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Republic of Serbia, 18000 Niš, Trg Kralja Aleksandra 11
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KNOWLEDGE AS A FACTOR OF ECONOMIC GROWTH OF TRANSITION COUNTRIES

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Jelena Petrović[1], Tanja Stanišić[2]

[1]Faculty of Matematics and Science, University of Niš, Serbia
[2]Faculty od Hotel Management and Tourism in Vrnjačka Banja, University of Kragujevac, Serbia

Abstract. *The purpose of this paper is to analyse the impact of knowledge on economic growth of transition countries. The aim is to identify the correlative relationship between the achieved level of development of the knowledge economy measured by KEI (Knowledge Economy Index) and level of GDP (Gross Domestic Product) and economic growth in transition countries by applying appropriate methods. The methods of comparative, correlation and regression analysis are used in the paper. The paper includes the following three parts: the analysis of the achieved level of the knowledge economy development in transition countries based on the KEI and its pillars; analysis of the actual level of GDP and economic growth in transition countries; testing of correlation between the KEI, on the one hand, and GDP and its growth, on the other hand and analysis of the influence of pillars within the KEI on GDP of transition countries. The results of the research indicate a weak correlation between the KEI and GDP in analysed countries. Based on them, we can conclude that knowledge is not a significant factor in the economic growth of transition countries.*

Key words: *knowledge, growth, development, GDP, transition countries.*

INTRODUCTORY DISCUSSION AND THEORETICAL BACKGROUND

Knowledge-based economy is a part of the development strategy of every economically developed country and its companies (Milisavljević, 2010, p. 115). Development of the knowledge economy has become a necessity in developed countries, but also in developing countries and transition economies. The richness of the state no longer depends on the ability to collect and convert raw materials, but on the ability to develop and upgrade intellect in the state, as well as skills related to specific companies. The company's success depends

Received October 31, 2014 / Accepted October 5, 2015
Corresponding author: Jelena Petrović
Faculty of Mathematics and Science, University of Niš, Višegradska 33, 18000 Niš, Serbia
E-mail: jelenapetrovic619@yahoo.com

on their ability to operate in a global market that is rapidly changing, and where consumers are more eager to gain new knowledge, where there are a large number of choices, and where relationships between buyers and sellers are constantly changing. Development of skills based on knowledge, and those concerning the efficient and effective use of knowledge, is important to increase the absorption capacity of the company (Krstić, 2011, p. 275). Knowledge management is becoming the dominant form of management in the company, and as such, the basis of management in the new knowledge society. It is continuously directing of all kinds of knowledge - individual, group, team or organizational, in order to meet existing and further needs (Krstić, 2009, p. 99).

The creators of value - people and their intellect, become now, in the "knowledge economy", i.e. "information society", a strategic resource of modern economy and its subjects (Krstić, 2007, p. 316). For successful economy and its subjects in this environment, people must acquire new skills. In particular, they must acquire skills that enable them to identify, manage, share and utilize information and knowledge. They need "information skills". Increase of both organizational and individual skills is the primary success factor in the development of the knowledge economy.

Many authors point to the importance of improving the knowledge economy, not only in developed countries, but also in countries that have achieved a lower level of economic development. Krstić and Stanišić have conducted a detailed analysis of the competitiveness of the Southeastern Europe countries based on the GCI (Global Competitiveness Index) and the KEI (Knowledge Economy Index), as well as its pillars. "Innovative policies, greater investments in education and training, creation of innovations and technological competences, information infrastructure, as well as, stimulating economic environment and institutional regime with the aim of creating, disseminating, transferring, and effective use of knowledge in production, services, and export of SEE countries, are needed" (Krstić, Stanišić, 2013, p. 165).

The World Bank Institute, within the program Knowledge for Development, regards that the successful development of the knowledge-based economy requires long-term investment in education, development of innovation skills, development of information and communication technologies and the existence of legal and economic framework. The World Bank divided these features into four elements that are crucial for t the state to be able to develop the economy based on knowledge. The first element relates to the legal and economic framework of the country, the second to the innovation system, the third to education and training, and the fourth to the information and communication system.

The first important element of the knowledge economy is the legal and economic framework of the country. Its effects depend on whether the state has a well-established and transparent macroeconomic and competitive politics and the legal system that allows economic operators to create and use knowledge freely. Legal and economic framework of the state should encourage continuous education, free movement of knowledge, the commercial application of the results of scientific-research development, cooperation between educational institutions and the public and private sector, investment in information and communication technology, encourage entrepreneurship and the like. On that basis, development of professionals is a necessary, but not sufficient determinant of state competitiveness. Proper economic policy that encourages improving governance, reducing corruption, encouraging an entrepreneurial climate, and domestic savings is needed.

The second element of the knowledge economy refers to the innovation system. Innovation system is a network of institutions which contribute to the development and dissemination of new technologies individually and collectively and provide a framework within which the state shapes and implements innovative policy. It is a system of interconnected institutions for creating, storing and transferring the knowledge and skills that are the basis for the development and diffusion of new technologies (Metcalfe, 1995, p. 408). Innovation system does not lead to progress if its results do not apply, then they are set. Science, engineering and technology do not stand still, but constantly progress and most modern technical and technological solutions very quickly become obsolete (Aranđelović, Gligorijević, 2008, p. 60).

Scientific research and the application of its results are important for the creation of a competitive economy. Based on the importance of innovation for the development of enterprises and the economy, the need for scientific research and inventive work must be integrated into the production flow and become a lever of rapid economic and social development is imperative (Hinić, 2001, p. 19).

A modern economy needs an education system that is functional, comfortable, efficient and adaptable to the changes and needs of society and the individuals (Babić, 2009, p. 58). Only an economy whose citizens and employees are educated, skilled, creative and able to adapt to constant change will be successful in the XXI century. People, businesses and economies that want to survive and prosper are forced to continuously and quickly learn that, as soon as they reach the relevant information and knowledge. Many studies have indicated that there is a positive correlation between the achieved level of staff education and economic growth. The economy and companies must equally continue to develop their scientific, technological and creative potential if they want to achieve and sustain a competitive advantage in the coming years (Despotović, Stamatović, 2013, p. 81).

The educational process was always a process based on the theoretical and practical application of various knowledge in achieving some objective function. As an important element of the knowledge economy, the education in its content, structure and level of development differs between developed countries and countries in transition. For creating an education system corresponding to the knowledge economy, it is necessary to move to the variable knowledge base by entering new knowledge, and by new systematization of existing knowledge. It is a requirement for knowledge that will enable overviewing the complexities of the world, its understanding and adaptation needs.

Information and communication technology (ICT) sector is the fourth element of the knowledge economy. It refers to the availability, dependability and efficiency of computers, phones, television and radio, as well as the different networks that link them (Chen, Dahlman, 2005, p. 7). The World Bank defines the ICT sector as a set of hardware, software, networks, and media for collection, and storage, processing and transmission of data, and presentation of information in the form of voice, data, text and images (The World Bank, http://info.worldbank.org).

Although there is no consensus on the causes of the decrease the global economic growth in the seventies and increase the growth rate of the nineties of the last century, a number of theoretical papers and empirical research suggest that the development of high technologies, especially the internet and related technologies, influenced the growth and development of the global economy at the end of the last and at the beginning of this

century. Adoption of new internet technologies and the model based on them and the success of using the growth potential that they offer become one of the most important strategic issues, both at the microeconomic and on the overall economy of a country. Using the internet in business contributes to increasing its effectiveness and efficiency (Avramović, 2006, p. 219).

All four mentioned elements of the knowledge economy are equally important. It is necessary to point out that the importance of any part of the knowledge economy can not be extracted. Best educated people will not be competitive enough if the economy does not stimulate innovation and entrepreneurship, if there is no rule of law and if information and communication sector is not developed.

1. Research Methodology and Hypotheses

Bearing in mind that the development of modern economies is based on knowledge, the main objective of this paper is to determine whether the development of transition economies is based on knowledge. The achieved level of the knowledge economy development is measured using the KEI, while the level of development of countries is viewed on the basis of the achieved level of GDP and GDP growth rates. The research includes all transition countries (except Turkmenistan, due to lack of data) analysed in the Transition Report 2012, which was prepared by the European Bank for Reconstruction and Development (The European Bank for Reconstruction and Development, 2012).

Based on the purpose and primary objective of the research, the authors of the paper will test the following hypotheses:

H1: More than 50% of transition countries have made progress towards knowledge society and knowledge economy in the period from 1995 to 2012;

H2: There is a strong positive correlation between the KEI and GDP in transition countries;

H3: The achieved level of the knowledge economy development in the transition countries has a significant impact on its economic growth measured by GDP indicator;

H4: All pillars of the KEI indicator have a significant impact on the GDP level of of transition countries.

The data of the World Bank represent the information basis of research for data about the KEI and GDP. The method of dynamic (comparative) analysis of the competitiveness of transition countries based on the KEI, the method of correlation analysis and the method of regression analysis are applied in the paper.

2. Dynamic Aspect of Comparative Analysis of the KEI Changes in Transition Countries for 1995 and 2012

The World Bank Institute has developed a methodology for benchmarking the development towards the knowledge economy called "The Knowledge Assessment Methodology" (KAM). KAM is an interactive program which allows the states, on the basis of systematic analysis and evaluation of the above mentioned parts of the knowledge

economy, to see their strengths and weaknesses based on the comparison of the knowledge economy pillars with neighbouring or other countries.

Comparison within the KAM includes 109 structural and qualitative indicators that serve as a replacement for the four pillars of the knowledge society, as well as 146 countries and 9 regions (The World Bank, http://info.worldbank.org). The KAM indicators are determined on the basis of data from renowned national institutions. Data are reliable and consistent with each other, because they are being continuously updated. The KAM allows states to identify the problems and dangers with which they are faced and thus focuses attention on future investments that would enable the transformation to a knowledge economy.

Using a methodology for benchmarking the transformation towards the knowledge economy, every year the World Bank forms ranking list of countries according to their level of development using the Knowledge Economy Index and the indicators that determine the level of development of each pillar within the KEI. Knowledge Economy Index shows how the environment in the country or region is conducive to effective use of knowledge for the purpose of economic development. It is an aggregate index that shows the achieved phase in the knowledge economy development in the country or region. In order to calculate the Knowledge Economy Index, the level of development of each pillar based on certain indicators is determined:

1) the first pillar – *The Economic Incentive and Institutional Regime*: tariff & nontariff barriers, regulatory quality and rule of law;
2) the second pillar – *The Innovation System*: investments in scientific research as a % of GDP, the cooperation of higher education institutions and the business sector, the number of registered patents per million inhabitants; number of published scientific papers per million inhabitants, private sector investment in scientific research;
3) the third pillar – *Education*: percentage of literate compared to the population over 15 years, public investment in education expressed as a % of GDP, percentage of professors and teachers in staff, investment in staff training;
4) the second pillar – *Information and Communication Technology (ICT):* the number of telephone lines (fixed and mobile) per thousand inhabitants, the number of computers per thousand inhabitants and the number of internet users per thousand inhabitants, and the availability of government services via the internet.

Table 1 shows the KEI score and rank for selected transition economies in 1995 and 2012. Based on the value of the KEI it can be concluded that Estonia had the highest value and the first position relative to other transition countries in 1995 and 2012. Estonia recorded an increase in the value of the KEI, but also improved the position on the world list of countries in observed period. The lowest value of the KEI was recorded in Mongolia in 1995, and in Tajikistan in 2012.

Table 1 Rank and score of KEI for transition economies

	Country	1995		2012	
		Rank	Score	Rank	Score
1	Estonia	27	7.94	19	8.4
2	Slovenia	28	7.89	28	8.01
3	Hungary	33	7.5	27	8.02
4	Slovak Republic	34	7.22	33	7.64
5	Poland	39	6.85	38	7.41
6	Bulgaria	40	6.81	45	6.8
7	Lithuania	43	6.59	32	7.8
8	Latvia	45	6.51	37	7.41
9	Croatia	48	6.25	39	7.29
10	Ukraine	52	5.96	56	5.73
11	Romania	53	5.91	44	6.82
12	Belarus	55	5.81	59	5.81
13	Russian Federation	59	5.67	55	5.78
14	Jordan	61	5.55	75	4.95
15	Turkey	62	5.46	69	5.16
16	Serbia	64	5.35	49	6.02
17	Armenia	67	5.25	71	5.08
18	Macedonia, FYR	68	5.14	57	5.65
19	Georgia	70	5.1	68	5.19
20	Moldova	73	5.07	77	4.92
21	Kazakhstan	79	4.93	73	5.04
22	Uzbekistan	84	4.78	104	3.14
23	Egypt	87	4.68	97	3.78
24	Azerbaijan	88	4.62	79	4.56
25	Tunisia	89	4.54	80	4.56
26	Kyrgyz Republic	91	4.42	95	3.82
27	Bosnia and Herzegovina	92	4.39	70	5.12
28	Albania	93	4.33	82	4.53
29	Morocco	96	4.17	102	3.61
30	Tajikistan	97	4.13	105	3.13
31	Mongolia	99	4.08	83	4.42

Source: The World Bank, http://info.worldbank.org/etools/kam2/kam_page5.asp

Starting from the 145 countries analysed d by the World Bank, we can conclude that about 60% of transition countries are located within the first half of the world list of countries according to the KEI score. Serbia, which is among them, took the 64th place in 1995 and the 49th place in 2012. Ten transition countries have decrease of the KEI score in 2012 in relation to 1995. Nine transition countries are worsening position on the world list of 145 countries in this period. Since about 71% of transition countries achieve the improvement of the knowledge economy, we can conclude that the first hypothesis of research is confirmed.

In order to view the position of each transition countries, according to each pillar within the KEI, its values are given in Table 2.

Table 2 The value of the pillars within the KEI indicator for transition countries (2012)

	Country	Economic Incentive and Institutional Regime		Innovation System		Education		Information and Communication Technology	
1	Estonia	1	8.81	3	7.75	2	8.6	1	8.44
2	Slovenia	2	8.31	1	8.5	8	7.42	3	7.8
3	Hungary	3	8.28	2	8.15	3	8.42	7	7.23
4	Slovak Republic	5	8.17	5	7.3	9	7.42	4	7.68
5	Poland	7	8.01	6	7.16	5	7.76	12	6.7
6	Bulgaria	9	7.35	7	6.94	13	6.25	13	6.66
7	Lithuania	6	8.15	9	6.82	1	8.64	5	7.59
8	Latvia	4	8.21	10	6.56	6	7.73	8	7.16
9	Croatia	10	7.35	4	7.66	14	6.15	2	8
10	Ukraine	24	3.95	14	5.76	4	8.26	18	4.96
11	Romania	8	7.39	12	6.14	7	7.55	14	6.19
12	Belarus	28	2.5	15	5.7	10	7.37	10	6.79
13	Russian Federation	29	2.23	8	6.93	12	6.79	9	7.16
14	Turkey	12	6.19	13	5.83	29	4.11	25	4.5
15	Serbia	23	4.23	11	6.47	15	5.98	6	7.39
16	Armenia	13	5.8	22	4.21	11	6.96	28	3.35
17	Macedonia, FYR	14	5.73	19	4.99	24	5.15	11	6.74
18	Georgia	11	7.28	18	5.15	27	4.61	27	3.72
19	Moldova	21	4.44	23	4.16	18	5.79	15	5.28
20	Azerbaijan	26	3.36	26	4.01	16	5.95	19	4.93
21	Bosnia and Herzegovina	16	5.55	21	4.38	19	5.77	21	4.77
22	Albania	18	4.69	27	3.37	25	4.81	17	5.26
23	Kazakhstan	17	4.88	17	5.59	23	5.16	22	4.65
24	Kyrgyz Republic	30	1.58	29	3.12	22	5.32	16	5.27
25	Mongolia	22	4.3	30	2.91	17	5.83	23	4.63
26	Tajikistan	27	2.55	31	2.18	26	4.66	29	3.14
27	Uzbekistan	31	0.92	28	3.13	20	5.65	31	2.87
28	Egypt	20	4.5	24	4.11	30	3.37	30	3.12
29	Jordan	15	5.65	25	4.05	21	5.55	24	4.54
30	Morocco	19	4.66	16	5.67	31	2.07	26	4.02
31	Tunisia	25	3.81	20	4.97	28	4.55	20	4.89

Source: The World Bank, http://info.worldbank.org/etools/kam2/kam_page5.asp

According to the first pillar - the Economic Incentive and Institutional Regime, the highest value was observed in Estonia, and the lowest in Uzbekistan. The country which recorded the highest value of the pillar Innovation system is Slovenia, the country with the lowest value of this pillar is Tajikistan. Countries which recorded the highest value of the pillar Education are Lithuania and Slovenia, while Morocco recorded the lowest value of this pillar. Estonia recorded the highest value of the pillar Information and Communication Technology, and Uzbekistan had the lowest value of this pillar.

3. Analysis of GDP as Indicator of Economic Growth in Transition Countries

For the purpose of further analysis Table 3 presents data on the achieved level of GDP in transition countries in 2012. The list of transition countries is given on the basis of the Transition Report of the European Bank for Reconstruction and Development (The European Bank for Reconstruction and Development, 2012).

Table 3 GDP and GDP growth rate in transition countries (2012)

	Ranking	Country	GDP (millions of US dollars)	Δ% GDP
1	8	Russian Federation	2,014,775	+3.44
2	17	Turkey	789,257	+2.24
3	24	Poland	489,795	+1.82
4	39	Egypt	262,832	+2.21
5	50	Kazakhstan	203,521	+5.00
6	54	Ukraine	176,309	+0.20
7	56	Romania	169,396	+0.35
8	58	Hungary	124,600	-1.70
9	62	Morocco	95,982	+4.20
10	63	Slovak Republic	91,348	+1.80
11	67	Azerbaijan	66,605	+2.20
12	68	Belarus	63,267	+1.50
13	70	Croatia	59,228	-1.98
14	74	Uzbekistan	51,113	+8.20
15	75	Bulgaria	50,972	+0.80
16	78	Tunisia	45,662	+3.60
17	79	Slovenia	45,378	-2.50
18	83	Lithuania	42,344	+3.70
19	87	Serbia	37,489	-1.70
20	91	Jordan	31,015	+2.65
21	93	Latvia	28,373	+5.00
22	102	Estonia	22,376	+3.94
23	110	Bosnia and Herzegovina	17,466	-0.70
24	113	Georgia	15,747	+6.00
25	124	Albania	12,648	+1.60
26	129	Mongolia	10,271	+12.28
27	132	Armenia	9,951	+7.19
28	134	Macedonia, FYR	9,613	-0.27
29	139	Tajikistan	7,633	+7.50
30	141	Moldova	7,253	-0.80
31	144	Kyrgyz Republic	6,475	-0.89

Source: The World Bank, http://data.worldbank.org/indicator

Within the observed sample of transition countries, Russia has the highest level of GDP. Rusia is ranked on the eighth place on the list of the World Bank according to the

value of GDP. Only seven transition countries achieve higher GDP than the average value of GDP (163,184 million) that all the countries in transition have made. Serbia is on the 19th place on the list of transition countries, and on the 87th place on the world list of 144 countries according to the value of GDP. Mongolia recorded the biggest economic growth and increase of GDP in 2012 compared to 2011. The largest decrease of GDP is recorded in Slovenia, followed by Serbia and Hungary.

