



Trade Openness, Institutions and Economic Growth of the Western Balkans Countries

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ABSTRACT

The Western Balkans Countries (WBC) represent a specific geoeconomic region. In the last three decades their economies have been affected by transition processes and opening. Progress of institutions implementing deep social reforms followed market reforms. The basic hypothesis is: independent variables Trade openness and Quality of institutions impact GDP growth. Dummy variables are also included in the paper (signing SAA and Candidate status), and so is the control variable (FDI inflow). The research covers 2005-2017. Panel analysis and Impulse response function in VAR model were applied. The results indicate statistically significant impact of the most variables on WBC economic growth. However, only the trade openness parameter shows positive direction. This implies that quality of institution was not sufficient to stimulate economic growth; it slowed down the growth. Impulse response function in Quality of institutions and GDP growth shows that, impulse growth "shock" of one standard deviation in Quality of institutions had positive effect on GDP growth in the first two years, whereas growth stagnated around initial level from year four. Impulse growth "shock" of one standard deviation of Trade openness caused GDP oscillations. It had negative effect on GDP up to year three, growth until year four and was around balanced from year five.

INTRODUCTION

The Western Balkans emerged as a geographical and geopolitical concept at the beginning of the XXI century. Use of the term Western Balkans has been intensified with the strengthening of the European Union's regional politics and new regional approach to the development of the Union and its periphery, including the Balkan region. Thus, the concept of the Western Balkans emerged

in this new phase of association of the Balkan countries that were not EU members. As a generally accepted geographical framework, the Western Balkans are all the more present in economic research. One of the authors that investigate various economic and social aspects of the development of the Balkans is Bartlett (2008). According to him, the Western Balkans comprise the former Yugoslav countries, without Slovenia and with Albania. The Western Balkans countries (WBC) have implemented deep economic reforms and undergone the most difficult phases of transition. Prior to the economic crisis (2008/2009) they had achieved significantly higher growth rates than they have today. However, the post-crisis period is accompanied by low, and in certain years even negative growth rates. With a low starting point, the majority of these countries are still in Europe's wake when it comes to the level of GDP per capita. This is why developmental issues have become crucial for their economic and general welfare. GDP growth rates still are the chief obstacle standing in their way to enter the "circle of the developed". Thus it comes as no surprise that there is such huge interest of researchers in the quantification of developmental factors with the aim of recognising their role and importance for growth and development, employment, living standard and welfare. This paper investigates the significance of trade opening towards EU, institutions and foreign investment for GDP growth. The investigation is conducted for the period 2005-2017.

This paper makes use of predictor variables to analyse the following: institutional changes measured using the sub-index of Institutions in GCI (WEF) and Trade openness measured as foreign trade coefficient. In addition to economic transition, there are ongoing wide institutional reforms. But the state of institutions is below the standards applied in EU. There is a high level of corruption in WBC, an inefficient local, regional and state administration, a lack of democratic potential, etc. The result is that the institutional gap is even wider than the other analysed factors. Besides these variables, the impact of trade openness of WBC economies towards EU is analysed. The WB countries are involved in the processes of development and partnership in numerous fields. The European Union signs international association agreements. Political stability is addressed first, then trade liberalisation, and finally EU free trading zone is established. Stabilisation and association process de facto comprises the following: contractual relation that makes up the Stabilisation and Association Agreement (SAA), asymmetric trade liberalisation, EU's financial help to candidate states (Eric, 2017), and the strengthening of regional cooperation. It is all about wide reform processes. However, despite positive changes due to trade liberalisation, there are economically afflicted sectors. In that context, the impact of SAA on GDP is analysed, whereby the SAA and the Candidate status with EU are the Dummy variables.

Following the 2008/2009 crisis instability reflected on investments. A chronic deficit in investments (particularly foreign ones) for accelerating growth was additionally problematised. A large body of research shows that the WB countries lack development investments (Popovic and Eric, 2018). Higher growth rates and structural changes are impossible without new investment. This is why growth in investments is urgent for the WBC, whereby FDI are generally considered to be possible solution for growth acceleration. However, FDI are not the only development factors.

