between institutional improvement and economic performance in 29 transition countries in the period 1992–2007. They found that per capita GDP is determined by the entire history of institutional reform

under transition. Thus, there exist institutional effects on economic performance in transition countries.

Political corruption in transition countries was examined by Goel and Budak [34]. Their results indicate that greater economic prosperity of the country certainly reduces corruption. These authors suggest that transitional countries need to undertake comprehensive reforms to reduce corruption. Budak and Rajh [9] find that high levels of corruption in the Western Balkan represent a serious obstacle to a successful business and conclude that the more visible corruption it is more connected with the state institutions and the government by the business community. For Mauro [48; 49], corruption has significant, detrimental effects on economic growth, which opens the issue of individual countries that, despite this, do not work to eradicate corruption and improve the performance of their institutions. As one of the possible reasons, Mauro [49] suggests the fact that individuals in cases where corruption is widespread do not have incentives, or institutional support to fight against it. In support of his claims, he gives the example of two illustrative models. Podobnik et al. [53] analyse the dependence of the Gross Domestic Product (GDP) per capita growth rates on the changes in the Corruption Perceptions Index (CPI) in the period 1999-2004 for all countries in the world. These authors find that, on average, the increase in CPI for those units leads to an increase in the annual growth rate of GDP per capita of 1.7%. However, once the transition countries in Europe have set aside, the authors have concluded that an increase in the CPI for those units generates an increase in the annual GDP growth rate per capita by as much as 2.4%. At the same time, they analysed the relationship between foreign direct investment and CPI and concluded that the decrease in corruption leads to a significant increase in the country's wealth.

The authors who examined the link between corruption and economic growth are Cieřlik and Goczek [12], d'Agostino et al. [14], Huang [37], Dzhumashev [21]. Ehrlich and Lui [27] analysed the impact of bureaucratic corruption on economic growth at various stages of economic development and under various political and economic regimes. Mo [50] calculates quantitatively the impact of corruption on economic growth and finds that

increasing corruption by 1% reduces the rate of growth by 0.72%. This author particularly points out that political instability is an important channel through which corruption affects economic growth. Drury et al. [19] also empirically test the impact of corruption on economic growth. These authors use time series for more than 100 countries between 1982 and 1997 and show that in democratic countries, corruption does not have a significant effect on economic growth, which is not the case with non-democratic countries. In contrast, corruption has a significant impact on economic growth. Svensson [56] reveals a negative relation between the level of corruption and country wealth factors, such as GDP, leading to a conclusion that the higher level of corruption causes a higher level of poverty. Dridi [18] examines the impact of corruption on various economic growth variables such as GDP per capita, political instability and some dummy variables. This author finds that there is a negative effect of corruption on economic growth and that it comes from the impact of human capital and political instability. Gyimah-Brempong [36] uses panel data for African countries to explore the impact of corruption on economic growth and distribution of income. The author uses a dynamic panel estimator and finds that corruption reduces the rate of economic growth and income per capita. His results show that increased corruption is positively correlated with inequality of income, which means that corruption more affects poorer African countries than the rich ones. De Vaal and Ebben [17] emphasize the overall effect of corruption on economic growth is highly dependent on the institutional setting of a country. Especially in situations where institutions are not well-developed corruption can be conducive to economic growth. Therefore, they emphasize the importance of taking into account the complete institutional setting in the study of corruption, both theoretical and empirical. Lućić et al. [47] analyse the impact of corruption (measured by Corruption Perceptions Index) on economic development (measured by GDP per year) of each country. These authors have shown that the change in GDP has been postponed for 6 to 10 years after the change in the level of corruption, and vice versa, i.e. the strongest causality between these two variables is noticed in the so-called medium-term framework.

Concerning political freedoms and economic growth, Przeworski and Limongi [54] conclude that political institutions are important for economic growth. Barro [5], using data for 100 countries between 1960 and 1990, conducted a panel analysis that led to the conclusion that political freedoms have a weak effect on economic growth, but that there are some indications for the non-linear relationship between these variables. He believes that when political rights are low, their expansion stimulates economic growth, but where there is already a moderate level of democracy, further expansion of these rights reduces economic growth. Begović et al. [7] showed that there is some empirical evidence that an increase in democracy boosts the development of financial intermediation and then such improved financial intermediation supports economic growth. Huang [38] shows that improved institutional quality is associated with increases in financial development at least in the short run. For the lower-income countries, this effect is expected to persist over longer horizons. Alesina et al. [3] studied the relationship between political instability and economic growth, that is, GDP growth per capita for 113 countries in the period 1950-1982. Their main finding is that in countries and periods with a high incidence of government collapse, growth is significantly lower than otherwise.