4. Results of Examination of Interdependence between KEI and GDP and Impact of KEI on GDP in Transition Economies

The results of correlation analysis, which examines the interdependence between the KEI indicator and the value of GDP for the group of selected countries in transition in 2012, are given in table 4. Based on the correlation coefficient, it can be concluded that there is a very weak correlation between the achieved level of the knowledge economy development, measured by KEI, and the achieved level of GDP in the transition countries in 2012. In this way, the second hypothesis of the research is rejected.

Table 4 Correlation between the KEI and GDP for transition countries

Correlations			
		KEI	GDP
KEI	Pearson Correlation	1	0.039
	Sig. (2-tailed)		0.837
	N	31	31

Source: Authors' calculation

Based on the value of the correlation coefficient presented in table 5, it can be concluded that there is a medium negative correlation between the level of the knowledge economy development measured by KEI and increase/decrease of GDP in 2012 (compared to 2011).

Table 5 Correlation between the KEI and GDP growth for transition countries

Correlations			
		KEI	GDP growth
KEI	Pearson Correlation	1	-0.412*
	Sig. (2-tailed)		0.021
	N	31	31

* Correlation is significant at the 0.05 level (2-tailed).

Source: Authors' calculation

The results of correlation analysis shown in Table 4 and Table 5 indicate that the transition countries do not base their economic growth on the knowledge economy, and that countries that have achieved significant economic growth recorded extremely small value of the KEI. At the same time, we can conclude that the third hypothesis of the research is not confirmed.

The determination coefficient shows how much of the variance of the dependent variable explains the model. In our case, the determination coefficient is 0.343 (Table 6). When we express this as a percentage, we can conclude that 34% of the achieved level of GDP in transition countries are influenced by all pillars of the KEI.

Table 6 Impact of all pillars within the KEI on the value of GDP in transition countries

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.586[a]	0.343	0.242	3.30671E5

a. Predictors: (Constant), Information and Communication Technology, Economic Incentive and Institutional Regime, Education, Innovation

b. Dependent Variable: GDP

Source: Authors' calculation

Based on the values of Beta from Table 7, we can conclude that the Innovation pillar has the highest impact on GDP, followed by the pillar Economic Incentive and Institutional Regime, while the Education pillar has the smallest impact. When the Sig. value is smaller than 0.05, the variable makes a significant unique contribution to the prediction of the dependent variable. When this value is greater than 0.05, it should be concluded that this variable does not make a significant unique contribution to the prediction of the dependent variable.

Table 7 Impact of pillars within the KEI on the value of GDP in transition countries

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	142318.208	251809.203		0.565	0.577
	Economic Incentive and Institutional Regime	-120287.073	38287.473	-0.708	-3.142	0.004
	Innovation	237214.007	76362.040	1.073	3.106	0.005
	Education	-41281.297	52223.235	-0.173	-0.790	0.436
	Information and Com. Technology	-62644.806	70228.333	-0.270	-0.892	0.381

a. Dependent Variable: GDP

Source: Authors' calculation

In our case, the Innovation pillar and the pillar Economic Incentive and Institutional Regime give unique and statistically significant contribution to the prediction of the results of measurements relating to realized GDP. Based on the results of regression methods, we can conclude that only two of the four pillars within the KEI have a significant impact on the size of GDP in transition countries. The fourth hypothesis of the research is not confirmed.

CONCLUSION

Knowledge becomes a vital development resource and key factor of sustainable economic growth in modern conditions. Companies that base their business processes on knowledge have a greater chance to survive and be competitive in the dynamic global market of products and services. Knowledge economy and its continuous improvement become the future of modern economies. This statement is valid for both developed economies and developing countries.

Analysing the situation in transition economies when it comes to the knowledge economy development measured by the Knowledge Economy Index, leads to the conclusion that, from 1995 to 2012, most transition countries, or about 71% of transition countries have made the improvement of the knowledge economy measured by the KEI. However, by observing their position in the world rankings, we find that some of these countries are located in the second half of the world list of countries in 2012. In this regard, we conclude that despite adequate progress, there is a possibility that transition economies continue to improve their position when it comes to knowledge society and knowledge economy.

The correlation analysis showed that transition countries do not base their growth on knowledge. Naimely, the research showed the existence of the weak positive correlation between the KEI and GDP in the analysed countries in transition. Exploring of correlation between the economy and the knowledge in the context of the knowledge economy development has highlighted the situation and the need to change the role of knowledge, education, innovation system, the information and communication sector and the economic and legal framework of the state.

Results of regression analysis confirmed the weak impact of the knowledge economy on the level of gross domestic product in the surveyed countries. All this leads us to the conclusion that knowledge is still an unused resource of economic growth, economic development and competitiveness of transition economies.

Greater investment in education, staff training and research, higher degree of development and application of modern technology, as well as the reduction of tariff and non-tariff barriers, increasing the protection of intellectual property, increasing the rule of law, reducing corruption are necessary in order to foster economic growth in transition countries. Developing and taking advantage of all components of the knowledge economy is a prerequisite for dynamic development of transition countries in the future.

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ZNANJE KAO FAKTOR PRIVREDNOG RASTA DRŽAVA U TRANZICIJI

Svrha ovog rada je da analizira uticaj znanja na privredni rast država u tranziciji. Cilj rada je da se primenom odgovarajućih metoda identifikuje korelaciona veza između dostignutog stepena razvoja ekonomije znanja merenom pomoću KEI (Knowledge Economy Index) u državama u tranziciji i dostignutog nivoa GDP (Gross Domestic Product) i privrednog rasta. U radu se primenjuje metoda komparativne, korelacione i regresivne analize. Rad obuhvata sledeća tri dela: analiza dostignutog nivo razvoja ekonomije znanja u državama u tranziciji na osnovu KEI i njegovih elemenata; analiza ostvarenog nivoa GDP i privrednog rasta u državama u tranziciji; ispitivanje korelacione veze između, KEI, sa jedne strane, i GDP i njegovog rasta, sa druge strane i analiza uticaja elemenata KEI na GDP država u tranziciji. Rezultati istraživanja ukazuju na postojanje slabe korelacione veze između KEI i GDP. Na osnovu njih se može zaključiti da znanje ne predstavlja značajan faktor privrednog rasta država u tranziciji.

Ključne reči: *znanje, rast, razvoj, GDP, države u tranziciji*

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ENVIRONMENTAL ASPECTS OF THE PROCESS OF GLOBALIZATION – NEGATIVE IMPLICATIONS AND CRISIS

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Ivana Ilić, Petar Hafner

Faculty of Economics, University of Niš, Serbia

Abstract. *Growing environmental problems of modern age capture attention of the global society. Man, as a major factor in the process of disturbing the optimal environmental balance, is considered to be the most responsible for the emergence of the environmental crisis that manifests itself in all spheres of life. Due to a growing number of environmental problems that require urgent attention, it is necessary to increase awareness of the problems that surround us. In the future, it is necessary to develop environmental ("green") economy, rationalize consumption, and instill a higher level of environmental awareness into future generations, in order to reduce environmental problems to a minimum level. It should be borne in mind that the environmental dimension is the underlying component of sustainable development of modern mankind. In line with this, the Environmental Performance Index (EPI) methodology has been developed. On the basis of this methodology and the presentation of ranking of countries according to the environmental performance, the work analyzes the state of environmental development in Serbia and neighboring countries.*

Key words: *globalization, environmental problems, environmental crisis, Environmental Performance Index (EPI).*

INTRODUCTION

In the last few decades, environmental problems have become a global problem of mankind in terms of their existence and influence, as well as social and economic forces that produce them. Definition of the term globalization is multifunctional and has different meanings, depending on the context in which it needs to be understood. Globalization is a complex process whose pace and direction are determined by a number of factors, while its economic, social, and environmental manifestations leave significant and lasting impact. One context (environmental definition) refers to the understanding of globalization as a process of manifestation of widespread environmental crises, caused by

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Corresponding author: Ivana Ilić
Faculty of Economics, University of Niš, Trg kralja Aleksandra 11, 18000 Niš, Serbia
E-mail: ivanica1404@yahoo.com

global environmental pollution. The environmental crisis that occurred during the last decades of the twentieth century imposed the need for rearrangement of human activities and a serious warning to the basic foundations of the survival of man on Earth.

More serious consequences of the environmental crisis resulted in the formal emergence of the concept of sustainable development, which rests on the harmonious relationship of natural resources, economic development, and the environment, in order to protect the health of present generations and preserve the economic wealth of the planet for future generations. The concept is actually formed by hybridization of social development and environmental problems. The idea of developing the concept of sustainability stems from the problematic relationship between society and its natural environment. The concept itself is based on unification of three key dimensions, environmental, economic, and social. Although there is no generally accepted definition of sustainable development, there is awareness and the need for denoting the concept of sustainability, as well as its origin. Simply put, it is a development that is sustainable, that does not lead to exhaustion or complete disappearance of natural resources, or to endangerment of universal human rights of any of us on the planet. Sustainable development is one of the most important ideas and goals of our time.

Globalizing mankind, in a sense, becomes "the global society", faced with real global problems. Among these issues, an important place belongs to the disruption of the environmental balance of the planet Earth, which threatens the survival of human life on it, to the extent that one can speak of a global environmental crisis. End of XX and the beginning of XXI century were marked by three interrelated processes: globalization, the development of science and technology, and the global environmental crisis. The consequence of rapid development of science and technology in thus-far unimaginable proportions is the emergence of the global environmental crisis. Expansive development has contributed to improving the living conditions of the human species, but, on the other hand, has had negative consequences for the environment and quality of life.

The consequences that globalization has on the environment are disastrous and should by no means be neglected. Environmental consequences that are difficult to eradicate in the long term cause a number of other consequences. The work starts with the traditional and time-proven opinion that globalization threatens the environment, and places an emphasis on the environmental consequences of globalization, as important obstacles to further economic and social development. By focusing on the environmental performance index (EPI), the paper will analyze the position of Serbia in relation to neighboring countries.

1. GLOBAL ENVIRONMENTAL IMPACT

The global aspect of environmental way of thinking has become the focus of attention, because environmental problems usually occur on a global scale, caused by the progress of science and technology. The environmental problems rise in importance mainly due to increased economic integration. What is more, globalization has brought significant conceptual change in the way of thinking about the environment. Many of us now see environmental problems as problems of international significance, not only as a national interest in terms of protection of the oceans and the atmosphere from warming. The environment is considered "common heritage of mankind", and environmental issues are increasingly the subject of international efforts due to their cross-border effects, as

well as the inability of only one or a few nations to solve these problems alone (Basler, 2011).

When globalization is considered in the context of ecological issues, environmental issues, and modern environmental crises, four interrelated contexts should be mentioned. The process of globalization is seen as a process of manifestation of environmental crises on a large scale, and the problems resulting from the global economic crisis are now very far from the national and regional frameworks. The development of civilization has certainly caused the gradual emergence of global warming and climate change on Earth. Second, the process of globalization can be seen in the context of developing environmental awareness of environmental issues and developing environmental movements. In the last decades of the twentieth century and early twenty-first century, the opinion that it is not possible to solve the emerging environmental problems by restricting them to a local area or through local action has become engraved in people's minds. Environmental movements around the world have been among the first social movements with the so-called "mondial" character. Some environmentalists have even suggested the creation of a "world environmental organization" for the sake of easier coordination of international environmental policies. When perceiving environmental problems from an ecological point of view, sociological meaning of the term globalization, as the socio-historical process, cannot be avoided. In this regard, it should be noted that globalization takes place in all areas of life, primarily in the economic, political, cultural, and psychological sphere (Smrečnik, 2002).

From an environmental perspective, the observed process of globalization causes severe consequences for the environment. In this regard, there are two prevailing standpoints. The first standpoint is that the process of globalization creates assumptions and possibilities for solving environmental problems present at the global level. In contrast to this view, there is the opinion that the process of globalization itself causes deep environmental crises, as it is characterized by the absolute dominance of the socio-political and economic model of the western highly developed countries, thus creating a global society with pronounced social inequality (Smrečnik, 2002).

Globalization caused international trade growth and accelerated financial flows, as well as greater cooperation among countries and innovations in science and technology. However, it also contributed to environmental degradation. The main causes of environmental problems, in terms of environmental protection and sustainable development, are: industrial production, growth of energy production, development of traffic, uncontrolled exploitation of natural resources, development of technics and technology, and chemical contamination of agriculture.

With the development of society and the increasing population, due to which the demand for products necessary for life increases, it has become necessary to shift to the industrial mode of production. Industrial production certainly has positive sides, in terms of increased production, but, on the other hand, it endangers environment through the emission of harmful gases into the air, water, and soil. The negative effects of industrialization are also manifested through the devastation of plants, destruction of animals, and deterioration of human health. Violation of the environment through depletion of raw materials and excessive accumulation of waste of all kinds that the nature cannot decompose are the characteristics of industrial production.

Virtually all energy sources have an impact on the environment and its pollution. Energy production, in addition to occupation and changes in the use of land rich in coal deposits, affects the level and regime of the ground water and waterways, reduces the

land available for agricultural production, pollutes the air with dust, changes land relief and climate. In addition to the visible negative consequences that increased energy production has on nature, there are other effects that are not noticeable, but that still affect the health of humans and animals. The main pollutants resulting from the increased energy production are: flue gases, fly ash, slag, and waste water.

Globalization, as a planetary process (Siriner et al., 2011), has led to the development of traffic, thus bringing another cause of environmental degradation. Increasingly developed transport infrastructure has brought a series of environmental problems, in terms of increased air pollution, noise levels, taking up space, and uncontrolled release of harmful and hazardous substances. The consequences of climate change are common in areas with the developed road traffic. Specifically, road traffic is largely dependent on oil, which has a share of 14% in emissions of harmful gases into the atmosphere, which directly affects human health (Jovanović et al., 2012).

All the above causes are the main drivers of the uncontrolled use of resources, which directly affects the reduction of environmental quality and causes significant environmental problems. Excessive depletion of these resources diminishes their ability to regenerate naturally, brings ecosystem disturbances, and threatens disappearance of resources, which would call into question the survival of the world.

Globalization has had far-reaching consequences for our way of life. This is due to faster access to technologies, improved communication networks, and innovation. The development of technics and technology leads to industry concentration, which negatively affects the environment in the way that has been described. The application of modern technology greatly contributes to global warming and increased emission of harmful gases. The problem of global warming is of an ecological nature and affects many vital functions of the planet Earth. Rapid development of technics and technology generates increasing disorder in the world, in terms of serious environmental problems.

In order to achieve higher agricultural production and protect against various parasites, chemical contamination of agriculture occurs. Furthermore, the use of chemicals to destroy weeds and other noxious plants disturbs the balance in the ecosystem. Toxic waste from this process pollutes the environment and damages plants. The products obtained after the application of chemicals in agriculture are considered to be harmful to human health.

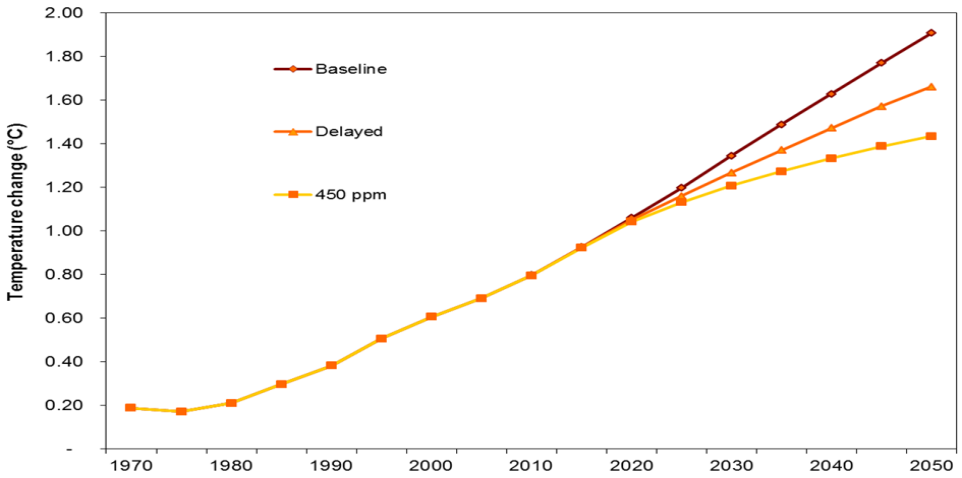
The positive impact of the process of globalization on the environment exists to some extent, but the key negative impacts of globalization are by far greater. Among the significant positive impacts of globalization on the environment, the progress in the use of resources, increased environmental awareness, and the development of environmental technology are worth mentioning.

Improved use of resources and preservation of the environment are achieved by promoting growth through sustainable development, improving education and income. An example of this is the activity of the World Bank in 1990, when it helped Mexico reduce the number of unhealthy ozone days (World Bank, 1990). Due to the impact of globalization, many multinational companies have focused on the creation of technology that reduces the impact of humans on the environment. Therefore, they created "green" technology, exemplified by the hybrid car and a new "green" Apple Mac.

Unfortunately, the negative impacts of globalization on the environment outweigh the positive ones. The main negative impact is reflected in the export-oriented environmental destruction. Excessive use of natural resources due to increased demand, and the removal of the ecosystem due to population growth have a major detrimental impact on the

environment. Unplanned deforestation causes loss of biodiversity on the planet. In Australia, about 90% of native forest trees is exported, thus destroying the natural heritage of this part of the world. Throughout the process of civilization and globalization, about one-half of the forests that once covered the Earth disappeared (World Wide Fund for Nature Europe).

A very important and far-reaching negative effect of globalization is manifested in global warming and climate change. Global warming is brought by greenhouse effect, caused by growing industrialization of developing countries and heavy reliance on fossil fuels. The carbon released into the atmosphere in this way causes global warming, which results in ice and glacier melting and consequent sea level rise, which, in turn, has a wide impact on biodiversity and weather system. Due to the above, according to the OECD, average global temperature has risen by 0.6 degrees Celsius since the late nineteenth century (See Graph 1).



