THE EFFECTS OF CORRUPTION ON INNOVATION AND COMPETITIVENESS THE CASE OF SEE COUNTRIES

Goran Buturac[1], Svetlana Ignjatijević[2]

Abstract

The paper deals with the analysis of interdependence between innovation, corruption and global competitiveness in the selected countries in transition. In addition to gaining new knowledge on the competitive position of individual countries in the observed sample, the aim of the paper is to identify the key areas where reforms for raising the level of innovation and competitiveness are needed in the analyzed countries. The research included the following countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Hungary, Macedonia, Montenegro, Romania, Slovenia and Serbia from 2007 to 2016. The examination of the direction and strength of the association was conducted by using Pearson linear correlation coefficient. The results indicate that corruption perception, innovation and competitiveness were in decline during the initial years of transition. Afterwards, there was an improvement in the observed indicators with the growth of openness and the degree of integration of these countries into institutionally and economically more developed Western Europe countries. Although the impact of corruption on innovation and competitiveness is of a different intensity among the countries, the results of the analysis confirm the expectations that the continued growth and openness and economic integrations could result in the reduction of corruption, increase in innovation and competitiveness, as well as in the convergence of the strength of interdependence of these variables among the countries.

Key words: *innovation, competitiveness, corruption*

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Introduction

Modern society is forced to maintain a certain level of competitiveness in an attempt to survive on the international stage. The challenges the modern economies face are numerous. Corruption is certainly the most negative phenomenon, even though it has existed in every society during every period; only its manifestations, intensity and consequences differ. There are many different definitions in literature, and authors agree that it is illegal, reciprocal, yet a voluntary phenomenon. According to Tanzi (1998), corruption represents the abuse of public power and he concludes that the abuse is sometimes not directly related to the private benefit "but but for the benefit of one's party, class, tribe, friends, family, and so on" (p. 564). Vuković (2005) states that the scope, type and intensity of corruption depend on characteristics of state regulations, "state interference in the economy, scope of transactions under direct and indirect state control, efficiency of the penal system, socio-historic circumstances, material development of a society and state of social values" (p. 138) .Esadze (2013) points out that "corruption is much more than a simple sum of so-called corruption offenses listed in the national criminal legislation" (p. 3). Đukić (2016) points out that corruption leads to the abuse of public and economic functions and official capacity in the public sector, whereas Prokopijević (2011) adds that a corrupted individual is dishonest, prone to nepotism, embezzlement, blackmails and moral depravity in mutual exchanges. As far as the negative influence on society is concerned, it first and foremost refers to the fact that it affects all countries, rich and poor – with a certain divergence in how much it is present and how much negative influence it has on aspects of social life (Vejnović, 2010). Vejnović (2010) concludes that the mentality of country residents plays an important part in the development of a corrupt society, and that in such society people have a difficult time in realizing their legal rights as well. A society becomes nontransparent, unattractive, and finally uncompetitive. The analysis of the factors responsible for the appearance of corruption points to countries that have issues in economic and human development. Firstly, it is necessary to indicate that countries with the issue of limited resources (food, energy, foreign currency, import-export limitations, etc.) have a higher rate of corruption. Poor state of public services, education and science as well, is indicated as the second factor. Low salaries or unprofessionalism of public servants can also be the reason for the intensification of corruption. The existence of tax evasion, as well as all other forms of avoiding obligations towards the state, represent the third cause of corruption.

Competitiveness of national economies depends on a number of factors, and education, research and development play a significant part. In the past, economic development relied on natural resources and cheap labor, whereas today developed countries invest significant funds into the development of human potential. According to Toffler (1975) education should "increase the individual's "cope-ability" the speed and economy with which he can adapt to continual change. And the faster the rate of change, the more attention must be devoted to discerning the pattern of future events." Being competitive on the global market implies "the improvement of all knowledge creation activities and its application in different areas. Such activities primarily imply innovations, research and development, education and workforce training" (Krstic et al, 2013, p. 142). According to Wickham (2001), a knowledge-based economy rests on "stimulating ambiance". Such conditions should enable and reinforce creativity, develop gained and new knowledge. As Krstić et al. (2013) states innovations and R&D have a role to "connect companies, research centers, universities and other public organizations" (p. 142) so as to keep up with global trends. Prodanović and Milošević (2013) point out that innovations are a desirable and necessary means of global competitiveness, referring to them as "a dynamic category", "a strategic factor" and "an essential part of the economic development model of every country" (p. 247). In the conditions of global market development, innovative economies and knowledge-based economies have preconditions for global competitiveness. Prodanović and Milošević (2013) point out that countries that "put an emphasis on knowledge, innovation, research and continuing education, have better chances not only for survival, but for further growth as well". Nowadays, knowledge is everywhere around us, in products, services. Simply put, it is the subject of purchases and sales; it influences modernization of the manufacturing and organization process. The results of innovative processes are: increase in productivity, creation of new products, new manufacturing processes, which can be categorized as micro effects. On the other hand, we can discuss the macro effects, such as increase in GDI, manufacturing and price competitiveness, positive foreign trade balance, and other.