Research Methodology

Data Analysis

This study aims to examine the relationship between the growth of the real gross domestic product, government effectiveness, control of corruption, political stability and the rule of law in the South East European countries. Data for growth of GDP are collected from World Development Indicators (WDI), while data for government effectiveness, control of corruption, political stability, and the rule of law are collected from World Governance Indicators (WGI) of the World Bank database. Kaufmann et al. [41, 42] explain these institutional quality measures in detail. These indicators are measured in units that range from -2.5 (weak) to 2.5 (strong), and they describe the following [2]:

- Government Effectiveness (GE) combines perceptions of the quality of public service provision and

administration, the independence of the civil service from political pressure, and the credibility of the government's commitments.

- Control of Corruption (CC) measures perceptions of the exercise of public power for private gain.
- Political Stability (PS) measures perceptions of the likelihood that the government will be destabilised by unconstitutional means.
- Rule of Law (RL) measures the extent to which agents have confidence in and abide by the rules of society. These include perceptions of the incidence of both violent and non-violent crime, the effectiveness and predictability of the judiciary, and the enforceability of contracts [2].

Table 1 presents descriptive statistics of selected independent variables in the model for each country, respectively. From the data presented in Table 1, it can be seen that Slovenia, according to all parameters, is superior to other SEE countries. Namely, Slovenia has the best government effectiveness, control of corruption, the highest political stability and the best rule of law. Also, the standard deviation of these variables is quite low for Slovenia.

Bosnia and Herzegovina has the worst government effectiveness, while Albania has the worst control of corruption. Report of European Commission [23] notices that "Bosnia and Herzegovina is at an early stage in the area of the judiciary. The constitutional and legal framework governing the judiciary is incomplete and does not provide sufficient guarantees of independence, accountability, and efficiency." Report of European Commission for Albania states that corruption prevails in many areas of Albania and remains an issue of importance [22]. Turkey has the weakest political stability (this is in line with [24]), while Serbia and Albania have the worst rule of law compared to all SEE countries. Standard deviations for all variables for Serbia are quite high compared to standard deviations for other countries, especially for Slovenia. Petrović et al. [52] empirically showed that Serbia's economic growth laggard due to deficient institutions, specifically lacking the rule of law and control of corruption. However, looking at the summary for all SEE countries, it can be said that the whole SEE territory suffers from very poor control of

Table 1: Descriptive statistics of selected independent variables

1996-2016	Government Effectiveness		Control of Corruption		Political Stability		Rule of Law	
	mean	st.dev.	mean	st.dev.	mean	st.dev.	mean	st.dev.
Albania	-0.38	0.22	-0.70	0.17	-0.18	0.30	-0.60	0.19
B&H	-0.71	0.21	-0.35	0.08	-0.46	0.22	-0.41	0.17
Bulgaria	0.09	0.12	-0.17	0.12	0.25	0.18	-0.11	0.07
Croatia	0.48	0.18	0.04	0.25	0.52	0.20	0.07	0.25
Greece	0.58	0.19	0.20	0.29	0.25	0.40	0.68	0.25
North Macedonia	-0.21	0.26	-0.33	0.24	-0.56	0.32	-0.33	0.14
Montenegro	0.08	0.15	-0.19	0.22	0.41	0.27	-0.05	0.25
Romania	-0.26	0.13	-0.26	0.16	0.21	0.21	-0.02	0.15
Serbia	-0.29	0.34	-0.50	0.34	-0.55	0.58	-0.60	0.39
Slovenia	0.98	0.11	0.93	0.14	1.05	0.14	1.01	0.08
Turkey	0.17	0.18	-0.08	0.18	-1.03	0.34	0.03	0.10
SEE countries	0.04	0.14	-0.07	0.07	-0.03	0.09	-0.03	0.10

Source: Authors' calculation based on WGI data.
Notes: B&H – Bosnia and Herzegovina.

corruption, significant political instability, the weak rule of law and poor government effectiveness.