Graph 1 Preview changes in average global temperatures in the period up to 2050.
Souce:OECD (2013) What is the impact of globalisation on the environment?, page 57

Global warming is particularly caused by increase in transport, i.e. harmful exhaust emissions from vehicles. According to the Office for National Statistics, the share of traffic-borne gas emissions in the greenhouse effect has increased by 47% since 1990 (Office for National Statistics). From an environmental point of view, the negative effects of globalization are higher, compared to the positive effects. The positive impact is only reflected in increased awareness of environmental issues and encouraging of multinational companies to take steps to protect the environment. Negative impacts are mainly based on export-oriented destruction, as well as on carbon and harmful gases emissions.

2. ENVIRONMENTAL CRISIS AS THE GLOBAL CRISIS OF HUMANITY

The negative effects of globalization and contemporary implications of social development are certainly the main causes of environmental crises. The fact that the ecological crisis is global in character and that its consequences are catastrophic for the Earth is indisputable. Most simply put, the environmental crisis refers to the global "attack" on ecosystems, that is, the man's immoral behavior towards nature. The manifestation of the environmental crisis is complex, which means that it appears as a structural and civilizational crisis of the modern era (Malešević, 2004).

The attitude of man to nature has resulted in the devastation of forest resources, exploitation of immeasurable amount of ores and minerals, and extinction of certain animal and plant species. Increased consumption of electricity for industrial purposes at the global level has doubled in less than a decade. Most researchers believe that with this pace of energy consumption, civilization cannot survive long. What is more, according to the most optimistic estimates, oil, as the non-renewable energy source, will disappear by the end of the XXI century (Malešević, 2004).

Assessing the social causes of the environmental crisis requires a lot of effort, but it is certain that they are crucial for the emergence and escalation of the crisis. Because of the consequences of globalization, nature socializes and society modernizes in the technical sense. Key to the enigma of the environmental crisis should be primarily searched in the sphere of the social system, because it is basically a social crisis. The reason for this fact lies in the fact that man is the only creature that can destroy their own survival through careless attitude towards nature. In line with this is Davies's opinion that economics describes the way in which humans interact with the environment in the production and reproduction of their lives. This relationship indicates that there is no environmental issue independent of economic relations (Davies, 2006). Maximum and inadequate exploitation of nature and the environment is especially typical of an industrial society. Future postindustrial society must raise awareness and turn more towards the preservation of nature and its revival, as well as diminish the gap that has been growing between the nature and society for ages.

To achieve the optimal balance between the environment and economic activity, it is necessary to reduce production, rationalize consumption, and instill a higher level of environmental awareness in future generations. There is an opinion that the environmental crisis is not accidental, but that it is immanent in essential characteristics of industrial civilization. The system of values of industrial civilization is most blamed because it focuses primarily on profit, while morality is ignored. Because of this belief that this system of values imposes, the significant destruction of nature occurs. Therefore, it is necessary to focus on a radical change of values in the future (Lomborg, 2009).

All economic activities affect the environment, whether done intentionally or unintentionally. Most of these activities usually lead to damage to the ecosystem or only pollute the environment. Mechanisms of economic growth can affect the environment by pollution and over-exploitation of natural resources, degradation and loss of wildlife habitat, and climate change. In addition, excessive consumption leads to degradation and increased exploitation of natural resources. Economic and environmental goals are often contradictory, and it is necessary to make a choice between them because their simultaneous realization is unlikely.

Environmental problems are increasingly present due to man's growing use of the environment in everyday activities. In order to preserve environment for the future generations, environmental protection requires slowing the uncontrolled exploitation of natural resources and lower level of pollution which results from expansive economic growth. Therefore, it is necessary to limit the economic growth in a short period of time and bring many activities in line with the rules of environmental protection, so as not to be brought to the brink of survival. Literature hosts conflicting opinions regarding the slowdown of economic growth for the sake of preserving the environment. Some theorists lobby for slower economic growth in order to protect the environment. In contrast, others say that the free market and technological progress are the best tools for solving environmental problems and lifting people out of poverty. In accordance with the concept of sustainable development, the focus should be on optimal use of natural resources that come from the environment for the sake of its preservation and further ability to use its resources in economic activities. The man, as one of the pillars of origin of the environmental crisis, is expected to rationally and responsibly manage natural resources, and, while still not too late, stop destruction and protect the natural environment from damage.

The concept that is closely associated with the environmental crisis refers to environmental awareness, which needs to be developed to prevent the emergence of the environmental crisis. Environmental awareness is immanent in social consciousness, and has its social essence, so that it cannot be exhausted only in criticism, no matter how progressive, nor can it be merely reduced to the awareness of the environment. It is actually a spiritual dimension of environmental culture, which includes knowledge and habits, adopted values, attitudes and beliefs, acceptance of norms about what is in the natural and social environment healthy and of high quality, how health is taken care of and what threatens it, in which way can the awareness and quality of life be improved in existing conditions (Koković, 2010). Furthermore, it is important to develop applied ecology on the basis of agreed environmental policies. It should be noted here that environmental policy relies on three basic attitudes, or groupings, based on current development. The first attitude sees current environmental policy as insufficient to successfully solve the existing dangers. It is mainly negatively evaluated. According to the second attitude, current environmental policy has mostly met all important expectations despite the permanent criticism of minor problems and failures. Third believe that environmental problems are exaggerated and that everything comes down to unnecessary environmental hysteria. Different currents and positions are found within these attitudes, among which are: moralists, biologists, socialists, rationalists, capitalists, and realists.

3. The Environmental Performance Index

For the purposes of reviewing the situation of the environment around the world, the Environmental Performance Index (EPI) was developed in 2006, whose forerunner was the Environmental Sustainability Index (ESI), developed in 1999. The Environmental Performance Index assesses the environmental performance of the country, by observing indicators that reflect the state of the environment. The main objective of EPI methodology is to "draw attention to how far countries have gone in achieving the objectives of environmental policy" (Environmental Performance Index, 2010). EPI index assesses the social and economic driving forces, pressures on the environment, the state of the environment and impact on human health and ecosystems.

In general, the EPI index is a powerful tool for managing a particular country and the world as a whole, with reference to the concept of sustainable development. The Environmental Performance Index strives to meet the needs of the governments to monitor the achieved environmental performance, and offers a method for assessing the effectiveness of environmental policies. It is especially designed to help policy makers to: 1) notice the current problems and identify priorities in environmental protection; 2) control the pollution of natural resources; 3) discover the most successful areas of environmental policy, and, where it is necessary, stop the ineffective efforts (Environmental Performance Index, 2008). The EPI methodology was developed through collaboration of the World Economic Forum with the Yale University and Columbia University. The data used for calculating the values of the EPI index has been obtained from the governments of countries, and it includes statements regarding environmental performance indicators.

Fig 1 The structure according to the EPI report from 2014.
Souce: 2014 Environmental Performance Index - Full Report, page 18

The Environmental Performance Index reflects the environmental performance ranking of the countries around the world, based on 10 categories, i.e. areas of environmental policy, and

25 performance indicators, grouped into two key components. These are: environmental "health" (perceived influence of environmental conditions on the health of humans) and ecosystem vitality (the health of ecosystems and natural resource management). Each of the indicators included in the EPI index structure is directed towards long-term sustainability of public health or ecosystems. The last report on the environmental performance shows a modified structure of the EPI index, which considers 9 environmental policy areas and 20 indicators (See Figure 1). The number of areas is reduced by one, because two previously separate areas, the effect of air pollution on human health and the effect of air pollution on ecosystems, are observed together. Now this is one area, designated as air quality. The environmental component "health" includes health impact, air quality, and water and sanitation as the most important areas of environmental policy. Within the components of the ecosystem vitality, the following environmental policy areas are analyzed: climate and energy, biodiversity and habitat, fishing, forestry, agriculture, and water resources.

EPI methodology, which is used for ranking the countries with respect to the environmental performance, has been applied in the analysis of the position of Serbia in relation to neighboring countries. For research purposes, the data concerning the ranking of the country has been taken from the reports for 2010, 2012, and 2014. It is important to note that Serbia and Montenegro were observed together in the reports for 2010 and 2012. The report from 2010 covered 163 countries around the world, where Serbia and Montenegro occupied the 29th position. In that year, in respect of neighboring countries, only Albania was better than us, occupying the 23rd position. Hungary was in the 33rd position, Croatia in the 35th, Romania in the 45th, followed by Slovenia (55th) and Bulgaria (65th). The lowest positions in the group of surveyed countries were occupied by Macedonia (73rd) and Bosnia and Herzegovina (98th). In the report for 2012, it is characteristic that Serbia and Montenegro went backward in the rankings, occupying 103rd position out of 132 countries in the rankings. The same trend could be observed in the case of Romania (88th) and Bosnia and Herzegovina (124th). In contrast, all other countries in the region advanced in the rankings and occupied much better positions in relation to 2010.

Table 1 Preview rank the countries selected according to EPI methodology for the period from 2010 to 2014

Country	Year / The number of countries		
	2010 /163	2012 / 132	2014 / 178
Albania	23	15	67
Bosnia and Herzegovina	98	124	107
Bulgaria	65	53	41
Croatia	35	20	45
Hungary	33	45	28
Macedonia	73	97	89
Montenegro	/	/	62
Romania	45	88	86
Slovenia	55	28	15
Serbia	29	103	31

Source: Author presentation according to the report from Yale University

According to the latest report from 2014, which shows the ranking of 178 countries, it can be seen that Serbia recorded progress (31st), returning to approximately the same

position in which it was together with Montenegro in 2010. From this year, Serbia and Montenegro are observed separately, so that Montenegro was for the first time independently ranked, occupying the 62nd position. The highest ranked among the analyzed countries in this year was Slovenia (15th), followed by Hungary (28th). The rest of the countries progressed in the ranking. Only Croatia and Albania occupied the lower positions in relation to 2012 (See Table 1). By analyzing the movement of positions in the rankings, only Bulgaria and Slovenia had an upward trend during the years observed in the study. Oscillatory movement in the ranking was characteristic for all other countries in the group of selected countries in the covered time period.

CONCLUSION

Globalization is a global process, and its effects will broaden and deepen over time. In addition to a large number of implications that it leaves behind, it can be said that the most difficult are the ones that threaten the survival of society and the environment. Economic activities are precisely the ones that contribute the most to environmental degradation, and they are directly correlated. Given the high degree of correlation between them, the economic activities must be sustainable, in order for the man to survive while respecting strong moral reasons, environmental regulations, and economic arguments. The concept of sustainable development should be widely accepted as a condition of survival and overall future progress. Failure to comply with the concept of sustainability leads to inefficient economic development, in terms of wastage of resources and energy, i.e. the tendency of long-term deterioration in the input-output ratio on a global scale. The economic and environmental objectives are often contradictory, and it is necessary to make a choice, because their simultaneous realization is unlikely.

The link between environment and economic development is very complex, and there is no possibility of independence of economic from environmental issues. Environmental problems, based on their scope and significance, are the most complex negative consequence of globalization. The expansion of environmental problems and involvement of the growing part of environment creates an environmental crisis, which is greatly affected by technological development. Manifestation of environmental crisis through various degrees of pollution, vulnerability, and degradation of environment is essential and burning problem of civilization, whose solution determines the future. In addition to the environmental crisis, environmental problems lead to the emergence of social crisis. The environmental crisis as such jeopardizes the natural and the human community, so that the requirements for the preservation of healthy living and working environment appear as a high moral social norm.

As an initial solution for combating the negative consequences of the globalization process, it is necessary to develop environmental awareness of all people, starting with the youngest, who are the future leaders of life on Earth. Expansion of environmental awareness results from the development of a growing number of environmental movements in the world and in our country. Legislative solutions should be reflected in the introduction of stringent environmental standards and environmental taxes that will ultimately discourage non- environmental behavior. The focus should be on the implementation of environmentally friendly technologies that can be applied in the production process, and imposing requirements for adherence to strict environmental standardization in carrying out economic activities. In addition to these solutions, strategic solutions are needed as

well, in terms of adherence to sustainable development strategy, based on the concept of sustainable development and smooth economic, environmental, and social prosperity. Interventionist role of the state is vital for the creation and implementation of required environmental principles and standards in doing business. The future is definitely in the green economy, which will be able to reconcile the problems posed by globalization and the environment. Perhaps the current environmentally shaken trajectory of human development can be changed, but it requires globalization of efficient social and political actions for the purpose of sustainability.

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EKOLOŠKI ASPEKTI PROCESA GLOBALIZACIJE – NEGATIVNE IMPLIKACIJE I KRIZA

Nadolazeći ekološki problemi današnjice sve više zaokupljuju pažnju globalnog društva. Čovek kao glavni činilac remećenja optimalne ravnoteže životne sredine smatra se najodgovornijim za nastanak ekološke krize koja se ispoljavam u svim sferama života. Kako postoji sve veći broj ekoloških problema koji zahtevaju hitno rešavanje, neophodno je povećanje svesti o problemima koji nas okružuju. Ubuduće je potrebno razvijati ekološku („zelenu“) ekonomiju, racionalizovati

potrošnju, i usaditi viši nivo ekološke svesti nadolazećim generacijama kako bi ekološki problemi bili svedeni na minimalni nivo.Treba imatu u vidu da je ekološka dimenzija noseća komponenta održivog razvoja savremenog čovečanstva. U skladu sa time, razvijena je metodologija Indeksa ekoloških performansi – EPI (The Environmental Performance Index). Po osnovu ove metodologije i izražavanja ranga zemlje prema ekološkim performansama u radu je izvršena analiza stanja ekološke razvijenosti u Srbiji i zemljama u okruženju.

Ključne reči: *globalizacija, ekološki problemi, ekološka kriza, Indeks ekoloških performansi (EPI)*

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DOMESTIC AND EXTERNAL FACTORS OF CURRENCY CRISES

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Milan Marković

Faculty of Economics, University of Niš, Serbia

Abstract. *The aim of this paper is to explain the essence and basic causes of currency crises in the last decade of the twentieth century. In doing so, we will not dwell on the description of the crisis of individual countries. We will analyze the aggregate (essential) factors which determine and encourage the development of currency crises. Research shows that poor macroeconomic policies and adverse external shocks are the most important and the most common factors of currency instability. These are the following determinants which are often associated: long retention of appreciated exchange rate, the bad conduct of monetary policy in a fixed exchange rate regime and the negative impact of speculative capital.*

Key words: *currency crises, exchange rate, speculative capital, expansionary monetary policy, monetary stability.*

INTRODUCTION

Currency crises are crises afflicting many economies with major problems from the standpoint of internal and external macroeconomic imbalances. In explaining currency crises, we highlight that they are very harmful for the economy because these crises lead to inflation, financial and economic disorders and reduce the value of the national currency. Therefore, in studies of currency crises special emphasis is on determinants (causes) which encourage its expansion.

Currency crises usually occur as a result of government efforts to maintain overestimated value of the domestic currency (Burda and Viploš, 2012, p. 389). It happens primarily in countries that have a fixed exchange rate regime. Developing countries with unfavorable structural characteristics are more susceptible to the functioning of currency crises. The problems deepened with the desire of speculators to profit from foreign currency trading. It is often said that speculative pressures, as an external factor, increase the likelihood of an outbreak, i.e. the development of currency crises.

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Corresponding author: Milan Marković
Faculty of Economics, University of Niš, Trg kralja Aleksandra 11, 18000 Niš, Serbia
E-mail: markovicmilan89@gmail.com

First-generation crisis models are mentioned most often in the theoretical considerations, which are linked to Krugman (1979). These models are linked to a situation where it is impossible to achieve both internal and external balance by using expansionary monetary policy. The only effect of expansionary monetary policy is reflected in the reduction of foreign exchange reserves (in order to defend the fixed exchange rate), and speculation in the foreign exchange market due to the loss of confidence in the fixed exchange rate.

In practice, they are usually linked with developing countries, such as Argentina, Mexico, Brazil, Russia, Southeast Asian countries ("Asian tigers"). They were the result of misguided macroeconomic policies, as well as the rational expectations of speculators. In almost all the crises of the nineties of the last century in Latin America, East Asia, Russia, effects of speculative capital were present. Latin America is a striking example of synergy of all factors of emergence of currency crises that are mentioned in the study, while East Asian countries were faced with a financial crisis that was not the result of inadequate monetary policy. In the case of these countries it was observed that the currency crisis quickly caused the financial (banking) crisis, which is usually marked by the liquidity crisis. The liquidity crisis and the withdrawal of speculative capital work towards the formation of a deep economic crisis.

To prevent the development and transfer of currency crises in the financial and real sector, several solutions are used. One of the measures involves the sale of foreign exchange reserves of the central bank. Then, the devaluation of the national currency and the third proposes a reduction in interest rates that will act as an incentive in attracting foreign capital. Here it should be pointed out that the sale of foreign exchange reserves in the foreign exchange market is only a short-term solution, while reducing interest rates together with the increase in the exchange rate can lead the country into a state of hyperinflation.

1. BAD ECONOMIC POLICY AS A BASIC CAUSE OF CURRENCY INSTABILITY

1.1. Too long retention of appreciated exchange rate in the regime of fixed exchange rate

Many countries are trying to prevent the creation of inflationary pressures by overvaluing national currency. It is the role of the exchange rate as a nominal anchor. In order to neutralize the high rates of inflation, the exchange rate is often held to unrealistic levels. It should be noted that in the short term exchange rate fixing is an important instrument of macroeconomic stabilization. However, in the long term (due to the inflationary sensitivity of an economy) comes to an appreciation of the real exchange rate which causes a reduction in the competitiveness of domestic exports. From this stems the external imbalance due to a decrease in exports, while the nominal exchange rate will rise.

Furthermore, an unfavorable balance of trade causes devaluation and monetary instability (inflation), which is quite contrary to its original goal of strengthening currencies. Given the dominance of purchasing power parity as a major determinant of the exchange rate, price increase causes the re devaluation of the national currency (Câmara and Vernengo, 2004).

In developing countries, in the process of macroeconomic stabilization, exchange rate policy as a nominal anchor is often applied (Miljković, 2008, p. 350). On the one hand, internal balance is achieved in a very short term by drastic reduction in the inflation rate. On the other hand, there are negative consequences of the loss of competitiveness of the

domestic economy if they too defend a fixed exchange rate. so-called inflation-devaluation spiral appears which introduces country into complete collapse (Dornbusch, 1996). Therefore, we propose a solution that includes an exit strategy, i.e. abandonment of the fixed exchange rate system. Also, if some countries have more durable higher inflation rates than the currency dominant countries in the world, they are not able to apply the fixed exchange rate regime which would be constantly defended (Ćirović, 2000, p. 82).

Dornbusch's work exhaustively explains how anti-inflation strategy by fixing exchange rate may cause a currency crisis. The work is called "Latin Triangle" keeping in mind the situation in many Latin American countries (Brazil, Chile, Mexico), not limiting the analysis only to the case of these countries.