The relationship between competitiveness of national economies, innovation process and corruption in society arises as a logical question. Human capital is the key factor for economic growth as it influences its expansion and development. As Horvat Novak (2015) points out, the significance of human capital has been proven in all modern economic research. The author suggests that healthcare and education enable the

creation and usage of human potential, while criminal and corruption represent the limiting factors of its development. Thus it can be concluded that innovation has a positive influence, whereas corruption has a negative influence on the competitiveness of an economy. For this reason, the research deals with the analysis of interdependence between innovation, corruption and global competitiveness in selected countries in transition. Alongside with gaining new knowledge about the competitive position of individual countries in the observed sample, the aim of this paper is to identify key areas in the analyzed countries where reforms for raising the level of innovation and competitiveness are necessary.

Methodological basis and data sources

The methodological basis of this paper is based on the application of Corruption Perception Index (CPI), Global Innovation Index (GII), and Global Competitiveness Index (GCI)[3]. The subject of correlation analysis is examination of the strength of interdependence between corruption perception, innovation and competitiveness. The selected variables are Corruption Perception Index, Global Innovation Index and Global Competitiveness Index. The examination of direction and strength of interdependence between these three indexes was conducted by correlation analysis. The observed sample consists of 10 countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Hungary, Macedonia, Montenegro, Romania, Slovenia and Serbia. The reference period is from 2007 to 2016; for Global Innovation Index from 2008 to 2016. The examination of the strength of relationship was conducted by using Pearson's linear correlation coefficient. That is the covariance of the standardized variables X and Y. It is calculated with the following formula:

$$r = \frac{\sum_{i=1}^{n} x_i y_i - n\overline{xy}}{n\sigma_x \sigma_y}$$

[3]Method for the calculation and the interpretation of Corruption Perception Index (CPI), Global Innovation Index (GII) and Global Competitiveness Index (GCI) are presented in the analytical part of the paper (Chapter 3 - Indicators of corruption perception, innovation and competitiveness of the selected countries in transition).

Or alternatively:

$$r = \frac{\sum_{i=1}^{n} x_i y_i - n\overline{xy}}{\sqrt{\left(\sum_{i=1}^{n} x_i^{\,2} - n\overline{x}^2\right)\left(\sum_{i=1}^{n} y_i^{\,2} - n\overline{y}^2\right)}}$$

The coefficient takes values from the closed interval between -1 and 1. A value of zero indicates that there is no linear correlation, a value of plus one indicates perfect positive fit, and minus one indicates perfect negative fit. The closer the value of coefficient is to 1, the stronger the linear relationship. Lesser coefficient value does not necessarily indicate the weak relationship between the variables, since there can be very strong correlation between the variables, but curvilinear, thus the application of linear correlation coefficient is not appropriate in such case. The data from Transparency International, The World Economic Forum and The World Bank were used as the sources of information for Corruption Perception Index, Global Innovation Index and Global Competitiveness Index.

Indicators of corruption perception, innovation and competitiveness of the selected countries in transition

Corruption Perception Index (CPI)

According to Transparency International (TI), corruption is the abuse of entrusted power for private gain that eventually hurts everyone who depends on the integrity of people in a position of authority. State chapters of Transparency International measure corruption in every sector in their countries. Therefore, CPI does not represent the assessment of the state of corruption, it rather represents the survey results on how business people perceive each area of business. The aim of creating CPI is to recognize the level of corruption in societies, enable comparative analysis by countries in a certain time frame, conduct a scientific analysis of the samples and offer specific suggestions for the improvement. The value of index is in the range from 0 to 100 index points. The value of 100 represents “clean” countries, that is countries with no corruption, and 0 represents extremely corrupt countries.

Transparency International data for 2015 are presented below. Countries with the lowest and the highest level of corruption perception are presented.

Table 1 *The least and the most corrupt countries in the world in 2015*

	Country	Rank	Score (0-100)	Country	Rank	Score (0-100)
1	Denmark	1	91	Myanmar	147	22
2	Finland	2	90	Burundi	150	21
3	Sweden	3	89	Cambodia		21
4	New Zealand	4	88	Zimbabwe		21
5	The Netherlands	5	87	Uzbekistan	153	19
6	Norway		87	Eritrea	154	18
7	Switzerland	6	86	Syria		18
8	Singapore	7	85	Turkmenistan		18
9	Canada	8	83	Yemen		18
10	Germany	9	81	Haiti	158	17

Source: *Transparency International (2015)*

While a small number of countries has made progress, generally speaking, the region is still in stagnation. The governments want to make changes, but carrying them into effect is a different story. The fact that the situation is deteriorating in countries such as Hungary, Macedonia, Spain and Turkey is worrying. These are the countries where there was a hope for a positive change. Currently, it can be observed that corruption is increasing, while democracy is in decline. The Nordic countries are at the top – Denmark, Finland, and Sweden are in the top three, and Norway is not far below as well. Yet, we are witnesses to a great number of instances of corruption in the most developed countries and in the Balkan countries as well. The situation is significantly worse in Azerbaijan, Kazakhstan, Uzbekistan and other countries, where the governments restrict or eliminate public and media.