The Model

An unbalanced panel data from 1996 to 2016 is used in this study. The model is specified as follows:

$$GDP_{it} = \alpha + \beta_1 GE_{it} + \beta_2 CC_{it} + \beta_3 PS_{it} + \beta_4 RL_{it} + \varepsilon_{it} \quad (1)$$

The dependent variable is the growth of real GDP_{it}, and regressors are GE_{it}, CC_{it}, PS_{it}, and RL_{it}. α is the intercept, and $\beta_1, \beta_2, \beta_3, \beta_4$ are the slope coefficients of the models, i represents the country, t is the time, and ε_{it} is the error term, independently and identically normally distributed with zero mean, i.e. $\varepsilon_{it} \sim N(0, \sigma^2)$.

The test of cross-sectional dependence

De Hoyos and Sarafidis [16] consider “the standard panel-data model as:

$$y_{it} = \alpha_i + \beta' x_{it} + u_{it}, \quad i=1, \dots, N \text{ and } t=1, \dots, T \quad (2)$$

where x_{it} is a $K \times 1$ vector of regressors, β is a $K \times 1$ vector of parameters to be estimated, and α_i represents time-invariant individual nuisance parameters”. The null hypothesis assumed that u_{it} is independent and identically distributed over periods and across cross-sectional units. The alternative hypothesis supposed that u_{it} could be correlated across cross-sections, while there is the assumption of no serial correlation [16]. De Hoyos and Sarafidis [16] explain that Breusch and Pagan [8] proposed an LM statistic:

$$LM = T \sum_{i=1}^{N-1} \sum_{j=i+1}^N \hat{\rho}_{ij}^2 \quad (3)$$

which is valid for fixed N as $T \rightarrow \infty$. In equation (3) $\hat{\rho}_{ij}^2$ is the sample estimate of the pairwise correlation of the residuals and \hat{u}_{it} is the estimate of u_{it} in equation (2).

$$\hat{\rho}_{ij} = \hat{\rho}_{ji} = \frac{\sum_{t=1}^T \hat{u}_{it} \hat{u}_{jt}}{(\sum_{t=1}^T \hat{u}_{it}^2)^{1/2} (\sum_{t=1}^T \hat{u}_{jt}^2)^{1/2}} \quad (4)$$

Under the null hypothesis, LM statistic is asymptotically distributed as χ^2 with $N(N-1)/2$ degrees of freedom [16]. The second generation panel unit root test Breusch-Pagan LM test shows cross-section dependence in our panel data model, and then we applied second generation unit root test to examine stationarity of the used data. Hurlin and Mignon [39] notice that the second generation unit root tests are robust to the cross-sectional dependence. We used Pesaran [51] test that is explained by Hurlin and Mignon [39]. They highlight that Pesaran suggests various models to explain the cross-sectional dependencies problem, and a one-factor model with heterogeneous loading factors for residuals is one of them. Hurlin and Mignon [39] describe that Pesaran augments the standard Dickey-Fuller (ADF) regressions with the cross-section average of lagged levels and first-differences of the individual series.

Pesaran's cross-sectional augmented Dickey-Fuller (ADF) regression (CADF) is specified as follows:

$$\Delta y_{it} = a_i + b_i y_{i,t-1} + c_i \bar{y}_{t-1} + d_i \Delta \bar{y}_t + e_{it} \quad (5)$$

Where: $\bar{y}_{t-1} = \frac{1}{N} \sum_{i=1}^N y_{i,t-1}$; $\Delta \bar{y}_t = \frac{1}{N} \sum_{i=1}^N \Delta y_{i,t}$; $t_i(N,T)$ is

the t -statistic of the OLS estimate of b_i [39]. The null hypothesis of panel unit root tests is that variables contain panel unit root, while the alternative hypothesis is that the individual panel series is stationary.

The Dumitrescu-Hurlin panel Granger non-causality test

The Dumitrescu-Hurlin panel Granger non-causality test is used to examine the causal relationships among the growth of GDP, government effectiveness, control of corruption, political stability, and the rule of law.