The above indicated issues result in low growth rates, low GDP per capita, high unemployment, low competitiveness and the like. The EU association process of the countries that are not full members is slowed down. Therefore, if the WB countries intend to join EU quickly, they need to implement institutional changes and increase the inflow of investment. The result will be the following: GDP growth, structural changes with export orientation, growth of competitiveness and the like. The quantification of the impact of the stated growth factors as predictor variables on the GDP growth will be investigated by means of Panel analysis and Innovation analysis in VAR model (with Impulse response function - IRF).

1. LITERATURE REVIEW

Even though the transition to the market economy of the Western Balkans countries differs from country to country, the majority of them have undergone the main transitional changes. In these processes institutions have the key role. However, in spite of changes and reforms, there still exist in the Western Balkans countries institutional problems that are reflected on the economic growth. In certain countries, institutions are insufficiently efficient; in others, there is corruption, or democratisation has not been fully implemented, etc. Thus it comes as no surprise that there is such great interest in researching the significance of institutions for the economic growth and welfare, which is why papers in this area are numerous and comprehensive. Acemoglu et al. (2014) make use of cross-country and cross-regional regressions to show that when we focus on historically determined differences in human capital and control for the effect of institutions, the impact of institutions on long-run development is robust, whereas the estimates of the effect of human capital are much diminished and become consistent with micro estimates. They argue that these institutions determine the incentives of and the constraints on economic actors, and shape economic outcomes. Economic institutions that stimulate economic growth emerge when political institutions allocate power to groups with interests in broad-based property rights enforcement, when they create effective constraints on power-holders, and when there are relatively few rents to be captured by power-holders. Buterin et al. (2018) analyse the impact of institutional reforms on the economic growth of the new EU member states, with a special review of Croatia. They analyse the period from 1996 to 2012 with five predictor proxy variables that represent institutional reforms (Economic Freedom Index according to Heritage Foundation, Efficiency of Rule - WGI indicators according to the WB, Rule of Law - WGI indicator according to the WB, Corruption Perception Index according to Transparency International and Transitional Reforms Index according to EBRD). It has been shown that there is a significant connection between institutional reforms and the economic growth in transitional countries and Croatia. Siddiquia and Ahmedb (2013) analyse the impact of institutions on the economic growth by means of GMM panel and using global approach. The results of the analyses show that favourable institutions positively affect economic growth. This paper also shows that for a developing country the institutional and policy rent is more important than other two indices that curb political rents and those that reduce transaction risks. This study also highlights the positive complementarities between the index of political rents and the index of risk-reducing technologies. Ebaidalla (2014) analyses the linkage between institutions and the economic growth of 20 countries of the Sub-Saharan region in the period from 1985 to 2007, using dynamic panel based on GMM. The results show that institutional quality, in terms of low corruption, rule of law and efficient bureaucracy, has a positive impact on the economic growth in SSA countries. Moreover, the study revealed that the institutional quality in British colonies has a significant impact on growth, while in the case of French colonies the impact is found to be insignificant. Analysing the connection between institutions and the economic growth of WB, Pere (2015) has made interesting remarks. According to him, the proxy variables that the institutions make are to be called „good governance“ and consist of the following indicators: 1. Accountability of Governance, Political stability and lack of violence, Governance efficiency, Legal framework, Law enforcement and Corruption control. For the analysis of the connection between these variables he used the data of the World Bank in the period from 1996 to 2012. The conclusion he reached is that regarding the correlation of economic growth and good governance, the analysis of regression for the period 1996-2012 presents a messy dependence of economic growth on good governance level. In some cases the dependence of these indicators is negative (governance efficiency, regulatory framework and corruption), while in some other cases it is not statistically significant. Croatia with the most positive indices in governance has the most modest growth compared to the other countries. The statistical analysis shows that political stability, absence of violence (stb) and the strengthening of law enforcement (law) affect the growth of the same period, but this is not evident for other indicators. Statistical analysis shows that some aspects of good governance can be better

identified for their impact on economic growth, displaced in time. Governance accountability (acc) affects economic growth in future periods, which means it has a slower future impact.