Table 2 *CPI in former socialist countries in Europe in 2015*

Country	CPI	Country	CPI
Estonia	70	Montenegro	44
Poland	62	Macedonia	42
Lithuania	61	Bulgaria	41
Slovenia	60	Serbia	40
The Czech Republic	56	Bosnia and Herzegovina	38
Latvia	55	Albania	36
Georgia	52	Armenia	35
Hungary	51	Moldova	33
Slovakia	51	Russia	29
Croatia	51	Ukraine	27
Romania	46		

Source: *Transparency International (2015)*

Among the observed countries, most of the former socialist countries have a higher ranking than Serbia. Estonia and Poland are rated very high and they are at the very top. Data suggest that Russia, according to the CPI value, is a highly corrupt country, although some major reforms have been implemented and there has been an increase in GDI. The analysis of CPI in Serbia indicates that during the reference period, the value of index has slightly changed. From 2003 to 2015, in most of the countries a small symbolical progress was made, while in 2008, 2010, 2014 and 2015 there was no change whatsoever. Until 2011, CPI had ranged from 1 to 5, where the majority of countries had a score up to 3. Since 2011, the value of index has been in the range from 1 to 100. The lowest index value represents the highly corrupt countries, whereas the value 100 represents free countries.

Table 3 *CPI of the countries in transition from 2007 to 2016*

CPI	RO	MNE	HR	HU	SL	SRB	BG	ALB	BIH	MK
2016	48	45	49	48	61	42	41	39	39	37
2015	46	44	51	51	60	40	41	36	38	42
2014	43	42	48	54	58	41	43	33	39	45
2013	43	44	48	54	57	42	41	31	42	44
2012	44	41	46	55	61	39	41	33	42	43
2011	3,6	4	4	4,6	5,9	3,3	3,3	3,1	3,2	3,9
2010	3,7	3,7	4,1	5	6,4	3,5	3,6	3,3	3,2	4,1
2009	3,8	3,9	4,1	5,1	6,6	3,5	3,8	3,2	3	3,8
2008	3,8	3,4	4,4	5,1	6,7	3,4	3,6	3,4	3,2	3,6
2007	3,7	3,3	4,1	5,3	6,6	4	4,1	2,9	3,3	3,3

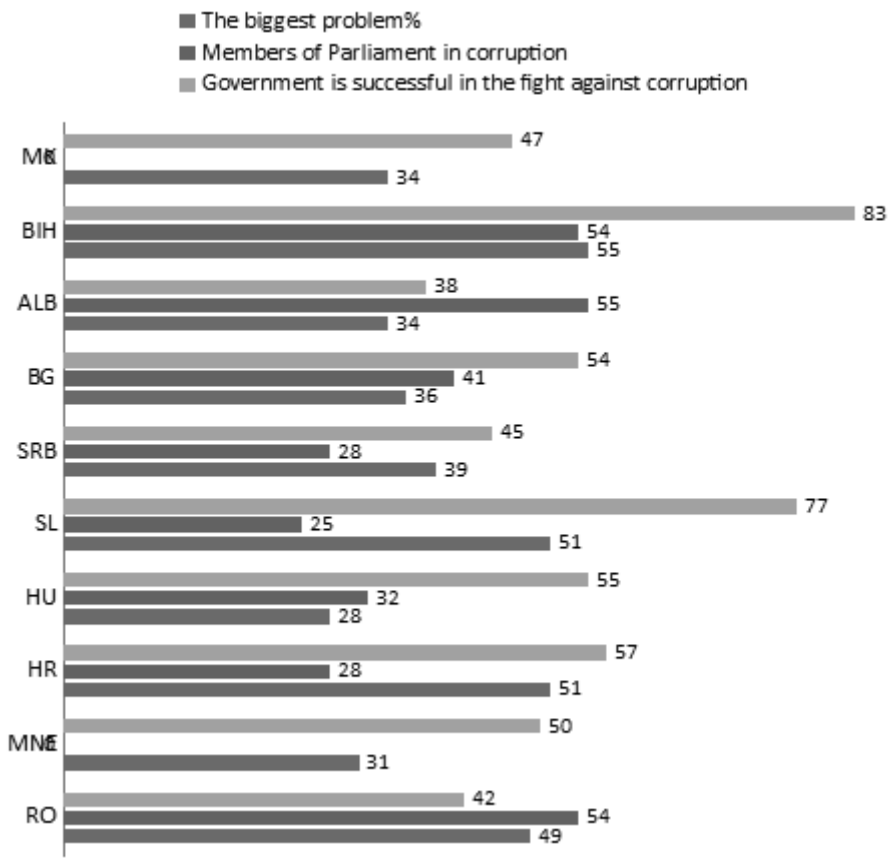
Source: *Transparency International (2015)*

There has been an insignificant change in the index in most of the countries (Romania, Montenegro, Slovenia, Serbia, Albania and Bosnia and Herzegovina). However, corruption perception has become worse in Croatia and Macedonia, whereas in Bulgaria, there has been a period of stagnation. Therefore, Serbia is still ranked as a country with widespread corruption. Transparency Serbia has been pointing out to the problems, accusations, disputes without judgment, and a number of vexed questions related to financing and control of political campaigns. The organization believes there have been no reforms of public administration, improvement of the work of inspection services – simply put, the analysis of Corruption Perception Index for 2015, leads to the conclusion that there has been no progress in the fight against corruption. To overcome the existing situation, laws have to be tightened. There is anticorruption legislation in books, i.e. in theory, but something is missing in application. Country governments have to control the political corruption and the reforms in the financial sector, and for that, a transparent system and free media are necessary.