Dumitrescu and Hurlin [20] provide a simple Granger¹ [35] non-causality test for heterogenous panel data models. The two stationary variables observations for individual i in period t are presented by x_{it} and y_{it} [46]. Dumitrescu and Hurlin [20] defined the linear model:

$$y_{it} = \alpha_i + \sum_{k=1}^K \gamma_{ik} y_{i,t-k} + \sum_{k=1}^K \beta_{ik} x_{i,t-k} + \varepsilon_{it} \quad (6)$$

where $i=1, \dots, N$, at time $t=1, \dots, T$, with $K \in N^*$. The model in equation (6) allows investigating Granger causality in a panel data context [20]. It is assumed that coefficients are time-invariant and differ across individuals. The null hypothesis is:

$$H_0 : \beta_{i1} = \dots = \beta_{iK} = 0 \quad \forall i = 1, \dots, N \quad (7)$$

that means there is no causality for all individuals in the panel [46].

Dumitrescu and Hurlin [20] define the alternative hypothesis as:

$$H_1 : \beta_i = 0 \quad \forall i = 1, \dots, N_1 \\ \beta_i \neq 0 \quad \forall i = N_1 + 1, N_1 + 2, \dots, N \quad (8)$$

Where N_1 is unknown and the condition $0 \leq N_1/N < 1$ is fulfilled. It is necessary that the ratio is less than one. There is no causality for any of the individuals in the panel if $N_1 = N$ which is according to the homogenous non causality null hypothesis. In case $N_1 = 0$, causality for all the individuals in the panel exists [20].

1 Granger [35] test developed a methodology for analysing the causal relationships between time series [46].

Results and Discussion

Before testing of stationarity of variables, Breusch-Pagan LM test of independence is applied. We used Breusch-Pagan LM test because the time dimension is longer than the number of countries in our sample ($T > N$). Result of this test is: $\chi^2 = 256.547$ with $p = 0.000$. So, we strongly reject the null hypothesis of no cross-sectional dependence, and the analyzed variables are crosssectionally dependent. Thus, we have used second generation unit root test for lag=0, according to different criteria (the Akaike, the Schwarz, the Hannan-Quinn information criterion, etc.). The criteria for lag selection are presented in appendix A in Table A1.

The order of integration for each series (i.e. variable in the model) is determined. Namely, Pesaran's CADF panel unit root test was used, and the results are presented in Table 2. The results of this test showed that variables growth of real GDP and the rule of law are stationary at level, otherwise control of corruption and political stability are nonstationary at level. Government effectiveness variable is stationary at level only using Pesaran's CADF test with constant. All five variables are stationary at the first differences.

Table 2. The second generation unit root test results

Variables	Level		First Difference	
	Constant	Constant & Trend	Constant	Constant & Trend
Pesaran's CADF test				
gGDP	-5.131 (0.000)	-4.640 (0.000)	-12.031 (0.000)	-10.812 (0.000)
GE	-2.065 (0.019)	-1.085 (0.139)	-7.441 (0.000)	-5.840 (0.000)
CC	1.203 (0.886)	1.791 (0.963)	-4.631 (0.000)	-4.659 (0.000)
PS	-0.822 (0.206)	-0.149 (0.441)	-5.141 (0.000)	-3.717 (0.000)
RL	-1.903 (0.029)	-2.313 (0.010)	-6.630 (0.000)	-4.832 (0.000)

Source: Authors' calculation

Note: gGDP is real GDP growth, GE is government effectiveness, CC is control of corruption, PS is political stability, and RL is rule of law; p-values are presented in the parentheses; Pesaran's CADF test is calculated for lag=0 based on different criterion.

The results of the first generation unit root test (the Levin, Lin and Chu, the Im-Pesaran-Shin (IPS), ADF-Fisher, and PP-Fisher panel unit root tests) are presented in the appendix A in Table A2. According to the first

generation unit root tests, we can conclude that variable control of corruption is stationary at level, while real GDP growth is stationary at level, except when the Levin, Lin and Chu test with intercept and trend is used. Political stability variable is stationary at level, observing four unit root tests first generation with intercept. This variable is stationary using the Levin, Lin and Chu and PP-Fisher tests with intercept and trend, but it is nonstationary applying the Im-Pesaran-Shin and ADF-Fisher tests with intercept and trend. Government effectiveness and rule of law variables are stationary using all tests with intercept and trend. These variables are nonstationary in applied tests with intercept, except government effectiveness that is stationary according to the Levin, Lin and Chu test. All analysed variables are stationary at the first differences applying the first generation unit root tests.