The models of endogenous growth (Grossman and Helpman, 1991) have shown a link between openness to international trade, technology transfer channel and the economic growth. Authors of this theory argue that international trade provides a lot of benefits for a country: a) to learn from abroad via interactions and contacts between the traders of new production processes, new technical information, as this learning can increase domestic productivity; b) to use a wide variety of differentiated products that are created abroad, whereby domestic producers can exploit technology that is incorporated, and the stock of the country's knowledge accumulated by learning increases; c) to imitate production methods and foreign products, meaning that innovation costs and redundancies in research efforts will be reduced. Numerous authors have empirically demonstrated that countries open to trade are experiencing a faster economic growth (Chang et al., 2009). Rodriguez and Rodrik (2001) re-investigate critically the conclusion of previous cross-country studies that openness is associated with higher rates of growth. They argue that a variety of measures of openness used in previous studies are proxies for other policy or institutional variables and the results that openness enhances growth are not robust. On the other hand, the main distinctive characteristic of the recent papers on this issue lies in the use of the Generalised Method of Moments (GMM) estimator on panel datasets. In this way, endogeneity and invariant omitted variables bias could be tackled.

Chang et al. (2009) highlight that the positive relationship between growth and openness may be significantly improved if complementary policies are undertaken. Huchet-Bourdon et al. (2017) point out an interesting non-linear pattern between trade openness and growth when export quality is taken into account: trade may have a negative impact on growth when countries have specialised in low-quality products; trade clearly enhances growth once countries have specialised in high-quality products, and their export basket exhibits a minimum required level of quality. Therefore, there is some pattern of complementarity between trade dependency and trade in quality so that the higher the quality of the export basket, the greater the impact of the export ratio on growth. Even though part of the public and some authors in the Western Balkans countries doubt in the effects of FDI, the fact that FDI are virtually the sole solution for "covering" investment deficits in those countries is indisputable. That is, FDI are one of the key drivers of economic growth. Most authors start from this assumption and prove that the economic growth depends on the inflow of FDI. When it comes to the papers that see FDI as a factor of accelerating growth, competitiveness and investment in development, as well as better economic and productive performance at the microeconomic and macroeconomic level, the following study stand out: Buckley et al. (2005). During this decade, there has been a number of interesting studies on the role of foreign direct investment in stimulating economic growth and vice versa (Mahmoodi, and Mahmoodi, 2016). They conclude that FDI would have to be the driver of the economic growth, because foreign capital influences the growth of productivity, has a tendency towards export and impacts on the growth of profitability.

2. METHODOLOGY

2.1 Data

The databases used in this paper the most is the World Development Indicators (WB), from which the data about GDP growth and Trade openness has been taken. The data about institutional progress has been taken over from the WEF official reports on Global competitiveness report. The data on the year of the Western Balkans countries signing the SAA and Candidate status is the basis for dummy variables, and has been taken over from the European Commission website.

Table 1. The dependent and explanatory variables for the analysis and data sources

<i>Variable</i>	<i>Denotation in the model</i>	<i>Source</i>
<i>(A) Dependent variable</i>		
Real growth of Gross Domestic Product	Gdpgrowth	World bank
<i>(B) Explanatory variables</i>		
Quality of Institutions	InstitutionQu	The Global Competitiveness Report, World Economic Forum
Trade Openness	Tradeopenness	World Bank
<i>(C) Dummy variables</i>		
Stabilisation and Association Agreement	Saasign	European Commission
EU Candidate Status	CandidateEU	European Commission
<i>(D) Control variable</i>		
Foreign investment inflow	FDInflow	World bank.

Source: Created by the authors, using data from The World Bank (2019), The European Commission (2019), and the World Economic Forum (2005-2017).