Below are the results of the research conducted by Transparency International during 2016. The first question refers to the opinion of respondents whether corruption is one of the three biggest issues the government has to resolve in their country. The data show the percentage of respondents who said that "corruption" or "bribery" is one of the three biggest issues. The second question refers to corruption perception in the context of members of the parliament. The data show the percentage of respondents who said "the majority" or "all" members of the parliament are involved in corruption. The third question refers to the opinion of

respondents on how successfully the government is fighting corruption. The data show the percentage of respondents who said their government "is not doing well" in fight against corruption. The data obtained from the three survey questions are represented for each country.

Figure 1 *The percentage of respondents who believe corruption is one of the three biggest issues in the country*

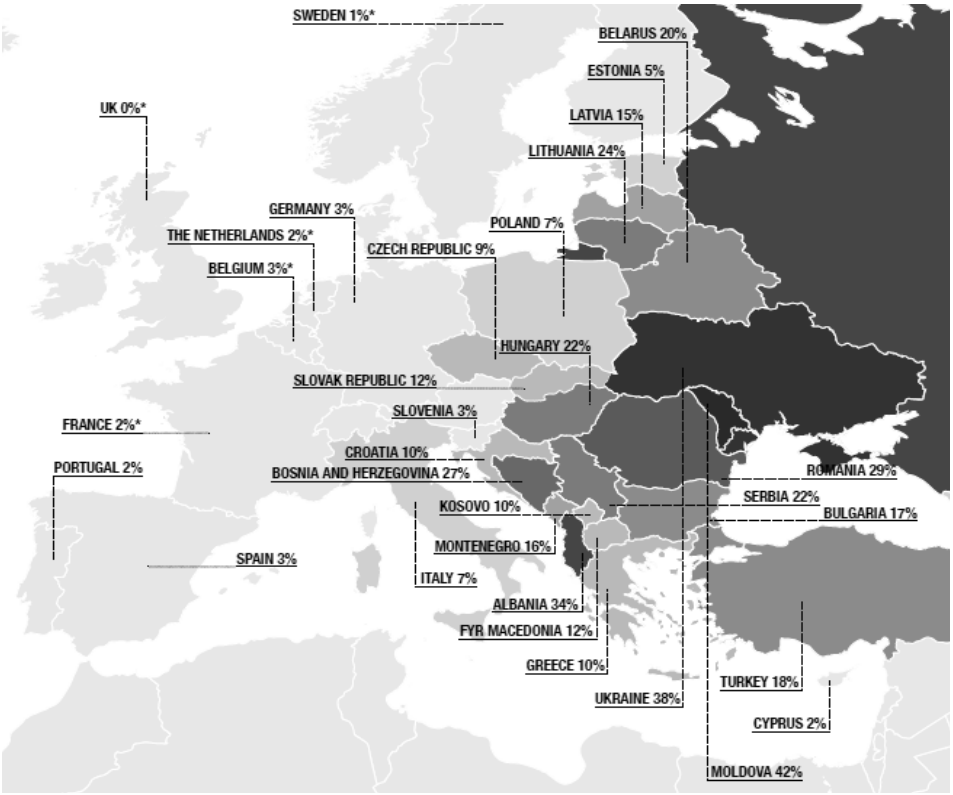


Source: *Authors' interpretation based on Coralie Pring (2016). People and corruption: Europe and Central Asia: Global Corruption Barometer, Publisher: Transparency International*

The research suggests that people in Bosnia and Herzegovina and Slovenia have the most positive attitude, whereas in Albania, there is a widespread opinion that the government has not been successful in fighting against corruption. In other analyzed countries, the attitude is uniform, and it spans from 42-57% respondents. When it comes to the second indicator

(corruption is the biggest problem in the country), respondents' attitudes range from 28-55%. The lowest percentage is present in Hungary, which indicates that respondents believe corruption is not the predominant issue and that there are other problematic areas, that is, that the government is successful in fighting against corruption. In Romania, Bosnia and Herzegovina and Albania, respondents believe the highest percentage of members of the parliament are corrupt, whereas in Slovenia, Croatia and Serbia, that percentage is very low.

Figure 2 *Bribery rates across Europe and Central Asia*



Source: *Coralie Pring (2016). People and corruption: Europe and Central Asia: Global Corruption Barometer, Publisher: Transparency International*

Figure 2 is showing countries according to the percentage of bribery, based on the Global Barometer data. It can be concluded that the highest bribery rate among the analyzed countries is present in Albania, Romania, Bosnia and Herzegovina, whereas Slovenia has the highest ranking, i.e. it has the lowest rate.