Comparing the results of the first and second generation unit root tests, we can observe that the variable growth of real GDP is stationary i.e. $I(0)$. The variable rule of law is stationary, applying the second generation unit root test and the first generation unit root tests with intercept and trend. Conclusions about the stationarity of control of corruption, government effectiveness, and political stability vary depending on the generation of the test.

When we use the second generation unit root test, control of corruption and political stability are integrated of order one i.e. $I(1)$, while these variables are stationary at level i.e. $I(0)$ according to the first generation unit root tests. The government effectiveness variable is stationary at level, applying the second generation unit root test with constant. Opposite, this variable is stationary at level according to the first generation unit root tests with intercept and trend.

After obtaining stationary variables, testing for Granger non-causality in heterogeneous panels was applied i.e. the Dumitrescu Hurlin test, also taking into account cross-section dependence by bootstrapping procedure. The Dumitrescu Hurlin test was estimated to examine the causal relationship among the first differences of selected variables (real GDP growth, government effectiveness, control of corruption, political stability, and rule of law). Results of the Dumitrescu Hurlin test are presented in Table 3.

Results from Table 3 show that in six cases, the null hypothesis about homogeneous non-causality can be rejected. There is Granger unidirectional causality between the first differences of political stability and real GDP growth at the 5 percent level in the SEE countries, namely political stability homogeneously causes real GDP growth. The control of corruption homogeneously causes

Table 3. Pairwise Dumitrescu Hurlin Panel Causality Tests

Null Hypothesis:	W-Stat.	Zbar-Stat.	Prob.	Direction
Δ CC does not homogeneously cause Δ gGDP	0.625	-0.957	0.339	No causality between Δ CC and Δ gGDP
Δ gGDP does not homogeneously cause Δ CC	0.871	-0.581	0.561	
Δ GE does not homogeneously cause Δ gGDP	0.651	-0.910	0.363	No causality between Δ GE and Δ gGDP
Δ gGDP does not homogeneously cause Δ GE	1.353	0.132	0.895	
Δ PS does not homogeneously cause Δ gGDP	2.717	2.084	0.037	Unidirectional causality from Δ PS to Δ gGDP
Δ gGDP does not homogeneously cause Δ PS	1.318	0.066	0.947	
Δ RL does not homogeneously cause Δ gGDP	1.391	0.216	0.829	No causality between Δ RL and Δ gGDP
Δ gGDP does not homogeneously cause Δ RL	0.374	-1.342	0.179	
Δ GE does not homogeneously cause Δ CC	1.728	0.691	0.490	Unidirectional causality from Δ CC to Δ GE
Δ CC does not homogeneously cause Δ GE	2.504	1.844	0.065	
Δ PS does not homogeneously cause Δ CC	2.191	1.325	0.185	No causality between Δ PS and Δ CC
Δ CC does not homogeneously cause Δ PS	1.261	-0.017	0.987	
Δ RL does not homogeneously cause Δ CC	3.148	2.908	0.004	Unidirectional causality from Δ RL to Δ CC
Δ CC does not homogeneously cause Δ RL	0.974	-0.422	0.673	
Δ PS does not homogeneously cause Δ GE	1.863	0.851	0.395	Unidirectional causality from Δ GE to Δ PS
Δ GE does not homogeneously cause Δ PS	2.859	2.289	0.022	
Δ RL does not homogeneously cause Δ GE	1.142	-0.181	0.857	No causality between Δ RL and Δ GE
Δ GE does not homogeneously cause Δ RL	0.913	-0.521	0.602	
Δ RL does not homogeneously cause Δ PS	2.841	2.263	0.024	Bidirectional causality between Δ RL and Δ PS
Δ PS does not homogeneously cause Δ RL	2.853	2.280	0.023	

Source: Authors' calculation

Note: gGDP is real GDP growth, GE is government effectiveness, CC is control of corruption, PS is political stability, and RL is rule of law, Δ is the first difference operator.

government effectiveness at the 10 percent level, which means there is Granger causality between the first differences of control of corruption and government effectiveness. The Granger causality between the first differences of rule of law and control of corruption is observed at the 1 percent level because rule of law homogeneously causes control of corruption. At the 5 percent level, there is Granger homogeneous causality between the first differences of government effectiveness and political stability. Bidirectional homogeneous causality is noticed between the first differences of rule of law and political stability at the 5 percent level.