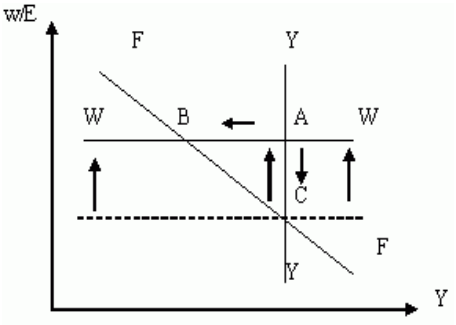

Fig. 1 Latin triangle
Source: Dornbusch, 1996.

Horizontal axis shows the level of output, while the vertical one real wages (nominal wages adjusted for the effects of inflation), respectively, the real exchange rate. The curve YY is the level of domestic product at optimum employment. To the right of it there is excessive employment and lack of employment, to the left. The curve FF is the curve of current account balance, while WW curve represents the real wage in the national currency that ensures social peace in the country. Right above the curve of FF there is a current account surplus, while under the curve WW appear lower wages than the "optimal". Accordingly, point C symbolizes the simultaneous internal and external balance, while other points are the points of imbalances.

In conditions of hyperinflation, many countries, in the process of macroeconomic stabilization (which is desperately needed in this case), introduce a fixed exchange rate. This often involves an enormous appreciation of the national currency. Inertia in the growth of nominal wages in the fixed exchange rate regime causes an increase in real wages, which shifts the real wages upward, so that more simultaneous equilibrium does not exist, and a triangle is underway. If the economy reaches the point A there will be social peace and optimal employment, but will be in the balance of payments deficit. This is because the constant habit of increasing wages contributes to inflation that reduces the real exchange rate and makes it uncompetitive economy, so the decrease in exports and an increase in "cheap" imports cause the deficit of the current balance of payments. The question is whether this situation is sustainable. Of course it is not . It continues, as a rule, as long as a short-term borrowing abroad is possible. When foreign exchange reserves are exhausted, then a currency crisis comes. To avoid such an outcome, it is possible to carry out a devaluation of the national currency, which will gradually lead the economy from point A to point C. In terms of the requirements for achieving positive effects of devaluation on the balance of payments, at this point would be to achieve a balance of current account and the economy will remain at the level of full employment. The only problem is the lower wages in foreign currency due to an increase in the nominal exchange rate. Social unrest, which will obviously follow, returns the economy to point A, opening

the possibility for the manifestation of inflation-devaluation spiral. The alternative is a deflationary adjustment of the balance of payments including reducing aggregate demand and employment, through the measures of restrictive fiscal and monetary policy. It is the unpopular measures that are the condition for aid from the International Monetary Fund. If the economy crosses from point A to point B, which is logical in terms of reduction of absorption, this situation brings with it certain consequences. There will be involuntary unemployment, which is solved by devaluation of the national currency, which is an instrument for increasing the price competitiveness of exports. Reducing the price of exports in foreign currency and increasing import prices in domestic currency, enables increasing production, exports and consequently, employment.

As an example of this, we will give Argentina, which in 1989 implemented reforms that were related to privatization, trade liberalization, deregulation and the implementation of the currency board regime, which proved to be very successful. The International Monetary Fund insisted on the currency board regime, which is broken down inflation in the short term. However, this policy precisely involves the appreciation of the real exchange rate and leads to a crisis in the middle, especially in the long term. Unsustainablility of such exchange rate policy caused the current account deficit and the attacks on the currency. Namely, the one chosen exchange rate regime is not an optimal solution for all time (Miljković, 2008, p. 412).

However, if the central bank does not increase domestic loans in order to maintain the original level of foreign exchange reserves (keeping in mind that foreign exchange reserves with loans to domestic entities make up the money supply), this can lead to contraction of the money supply. In this case, the interest rates become very high and international investors increase demand for domestic assets, so the foreign exchange reserves quickly recharge (Burda and Viploš, 2012, p. 499).

1.2. Improper conduct of monetary policy in a fixed exchange rate regime

Another important factor for currency crises is linked to the inappropriate conduct of economic policy (especially monetary) in terms of a fixed exchange rate. In explaining this problem, we analyze the situation where there is imperfect capital mobility, fixed exchange rate regime, while the country's central bank guides expansionary policy. This will be displayed using the "famous" Mundell-Fleming model.

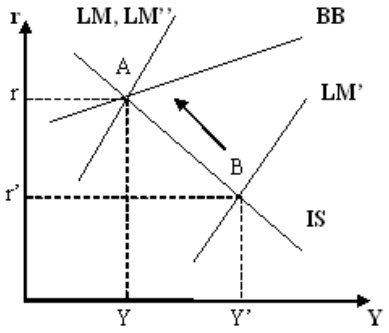

Fig. 2 Mundell-Fleming model under conditions of imperfect capital mobility, fixed exchange rate and an expansionary monetary policy

Figure 2 shows the Mundell-Fleming model, which assumes that the central bank is pursuing expansionary monetary policy in a fixed exchange rate regime. Each point on the IS curve implies equality of investment and savings, while each point on the LM curve represents equality of supply and demand in the money market. BB curve shows the point where the balance of payments is in equilibrium. It does not move because the whole analysis is performed in terms of a fixed exchange rate and under the assumption that monetary policy measures do not directly affect the balance of payments.

Equilibrium is reached in the point A. This point shows the combination of interest rate r and the total output Y for achieving simultaneous internal and external macroeconomic equilibrium. The internal equilibrium of the economy means situation without involuntary unemployment and inflation, while the external equilibrium reflects the balance of payments balance.

If the central bank decides for the conduct of an expansionary monetary policy, the LM curve will shift to the right and down to the level of LM. Expansionary monetary policy implies that the central bank increases the money supply and/or reduces the interest rate. These are the two main variables of monetary policy. Expansionary policy is conducted usually by reducing the required reserves, reducing the benchmark interest rates and the purchase of securities on the open market (Marković, 2014). The model also assumes that the money supply consists of foreign exchange reserves and domestic corporate loans.

The increase in the money supply in this model was induced by increasing the sum of domestic credit. By increasing the money supply, the balance moves and now the economy is at point B. The interest rate is reduced due to the increased supply of money, while aggregate output (production) increases due to increased spending (primarily investment, due to reduced rates of borrowed capital). Lower interest rates lead to an outflow of capital from the country and increased production increases consumption and imports, especially in less developed economies that are dependent on imports. So, at this point expresses the balance of payments deficit, so there is no balance. As the monetary authority is obliged to maintain external balance and to defend exchange rate, the central bank brings out the foreign exchange reserves. Since the foreign exchange reserves are decreased (as a component of the money supply), it is clear that the money supply reduces returning the economy to point A. The money supply is the same; the interest rate and gross domestic product are the same, while foreign exchange reserves are only decreased.

Based on all the above, the view that the central bank should not use expansionary monetary policy to solve the problems of economic development of the country with fixed exchange rate may be accepted. Such monetary policy of the central bank will return like a boomerang in the form of an increase in the inflation rate which is difficult to control if, so-called inflationary spiral of exchange rate and price is opened (Todorović, Marković, 2013, p. 128).

2. Destructive Effect of Speculative Capital to Monetary Stability

Many economists believe that speculative capital movements are the main initiator of currency crises. Others say that they only support the further expansion of the currency crisis. Either way, in modern conditions of financial globalization they represent a significant (external) factor of currency crises.

Developing countries represent a fertile ground for attracting and operation of speculative capital due to their greater absorptive power of capital (Marković, 2013, p. 109). Often, the currency crises are defined as speculative pressures on the foreign exchange market. If these countries report high rates of inflation, there is a cumulative appreciation of the real exchange rate. The deterioration in price competitiveness of the domestic economy in world commodity markets affect the formation of the increased deficit of the current balance of payments, which is a necessary condition for the increased inflow of foreign capital (Ćirović, 2000, p. 410). Thus, the overvalued exchange rate causes a balance of payments deficit, which is a signal to foreign capital that will probably come to the devaluation of the national currency. Often this reduces the deficit by increasing interest rates, which is a double-edged sword. This is because the policy of high interest rates covers the current account deficit and controls inflation, but also increases the possibility of higher short-term capital inflows (hot money) with speculative intentions and characters.

Talking about the effects of speculative capital, we consider the causes of currency crises through its negative effects on the exchange rate. This is because such movement of capital can have a stabilizing effect, too. For example, in the case of excess of supply over demand of foreign currency, the exchange rate falls (in direct notation). Speculators may have the expectation that the exchange rate will rise in the coming period, and therefore, they can decide to purchase them. They do it because they earn interest on the difference between the buying and selling price of foreign exchange (exchange rate). This situation is similar to speculation with other products. As soon as the price of a good is lower (assuming the same quality) an increase in demand for it is normally expected. Thus, with increasing the demand for foreign currency, speculators prevent a significant drop in the exchange rate, and maintain it at a relatively stable level.

However, in most cases, speculative capital is not going down that road. The negative effects of speculation in the foreign exchange market in particular are present in a fixed exchange rate regime. Let us start from the assumption that the country has fixed exchange rate regime and that the balance of payments deficit is caused by a decrease in exports. In this case, the inflow of foreign currency is lower (because the export charges in foreign currency). This leads to an increase in pressure on the exchange rate; each increase in the exchange rate necessary leads to price increases to a certain percentage, depending on the stronger or weaker exchange rate pass-through to inflation (see Markovic and Markovic, 2014).

In the system of fixed exchange rates an antagonistic relationship is formed between the monetary authority (central bank) and foreign exchange dealers (speculators) who occasionally attack the currency parity when estimate conditions for exchange rate changes (Ćirović, 2000, p. 26). Then, the short-term speculative capital is transferred from weaker to stable, as a rule, stronger currencies. The central bank has two obvious solutions to the new situation:

- To sell foreign currency from foreign exchange reserves and/or
- To borrow abroad in the short term.

In the sixties of the twentieth century, the monetary authorities in most countries were able to defend the exchange rate by means of these measures because the capital was available to a large extent and they were able to easily borrow abroad. But, the question is whether this is possible in modern conditions. Countries with balance of payments problems have lower credit rating due to the lower probability of repayment of debt, interest rates are higher which worsens the conditions of borrowing and foreign exchange reserves are still limited.

If the central bank defends the exchange rate, then it will come out as a winner in the short term. However, if speculators win, loss of confidence in the fixed exchange rate of a currency crisis will occur. Specifically, the central bank can defend the exchange rate due to the balance of payments deficit. But when speculators recognize the long-term external imbalances, they are becoming aware that the devaluation of the national currency will come inevitably. Speculators then increase the demand for foreign currency expecting further growth rate, while the central bank increases the supply of foreign exchange by reducing foreign exchange reserves. In fact, when they feel that the moment of discharge of foreign exchange reserves is closer, they increase the purchase of foreign currencies expecting the sudden devaluation (the case of Mexico and some Asian countries) (Jevđović, 2013). If the central bank doe nott defend a peg against a foreign currency, currency crisis becomes inevitable, accompanied by high rates of devaluation and inflation.

The impression is that the currency crises, due to adverse external shocks, occur only in those countries with a fixed exchange rate regime. However, a system of flexible exchange rates is not t immune to speculative attacks, especially in developing countries with large quantum of foreign capital. Less suspicion towards worsening performance of the national economy can lead to a drastic increase in the outflow of capital. As soon as there is a suspicion i.e. lack of confidence in monetary stability in the country by foreign investors, there comes a sudden withdrawal of capital from the country. Stable public finances, wage flexibility and a healthy banking system are the guarantee of the stability of prices and exchange rates, as well as the entire economy.

Speculators, to make a profit, must choose the right time to buy and sell foreign currency, bearing in mind the expected moment of manifestation of a currency crisis. If they start too early to buy foreign currency, e they may not earn anything because the central bank may initially defend the exchange rate, while the losses are likely to occur due to the payment of costs of conversion. Conversely, if speculators start buying too late, after the currency has been devalued, they will end with a loss (Burda and Viploš, 2012, p. 498).

CONCLUSION

Every crisis has distinct characteristics and factors that encourage its development. These factors may be the result of misguided macroeconomic policies (monetary and foreign exchange, primarily), or those that originate from the environment. According to our research, we can clearly observe common, usually present interrelated causes of recent currency crises:

- Long retention of appreciated exchange rate,
- Inadequate conduct of monetary policy under fixed exchange rates and
- Speculative capital movements (its devastating effect).

In a fixed exchange rate regime, monetary authority is committed to defending the value of the national currency. The central bank must intervene through a reduction in foreign exchange reserves to increase the supply of foreign exchange, although it is aware that there is a real appreciation of the exchange rate and that it is not sustainable in the long term. Since foreign exchange reserves are not an inexhaustible source of financing balance of payments imbalances, it is quite obvious that the rescue of a fixed exchange rate becomes impossible after a certain period of time. In this case, the monetary authority is faced with the impossibility of defending a particular level of the exchange rate and this

leads to inflation (hyperinflation usually) because of high rate of devaluation of the national currency. Then, the currency crisis is being largely present.

Also, anyone conducting expansionary monetary and credit policy in terms of a fixed exchange rate, and in order to stimulate economic activity, is being inefficient. In the medium and long term this policy cannot be maintained in order to stimulate economic growth. The economy returns to its original equilibrium, and foreign currency reserves decrease. Since they are not unlimited, inexhaustible source, reactions of speculators are possible.

Due to prediction of the devaluation of the national currency in the future, many players decide to sell, and then purchase foreign currency, and so the central bank has enormous problems in defending the established level of the exchange rate. In these conditions, the market becomes very sensitive, while the thought of devaluation by some agents causes the actual reaction of market participants towards the sale of the domestic currency. The monetary authority spends available foreign exchange reserves, and then, in most cases "brutal adjustment" will appear. Speculators know that the exchange rate will not take place in these circumstances. Every crisis ends with the transition to a floating exchange rate (due to the inability to defend the established level), with hyperinflation and a high rate of currency devaluation.

On this basis, we conclude that many of the causes of currency crises are intertwined, and they cannot be considered separately because of their common and simultaneous action.

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DOMAĆI I SPOLJNI FAKTORI VALUTNIH KRIZA

Cilj ovog rada sastoji se u objašnjenju suštine i osnovnih uzroka valutnih kriza u poslednjoj deceniji dvadesetog veka. Pri tome, nećemo se zadržavati na opis kriza pojedinačnih zemalja. Analiziraćemo agregatne (suštinske) faktore koji uslovljavaju i podstiču razvoj valutnih kriza. Istraživanje pokazuje da loša makroekonomska politika i negativni eksterni šokovi jesu najznačajniji i najčešći činioci valutne nestabilnosti. Radi se o sledećim determinantama koje su često povezane: predugo zadržavanje apresiranog deviznog kursa, loše vođenje monetarne politike u režimu fiksnog deviznog kursa i negativno dejstvo špekulativnog kapitala.

Ključne reči: *valutne krize, devizni kurs, špekulativni kapital, ekspanzivna monetarna politika, monetarna stabilnost*

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COMPETITIVENESS AND DEVELOPMENTAL TRENDS OF THE NEW INDUSTRIAL POLICY OF THE REPUBLIC OF SERBIA

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Ivana Kostadinović, Zorana Kostić, Ivana Ilić

Faculty of Economics, University of Niš, Serbia

Abstract. *The achieved level of economic development determines the degree of industrial development in one country. The aim of this paper is to identify the key determinants of the new industrial policy of Serbia, in the context of European integration processes. The same is based on the analysis of strategic documents of Serbia and the European Union, governing the industrial development for the period up to 2020. Particular attention is paid to the monitoring of developmental dynamics and trends in improving industrial competitiveness. It has been noted that the achieved level of industrialization defines the industrial competitiveness of a national economy. Serbia needs an efficient, industrially competitive economic structure that will be able to meet the growing demands and challenges of the market. Only a properly designed and consistently applied industrial policy can follow the European developments in the future.*

Key words: *new industrial policy, the European integration process, The Competitive Industrial Performance Index (CIP), the development and competitiveness of the industry.*

INTRODUCTION

Plenty of theoretical insights and empirical examples have confirmed that the achieved level of economic development to a large extent determines the degree of industrial development. Industrial policy is part of a broader economic policy, which specifies the place and determines the importance of industry in generating economic growth and development of a country. In order to achieve the strategic goals of a country, a high level of coordination and integration of the industrial policy with other relevant policies is required. Adequate implementation of appropriate industrial policy is a necessity and a need of all economic systems in order to overcome developmental limitations, on the road from the comparative advantages to the strategic objectives.

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Corresponding author: Ivana Kostadinović
Faculty of Economics, University of Niš, Trg kralja Aleksandra 11, 18000 Niš, Serbia
E-mail: ivana.kostadinovic@eknfak.ni.ac.rs

Industrialization is a central strategy for achieving the economic transformation of underdeveloped countries. Based on empirical data and general theoretical knowledge, large disparities have been observed in the industrial development across countries. Convergence between the industrially most competitive countries and less developed countries is in stagnation. On the one hand, middle-income countries are trying to achieve industrial progress in the sustainable environment. Industrialized countries, on the other hand, tend to overcome the consequences of the economic crisis and point to the dangers of de-industrialization through "industrial renaissance". Serbia belongs to the group of industrially developing countries.

The analysis of the economic results, achieved in the previous period, shows that the Serbian industry has not contributed to economic growth to the expected extent, despite the available industrial capacities. The causes that led to this state of affairs should be sought both in economic and in non-economic spheres. In order to create a new, more efficient economic structure, it is necessary to reduce developmental limitations to a minimum. In this regard, the purpose of long-term and continuous adjustment of sectoral policies to the concept of accelerating economic growth requires the transformation of consumer-oriented demand into pro-investment demand, thereby putting the emphasis on tradables. It is essential to point out the necessity of selecting a pro-investment and export-oriented development path. Selecting the correct development orientation is not simple, as it requires recognition of all specific features of our country and appreciation of the strategic documents of the European Union.

The first part of this paper will provide foundations of industrial policy. The second part will include detailed analysis of the situation, objectives, and measures of the new industrial policy of Serbia. Strategic developmental directions of Serbian industry until 2020 and changing trends will be shown in the third part of the paper. The fourth part will focus on *The Competitive Industrial Performance Index*, viewed in the context of industrial development indicators.

1. FOUNDATIONS OF INDUSTRIAL POLICY

In the aftermath of the 2008 global economic crisis, a number of public interventions have been initiated, in order to ensure economic recovery, job creation, and foster much-needed transitional sustainability. The package of stimulus initiatives differed among countries affected by the global economic crisis, but each of them contained the two key pillars: the massive investment plans in respect of infrastructure, which reflects the classic remedy for the economic crisis, and industrial policy (Aggarwa & Evenett, 2012). Industrial policy is an important instrument of the private sector and economic development based on the production of new goods with new technologies and the transfer of resources from traditional activities to these new ones. Besides, it is a central instrument for improving economic transformation. Theorists have come up with a number of definitions of the concept of industrial policy and its scope, depending on the viewing angle.