Global Competitiveness Index – GCI

When talking about competition, we start with Porter's attitude (2008) that national prosperity is created, not inherited. Ignjatijević et al (2016) pointed out that "national competitiveness has become one of the main preoccupations of governments and economies in every country, and that each country is different in the degree of competitiveness as well**,** and no country is competitive in every sector." The question is, what makes one country and economy more competitive and how is competitiveness measured? Milojević, Cvijanović and Ignjatijević (2012) pointed out that the economics, that is macroeconomics, has developed a system of global indicators that describe economic activity in a certain country. The aim of so-called macroeconomic aggregates is the quantitative analysis of economic development and the possibility of comparing global indicators of multiple countries. Global Competitiveness Index (GCI) is defined by World Economic Forum. GCI is a composite index composed of twelve "pillars of competitiveness", divided into three groups. The first group includes the following pillars: (1) Institutions (2) Infrastructure (3) Macroeconomic environment (4) Health and Primary Education. The second group includes: (5) Higher Education and Training (6) Goods Market Efficiency (7) Labor Market Efficiency (8) Financial Market Development (9) Technological Readiness and (10) Market Size. The third group includes two pillars: (11) Business Sophistication and (12) Innovation. As WEF points out, these pillars include microeconomic and macroeconomic factors of the development of institutions, that is factors of competitiveness of a national economy.

Table 4 *GCI of countries in transition from 2007 to 2016*

GCI	RO	MNE	HR	HU	SL	SRB	BG	ALB	BIH	MK
2016	4,3	4,1	4,1	4,2	4,4	4	4,4	4,1	3,8	4,2
2015	4,3	4,2	4,1	4,2	4,3	3,9	4,3	3,9	3,7	4,3
2014	4,3	4,2	4,1	4,3	4,2	3,9	4,4	3,8		4,3
2013	4,1	4,2	4,1	4,2	4,3	3,8	4,3	3,8	4	4,1
2012	4,1	4,1	4	4,3	4,3	3,9	4,3	3,9	3,9	4
2011	4,08	4,27	4,08	4,36	4,3	3,88	4,16	4,06	3,83	4,05
2010	4,16	4,36	4,04	4,33	4,42	3,84	4,13	3,94	3,7	4,02
2009	4,11	4,16	4,03	4,22	4,55	3,77	4,02	3,72	3,53	3,95
2008	4,1	4,11	4,22	4,22	4,5	3,9	4,03	3,55	3,56	3,87
2007	4	3,9	4,2	4,4	4,5	3,8	3,9	3,5	3,6	3,7

Source: *WEF (2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016.)*

One common characteristic of the majority of the observed countries is the improvement in Global Competitiveness Index ranking from 2007 to 2016. However, the index values indicate that the growth dynamic is relatively slow. Moreover, it is interesting to note that the economically developed countries in the observed group, such as Hungary or Slovenia record the drop in the index ranking. Looking at Serbia separately based on the World Economic Forum 2015 report, it is ranked at the 94th place on the list that includes 140 countries, with Global Competitiveness Index (GCI) value of 3.89, which is 0.01 lower compared to the previous year.

Global Innovation Index (GII)

Global Innovation Index (GII) is an evolving project that builds on its previous editions while incorporating newly available data and that is inspired by the latest research on the measurement of innovation. GII is monitored for EU members and two former SFRY countries: Serbia and Macedonia. GII relies on input and output sub-index. The input sub-index consists of: (1) Institutions, (2) Human capital and research, (3) Infrastructure, (4) Market sophistication, and (5) Business sophistication, and the output sub-index consists of: (6) Knowledge and technology outputs and (7) Creative outputs.

The Innovation Index should enable the evaluation of areas which require an effort for improving innovative performances. As the index creators point out: "To achieve a high level of performance, countries and regions need a balanced innovation system performing well across all dimensions. They need an appropriate level of public and private investment, effective innovation partnerships among companies and with academia, as well as a strong educational basis and excellent research. Also, the economic impact of innovation needs to manifest itself in terms of sales and exports of innovative products as well as in employment". According to EIS 2016 Report, EU countries are divided into: *Innovation Leaders:* Denmark, Finland, Germany, the Netherlands and Sweden; *Strong Innovators* - Austria, Belgium, France, Ireland, Luxembourg, Slovenia, and the United Kingdom; *Moderate Innovators* - Croatia, Cyprus, the Czech Republic, Estonia, Greece, Hungary, Italy, Latvia, Lithuania, Malta, Poland, Portugal, Slovakia, and Spain; *Modest Innovators* - Bulgaria and Romania.

In-depth analysis by countries shows that the leaders are: in quality of academic research – Sweden; in financial framework conditions – Finland; Companies that invest a lot in innovation – Germany; in innovation

networks and collaboration - Belgium and in innovation in small and medium-sized companies (SMEs) – Ireland.