Therefore, the results of this paper showed that there is some empirical evidence to support the paper hypothesis that there is a causal relationship between some institutional quality measures and gross domestic product growth in SEE countries. Our results show that some institutional quality measures cause economic growth, which partially coincides with research by Chong and Calderon [11], and Petrović et al. [52].

Acemoglu et al. [1] conclude that the cause of slow economic growth in some countries can be found in institutions, while macroeconomic policies that do not lead to growth are their consequence. The poor institutions' quality, which includes the lack of rule of law, the prevalence of corruption and the high degree of political instability, causes misguided and inadequate macroeconomic policies [10].

Cvetanović et al. [13] pointed out that „institutions play an important role in increasing the functionality of society, and in particular, in increasing economic efficiency. They must provide predictable and coherent rules, but in spite of this, institutional changes and adjustments to social preferences, technology, political and socioeconomic structures and external factors are necessary. The essence of the existence of quality institutions is that, by creating rules of the game in the economic and political sphere, adequate incentives influence the behavior of economic entities towards improving the quality of key macroeconomic performances“.

Strong institutions influence high levels of income per capita, as they shape the conditions for investment, technological progress, and growth [10]. A stable and efficient

legislative and legal system is of primary importance for the process of economic growth. In areas where corruption and incomplete protection of property rights are evident, low investment returns become available or they are not present at all, and this logically affects the slowdown in economic growth [13].

Conclusions

This paper examines the relationship between the growth of the real gross domestic product, government effectiveness, control of corruption, political stability and the rule of law in the South East European countries in the period 1996-2016. To achieve the aim of this paper, the panel framework is used. The Dumitrescu-Hurlin panel Granger non-causality test is also employed to examine the causal relationship between the selected variables. Analysing descriptive statistics of our data, according to all variables Slovenia predominates to other SEE countries and the volatility of these variables is fairly low compared to other countries in the region. Slovenia is the best example of a country where improvement in the quality of institutional factors led to economic growth. Although it represented the country in transition in 1996, Slovenia managed to achieve better results in controlling corruption, government effectiveness and the quality of the rule of law in comparison with the countries that did not go through such economic turbulences, such as Greece and Turkey. Croatia is second to Slovenia when it comes to political stability. However, the parameter shows a great difference in mean value (Slovenia 1.05, Croatia 0.52). While Bosnia and Herzegovina has the poorest government effectiveness, Albania is the worst ranked regarding the control of corruption. According to the results obtained, it turned out that Turkey has the weakest political stability, while Serbia has the poorest rule of law compared to all SEE countries. However, observing all SEE countries it can be said that the entire SEE region (except for Slovenia) suffers from very poor control of corruption, followed by significant political instability, the weak rule of law and poor government effectiveness. There is a unidirectional homogeneous causality between some observed variables. It can be concluded that political

stability causes real GDP growth. In addition, it has been found that control of corruption causes government effectiveness; rule of law causes control of corruption, and government effectiveness causes political stability. There is only bidirectional homogeneous causality between the rule of law and political stability. Thus, some institutional quality measures cause economic growth in SEE countries that is unequivocally indicated by the latest reports of the European Union and the assessment of the state of democracy in the region of various monitoring organizations such as Freedom House [31], the International Institute for Democracy and Electoral Assistance [40] and the Economist [25]. Political interference and pressure, the deterioration of independent institutions and the strengthening of the executive power affect the rule of law in most South East European countries. This is a long-lasting problem, but nowadays it is indicated that these trends are on the rise. However, it is notable that political elites do not show commitment to changing the situation. Being accustomed to solving economic problems in the short term through various types of international assistance, these elites do not show interest in improving institutional measures for the purpose of economic and political progress. Therefore, important further research can be directed towards exploring the causal relationship between institutional measures and the inflow of foreign direct investment in the SEE countries.