UNCTAD (*The United Nations Conference on Trade and Development*) defines industrial policy as "a concerted, focused, and conscious effort on the part of the government to encourage and promote a specific industry or sector with an array of policy tools". The World Bank sees the industrial policy as "government efforts to alter the industrial structure to promote productivity-based growth". Pack and Saggi give a more detailed definition, stating

that it is any type of selective intervention or government policy that attempts to alter the structure of production towards sectors that are expected to offer better prospects for economic growth than would occur in the absence of such intervention, i.e. in the market equilibrium The most famous advocate of industrial policy, Rodrick, implies that it can be viewed as a means of coordination for stimulating socially profitable investment (Rodrick, 2013).

Industrial policy represents a conscious action of the state in setting goals and establishing instruments to achieve these goals in the field of industry. The main objective of industrial policy is the development of the economy and determining the place and role of industry in this development. The effects of industrial policy are reflected in the realization of the objectives (Gligorijević, 2008).

Generally, industrial policy can be defined as any policy affecting the industrial activity of a country. Regardless of which definition is considered, it is clear that the main objective of the industrial policy is raising productivity, profitability, and international competitiveness of national industries, through the construction of an optimal industrial structure (Jurčić, 2013). According to a number of theorists, governments should be directly involved in the establishment of national industrial objectives, and be held accountable for achieving goals. Specifically, governments are the ones that should determine which industries would be most likely to be competitive in the future global economy, and focus on them in setting industrial policy objectives.

2. Analysis of the Situation, Objectives, and Measures of the New Industrial Policy of the Republic of Serbia

1. On the way to full membership in the European Union, Serbia is faced with a task of harmonization of industrial policy with the principles of the EU and its member states. The development of industrial policy in the European Union and Serbia is regulated by the long-term strategic documents, which lay down the main goals and priorities of further development, incentive measures, and development policy. Our country has adopted the Strategy and Policy of the Industrial Development of the Republic of Serbia for the period 2011-2020. The strategy is aligned with the industrial policy of the European Union and the goals of the new European strategy, Europe 2020. This strategy is a general document that directs the further course of the Serbian industry, with proposed measures to improve the current situation. The potential that Serbia has needs to be used effectively, through the application of the well-structured Strategy. Accordingly, the objectives and priorities of future development are designed within the framework of the above-mentioned document, which validates the concept of sustainable development and seeks to strengthen the role of industry in the economy and society. The objectives of the Serbian strategy should be aligned with the objectives of the industrial policy of the European Union, presented in the Lisbon strategy, which was defined in 2000 and revised in 2005 and 2008.

Future trends in the Serbian industry are heading towards sustainable and dynamic development that fits the needs of the markets of the European Union, and is able to withstand the pressures of competition originating from other European Union member states. In order to make the industry more competitive, Serbian Strategy provides for essential strategic goals and directions that should be followed in the future. The primary objective is to increase the competitiveness of the industry, and make the overall industrial

policy proactively oriented towards export competitiveness of industrial products and services with high added value, based on knowledge, innovation, research and development (Strategy and Policy of the Industrial Development of the Republic of Serbia 2011- 2020, p. 29).

2. In accordance with the intended orientation of industrial policy, the Strategy presents the following strategic objectives: a dynamic and sustainable industrial growth and development, the proactive role of the state, improving the investment environment, strengthening competitiveness, accelerating the development of entrepreneurship, increase and restructuring of exports, reform of the education system in accordance with the needs of the economy, active and dynamic cooperation between science and industry, fostering innovation, reform of the labor market and employment policy, balancing stabilization, development and social role of the state, the development of regional industrial centers and regional business infrastructure, improving energy efficiency, and environmental protection (Strategy and Policy of the Industrial Development of the Republic of Serbia 2011- 2020, p. 52).

Indicators of dynamic and sustainable industrial growth and development are higher living standard, as well as the reduction of unemployment and poverty. The proactive role of the state, as one of the goals of the Strategy, is reflected in the institutional establishment, with emphasis on knowledge and skills for finding the optimal solution for the development of the industry. To improve the investment environment, it is necessary to attract more foreign direct investments, and invest them in development of small and medium-sized enterprises, which will take the workforce of existing unsuccessful companies. In order to strengthen the competitiveness, it is necessary to carry out the transition and reform processes that will enhance the development potential of the country. Faster development of entrepreneurship is only possible through the support for the establishment of new enterprises, employment, and human resource development.

In order to increase and restructure exports, special attention must be given to: increasing the competitiveness of products of Serbian industry, their placement on the EU market, and restructuring of exports towards high technology branches. Based on the data given in Table 1, it can be seen that the high-tech industry is the sector with the highest projected growth rates in Serbia until 2020, which, in 2008, accounted for 7.5% of gross value added. However, one should not ignore the fact that the low-technology-intensive sector has dominant share in the structure of the Serbian industry, which accounts for over 50% of gross value added of the Republic of Serbia. The average projected growth rate of low-technology-intensive industrial sector by 2020 is 6%.

To make responses of the economy as efficient as possible, a reform of the education system is essential. The reform of the education system involves compliance with the current and future needs of the labor market. Industrial policy objectives should involve active and dynamic cooperation between science and industry, relating to innovation in all fields. In order for this goal to be achievable, it is necessary to produce a long-term program of technological development that will be compatible with the strategic development priorities, the real situation, and perspectives of technological development in Serbia.

Encouraging innovation is important for increasing industrial growth and employment, as well as for the creation of new industrial products with added value. In this respect, there are investments in new products, which may stand for competitive products on the market,

and ultimately improve the industrial growth. The reform of the labor market and employment policies should be implemented to reduce the fiscal burden of work, maintain a responsible policy of minimum wage, and increase the proportion of funds for active labor market programs in GDP. Strategic documents governing the industrial development for the period up to 2020 map out a harmonized relationship between stabilization, development, and social role of the state, because the privatization and restructuring of the industry, which should be done in the future, involve significant social costs. For the purpose of better regional development and reducing regional differences that have been present for several decades, it is necessary to develop regional industrial centers and regional business infrastructure. The economic competitiveness and energy efficiency are closely related. In accordance with this, energy efficiency can be improved through the most rational use of energy. Environmental protection, as the goal of the Strategy of industrial development, emphasizes that efforts should be directed towards cleaner modes of production and reducing environmental pollution.

Table 1 Projected share of sectors and fields in gross value added and projected growth rates

Subsectors	Share in gross value added		Growth rates 2008-2020
	2008	2020	
Low-tech	50.7	43	6%
Food	29.9	24.4	1%
Textile	4.9	5.2	8%
Medium-low-tech	25.4	22	6%
Coke and petroleum products	0.3	0.4	8%
Rubber and plastics	6.0	5.5	5%
Other minerals	6.0	5.6	6%
Metal	13.1	10.5	5%
Medium-high-tech	16.4	23	10%
Chemical	7.7	10	10%
Machines and equipment	5.0	7	8%
Means of transport	3.8	6	11%
High-tech	7.5	12	12%
Electronics	7.5	12	12%

Source: *Serbian Post-Crisis Economic Growth and Development Model 2011-2020* (2010). Foundation for the Advancement of Economics – Faculty of Economics, Macroeconomic Analyses and Trends and Konjunktur-Barometer – Economic Institute, USAID. Belgrade, p.29.

The overall objective, which is presented within a new policy of industrial development, is the strengthening of the competitiveness of the national industry, as well as ensuring its growth and development. The achievement of this objective is possible through general measures and instruments of economic policy, reducing the barriers that hinder the successful operation, and orientation towards new knowledge, technology, and innovation.

3. To achieve the set objectives, specific measures and activities need to be strictly followed and enforced. The set of related actions are the result of the current phase of development of the Serbian market economy, and obligations that country has on the basis of international agreements, membership in the World Trade Organization, and the

Stabilization and Association Agreement with the European Union (Strategy and Policy of the Industrial Development of the Republic of Serbia 2011- 2020, p. 66). A number of measures should be aimed at improving the competitiveness of Serbian industry, with particular emphasis on the processing industry, with respect to its current capacities and circumstances in the environment. Accordingly, the task of industrial policy is to contribute to the efficient functioning of the market, with possible direct intervention in the event of deficiencies, and creating a favorable business environment. Special emphasis in the concept of a new industrial policy has been placed on the horizontal incentive measures that emphasize equal chances for the success of all enterprises, whose success is rewarded by the market which is the driving force of the modern processing.

The Strategy and Policy Development of the Industrial Development of the Republic of Serbia 2011-2020 highlights the following measures and activities, aimed at:

1) building the institutional framework and the business environment;
2) strengthening competitiveness and productivity;
3) development of entrepreneurship, i.e. the sector of small and medium-sized enterprises;
4) effective restructuring and privatization;
5) strengthening the competitiveness of certain sectors by using horizontal and vertical measures.

Given the situation in the industrial sector, it is necessary to make reforms, in order to strengthen its competitiveness. The new Serbian policy of industrial development for the period 2011 – 2020 provides for reforms within specific industrial policy goals, set for the future. The changes are aimed at achieving a higher level of competitiveness and strengthening the economy of Serbia, primarily industry.

Dynamic and competitive development of Serbia requires a reform of education in the first place, because the highly educated people are the basis of higher phase of sustainable development. The emphasis is placed on the transformation of vocational education, concerning the identification of professional competences acquired earlier. Certainly, it is necessary to increase investment in education, which ultimately refers to investment, which, besides creating human capital, contributes to the development of society. Continuing the started modernization, reform of the education and training system is a primary task for our country, in order to provide quality workforce, able to work with new technologies and ready to respond to new market conditions. The problem that arises with the education of the people is non-compliance with labor market needs. Instead of giving subsidies to foreign investors for each new job, it is much better to invest that money in the continuous education of the workforce. In addition, education should be oriented towards the market structures of the future, which is the way to successfully attract foreign investors. The main competitive advantage of Serbia lies in the knowledge, and may be used only through the reform of education. The education reform process is based on the establishment of a system of social partnership, the improvement of educational institutions, providing quality systems in education, and research system in the education.

In terms of technological development, Serbia is characterized by backwardness, which refers not only to the highly developed countries, but also to the level of technology that the Serbian industry had in the late 20th century. Industrial policy and strategy for the period up to 2020 focus on three strategic priorities, which are instruments of technological policy of recovery of Serbian industry. Their implementation is organized in the form of phases, and refers to revitalization, re-engineering, and development. Revitalization is the instrument,

which should in the short term (2011-2015) activate the current technological resources and bring them to the normal state, with a focus on quantitative aspects. At this stage, the state has a key role in implementing and launching initiatives. The next phase, re-engineering, refers to the technological reconstruction of industry in the period from 2013 to 2020, through technological modernization and introduction of high-tech content. Development expansion (2018-2030), as the last stage in the technological development of the Serbian industry, seeks to alter the technological profile of the industry, by building new high-tech sector and increasing the innovative potential.

The initiator of industrial development in the future is innovation, which is the most important factor of industrial competitiveness. In addition, innovation is the driver of economic growth, which is imperative for Serbia in the future. Innovative policy aims to reach a greater number of scientific discoveries that the industrial sector will transform into commercial products. Research and development policy is part of the innovative policy, which should enable the transformation of scientific research into new technologies and innovations. In Serbia, the situation in this respect is very bad, which requires greater investment in knowledge and innovation, greater number of companies engaged in research and development, and better programs that encourage investment in science and technology. Allocation of only 0.3% of GDP for science is very low, and new industrial policy emphasizes that the level of budgetary allocations from GDP by 2015 should reach 1%.

Reforms in the context of information and communication technology, which are the initial spark of economic growth on a world scale, are related to the digitalization of telecommunications infrastructure, enabling the widespread availability of the Internet, encouraging the development of web economy, and a higher level of development of electronic communication. In order to achieve the planned changes, of primary importance is the training of a scarce number of professionals in this area, expansive development of e-government, health care, and a host of other activities that are closely associated with better functioning of information and communication technologies. All this is aimed at modernizing and increasing the competitiveness of the industry, as information and communication technologies are the means to achieve them.

Strategy and Policy of the Industrial Development of the Republic of Serbia from 2011 to 2020 provides for the changes in terms of competition, i.e. promoting economic openness, by strengthening ties with foreign countries. Although foreign trade is expanding, a trade deficit still exists, which can be overcome only by export growth, which is one of the main goals of Serbian industrial policy. To increase exports, it is necessary to remove or reduce barriers and ensure membership in the World Trade Organization, which would help Serbia increase its export volume. Membership in the World Trade Organization is a crucial goal for Serbia this year. In addition to increasing exports, the focus should also be on the attraction of foreign investments, which is highlighted by the industrial policy by 2020. For their attraction, the status of candidate for membership in the European Union is of particular importance, which Serbia achieved in 2012. In addition, it is noted that Serbia lacks relatively strong companies, which will be future carriers of economic growth, employment, and driving force of economic development, so that efforts should be directed towards their establishment. When it comes to regional development, the transformation should focus on institution building, the construction of regional economic infrastructure, recognition of the strategic planning of regional development, endogenous regional development, and regional integration in the European Union (Strategy and Policy of the Industrial Development of the Republic of Serbia 2011-2020, p. 109).

Environmental protection is an important objective of industrial policy if one takes into account the environmental degradation that comes from industrial production. Pollution is present in the air, water and soil, and there is also hazardous waste from industrial production. In this regard, the focus should be on cleaner industrial production, reducing pollution and environmental pressures, along with the development of infrastructure systems to support industrial development.

3. Analysis of the Strategic Directions of Industrial Development of the Republic of Serbia until 2020

The presented scenario of future industrial growth for the period up to 2020 is characterized by a shift in relation to the transitional period, and a host of ambitious, but achievable goals. The most important agents of industrial growth for the coming period have been identified, which primarily relate to the dynamic growth of investment, the growth of industrial employment, and export-oriented industries. The model of industrial growth takes into account some of the important changes in the environment. First of all, this refers to growing macroeconomic risks, the struggle with recession, falling exports, rising unemployment, and instability in the international economic relations. Future industrial growth, in addition to the obstacles encountered in the environment, also faces a number of inherited internal problems and challenges. First, the recovery of the industry and upcoming changes face falling employment, resulting in a drop in earnings, which ultimately leads to social problems and political upheavals, which indicates the orientation towards achieving short-term goals. Second, the industrial infrastructure is underdeveloped in all respects. The third problem is the long-standing inflation, which greatly complicates the betterment of the industry. Last but not least, there is the problem of deficit in the budget and the current balance of payment, and the growth of the foreign debt, which is a major threat to economic stability and growth. The new industrial growth model points to two milestones, reflected in the focus on industrial growth, innovation, and exports, and accelerated process of reform and European integration (Strategy and Policy of the Industrial Development of the Republic of Serbia 2011–2020, p. 131).

The next period of industrial growth of Serbia must be pro-innovation-oriented and export-oriented, whereby the focus should be on the growth of investment, rather than expenditure growth. What is more, Serbia needs to be more committed to European integration, in order to become a member of the European Union as soon as possible, and thus acquire the right to use the economic benefits provided by this community. The predicted average growth of GDP per annum by 2020 will amount to 5.8%, internal demand to 7.7%, while the productivity will experience a cumulative increase by 50% and employment by 17% (Strategy and Policy of the Industrial Development of the Republic of Serbia 2011–2020, p. 132).

The increase in gross domestic product over time should be conditioned by the dynamics of investment. Better results of economic development can be expected only with the recovery of industry and construction, i.e. when their combined share in GDP reaches the level of 25.5%. The key parameters of the new model of economic growth from 2011 to 2020 are (Strategy and Policy of the Industrial Development of the Republic of Serbia 2011–2020, p. 133):

1) Increasing the share of fixed investment to 25% in 2015 and 28% in 2020;
2) Reducing the share of government expenditure in GDP from 20.5% in 2009 to 12.4% in 2020;
3) Increasing the share of exports of goods and services in GDP from 27.6% in 2009 to 65% in 2020;
4) A significant reduction in the deficit of current transactions in the balance of payments from 7.1% in 2010 to 3.3% of GDP in 2020.

Table 2 Average growth rates of target variables of industrial policy in the period 2011-2020

Target variables	Average growth rate 2011-2020 (%)
GDP	5.8
Investment	9.7
Internal final demand	4.7
Expenditure	3.5
Export of goods	14.2
Processing industry	7.3
Construction	9.7
Employment in processing industry – total growth	18

Source: Strategy and Policy of the Industrial Development of the Republic of Serbia 2011- 2020

The amount of budget expenditure allocated for industrial policy by 2020 should be about 1% of gross domestic product. This practically means that around 527 million euros should be allocated for industrial policy in 2020, or about 1% of GDP. In order to use it in an efficient manner, it is necessary to design the dynamics of spending, compliant with the guidelines of the (new) industrial policy (Serbian Post-Crisis Economic Growth and Development Model 2011-2020 (2010). Foundation for the Advancement of Economics – Faculty of Economics, Macroeconomic Analyses and Trends and Konjunktur-Barometer – Economic Institute, USAID. Belgrade. p.31).

The new model puts particular emphasis on the inflow of foreign direct investment, which serves as the basis of important structural changes and economic recovery, primarily in the field of industry. Within a macroeconomic model of economic growth and development, three assumptions overlap. They point to the recovery of the industry, which is based on investment and exports, the necessity of joining the European Union, as well as the risk that originates from large external debt burden. Accordingly, in order to achieve sustainable economic growth, it is necessary to redirect the economy from exports and expenditure to imports and investment.

The inflow of foreign direct investment in the Serbian processing industry between 2004 and 2010 was 25.4% of the total foreign direct investment. The most attractive areas for foreign investments in processing industries were the food and beverages industry and the industry of chemicals and chemical products. Based on the inflow of foreign direct investments in processing companies, there were positive effects, i.e. productivity growth. The production of cement, lime and plaster, and the production of tobacco were the most productive fields, and in these fields, foreign ownership is the most prominent. This is supported by the fact that 31% (Strategy and Policy of the Industrial Development of the Republic of Serbia 2011- 2020, p. 139) of the capital value of companies in the processing industry in Serbia is in foreign ownership.

According to the projections of the industrial growth model for the coming period, the inflow of foreign direct investments should amount to 5.8% of GDP per year, while the share of processing industry in total inflow should exceed 40%. For the sake of attracting foreign investors, Serbia widely uses tools (tax exemption, subsidy for each new job, free sites), which are not popular in economics. Our strongest argument for attracting foreign investors is educated workforce, offered at a low price. The current structure of foreign direct investment is incongruous in Serbia, and causes a structural imbalance. Foreign investments are mostly focused on the financial sector (banks, insurance companies, and other financial intermediaries), real estate, and retail chains. On the other hand, in developed countries, investment in industry and infrastructure prevails, where investment in the industry accounts for about 40% (Reindustrialization Strategy of Serbia: A Draft Version, 2012) of foreign direct investment.