Table 5 *GII of countries in transition from 2011 to 2016*

GII	RO	MNE	HR	HU	SL	SRB	BG	ALB	BIH	MK
2016	37,9	37,36	38,29	44,71	45,97	33,75	41,42	28,38	29,62	35,4
2015	38,2	41,23	41,7	43	48,49	36,47	42,16	30,74	32,31	38,03
2014	38,08	37,01	40,75	44,61	47,23	35,89	40,74	30,47	32,43	36,9
2013	40,3	41	41,9	46,9	47,3	37,9	41,3	30,9	36,2	38,2
2012	37,8	40,1	40,7	46,5	49,9	40	40,7	30,4	34,2	36,2
2011	36,83	/	37,98	48,12	45,07	36,31	38,42	30,45	30,84	33,47

Source: https://www.globalinnovationindex.org/home

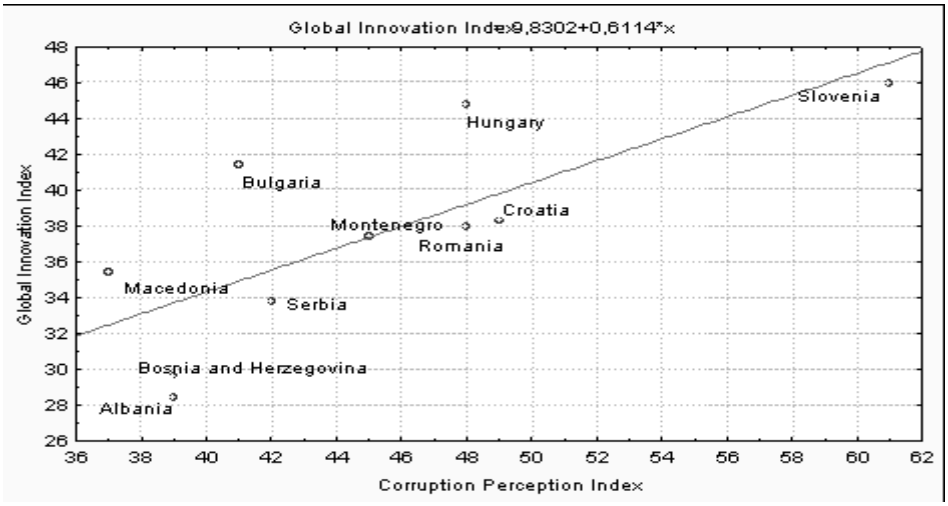
The values of Global Innovation Index presented in the table 5 confirm that in the observed group of countries, EU members display a higher degree of innovation. As expected, the greatest degree of innovation in 2016 is present in Slovenia, economically most developed country. At the same time, the lowest degree of innovation is present in Albania. Dynamic of Global Innovation Index from 2011 to 2016, suggests that in the observed countries, the index has declined (Hungary, Serbia, Montenegro, Bosnia and Herzegovina and Albania) or is improving relatively slowly (Romania, Croatia, Slovenia, Bulgaria and Macedonia).

Results

The results of the analysis from the previous chapters, where the horizontal analysis of the corruption level, innovation and competitiveness in the selected countries was carried out, confirm the existence of structural changes in institutional and innovation capacities building, and changes in the level of competitiveness. Considering the fact that the results are heterogeneous across countries, the difference in the strength of interdependence of the three observed variables in each analyzed country is something to be expected. A common characteristic for all countries is a noticeable degradation in corruption perception, decline in innovation and competitiveness during the first years of transition. Yet, during the years afterwards, with the growth of openness and the degree of integration of these countries into the institutionally and economically more developed space of western European countries, there was an improvement in the observed indicators.

At the very beginning of the correlation analysis, the strength of the reducing corruption effect on the innovation development in the observed countries was examined. Correlation coefficient between the corruption perception index and global innovation index was calculated.

Figure 3 *Correlation between corruption perception and innovation in the analyzed countries*



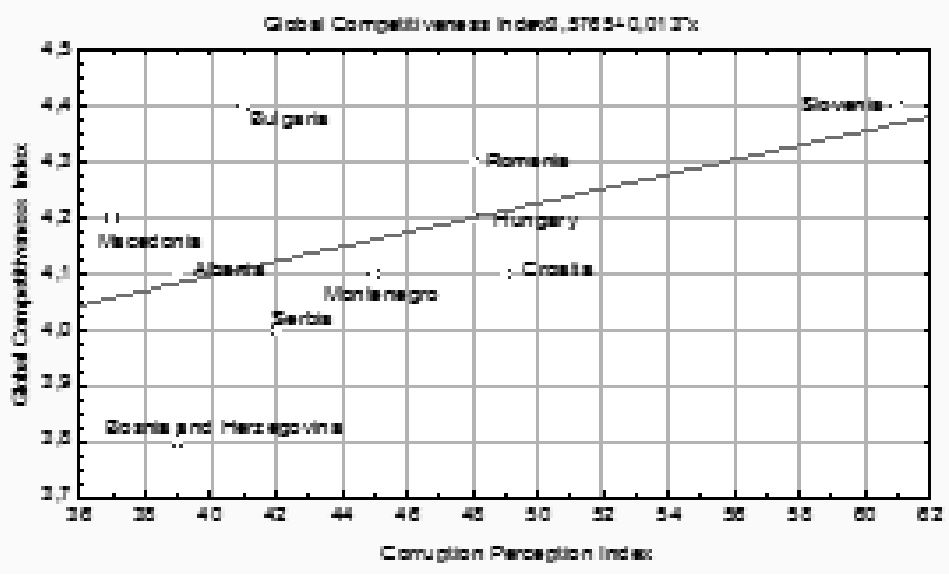
Source: *Authors' interpretation based on the data base*