A) Growth of Gross domestic product. This is the dependent variable in the model. It is calculated as the annual change of the GDP level (gross value added increased for taxes and subtracted for subventions). A comprehensive indicator of GDP comprises the market value of all final goods and services produced in a country in a certain time period (Mankiw, N.G., 2004). Therefore, GDP reflects the strength of economy, while the growth rate reflects economic progress in a given time period (as a rule - one year). GDP growth influences the growth of general welfare; hence the frequency of research into different factors that impact on the height and movement of GDP.

B) Trade openness, the variable in the model calculated via foreign trade coefficient, whose analytical expression is:

$$K_{ft} = ((X+M))/Y \quad (1)$$

where the sum of import and export (X+M) is in the numerator, and GDP (Y) in the denominator.

Quality of institutions is a variable that impacts on the competitiveness and economic growth. It is considered that the quality of institutions influences decisions on the selection of the location for economic activities and that it has a key role in distributing new values and incurring costs during the realisation of developmental policies and strategies. Analysis of progress and institutional quality is based on the composite pillar of institutions within the Global competitiveness index, for each observed country of the Western Balkans. The report makes use of 21 sub-indexes that serve for the final assessment of this indicator.

C) Stabilisation and Association Agreement is the dummy variable. It marks whether a country has signed the SAA with the EU. For the year in which SAA was not signed, the country gets the value 0, whereas for the year and period after signing the SAA it gets the value 1. The WB countries sign Association Agreements with EU and implement the process of stabilisation and association. Process is the initial phase of EU accession. The agreement includes stabilisation and transition of countries towards market economy, promotes regional cooperation and prepares the countries for EU membership. Economic aspects of SAA are complete trade opening towards EU and removal of

trade barriers. Candidate status for EU membership_{it} is the dummy variable. It marks whether a country has got Candidate status for accession to the EU. For the year in which candidate status has not been obtained, the country gets the value 0, whereas for the year and period after getting the Candidate status it gets the value 1.

D) Inflow of foreign investment. Theoretically, investments are a factor of macroeconomic balance and an important driver of the economic development. This is particularly relevant for developing countries. The Balkan region records chronic deficit, which is why the preference for attracting FDI is one of the ways of accelerating the growth of GDP and increasing the economic welfare in the Western Balkans countries.

The data on all variables has been collected for the WBC in the period from 2005 to 2017.

2.2 ANALYSIS TECHNIQUE

2.2.1 Panel analysis

One of the econometric techniques used in this paper is panel analysis. Two panel models are tested and the optimal model is decided on the basis of relevant tests. An advantage of panel analysis compared to multiple regression analyses is that it allows us to define and test complicated econometric models; panel data reduces the problem of multicollinearity. There are different models, independently pooled panels, fixed effect model and random effect model. This paper attempts to explain panels with fixed and random effect, while pooled model is not presented due to numerous restrictions.

Fixed effect model is a linear model in which the constant member changes with each observation unit whereby it is constant over the time, and is defined as:

$$Y_{it} = \alpha_i + \beta_1 \cdot x_{it1} + \beta_2 \cdot x_{it2} + \dots + \beta_k \cdot x_{itk} + \varepsilon_{it} \quad i = 1, \dots, N; t = 1, \dots, T \quad (2)$$

where N denotes the number of individual observations, T denotes the number of periods, x_{itk} , $k=1, \dots, k$ value of k-independent variable, i-unit observed in the period t. Parameter α_i is the constant member, different for each observation unit, and $\beta_1, \beta_2, \dots, \beta_k$ parameters are to be estimated. Parameter ε_{it} is the error term in the observation of i-unit in the moment t, whereby it is presumed that ε_{it} are independently and identically distributed random variables by observation units over time, with mean 0 and constant variance σ^2_ε . In addition, it is assumed that all x_{itk} are independent with ε_{it} for all i, t, k. Fixed effect model can be formulated by means of analytical form of dummy variable:

$$Y_{it} = \sum_{j=1}^N \alpha_j \cdot d_{ij} + \beta_1 \cdot x_{it2} + \dots + \beta_k \cdot x_{itk} + \varepsilon_{it} \quad i = 1, \dots, N; t = 1, \dots, T \quad (3)$$

where $d_{ij}=1$ provided that $i=j$, and opposite is $d_{ij}=0$. Based on this equation it can be concluded that for the evaluation of fixed effect model we need to estimate N parameters $\alpha_1, \alpha_2, \dots, \alpha_n$ with N dummy variable. The method of least square for the evaluation of fixed effect model is called the Least Square Dummy Variables, LSDV. Estimator attributes vary given the size of the sample i.e. given the number of periods and the number of observations units in the sample. The main disadvantages of this method are the loss of the level of freedom due to evaluation of a constant member for each observation unit, the phenomenon of multicollinearity between independent variables due to a great number of dummy variables, inability to assess a great number of observation units and the inability to use it in case of variables not depending on the time.

Random effect model presumes a simple linear model where the assumptions that observation units are randomly selected apply, so that the differences between the units are random. Accordingly, random effect model can be expressed as follows:

$$Y_{it} = \mu + \beta_1 \cdot x_{it1} + \beta_2 \cdot x_{it2} + \dots + \beta_{k1} \cdot x_{itk} + \alpha_i + \varepsilon_{it} \quad i = 1, \dots, N; t = 1, \dots, T \quad (4)$$

where μ denotes common constant member, and α_i random effect for each observation unit. Thereby, it is assumed that in this model α_i are independently and identically distributed random variables by observation units with the mean 0 and variance σ^2_α , while $\beta_1, \beta_2, \dots, \beta_k$ are parameters that should be estimated. The next assumption is reflected in that ε_{it} are independently and identically distributed random observation units in time, with the mean 0 and variance σ_ε .

2.2.2 Dynamic analysis

What follows is the analysis of the impact of the distinctive variable values from the previous period on the present and future values. General form of the dynamic-vector autoregressive (VAR) model with the domain of N variables and the lag length k is as follows:

$$Z_t = \mu + A_1 Z_{t-1} + \dots + A_k Z_{t-k} + \psi D_t + e_t \quad (5)$$

where n is the dimensional vector of potentially endogenous variables of the series (n x 1), A_1, \dots, A_k are square matrices of the autoregressive parameters of the series (n x n), D_t is the vector of non-stochastic exogenous variables with parameter matrix, e_t is the innovation vector, that is, n-dimensional vector process of the white noise with the expected value zero and covariance matrix (Juselius, 2006). The dynamic analysis procedure in this paper consists of innovation analysis with the impulse response function.

3. RESULTS

Prior to the formation of the econometric model, the correlation between the explanatory variables was examined in order to discover the possible problem of collinearity. This problem can disturb the estimate of parameter values, their significance and the direction of impact on the dependent variable. According to experience so far, there is no adjusted test for discovering multicollinearity in panel models. According to Baltagi (2008, 2015), empirical papers that use panel models for discovering multicollinearity problems deploy the correlation coefficients between pairs of potential independent variables.

Table 2. Correlation matrix between pairs of explanatory variables, GDP growth - dependent variable

	Gdpgrowth	Institution Qu	Trade Openness	Saassign	Candidate Eu	FdiInflow
GdpGrowth	1.00					
InstitutionQu	-0.23	1.00				
TradeOpenness	0.11	0.03	1.00			
SaaSign	-0.41	0.33	0.07	1.00		
CandidateEu	-0.19	0.47	0.23	0.41	1.00	
FdiInflow	0.12	0.12	-0.25	-0.23	-0.23	1.00