Furthermore, the growth of industrial production has been projected at 6.9% annually, and increase in the share of processing industry in total industrial production should be at the rate of 7.3% per annum. By achieving anticipated growth rates, the share of industry in GDP of 17.6% in 2011 will increase to 19.1% in 2020, while the trend in the processing industry will also rise from 13% to 14.7%. Therefore, the processing industry should amount to 20% of GDP in 2020. Within the processing industry, the highest average annual growth rates for the next period are projected in high-technology field. In addition to these fields, it is expected that the automotive, as well as pharmaceutical industry, will have high annual growth rates. According to currently available data, Serbia is experiencing the decline in industrial production by 4.3% compared to last year (Statistical Office of the Republic of Serbia).

The holder of future industrial growth and economic sustainability is employment. In recent years, employment has significantly lagged behind economic growth, due to transition, restructuring, and institutional and structural constraints. With the advent of the global economic crisis, unemployment has deepened, and in 2010 unemployment rate reached a level of over 20%. Currently, according to data from the Statistical Office of the Republic of Serbia, the unemployment rate is 21.2%, and the expectations of the International Monetary Fund are that by the end of the year it will reach 21.8%. Serbia is facing a difficult task, given such a high unemployment rate, and the desire to join the European Union, which sees a substantial obstacle to Serbian accession in the unemployment rate. Changes in employment policy are necessary so that Serbia could meet expectations for entry into the Union. Projections of the sectoral structure of employment reflect the equal importance of the quantitative increase in employment and changes in the sectoral structure, which, simultaneously observed, suggests the improvement of its quality. The analysis of the current sectoral structure of employment shows that employment in Serbian agriculture is high, and that employment in the industry is low, compared with countries with similar levels of economic activity. The transition to a new model of development means, among other things, the revitalization of industrial employment (Serbian Post-Crisis Economic Growth and Development Model 2011-2020, 2010, p. 93-94). Judging by projections of industrial employment by 2020, it should increase by a quarter, while the share of employees in the industry in total employment should reach 26.4%. Given the growth of the processing industry by 2020, the projected number of employees should amount to nearly 500,000, an increase of 13% compared to 2009 (Strategy and Policy of the Industrial Development of the Republic of Serbia 2011- 2020, p. 137).

For export-oriented industrial growth, important goals for the period up to 2020 are achieving an average annual growth rate of exports of goods and services of 13.5%, increasing the share of tradable sectors in GDP formation by export growth, reducing the trade deficit to 12%, and changing the structure of exports in terms of increasing the share of tradable goods with higher share of value added. As the most important objective among other objectives, there is an increase in export competitiveness. The effort in the coming period is to bring the share of exports of goods to the level of 47.1% of the gross domestic product of Serbia. Serbia's foreign trade partners in the field of export will not change significantly but the number of partners from the EU should increase. Strengthening Serbian exports is only possible if transnational companies are encouraged to invest or assist in technological reconstruction of large production capacities. Regarding the export of the products of processing industry, it is projected that it should account for about 94.1% of total exports of goods, which will result in reducing the trade deficit. Within the processing industry, export is focused on the automotive industry, followed by the food and chemical industries. The automotive industry is expected to account for more than one-fifth of total export growth of the processing industry by 2020.

4. The indicator of Industrial Development According to UNIDO Methodology – The Competitive Industrial Performance Index

The United Nations Industrial Development Organization (UNIDO) is a specialized organization of the United Nations that promotes industrial development, poverty reduction, globalization, and environmental sustainability. As an organization that puts special emphasis on inclusive and sustainable industrial development, it is responsible for the promotion and improvement of industrial development in developing countries and transition economies. Serbia joined this organization in 2000, which had 171 member countries on 1 January 2014 (UNIDO, www.unido.org).

The Competitive Industrial Performance Index (CIP) has become a major diagnostic tool adopted by UNIDO for benchmarking and measuring industrial competitiveness of countries. The CIP index can also be used as an analytical tool for designing policies and assessing the effectiveness of the chosen policy. Despite being a composite index, the CIP index provides a possibility of analysis of the relative performance of countries over time, through different sub-indicators which are included in the index structure. Therefore, national economies can compare their industrial structure, technological level of development, and achieved export performance (Competitive Industrial Performance Report 2012/2013, 2013).

"The CIP index provides complex analysis and follows the developmental trend of competitiveness of one industry. It provides a comparative analysis with other industries, based on absolute and relative indicators and dimensions of competitiveness. Based on its comparison and trends, it is possible to draw conclusions about the state and prospects of the industrial development, which can be a basis for defining economic, industrial, and trade policies, and concrete measures within them" (Mićić, 2014).

According to UNIDO methodology, the CIP index consists of eight sub-indicators, grouped into three dimensions of industrial competitiveness. The first dimension relates to a country's ability to produce and export the product. Indicators of this dimension are the value added per capita (MVApc) and exports per capita (MKSpc). The second

dimension refers to the level of technological development and technological upgrading. This dimension is observed through two composite sub-indicators: a) the intensity of industrialization (INDint) and b) the quality of exports (MXQual). The intensity of industrialization is calculated as a linear aggregation of the share of medium and high technology in the production of value added in total value added produced, and is calculated as: (MHVAsh + MVAsh)/2. The quality of the country's exports is obtained as linear aggregation of the share of medium and high-tech manufactured products in total manufactured exports, and is calculated as follows: (MHXsh + MXsh)/2. Finally, the third dimension of competitiveness includes the impact of the country in world production, both in terms of its share in world manufacturing value added (ImVMVA), and in terms of the impact of the country on the world trade (ImVMT). The CIP index is a composite index, derived as geometric aggregation of these six sub-indicators that have equal relative importance.

What characterizes this index and makes it different from other competitiveness indices is the fact that it provides a unique comparative analysis of industrial performance (*Industrial Benchmarking Performance*) and ranking on the basis of quantitative indicators and a selected number of indicators that are used as a measure of industrial performance. Comparisons and rankings are available at both global and regional level. The analysis included 135 countries in 2010. Based on empirical data and general theoretical knowledge, large disparities were observed in the development of industries around the world. According to UNIDO methodology, the countries were classified according to the level of industrial development into five categories: *top* (most advanced), *upper middle*, *middle*, *lower middle*, and *bottom* (undeveloped).

Table 3 Overview of the values of CIP ranking/index of South East European countries

CIP ranking 2010	CIP Index 2010	Country	MVApc	MXpc	MHVAsh %	MVAsh %	MHXsh %	MXsh %	ImWMA %	ImWMT %
76	0.0262	Serbia	146.024	771.86	20.05	15.97	32.82	78.21	0.020	0.071
50	0.0603	Croatia	999.359	2356.28	31.77	16.19	49.46	90.42	0.063	0.099
32	0.1152	Slovenia	2716.24	11094.26	45.52	20.89	62.96	90.83	0.075	0.206
29	0.1402	Hungary	1210.31	8291.96	53.47	21.08	77.99	87.04	0.166	0.763
59	0.0460	Bulgaria	398.788	1958.22	25.57	15.52	35.40	70.99	0.041	0.135
46	0.0675	Romania	341.552	2111.40	33.88	13.06	54.69	90.36	0.100	0.413
83	0.0219	B&H	210.547	885.83	29.17	10.14	23.00	72.69	0.011	0.032
84	0.0214	Macedonia	388.821	835.51	14.60	17.69	18.08	63.35	0.011	0.019
94	0.0144	Albania	214.538	359.49	14.36	11.34	15.42	75.26	0.010	0.011

Source: The Industrial Competitiveness of Nations-Looking back, forging ahead, Competitive Industrial Performance Report 2012/2013 (2013). The United Nations Industrial Development Organization, Vienna.

Based on the data presented in Table 3, it can be seen that Serbia occupies the 76th place in the world according to the level of industrial development, which puts us in the upper-middle category of countries. Compared to neighboring countries, we can say that only Bosnia and Herzegovina, FYR Macedonia, and Albania have a lower level of

industrial development, measured by the CIP index. This unenviable data indicates that, in the coming period, Serbia must focus its efforts on improving industrial development and competitiveness.

CONCLUDING REMARKS AND RECOMMENDATIONS

Industrial policy, as part of the general economic policy of a country, plays a key role in the development of the economy. From the theoretical point of view, there are good reasons to believe that industrial policy can play an important role in promoting development. As the foundation of economic and social development, a country's industrial policy is a benchmark for the regional, educational, technological, financial, monetary, and other policies. The outcome of industrial policy depends on the mindset of the policy makers, attitude of international institutions, as well as compliance with the conditions of development that are present in a country. The implementation of industrial policy and the achievement of its objectives require the networking of companies and cooperation between the private and public sector due to the trends of globalization and technological changes.

The primary objective of the industrial policy of Serbia is to improve, i.e. increase the competitiveness of this sector. Serbia has proactive industrial policy, based on export-oriented competitiveness. The comparative advantage of Serbia lies in labor-intensive industries, and focus should be placed on the development of the knowledge economy, which should be part of the future competitive advantage of our country. Besides, much greater investment in research and development is needed, because only innovation can stimulate industrial development, and thus indirectly affect the increase in exports of products of high-tech intensive industries to the world market. In particular, the focus should be on the processing industry, because orientation towards the service sector is not a favorable option for further long-term stable and sustainable development of the country.

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KONKURENTNOST I RAZVOJNI TOKOVI NOVE INDUSTRIJSKE POLITIKE REPUBLIKE SRBIJE

Dostignuti nivo privrednog razvoja determiniše stepen razvoja industrije u jednoj zemlji. Cilj ovog rada je sagledavanje ključnih odrednica nove industrijske politike Srbije u kontekstu evropskih integracionih procesa. Isti se bazira na analizi strateških dokumenata Srbije i Evropske unije kojima se uređuje razvoj industrije za period do 2020. godine. Posebna pažnja u radu posvećena je praćenju razvojne dinamike i uočavanju tendencija u unapređenju industrijske konkurentnosti. Uočeno je, da dostignuti nivo industrijalizacije opredeljuje industrijsku konkurentnost jedne nacionalne ekonomije. Srbiji je potrebna efikasna, industrijski konkurentna privredna struktura koja će biti u stanju da odgovori sve većim zahtevima i izazovima na tržištu. Samo adekvatno koncepirana i dosledno primenjena industrijska politika može pratiti evropske razvojne tokove u budućem periodu.

Ključne reči: *nova industrijska politika, evropski integracioni procesi, The Competitive Industrial Performance index (CIP), razvoj i konkurentnost industrije*

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ATTITUDES OF SERBIAN URBAN RESIDENTS TOWARD TOURISM DEVELOPMENT

UDC 338.48(497.11 Kragujevac)

Darko Dimitrovski[1], Veljko Marinković[2], Vladimir Senić[1]

[1]Faculty of Hotel Management and Tourism, University of Kragujevac, Serbia
[2]Faculty of Economics, University of Kragujevac, Serbia

Abstract. *Tourism is one of the main driving forces of economic development in modern era, offering new opportunities for employment, increase in living standard and improvement of quality of life in the cities. Over time, tourism has had influence on urban environment and its inhabitants, through reshaping their initial attitudes regarding benefits and deficiencies of its further development. Urban population is not homogeneous and as such is not uniform in perception related to tourism development, but some general conclusions can be drawn. This study aims to understand perception of residents about tourism development in city of Kragujevac, given that city authorities are keen to extend number of tourist visits and overnight stays within their tourism campaign efforts. The objective is to identify key factors related to the significance of tourism development based on attitudes of inhabitants of Kragujevac, as well as to determine whether there are differences in attitudes based on age and place of birth of the respondents. Through factor analysis seven factors surfaced, including: economic development, healthy and clean environment, development of local communities, sport and entertainment, preservation of environment, culture and real-estate. Results suggest that there is statistical difference in attitudes among respondents' in terms of their age and place of birth.*

Key words: *Attitudes, tourism development, urban residents, city of Kragujevac*.

INTRODUCTION

Tourism in Serbia is still in its infancy and as such it is profiled and adapted to tourists and their demands. The largest cities in Serbia represent the nation's most frequently visited tourist destination which is particularly pronounced in the number of overnight stays by foreign tourists. Given this, it is rather necessary to examine urban residents' attitudes towards tourism development and various ways in which it impacts

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Corresponding author: Darko Dimitrovski
Faculty of Hotel Management and Tourism, University of Kragujevac, Vojvođanska 5a, 36210 Vrnjačka Banja, Serbia
E-mail: darko.dimitrovski@kg.ac.rs

their local communities. The city of Kragujevac was traditionally attractive to tourists. Yet, in the past several years the city has experienced full affirmation, with the number of tourists staying in the city steadily increasing.

One of the main reasons for increased number of visitors is related to FIAT's heavy investment into the car production facilities located in the city. This resulted in increased demands on behalf of tourists, which reflected both on adjusting overall city's tourist products and on socio-economic changes among local inhabitants.

Table 1 Changes in the number of tourist arrivals and overnight stays between domestic and foreign tourists from 2007 to 2014 in the city of Kragujevac

	Domestic tourists		Foreign tourists	
	tourist arrivals	overnight stays	tourist arrivals	Overnight stays
2007	12.830	28.938	7.543	16.165
2008	15.710	40.952	7.795	18.905
2009	14.590	31.068	9.007	22.825
2010	16.599	32.464	10.449	23.231
2011	16.778	39.828	13.895	44.819
2012	15.515	34.417	20.846	83.052
2013	16.670	32.528	15.956	50.911
2014	17.833	32.236	15.660	33.761

Source: Tourist organization of the city of Kragujevac

Table 1 shows a noticeable increase in the number of tourist arrivals and overnight stays in both categories, especially when it comes to foreign tourists. In the first phase, the attitude of urban population to more intensive growth in tourist arrivals will be extremely positive, expecting certain benefits, especially in the aspects of future employment, improvement of the standard of living and the opportunity to start small and family businesses. In the period after the initial euphoria, it is expected that urban population over time with a more pronounced increase in the number of arrivals and overnight stays of foreign tourists, will reach a certain saturation among locals and even possibly irritation. Therefore, these kind of studies are justified, because tourism development and its future development depend on the attitude and the support of the urban population.

1. THEORETICAL CONSIDERATIONS

1.1 Attitudes of urban population

A "perceived" impact represents a personal view of such impact (Ap, Crompton, 1998). Using this method of observing the attitudes, researchers have found that residents' attitudes towards tourism are not only the reflections of their perceptions of tourism impact, but also the result of interaction between residents' attitudes and factors that have an influence on them (Lankford et al., 1994).

Cities themselves are very attractive for tourist visitors because of their specific historical and cultural contents. As tourism in urban environments is developing, both the significant economic effect and socio-cultural liaison between local residents and tourists of different religions, nationalities and interests are created. On the other hand, urban and

rural residents do not have the same attitude towards tourism. There is also a significant difference in urban and rural infrastructure because urban infrastructures have better conditions, with larger hotel capacity, enabling them to accommodate larger number of visitors. Yet, there are only a few studies related to urban communities that investigate mentioned issues (Schofield, 2010; Chen, 2000; Iroegbu, Chen 2002; Andriotis, Vaughan 2003). Snaith and Haley (1995) focused their research on the relationship between resident attitudes and support for tourism development in an urban area. They claim that it is necessary to understand urban residents' needs and desires, and to find the way to direct tourism development in order to accomplish general welfare of the local community. The best solution is to find out more about the urban residents' attitudes towards tourism development, recognize them and certainly use them as the foundation for developing sustainable tourism strategies.

For successful development of tourism industry, effective planning should be undertaken aiming to identify tourists' demands. Studies on host communities have identified factors that influence residents' attitudes towards tourism and its future development (Fredline, Faulkner 2000; Upchurch, Teivane 2000; Weaver, Lawton 2001; Williams, Lawson 2001; Besculides et al., 2002; Teye et al., 2002).

1.2 Attitudes toward tourism

Support of local residents plays the essential role for regional destinations where tourism is not on a high level of development, which is the case of Serbia, because that kind of support improves chances of long-term success. Indeed, several studies report that it is not possible to sustain tourism on a destination that lacks support of the local community (Ahn, Lee, Shafer, 2002; Twinning-Ward, Butler 2002; McCool, Moisey, Nickerson, 2001). Variety of studies have shown a connection between tourists' attitudes and their behavioral intentions (Lee, Graefe, Burns, 2004; Yu, Littrell 2005). According to Andereck and Nyaupane (2011) tourism enhances the overall life satisfaction of residents in a community. It would be of a great importance for the tourism industry, especially for regional tourism development projects, to understand urban residents' attitudes and perceptions in order to evaluate how they affect the future prospects of tourism development in that area or region.

Before development of tourism is initialized by residents, it is very important to comprehend how they feel about such development. A sustainable tourism industry in a community can be hardly developed without the support provided by a community. Residents are absolutely entitled to determine which tourism impacts are accepted and which impacts can cause problems (Andereck, Vogt 2000). Numerous studies on community residents' perceptions of tourism impacts have been conducted (Andereck et al., 2005; Choi, Sirakaya 2005; Sheldon, Abenoja 2001; Sirakaya et al., 2001; Teye et al., 2002; Upchurch, Teivane 2000).

Residents' perceptions are found to be critical regarding distribution of the environmental, social and economic costs and benefits that tourism can cause, which increases sustainable tourism development (Twining-Ward, Butler, 2002). Many local communities consider that tourism can induce change in social, cultural, environmental and economic dimensions in the circumstances when tourism activities have been closely connected with the local communities (Beeton, 2006; Richards, Hall, 2000). When tourism development does not affect local residents' lifestyles, residents acquire a higher degree of social tolerance for

visitors, and the interaction between tourists and residents is more satisfying. As some researchers argue, the nature, depth and quality of interaction between tourists and local residents considerably affects tourists' subjective experiences (Sheldon, Abenoya, 2001).

It is documented in the literature that tourism development has both positive and negative impacts on host communities. Thus, as it produces benefits, it also imposes costs (Jafari, 2001). When local residents estimate benefits and costs of tourism development, they establish their own attitude toward tourism. Hence, tourism should not be regarded as a commercial activity without any significant impact on the natural, human-made, and socio-cultural environments in which it is situated (Garrod, 1998).