Correlation coefficient is 0.75. The relationship is positive. Correlation is of medium strength. As expected, the data confirms that the countries with lower level of corruption are at the same time with higher level of innovation. In the group of the observed countries, Slovenia stands out. This country displays the lowest level of corruption and, at the same time, the highest Global Innovation Index as measured by Corruption Perception Index. The EU members group follows: Hungary, Croatia, Bulgaria and Romania. It is interesting that Montenegro, still not an EU member, is in this group. After Montenegro, Serbia is in the leading position in the group of non-EU members. Finally, it is interesting to point out that the intensity of the impact of corruption on the level of innovation is weaker in economically less developed countries (Albania, Bosnia and Herzegovina). That is expected considering the fact that parallel with the decline in economic growth, alongside with corruption, the intensity of other obstacles for innovation development increases.

The level of corruption in countries is reflected in their competitiveness, in addition to innovation. Since a number of other variables, besides corruption, influence competitiveness, the correlation coefficient for the

observed group of countries is somewhat weaker and is 0.50. Bosnia and Herzegovina and Bulgaria have atypical values in the group of analyzed countries. Bulgaria's atypical values stem from the fact that it managed to improve its global competitiveness level, even though it has not made a significant progress on the scale of Corruption Perception Index. This can be explained with its significant step forward in the development of the business environment, administrative infrastructure and ease of doing business. For example, according to ease of doing business, Bulgaria has moved from 62nd to 39th place from the total of 190 ranked countries, in the period from 2006 to 2016 (World Bank, 2017).

Figure 4 *Correlation between corruption perception and Global Competitiveness Index*



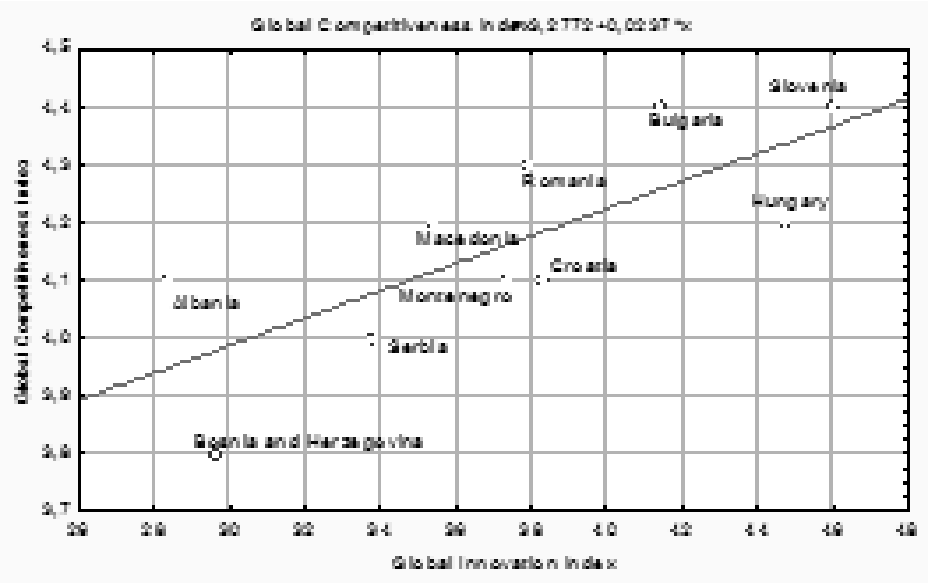
Source: *Authors' interpretation based on the data base*

At the same time, Bosnia and Herzegovina has the lowest Global Competitiveness Index value, and after Macedonia, the lowest Corruption Perception Index.

Slovenia stands out with the high value of Global Competitiveness Index and Corruption Perception Index (GCI=4.4; CPI=61). After Slovenia, the EU memebers group follows: Hungary, Romania and Croatia. After Montenegro, Serbia has the best ranking among the non-EU members.

As expected, when examining the strength of interdependence between corruption perception, innovation and competitiveness, the strongest relationship is present in correlation between inovation and comeptitiveness. Correlation coefficient is 0.79.

Figure 5 *Correlation between innovation and competitiveness*



Source: *Authors' interpretation based on the data base*

Following the previous results, this correlation analysis confirms the positive effect of EU integrations on the development of innovation and competitiveness. Slovenia is again at the top of "the pyramid". Hungary, Bulgaria, Croatia and Romania come after. In this part of the analysis, Albania has atypical values. Even though this country has the lowest Global Innovation Index (GII=28.38), it has a relatively high position in the group of non-EU members considering Global Competitiveness Index (GCI=4.1). The legacy of relative isolation of this country has left a mark on it. Although it is a smaller country, according to the indicators of the openness[4] and integration, Albania is less open and integrated country, which, by looking at the results of analysis, slows down its innovation

[4] One of the most commonly used indicators of the openness of the economy is the share of export and import in GDI because of the simplicity of calculation, the availability and international comparability. According to the World Bank data, the share of import and export in GDI in 2015 in Albania was 27.2%. For comparison, in Croatia this indicator was 49.4%, in Montenegro 42.8%, in Macedonia 48.4%, in Hungary 90.7%, in Romania 41.1%, in Serbia 46.7%, and in Slovenia 77.9%.

and economic progress. On the other hand, the prevailing Albanian economic structure where primary manufacturing and labor-intensive activities prevail, with predominant *lohn* businesses where manufacturing is performed for a known customer by the given technology of that same customer can account for the weaker innovation performance. Thereby, the faster innovation development and products manufacturing with higher added value is thus being limited.