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Appendix A

Table A1. VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	103.3286	NA*	2.88e-08*	-3.171891*	-3.000348*	-3.104539*
1	119.0629	28.42310	3.90e-08	-2.872995	-1.843737	-2.468882
2	139.2837	33.26659	4.62e-08	-2.718830	-0.831856	-1.977956
3	161.8541	33.49147	5.21e-08	-2.640453	0.104236	-1.562819
4	184.2589	29.63218	6.13e-08	-2.556738	1.045667	-1.142343
5	207.9784	27.54530	7.33e-08	-2.515434	1.944687	-0.764278
6	236.5397	28.56130	8.12e-08	-2.630314	2.687522	-0.542398
7	264.5418	23.48558	1.03e-07	-2.727154	3.448397	-0.302477
8	294.6571	20.40068	1.45e-07	-2.892164	4.141103	-0.130726

Notes: * Indicates lag order selected by the criterion; LR – sequential modified LR test statistic (each test at 5% level); FPE – Final prediction error; AIC – Akaike information criterion; SC – Schwarz information criterion; HQ – Hannan-Quinn information criterion.

Table A2. Unit root test results – the first generation

Variables	Level		First Difference	
	Intercept	Intercept & Trend	Intercept	Intercept & Trend
Levin, Lin & Chu t*				
gGDP	-23.0518 (0.0000)	1.4286 (0.9234)	-15.6355 (0.0000)	-16.6926 (0.0000)
GE	-2.4369 (0.0074)	-2.0478 (0.0203)	-11.5249 (0.0000)	-12.2049 (0.0000)
CC	-2.2386 (0.0126)	-1.8653 (0.0311)	-6.7908 (0.0000)	-10.0667 (0.0000)
PS	-2.3437 (0.0095)	-2.2538 (0.0121)	-10.8871 (0.0000)	-8.4938 (0.0000)
RL	-1.2693 (0.1022)	-6.1782 (0.0000)	-11.5348 (0.0000)	-11.3709 (0.0000)
Im, Pesaran and Shin W-stat				
gGDP	-11.7333 (0.0000)	-4.0527 (0.0000)	-17.2838 (0.0000)	-17.0473 (0.0000)
GE	-1.2037 (0.1144)	-1.5042 (0.0663)	-9.3833 (0.0000)	-8.9899 (0.0000)
CC	-1.9003 (0.0287)	-1.4020 (0.0805)	-5.8929 (0.0000)	-6.1345 (0.0000)
PS	-1.7597 (0.0392)	-1.2411 (0.1073)	-8.7092 (0.0000)	-5.0506 (0.0000)
RL	-0.0705 (0.4719)	-4.6096 (0.0000)	-9.2853 (0.0000)	-7.3525 (0.0000)

Variables	Level		First Difference	
	Intercept	Intercept & Trend	Intercept	Intercept & Trend
ADF - Fisher Chi-square				
gGDP	326.533 (0.0000)	51.7944 (0.0003)	239.786 (0.0000)	181.657 (0.0000)
GE	28.5085 (0.1594)	37.8230 (0.0192)	116.719 (0.0000)	98.9094 (0.0000)
CC	36.1166 (0.0295)	38.9941 (0.0141)	76.6501 (0.0000)	73.8238 (0.0000)
PS	41.2757 (0.0076)	27.6793 (0.1866)	103.391 (0.0000)	71.6154 (0.0000)
RL	29.0772 (0.1427)	59.0478 (0.0000)	111.040 (0.0000)	84.5323 (0.0000)
PP - Fisher Chi-square				
gGDP	338.521 (0.0000)	317.599 (0.0000)	757.523 (0.0000)	210.826 (0.0000)
GE	28.3129 (0.1655)	49.6934 (0.0006)	153.628 (0.0000)	146.358 (0.0000)
CC	49.7797 (0.0006)	46.2106 (0.0019)	103.023 (0.0000)	99.3648 (0.0000)
PS	36.8411 (0.0246)	39.6717 (0.0118)	99.3588 (0.0000)	98.8527 (0.0000)
RL	28.1764 (0.1699)	62.0049 (0.0000)	141.353 (0.0000)	105.648 (0.0000)

Source: Authors' calculation

Note: Schwarz automatic selection of the lag length has been used for the unit root tests; probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality; p-values are presented in the parentheses.



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