Tourist destinations tend to ensure long-term viability that would bring benefits to both the tourism industry and host communities. However, this goal can be difficult to attain because tourism development usually has harmful effect to host communities, so their social, economic, and environmental prosperity can start deteriorating as tourism industry is expanding. As the literature suggests, residents should be included in the planning of tourism development in host communities in order to avoid negative impacts of tourism on host communities (Sheldon, Abenoya, 2001; Choi, Sirakaya, 2005). Residents' participation in planning and development stages is also a necessity for sustainability of the development (Mowforth, Munt, 2003; Dyer et al., 2007). If local communities want their traditional lifestyles and values to be respected and to ensure their benefits, they should necessarily involve themselves in decision-making processes (Mitchell, Reid, 2001; Sheldon, Abenoja, 2001).

An important part of literature refers to the economic, socio-cultural and environmental impacts that tourism development has on resident communities and the residents' attitudes towards tourism development. Both positive and negative aspects of tourism impact have been found in many local communities. Residents of any host community may positively accept tourism because it allows job creation, income generation and it also improves community infrastructure (Mitchell, Reid, 2001; Andriotis, 2002). Residents who benefit from tourism through employment will have more favourable perceptions than those who do not (Fredline, 2004). On the other hand, tourism may be negatively accepted by the residents of host communities because of the socio-cultural and environmental costs it generates (Chen, 2000). Residents will be able to understand positive and negative aspects of tourism and they will make their conclusions on the basis of balancing benefits and the costs. Balance of residents' perceptions of the costs and benefits that tourism can cause is the most important factor in visitor satisfaction and conditional for success of the tourism industry. In the circumstances when the number of tourists to a particular region increases, residents who initially had excessively positive attitude towards their guests over time developed a certain distance related to long-term benefits of tourism. This change of attitude may arise because the original expectations of the benefits of tourism were exaggerated or because it is believed that only a small number of people will attain the benefits.

There are many circumstances under which negative attitudes towards tourism development can arise. Most often they refer to poor relationship between locals and authority, problems with distribution of benefits to local residents and exclusion of local population from decision-making process. Residents are more tolerant to negative social consequences because they are less important in determining the quality of life. Attitudes towards tourism are mainly determined by resident values referring to economic benefits with a clear priority to job creation.

According to the research on residents' attitude, residents who value economic impact will have positive attitudes towards tourism, but negative ones toward environmental and

cultural change (Walpole, Goodwin, 2001; Yoon et al., 2001). Residents with the most economic gain provide the best support to the tourism industry (Harrill, 2004). Realizing that the costs of tourism exceed the benefits, residents can develop feelings of resentment and irritation towards tourism, diminishing community satisfaction (Ko, Stewart, 2002).

Hardly any work has been devoted to examining residents' attitudes in developing countries, especially at the stage when the support and involvement of the local community is critical for the overall success of tourism development efforts. Usually studies about attitudes of city residents toward tourism development are performed by Western researchers. Thus, the relevance of the findings in Serbia may not fit the existing pattern.

Tourist destinations, such as the city of Kragujevac, have a greater urgency to determine resident sentiments so the chosen path of development has community support, before it becomes too late. This kind of support can be achieved through strong patronization of local residents and their positive attitude towards tourism growth and development wherever it is required.

Through extending our limited knowledge of city resident attitudes to tourism development, especially in Serbia, this research provides significant insights into urban community concerns and priorities in Serbia, and also discusses the practical implications of the results. As such, it makes a contribution both in theoretical and practical context. The aim of the survey was to truly understand resident's views and concerns about potential impacts of tourism development through community perspective, and to facilitate the preparation of a tourism strategy that incorporates needs of the host population and desires of tourists. Within this framework, there were two specific objectives: a) to examine the key factors affecting resident attitudes and b) to determine difference between certain age groups and between locally and non-locally born populations.

2. Materials and Methods

The study focuses on the city of Kragujevac in central Serbia and examines the results from an urban community survey to determine resident attitudes toward tourism development. The location of the study was the city of Kragujevac, a big town (835 square kilometers) situated in the central part of Serbia. The area has become a popular and well-established tourist destination widely known as former Serbian capital.

Kragujevac is the fourth largest city in Serbia, the main city of Šumadija region and the administrative centre of Šumadija district. It is situated on the banks of the Lepenica River. According to official results of the 2011 census, the city has a population of 147,281 inhabitants, while municipality has a population of 177,468. Kragujevac was the first capital of modern Serbia (1818–1839), and the first constitution in the Balkans was proclaimed in this city in 1835. Further on, the first full-fledged university in the newly independent Serbia was founded in 1838, preceeded by the first grammar school (Gimnazija), Printworks (both in 1833), professional National theatre (1835) and the Military academy (1837). The city of Kragujevac, as a tourist destination, is significant due to cultural and historical heritage, natural surrounding, and pleasant and hospitable people.

Survey was conducted on the territory of the city of Kragujevac. The city itself is the fourth largest Serbian city located in the central part of the country. After the World War II, Kragujevac developed industry which relied on producing cars, trucks, hunting arms, leather and textile. The city is mainly dependent on further development of industry, but tourism can also generate employment opportunities for a large proportion of local population.

The study on citizens' attitudes on further tourism development was carried through a survey method. Specifically, a five-point Likert scale was used, where mark 1 meant that respondent completely disagrees with a specific statement, while mark 5 meant that respondent completely agrees with a statement. Survey consists of 29 statements that express various aspects of tourism significance. Selection of statements was done through literature review (Schofield, 2010; Aref, Redzuan, Gill, 2009; Sonmez, Teye, Sirakaya, 2002; Ko, Stewart, 2002). Essentially, all statements describe different aspects of tourism development in urban areas.

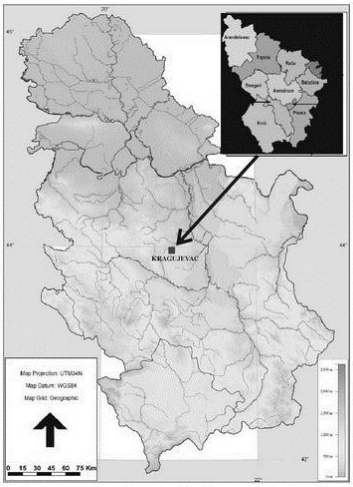

Fig. 1 City of Kragujevac, Serbia

For developing countries, further economic progress usually comes from tourism development and this is most evident to citizens who have direct benefits from tourism. The impact of tourism through perception of urban population includes aspects of environment preservation, improvement of sports and entertainment contents, as well as encouraging cultural activities and better understanding among people.

For the survey purposes, convenience sample was used. Sample consisted of a total of 188 respondents. From a total number of respondents, 83 were males (44.2%), and 105 were females (55.8%). In terms of age, respondents were classified into three groups: younger – up to 30 years of age (60 respondents, 31.9%), middle age – between 30 and 50 years of age (113 respondents, 60.1%) and older – over 50 years of age (15 respondents, 8%). From the perspective of professional status as a criterion for segmentation, 125 respondents have a job (66.5%), while 63 respondents are unemployed (33.5%). Finally, 140 respondents were born in the city where the survey was conducted (74.5%) and 48 respondents (25.5%) were born elsewhere, but now live and work there. Data gathering was conducted through a personal interview. Surveying itself was conducted in the homes of respondents, which gave respondents enough time to think thoroughly about statements in the questionnaire. Prior to surveying, the questionnaire was pre-tested on a sample of 30 respondents.

Data analysis was done in Statistical Package for Social Sciences Version 13. In terms of statistical analyses, we used independent samples t test, variance analysis (ANOVA) and explorative factor analysis. Given that the certain number of statements is related to examining the significance of tourism on further development of local community, we wanted to investigate whether there is a statistically significant difference among those born in the city and those who are born elsewhere, but live and work in the city of Kragujevac. For the purposes of this analysis, we used independent t test. Comparison of means among different age groups was done based on the results of ANOVA test, given that we used three age groups. In cases when ANOVA test shows significant differences among different groups, it is important to identify among which groups these differences were manifested. For that reason, we conducted Post hoc Tukey test. Finally, by implementing explorative factor analysis (principal component analysis), 29 statements were grouped in several different factors.

3. RESULTS

Two fundamental objectives of the study were to determine statistically significant differences between different groups of respondents based on 29 statements and to identify factors that highlight significance of tourism for the development of a given society and its national economy. In the first step of analysis, through use of t test, we distinguished five statements where significant differences appeared in attitudes of residents of local origin (respondents born in Kragujevac) and residents of non-local origin (respondents born elsewhere). In all five statements, non-local residents showed more positive attitude on the significance of tourism (Table 2).

Table 2 Results of independent samples t test

	Locally born	Non-locally born	
Statements	M (SD)	M (SD)	t
Tourism development stimulates increased investments	4.02 (0.92)	4.31 (0.55)	- 2.06**
Tourism development improves coverage with public toilets	3.45 (1.05)	3.73 (0.79)	- 1.93*
Tourism development improves of environment preservation	3.59 (1.16)	3.90 (0.90)	- 1.86*
Tourism development improves environmental consciousness of local population	3.41 (0.91)	3.67 (0.95)	- 1.68*
Tourism development improves shopping options	3.51 (0.93)	3.83 (0.72)	- 2.44***

Notes: M – Mean; SD – Standard Deviation; *** p < 0.01; ** p < 0.05; * P < 0.1

* Table refers only to statements where there are statistically significant differences among two groups of respondents.

When we speak about forming segments on the basis of age, statistically significant difference appeared only for three statements. Results of ANOVA test are shown in Table 3. It can be inferred that different age groups of respondents have homogeneous attitudes on different aspects of tourism significance. Nevertheless, Post hoc Tukey test has identified among which groups there are significant differences. In the case of statement "Tourism development improves environmental consciousness of local population" older respondents are statistically different in their views on this issue (arithmetic mean – M = 4.21) in comparison to younger respondents (M = 3.35) and mid-age respondents (M = 3.45). When we speak of statement "Tourism development helps lower the noise" there is a significant difference between younger respondents (M = 2.57) and mid-age respondents (M = 2.18). Finally, for the statement "Tourism development contributes to cleaner streets" attitude of mid-age respondents (M = 2.62) is significantly different from those respondents belonging to older population (M = 3.29).

Table 3 Results of ANOVA test

Statements	F	p
Tourism development improves environmental consciousness of local population	5.27	0.006***
Tourism development helps lower the noise	2.60	0.077*
Tourism development contributes to cleaner streets	3.11	0.047**

Notes: *** p < 0.01; ** p < 0.05; * P < 0.1

* Table refers only to statements where there are statistically significant differences among two groups of respondents.

Table 4 Results of factor analysis

Factors	Factor loading	Eigenvalue	% of variance explained	Cronbach's alpha
F1: Economic development		3.300	11.378	0.80
Tourism development improves infrastructure	0.763			
Tourism development improves entertainment options	0.685			
Tourism development generates employment opportunities	0.664			
Tourism development assures economic benefits to small business	0.632			
Tourism development stimulates increased investments	0.607			
Tourism development improves hospitality options	0.512			
F2: Healthy and clean environment		3.105	10.706	0.82
Tourism development helps lower the noise	0.833			
Tourism development helps lower the traffic congestion	0.812			
Tourism development helps lower air-pollution	0.751			
Tourism development contributes to cleaner streets	0.655			
F3: Development of local communities		2.896	9.985	0.76
Tourism development improves tourist signalization	0.713			
Tourism development improves possibilities for development of local communities	0.665			
Local population has great benefits from tourism development	0.615			
Tourism development has an impact on improvement of living standard of a local community	0.608			
F4: Sport and entertainment		2.428	8.374	0.69
Tourism development increases areas under parks and spaces for recreation	0.773			
Tourism development increases variety of cultural and sport activities	0.718			
Tourism development improves shopping options	0.681			
F5: Preservation of environment		2.387	8.232	0.77
Tourism development improves coverage with public toilets	0.793			
Tourism development improves of environment preservation	0.763			
Tourism development increases the number of parking lots	0.560			
Tourism development improves environmental consciousness of local population	0.536			
F6: Culture		2.201	7.590	0.70
Tourism development improves understanding and acceptance of differences	0.732			
Tourism development improves preservation of our culture and tradition	0.729			
Tourism development improves cultural exchange and better understanding among people	0.610			
Tourism development improves preservation of cultural and historic heritage	0.514			
F7: Real estate		1.387	4.784	-
Tourism development results in increase of real-estate prices	0.706			

Notes: Extraction Method: Principal Component Analysis: Rotation Method: Varimax: Only loadings greater than 0.5 are reported; Total percentage of explained variance 61.047%; KMO = 0.850; Bartlett Test of Sphericity: p = 0.000

In order to identify a lesser number of factors we conducted explorative factor analysis (principal component analysis with varimax rotation). By implementing Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphercity we tested the adequacy of using factor analysis. In both cases we obtained adequate factor analysis (KMO = 0.850; Bartlett's test of sphericity: p = 0.000). Varimax rotation identified a total of seven factors (economic development, healthy and clean environment, development of local communities, sport and entertainment, preservation of environment, culture and real-estate). Results of explorative factor analysis are presented in Table 4.

All factors have a high level of reliability. Values of Cronbach's alpha coefficient for obtained factors are higher than required minimum threshold which is 0.6 (Robinson et al., 1991). Three statements (tourism development allows easier access to information of local significance; tourism development improves the quality of public services; tourism development results in increase in personal income) are excluded from further analysis, given that they were not sufficiently correlated with any of the formed factors. Hair et al. (1995) suggest that only factor loadings higher than 0.5 should be considered as significant. In that context, if a certain statement has a loading lower then mentioned threshold, then it is excluded from the further analysis. The most statements grouped around the first factor – economic development (a total of six statements). Factor related to economic development describes the largest portion of variance, and groups statements that are dealing with improving tourist offering (improving of hospitality services and entertainment options) as well as with economic consequences of tourism development, including: employment opportunities, stimulating investments, infrastructure improvement. Around factor that is related to real-estate, only two statements grouped (tourism development results in increase of real-estate prices, tourism development results in increase in personal income). However, given the level of correlation of statement "tourism development results in increase in personal income" with a factor "real-estate" is 0.4, this statement was excluded from the further analysis. Obtained factors describe 61% of total variance.

4. DISCUSSION

Two basic objectives of the study are: determining statistically significant differences in attitudes of respondents on the impact of tourism development in terms of age and place of birth, as well as identifying factors that are significant for economic development and society in general. Results indicate statistically significant differences in five statements in terms of attitudes locally and non-locally born citizens of Kragujevac. In all five statements it is noticeable that non-locally born inhabitants are more positive in terms of the significance of tourism, especially, that tourism stimulates investments, preserving environment and improvement of ecologic state of mind, but also in terms of wider range of available services and products. Sheldon and Var (1984) in their study reveal relatedness of attitudes towards tourism between locally and non-locally born inhabitants, while Um and Crompton (1987) in their research show that the more an inhabitant is connected to the local community, through birth, heritage or duration of stay in it, they has less positive attitude towards tourism development, with increased expectations of negative effects on local community and quality of environment. Gursoy and Rutherford (2004) stress also the aspect of emotional relatedness to local community. Gursoy and Rutherford (2004) and Nicholas, Thapa and Ko (2009) used place of birth or the period of

residence in the locality as key factors influencing the perceptions and attitudes of residents towards changes or developments in their community.

Through utilizing ANOVA test we determined that different age groups of respondents have homogeneous attitudes in general on different aspects of tourism significance, even though there are significant exceptions among certain groups. Namely, between older and younger population there is a difference in attitudes on whether tourism raises environmental consciousness. Between younger and mid-aged population there is a difference on perception of noise resulting from tourism development and finally, there is a difference in attitudes of mid-aged and older population on waste generation as a consequence of tourism development. Age is stressed as an important factor in terms of attitude of urban population towards tourism development. In their study on Australian Golden Coast, Tomljenović and Faulkner (2000) found little difference according to residents' age. Older respondents are equally supportive of tourism development as younger respondents, even showing that older generations are more tolerant towards foreign tourists and are less worried of tourism's harmful effects on environment. Cavus and Tanrisevdi (2002), in the study they conducted in Kuşadasi, Turkey, found a significant relation between age, duration of stay and attitude towards tourism development, with older population having a more pronounced negative attitude towards tourism development. According to Weaver and Lawton (2001) younger residents are generally more supportive of tourism development.

Based on the conducted factor analysis, seven factors were determined, including: economic development, healthy and clean environment, development of local communities, sport and entertainment, preservation of environment, culture and real-estate. Economic development surfaced as the most important of all seven factors. This was expected in a current economic situation if we take into consideration that local communities are directed towards tourism in order to generate increase in revenues, employment and quality of life. Tourism development is often linked to economic development, while ignoring other segments of improving quality of life in urban settings that are a direct consequence of tourism development. Factors such as healthy and clean environment and preservation of environment nowadays are getting greater global and social significance, and are including statements as lower noise, air-pollution, waste generation, as well as improvement of environment and raising environmental consciousness of urban population. In addition, tourism development is frequently found in conflict with preserving environment, but if followed with adequate strategy, tourism development can lead towards improving environment. It is important to stress the factor of local community as one of the fundamental reasons for tourism development which improves quality of life and living standard of population. Among mentioned factors, as very important elements of improving tourist offer are sport and entertainment (recreation, sports activities, wider options for shopping) and culture (improved preservation of cultural-historic heritage, preservation of culture/ tradition and better understanding among people). Real-estate as a factor includes statement that tourism development leads to increase in housing prices, which is somewhat expected, given that with the development of tourist destination, housing market becomes important.

CONCLUSIONS

Tourism is increasingly perceived as a potential source providing local employment opportunities, tax revenues, reducing poverty and economic diversity. Currently, Kragujevac, with its undergoing revitalization of industry, has put tourism as a priority, with an objective of bringing businesses and tourists into the city in order to help boost the local economy. Significance of conducted study is twofold – theoretical and practical. The study is directed onto two different aspects of development, planning of tourism development with giving support to economic activities and better understanding of the needs of local community and ways of solving the existing issues. Research is also important because of specific domain that it covered, which so far has not been a subject of other studies.

Research itself has some limitations and they are related to classifying groups of respondents into locally and non-locally born urban population. Criteria for respondents selection was that they live in Kragujevac, after which they were classified based on their place of birth, and not on the basis of their duration of living in the city, so we were unable to gain data on time lived in the city and emotional liaison that results from the time spent in the city, which on the other hand, directly affects attitudes on the impact of tourism development.

Findings of this study suggested that understanding of local residents' attitudes toward any form of tourism development requires an examination of a set of very complex and interrelated factors. Some residents are more concerned about economic benefits, while others are more concerned regarding specific social, cultural or environmental benefits. Results of this study suggested that seven factors influence attitudes and especially impact perceptions of tourism development. According to the results of the study, future research should link local government as a developer of tourism and policy makers with attitudes of residents in a manner that will help understand interaction among perceptions of tourism development and their long term needs. Finally, it would be interesting to determine if there is a statistically significant difference among urban and rural populations.