Source: Authors' calculation in Eviews programme

Correlation test shows that the explanatory variable pairs should not cause the multicollinearity problem because the correlation is markedly weak in all cases. Therefore, correlation coefficients are not at the level which could lead to the multicollinearity problem. The following table shows the results of the panel model. The results of the application of the model with fixed effect show that the Institution Quality, Trade openness, Saasign dummy variables parameter was evaluated as statistically significant. InstitutionQu and Saasign are variables with a negative sign in the explanation of the variations of the dependent variable at the significance level of 5%. Tradeopenness is the only significant variable with a positive sign in the explanation of the variations of the dependent variable. The impact of Fdiinflow was not evaluated as statistically significant, because the probability of t-statistics by far exceeds the border value of 5%. The last section of the assessed model shows the total quality of the model. Coefficient of determination ($R^2=0,42$) implies that 42% of the total GDP variations is explained by predictor variables in the model. The value of F-statistics (with the significance level of 5%) indicates that the explanatory variables simultaneously achieve a significantly acceptable impact on the dependent variable (the value of F test is 4,75, and the probability is lower than 0,1%, which is statistically acceptable).

Table 3. Panel analysis results

Variable	Fixed effect model		Random effect model	
	Prob	t-Statistic	Prob	t-Statistic
c	0.0956	1.690601	0.0974	1.679250
InstitutionQu	0.0060*	-2.83731	0.2198	-1.237826
Tradeopenness	0.0018*	3.25652	0.0993	1.669974
Saasign	0.0196*	-2.40378	0.0012*	-3.362361
CandidateEU	0.9067	-0.117643	0.9161	0.105759
Fdiinflow	0.6444	-0.463651	0.3499	0.940870
R-squared	0.4152		0.2079	
Adjusted R-squared	0.3279		0.1528	
F-statistic	4.756841		3.7787	
Prob (F-statistic)	0.000039		0.00430	

Source: Authors' calculation in Eviews programme, * denotes 5% significance

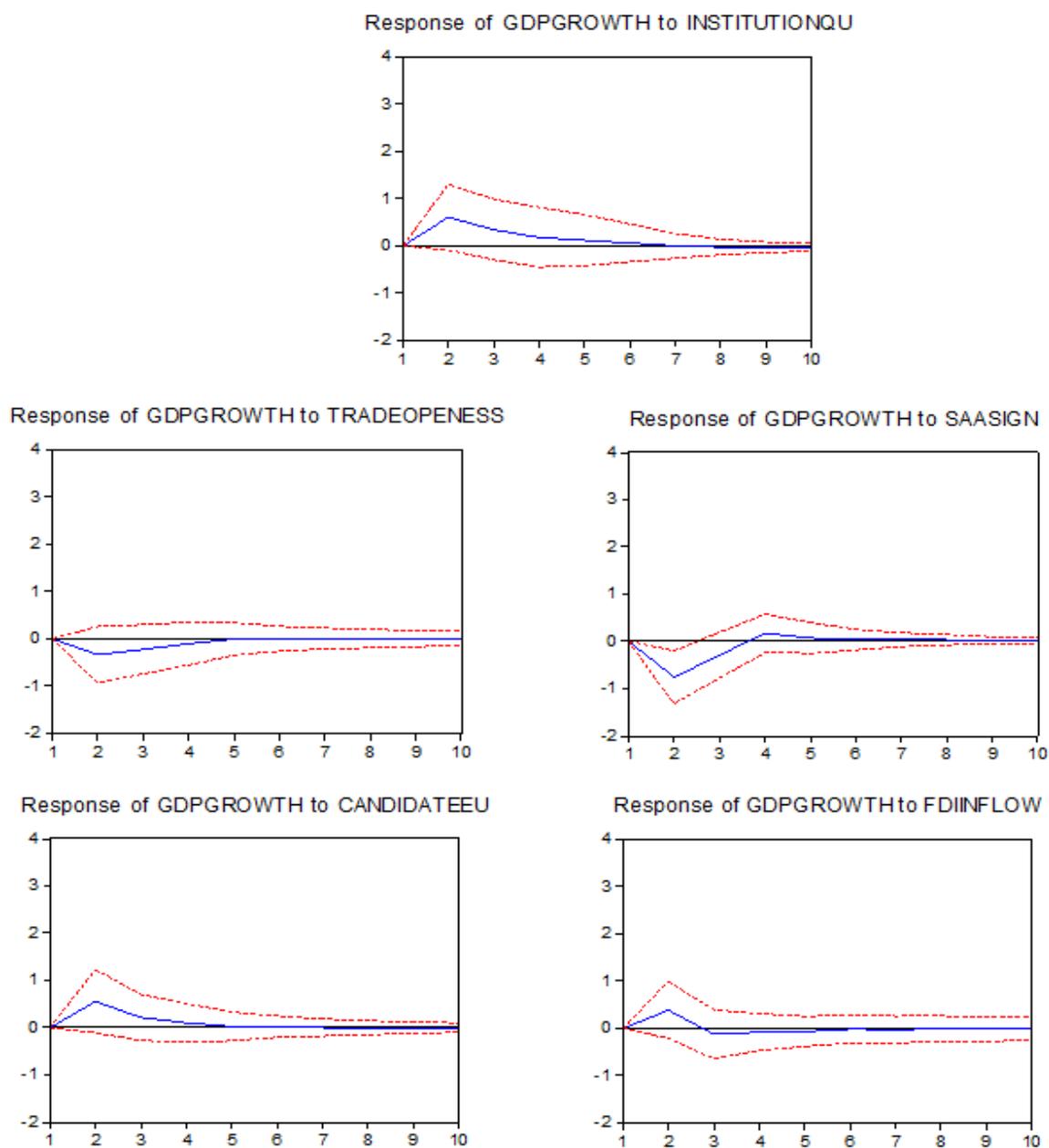
Model comparison. Hausman test is used in comparing evaluated coefficients of the model with fixed and the one with random effect (Hausman, 1978). If the null hypothesis is not rejected, it can be concluded that the random effect estimator is more efficient. However, if the null hypothesis is rejected, it is to be concluded that the random effect estimator is not consistent, that is, it refers to using the fixed effect estimator. The results of Hausman test show the value of 23,75. The calculated probability of the test is less than the significance level of 5%. The result implies acceptance of the model with fixed effect as adequate in explaining the variations of the dependent variable with predictor variables.