Conclusion

The results suggest that during the initial years of transition, corruption perception was in decline, which had a negative influence on the level of competitiveness and innovation. Further market liberalization and integration processes have improved the analyzed indicators. The results suggest there is medium strong, positive correlation between corruption and innovation perception in the analyzed countries. The results presented confirm that countries which have the lower level of corruption also have a higher level of innovation. Slovenia has the lowest level of corruption and the highest Global Innovation Index out of all analyzed countries. The strength of the influence of corruption on innovation is weaker in economically less developed countries (Albania, Bosnia and Herzegovina) due to the presence of other limiting factors. The results show there is a weak positive relationship between corruption perception and Global Competitiveness Index. Large discrepancies are present in Bosnia and Herzegovina and Bulgaria. Bulgaria has not made any progress regarding corruption, but it reached a higher level of competitiveness by improving business conditions. In examination of correlation influences, the strongest positive relationship is present in Slovenia, followed by Hungary, Bulgaria, Croatia and Romania. When analyzing this influence, Albania stands out with the lowest level of competitiveness, as a consequence of long-term isolation and unfavorable manufacturing structure.

The results indicate that corruption is a negative and limiting phenomenon, and one of the most serious problems, right after unemployment. The results further confirm the need to take decisive measures so as to monitor and prevent the analyzed phenomena. Building the trust in public sector as well as the unity of all participants, while strictly following their legal jurisdictions, is of the utmost importance when building a democratic society and the rule of law.

Literature

1. Đukić, S. (2016). *Korupcija u Srbiji - teorijska i empirijska analiza*, Doktorska disertacija, Univerzitet Privredna akademija u Novom Sadu, Novi Sad.

2. Esadze, L. (2013). Razvoj strategije za borbu protiv korupcije, *Priručnik u okviru projekta PLAC*.

3. Horvat Novak, D. (2015). *Analiza povezanosti ljudskog kapitala sa stopama korupcije i kriminala* (Doctoral dissertation, University North. University centre Varaždin. Department of Business Economics.).

4. Ignjatijević, S., Janjetović, R. & Aničić, A. (2016). Uslovi poslovanja u Republici Srbiji i rizici u međunarodnom poslovanju, *Oditor*, 2(3), 7-21.

5. Krstić, B., & Džunić, M. (2013). Ekonomija znanja I konkurentnost zemalja Zapadnog Balkana u uslovima svetske ekonomske krize. *Teme: Casopis za Društvene Nauke*, 37(1), 141-162.

6. Milojević, I., Cvijanović, D. & Ignjatijević, S. 2012. Makroekonomski okvir konkurentnosti srpske privrede i ICT sektora. *Tranzicija*, 14(29): 27-32.

7. Porter, M. 2008. *O konkurenciji*, Fakultet za ekonomije, finansije i administraciju, Beograd

8. Prodanović S. & Milošević, S. (2014). Глобални индекс иновативности: компаративни приказ иновационих компоненти земаља региона. *Зборник радова Економског факултета у Источном Сарајеву*, *1*(8), 247-255.

9. Prokopijević, M. (2011). Korupcija: ekonomska strana, *Dosije korupcija*, 1(1), 5-19.

10. Tanzi, V. (1998): *Corruption around the World: Causes, Consequences, Scopes, and Cures*, IMF Staff Papers, Vol.45, ss. 559-594.

11. Toffler, A. (1975). Šok budućnosti, Otokar Keršovani, Rijeka, Hrvatska.

12. Transparency International, http://www.transparency.org/research/cpi/overview

13. Vejnović, D. (2010). *Sociološki aspekti uzroka, karakteristika i sprečavanja korupcije društava u tranziciji*. Zbornik radova sa naučnostručnog skupa s međunarodnim učešćem „Metodologija izgradnje sistema integriteta u institucijama na suzbijanju korupcije“, 2010, Banja Luka, Republika Srpska.

14. Vuković, S. (2005). *Pravo, moral i korupcija*, IP „Filip Višnjić“, Institut društvenih nauka, Izdavačko preduzeće „Rad“, Beograd, str.138.

15. Wickham A. P. (2001*). Strategic Entrepreneurship – A Decision-Making Approach to New Venture Creation and Management.* London: Pearson Education Limited.

16. World Bank, http://data.worldbank.org/

17. World Economic Forum, https://www.weforum.org/reports

18. https://www.globalinnovationindex.org/