Table 4. Hausman test results

Test Summary	Chi-Sq. Sta- tistic	Chi-Sq. d.f.	Prob.
Cross-section random	23.75	4	0.0002

Source: Authors' calculation in Eviews programme

Figure 1. Impulse response function of the GDP growth variable with changes of explanatory variables



Source: Authors' calculation in Eviews programme

Results of the Impulse responsive function (IRF). Innovation analysis with impulse response function was used for establishing the connection between the predictor variables and economic growth in the dynamic system. Result: impulse of one standard deviation in explanatory variables impacts on the GDP growth variable. The impulse response function represents the impact of the "shock" of one standard deviation in individual variables onto the unit "shock" in endogenous variables of the system. Changes in individual variables via dynamic system structure of the model impact on the present and future values of all endogenous variables (Swanson, and Granger, 1997). Impulse response function is analysed graphically or by means of a table (in this research, the graphical analysis of the impulse response function is used). Analysis of the impulse response function uses orthogonalisation of residual deviations. A limiting factor of the innovation analysis is the sensibility of the procedure of orthogonalisation to variable order (Lütkepohl, and Reimers, 1992).

Impulse response function in Quality of institutions and GDP growth shows that over extrapolation period 2018-2028, impulse growth "shock" of one standard deviation in Quality of institutions had positive effect on GDP growth in the first two years, while growth stagnated around initial level from year four. Impulse growth "shock" of one standard deviation of Trade openness caused GDP oscillations. It had negative effect on GDP up to year three, growth until year four and was around balanced from year five. "Shock" increase of one standard deviation in the SAA variable results in a steep fall in the first two years, whereas the most significantly positive impulse is present in the third and fourth year. However, from the fourth year until the end of the period, the impulse acts stagnantly on the movement of the economic growth. "Shock" increase of one standard deviation in the FDI variable results in oscillating changes of GDP. Impulse reaches its peak in the second year, and then sharply falls in the third, while acts stagnantly from the fourth year onwards. At the end of the period it comes close to the level of the initial impact. The impact of the remaining explanatory variable (Candidates status for EU) on the growth in the innovation analysis is similar. The relation between CandidateEU and economic growth shows that the impulse of CandidateEU in the first two years is markedly positive for the economic growth, while stagnating around the level from the beginning of the period from the fourth year onwards.

CONCLUSIONS

Economic growth is the key issue for every country. High GDP growth rates, structural changes and social reforms are the activities required to be undertaken by every transitional country on their way towards market economy and democratisation. This applies to WB countries as well. Previous research has confirmed that GDP growth and welfare of the Western Balkans countries depend on the growth, continuity and effectiveness of investment in many sectors. Apart from economic investments, greater investments into the public sector are required as well. Most WB countries have not completed institutional reforms yet. Institutions are not as efficient as they should be. Corruption and other forms of eroding the social norms have not been uprooted yet. This is a serious obstacle for a greater GDP growth. Even though it is changing, general business environment in the WBC is not sufficient for greater growth. This jeopardises GDP per capita, employment, export, other macroeconomic indicators and general welfare state.

Using panel analysis, the conclusion has been reached that converges with relevant scientific and theoretical views in this area. Panel analysis with fixed effect, which was chosen by means of Hausman diagnostic test as adequate for the assessment of parameters in the model, shows that the Institution quality, Trade openness, and Saasign dummy variables parameters were evaluated as statistically significant. InstitutionQu and Saasign are variables with negative sign in the explanation of variations of the dependent variable at the significance level of 5%. Tradeopenness is the only significant variable with positive sign in the explanation of the variations of the dependent variable. The impact of Fdiinflow was not assessed as statistically significant, because the probability of t-statistics by far exceeds the border value of 5%. The value of F test, which amounts to

4.75, and probability lower than 0.1%, point to the conclusion that the chosen explanatory variables simultaneously and significantly affect GDP as the dependent variable. It follows that in the period 2005-2017 institutions, and trade opening affected growth, but they also delayed it to a certain extent, which in particular refers to the Quality of Institutions.

The establishment of connection between the predictor variables and GDP growth was done by means of innovation analysis using impulse response function (IRF). The results have shown that the impulse of one standard deviation in explanatory variables impacts on the GDP variable only in the initial years. Impulse growth "shock" of one standard deviation in Quality of Institutions had positive effect on GDP growth in the first two years, while growth stagnated around initial level from year four. Impulse growth "shock" of one standard deviation of Trade openness caused GDP oscillations. It had negative effect on GDP up to year three, growth until year four and was around balanced from year five. "Shock" increase of one standard deviation in the SAA variable results in a steep fall in the first two years, whereas the most significantly positive impulse is present in the third and fourth year. However, from the fourth year until the end of the period, the impulse acts stagnantly on the movement of the economic growth. "Shock" increase of one standard deviation in the FDI variable results in oscillating changes of GDP. Impulse reaches its peak in the second year, and then sharply falls in the third, while acting stagnantly from the fourth year onwards. At the end of the period it comes close to the level of the initial impact. The relation between Candidate EU and economic growth shows that the impulse of Candidate EU in the first two years is markedly positive for the economic growth, while stagnating around the level from the beginning of the period from the fourth year onwards. Generally, innovation analysis shows that not even abrupt changes in the observed variables would influence growth rate increase in the long run. The continuation of institutional and structural reforms, as well as open economy are necessary. However, these changes in the WB countries have to be implemented in the long run and continually. What the innovation analysis shows is that no shocks can lead to faster economic growth and welfare.

The final conclusion is that greater trade liberalisation with the preference for export, institutional reforms, inflows of FDI, structural changes, as well as strengthening of cooperation with the European Union have a long-term effect on a faster economic growth of the Western Balkans countries.

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