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ODNOS URBANOG STANOVNIŠTVA U SRBIJI PREMA RAZVOJU TURIZMA

Razvoj turizma je jedan od pokretača ekonomskog razvoja u savremenom dobu, omogućavajući nove mogućnosti za zapošljavanje, rast standarda i kvaliteta života u gradovima. Turizam je vremenom uticao na gradsku sredinu i stanovništvo menjajući njihove prvobitne stavove o prednostima i nedostatcima njegovog razvoja. Gradsko stanovništvo nije homogeno i kao takvo nije jedinstveno u percepciji razvoja turizma, ali se ipak mogu doneti neki opšti zaključci. U radu se istrazuju stavovi koje lokalno stanovnistvo ima prema razvoju turizma. Cilj studije je da, putem studije slučaja u gradu Kragujevcu, razume percepciju urbanog stanovništva kada je u pitanju razvoj turizma, posebno u svetlu napora koje gradske institucije ulažu u povećanje broja turističkih poseta i noćenja gostiju. Cilj rada je da izdvoji ključne faktore za razvoj turizma na osnovu stavova stanovništva grada Kragujevca, kao i da utvrdi da li postoje razlike u stavovima u zavisnosti od starosti i mestu rođenja ispitanika. Faktorskom analizom izdvojeno je šest faktora: ekonomski razvoj, zdrava i čista sredina, razvoj lokalnih zajednica, sport i zabava, očuvanje životne sredine, kultura i nekretnine. Rezultati pokazuju da postoje statistički značajne razlike u stavovima ispitanika kada su u pitanju starost i mesto rođenja.

Ključne reči: *stavovi, razvoj turizma, urbano stanovništvo, grad Kragujevac*

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CORPORATE LIQUIDITY MANAGEMENT: IMPLICATIONS AND DETERMINANTS

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Ksenija Denčič-Mihajlov, Marina Malenović*

University of Niš, Faculty of Economics, Serbia

Abstract. *Corporate liquidity is influenced by many factors which derive both from the company itself, as well as from the company's environment. This paper focuses on the internal determinants of corporate liquidity. The aim of this paper is to show which company performance indicators are the main determinants of the liquidity of selected companies in Serbia, Croatia and Montenegro, and whether these determinants are specific only to the companies in this region. The companies that make the sample are non-financial companies whose shares are parts of regional capital market indices - BELEX15, CROBEX10 and MONEX20. The values of the liquidity indicators of these companies indicate solid liquidity. The most important determinants of corporate liquidity are firm size, leverage and capital structure. The results show that the dominant motive of holding liquid assets in our sample is precaution, which indicates the way the crisis has affected the business operation of the analyzed companies.*

Key words: *liquidity indicators, determinants, post-crisis period, market index.*

INTRODUCTION

Companies are imposed by creditors' requirements to maintain financial solvency. A more liquid company gives them greater assurances that their liabilities will be met in full and on time. Therefore, companies have to establish and hold liquidity reserves in the form of cash or marketable parts of the assets at a level that guarantees liquidity. Holding liquidity reserves means that some parts of assets are disconnected from operating activities, and the explicit cost of that is the loss of yield that could be achieved in the case that the liquidity reserve is directly involved in operating activities. The essence of liquidity management stems from the fact that the company's maturing liabilities, under normal circumstances, may be paid only in cash. The cash required for the payment can be provided in through purchase of products, services, or other parts of marketable assets, as well as from sources outside the company. In this context, the liquidity of the company

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Corresponding author: Marina Malenović, * PhD student
Faculty of Economics, University of Niš, Trg kralja Aleksandra 11, 18000 Niš, Serbia
E-mail: marinavujicic@rocketmail.com

is usually identified with the convertibility of certain parts of the asset into cash. Cash represents the absolute liquid asset. In the literature it is stated that it is "the asset over assets", because it is the criterion by which the liquidity of all other parts of the asset is determined. The liquidity of any asset reflects the ease and speed of its conversion into cash without significant transaction costs and loss in value. To what extent will a particular kind of asset be liquid depends on the characteristics of this asset (type and divisibility), the conditions on the market, price stability, costs of sales, etc.

Liquidity can be analyzed using liquidity ratios, which represents the static analysis of liquidity, or by using cash-flow analysis, which is a dynamic analysis of liquidity. In this paper, liquidity is measured by the ratios that give answer to the question whether the company has sufficient cash and marketable assets to meet its matured liabilities. These indicators are current ratio, quick ratio (acid-test) as well as the value of net working capital.

The objective of this paper is twofold: firstly, to assess liquidity of the leading domestic companies and companies from two neighboring countries, and secondly, to estimate the main determinants of firms' liquidity in the period immediately after the global economic crisis.

The paper is structured as follows. In the next section, we summarize theoretical determinants of corporate liquidity. Based on the available literature, and in accordance with the business conditions of companies from the sample, hypotheses for research are set. In section 3 we present and characterize the data and construct variables used in our empirical analysis. In sections 4 and 5, estimation results of determinants of liquidity for Serbian, Croatian and Montenegrin companies are presented respectively. In the final section, we summarize results and give a conclusion.

1. THEORETICAL ASPECTS OF CORPORATE LIQUIDITY DETERMINANTS

The optimal amount of liquid assets of a company is determined by the trade-off between the low yield on liquid assets and the benefit of minimizing the need for costly external financing. Determinants of corporate liquidity can be considered as micro and macro determinants, given that the level of the company’s liquidity is affected not only by the factors that come from the company itself, but also by the macroeconomic conditions. This paper focuses on the micro determinants of liquidity. These determinants relate to the performances of the company, the management decisions, structure of assets, model of financing, capital structure, etc. Further on in this text, hypotheses for research are set up in the form of the expected influence of each of the potential determinants of liquidity on company's liquidity.

Company's liquidity is affected by firm size. Regarding this determinant of corporate liquidity, there are authors who have come to the conclusion that there is an inverse relationship between it and corporate liquidity, but there are also those who have concluded the opposite. The first conclusion stems from the fact that large companies have a variety of investment opportunities instead of holding cash. On the other hand, a positive correlation can be explained so that the majority of large companies have cash on hand in order to avoid liquidating their assets. The study conducted on a sample of French companies (Saddour, 2006: 15) shows that positive correlation existed in companies at the maturity stage of the life cycle, whereas the opposite referred to growing companies.

Ferreira and Vilela (2004) in a study on a sample of 400 companies from the countries of the European Monetary Union conclude that larger firms hold less liquid assets (Ferreira, Vilela, 2004: 317).

Therefore, *the first hypothesis in this research is that firm size and liquidity of a company are in an inverse relationship.*

The total debt of companies proved to be a significant determinant of the liquidity in the research conducted on a sample of Dutch non-financial companies (Bruinshoofd, Kool, 2002: 14). Higher indebtedness of the company increases moral hazard and marginal costs of borrowing. It increases the uncertainty of access to financial markets in the future. To measure the level of liabilities in this paper, the total debt will be put in relation to total assets. This measure of indebtedness showed an inverse correlation with liquidity (Ferreira, Vilela, 2004: 309). *The second hypothesis is set that companies that have a higher ratio of total debt to total assets have lower liquidity.*

Companies that have a large amount of short-term debts will hold more liquid assets due to uncertainty of refinancing (Bruinshoofd, Kool, 2002: 4). In our sample in the third part of the paper we examine whether *companies that have a higher amount of short-term debts have a higher value of the liquidity ratios*.

The indebtedness ratio of the company, which presents the share of borrowed sources of financing in long-term sources of financing, is used as one of the measures of indebtedness. It is expected that this ratio is negatively correlated with liquidity. As company's indebtedness ratio grows, the costs of investing in liquidity also grow, so liquidity reduces. In addition, some authors argue that firms with better access to debt market can use borrowing instead of holding liquid assets. Companies that are more likely to fall into financial problems are expected to have a lower liquidity level (Kim, Mauer, Sherman, 1998: 348). In connection with the foregoing, we examine the following hypothesis: *Companies with higher indebtedness ratio are less liquid.*

The maturity structure of the debt can be represented as a share of short-term debt in total debt. Companies that have a larger share of short-term debt in total debt should be more liquid. This effect comes from the uncertainty of refinancing, that informationally affects the increase in the costs of external financing and companies in this situation should hold more liquid assets (Bruinshoofd, Kool, 2002: 14). The study conducted on a sample of companies in Portugal showed that companies with more long-term debt hold less liquid assets, which is consistent with previous observations (Pastor, 2010: 44). Thus, we hypothesize the following: *For any amount of the total debt, shorter average maturity of the debt, or more short-term debt in total debt, increase liquidity.*

As a potential determinant of liquidity, this paper also examines the capital structure. The ratio of capital structure represents the relationship of long-term debt and own capital. This determinant indicates the risk of financing of the company. More long-term debt in relation to its own capital increases the risk for investors. Also, we analyze two indicators, that show the share of long-term debt and own capital in total long-term sources of financing. In line with the previous analyzes of the determinants of liquidity related to indebtedness, it is expected that the companies, that are dominantly financed by borrowed funds, have lower liquidity ratios. Hypothesis for research is that *there is a positive correlation between the share of own capital in the capital structure and liquidity of a company*.

If a company finances its operations from external sources, the permanent interest expenses appear. Those expenses should be covered from operating profit. As a potential determinant of liquidity the interest coverage ratio should be examined. Due to the fact that in the countries in which companies in the sample operate, interest rates are relatively high, the amount of this financial expense and its covering can significantly influence company's profit and probably liquidity. Therefore, we set the following hypothesis: *A higher interest coverage ratio leads to greater liquidity of the company.*

To analyze the solvency of companies, we use the equity to fixed asset ratio. The available literature does not deal with this determinant, but in this article we examine its potential effect on liquidity. We hypothesize the following: *A more solvent company is more liquid.*

The profitability of the company should be associated with liquidity and more profitable companies should be more liquid. Company's profit is a source of cash flow. However, the profit achieved in one year does not automatically mean more cash. Despite this fact, those companies that have a higher profit are more likely to be more liquid (Benjamin, Samuel, 2012: 124). The research conducted in Nigeria shows a positive relationship between profitability and liquidity (Lawrencia, Sunday, Samuel, 2012: 54). The rate of return on equity and the rate of return on total assets are taken as indicators of profitability. *The hypothesis that we investigate is that companies which record higher rates of return have more liquid assets.*

Another variable whose impact on liquidity is considered in this paper is operating profit margin or commercial margin, which puts in ratio operating profit and sales revenue. It is expected that higher rate of operating profit leads to greater liquidity of a company. This assumption was confirmed in the study of the determinants of liquidity of small medium-sized enterprises in the US (Faulkender, 2002: 27). *Therefore, there is a positive correlation between operating profit margin and liquidity of a company.*

The last potential determinant of liquidity is the ownership concentration, measured by the percentage of capital that is held by three largest shareholders of the company. The concentration of ownership may have a positive impact on performances and liquidity of the company, when the management of the company is better coordinated, due to less dispersion of ownership. However, capital concentrated in a small number of owners may also lead to the situation where these large shareholders actually lead the company and that the lack of professional management worsens the financial situation of the company. A research done in Switzerland shows that companies with less concentrated ownership hold more liquid assets (Jani, Hoesli, Bender, 2004: 19). The study in Pakistan confirms the view that less liquid funds are run by companies with a high concentration of ownership, because the problem of asymmetric information is less expressed (Anjum, Malik, 2013: 100). Accordingly, we examine *the hypothesis that the concentration of capital and liquidity of a company are in an inverse relationship*.

2. DATA AND VARIABLE DEFINITION

The sample used for empirical research of determinants of liquidity consists of non-financial companies, whose shares are parts of Belgrade Stock Exchange index BELEX15, Zagreb Stock Exchange index CROBEX10 and Montenegro Stock Exchange index MONEX20. The data from Belgrade Stock Exchange have been analyzed for twelve

companies, the data from Croatian stock exchange are taken for nine companies and the data from Montenegrin stock exchange cover eighteen companies. For all calculations we used the officially published financial reports of the companies.

The research covers a three-year period from 2010 to 2012, the period immediately after the global economic crisis, which has certainly had an impact on the liquidity and financial positions and results of companies in the sample. Therefore, it was particularly interesting to estimate the liquidity of the leading companies in the chosen countries and to see whether and how their liquidity changed during the period. A relatively small size of the sample and short period of analysis, appear as limiting factors for the data analysis. However, given the previously mentioned characteristics of the sample, that it covered the most successful companies in these national economies and that the period after the crisis is considered, this research gains its importance.

In the next part of the paper, we firstly consider indicators of the liquidity of companies in the sample, then we explain the variables that are used as potential determinants of liquidity and we analyze the determinants of liquidity separately for companies from BELEX15, CROBEX10 and MONEX20. In order to analyze the determinants of liquidity, a simple linear regression model is used.

2.1. Liquidity ratios of analyzed companies

In the observed period the domestic companies from the sample recorded current ratio from 0.64 up to 11.89. This ratio is mainly stable for all companies, with a small decline in 2012. If we look at the rigorous Quick ratio of these companies during the same period, we see that the value of this ratio ranges from 0.49 to 10.10. In the observed period the companies whose shares are in the CROBEX10 recorded a current ratio of 0.89 to 6.08. The analysis of data on more stringent and better liquidity ratio, Quick ratio, shows that its value ranges from 0.30 to 5.93. Also, two companies from the sample recorded a negative amount of net working capital. The companies from Montenegrin stock exchange recorded a current ratio of 0.24 to 5.88. A more precise measure of liquidity, Quick ratio gets values from 0.03 to 5.94. Eight of the eighteen companies have negative net working capital in two years at least. These liquidity ratios derived from high current liabilities of the company. Current ratios and Quick ratios for all companies from the sample are given in Table 1.

The data on liquidity indicators of companies from the sample show that there are large fluctuations in the level of liquidity and there occurs a challenge - to examine what factors influence these fluctuations. For comparison of liquidity of Serbian, Croatian and Montenegrin companies, the median for liquidity ratios for all three groups of companies is calculated. The results are given in Table 2. We point out that the companies from Serbia and Croatia have significantly more favorable liquidity than the companies from Montenegro. The median of current ratio for companies in the BELEX 15 is slightly lower than the median for companies from CROBEX10, where the median of Quick ratio for both groups of companies is above 2, which is a relatively good indicator. Given that the observed period is a period of crisis in business, these results are somewhat surprising. However, these are mostly large companies, which take special care of their liquidity out of precaution.

Table 1 Current ratio and Quick ratio of the companies whose shares are parts of indices BELEX15, CROBEX10 i MONEX20 for the period from 2010 to 2012

SE	Company	Current ratio			Quick ratio		
		2010	2011	2012	2010	2011	2012
B	NIS a.d., Novi Sad	1.05	1.79	1.69	0.49	1.07	0.98
B	Energoprojekt holding a.d., Beograd	3.90	4.45	2.89	3.90	4.45	2.64
B	Aerodrom Nikola Tesla a.d., Beograd	9.72	10.46	6.94	9.43	10.10	6.64
B	Soja protein a.d. , Bečej	2.40	3.15	1.99	1.26	1.55	1.02
B	Imlek a.d. , Beograd	1.42	1.47	0.64	1.11	1.12	0.54
B	Metalac a.d. , Gornji Milanovac	2.67	1.94	2.24	2.66	1.92	2.22
B	Galenika Fitofarmacija a.d. , Zemun	10.32	11.89	5.33	5.22	7.23	2.91
B	Messer Tehnogas a.d. , Beograd	4.98	4.58	6.87	4.50	4.15	6.31
B	Jedinstvo a.d. , Sevojno	2.13	1.69	1.65	1.95	1.42	1.40
B	Alfa plam a.d. , Vranje	5.47	5.28	5.18	3.68	3.41	3.70
B	Goša montaža a.d. , Velika Plana	1.51	1.51	2.27	1.28	1.37	2.09
B	Veterinarski zavod Subotica a.d, Subotica	1.84	2.72	2.28	1.17	1.92	1.76
Z	Adris grupa d.d.	4.26	4.17	5.51	3.59	3.56	4.72
Z	Atlantic Grupa d.d.	1.40	1.97	1.84	0.96	1.34	1.26
Z	Ericsson Nikola Tesla d.d.	6.08	6.07	2.48	5.87	5.93	2.40
Z	HT d.d.	3.22	3.30	3.42	3.09	3.20	3.32
Z	INA d.d.	0.89	1.03	0.82	0.52	0.54	0.43
Z	Končar - elektroindustrija d.d.	2.72	2.57	2.87	2.09	1.96	2.20
Z	Valamar Adria Holding d.d.	1.15	1.04	1.66	1.12	1.00	1.61
Z	Ledo d.d.	3.01	3.52	1.57	2.27	2.69	1.34
Z	Podravka d.d.	1.15	1.70	1.70	0.73	1.05	1.07
Z	Petrokemija d.d.	0.90	1.11	0.98	0.30	0.42	0.43
M	Crnogorski Telekom AD Podgorica	2.08	2.58	2.95	1.99	2.50	2.86
M	Elektropriveda Crne Gore AD Nikšić	3.34	2.04	1.95	3.02	1.78	1.71
M	13. jul - Plantaže AD Podgorica	2.14	2.01	3.31	0.72	0.67	1.11
M	Jugopetrol AD Kotor	4.07	4.68	5.41	2.89	2.52	2.82
M	Crnogorski elektroprenosni sistem AD	2.12	5.88	4.84	1.87	5.68	4.69
M	Kontejnerski terminali i generalni tereti	1.01	0.83	0.74	0.81	0.56	0.54
M	HTP Budvanska rivijera	1.40	1.07	0.71	1.34	0.92	0.61
M	Luka Bar AD Bar	1.33	1.86	1.95	1.30	1.82	1.90
M	Rudnik uglja AD Pljevlja	0.42	0.31	0.35	0.29	0.22	0.26
M	Solana Bajo Sekulić AD u stečaju Ulcinj	0.55	0.49	0.46	0.44	0.39	0.37
M	Zetatrans AD Podgorica	4.90	3.40	4.16	4.84	3.36	4.13
M	Institut Simo Milošević AD Igalo	0.99	0.83	0.44	0.97	0.78	0.42
M	Kombinat aluminijuma AD Podgorica	0.46	0.08	0.06	0.20	0.03	0.03
M	Jadransko brodogradilište AD Bijela	0.48	0.51	0.67	0.22	0.15	0.42
M	HTP Ulcinjska rivijera AD Ulcinj	1.87	0.54	0.30	1.71	0.41	0.24
M	Barska plovidba AD Bar	3.84	2.32	1.33	3.48	1.84	1.07
M	CMC AD Podgorica	2.99	3.71	6.11	2.97	3.10	5.94
M	Lutrija Crne Gore AD Podgorica	0.24	0.40	0.58	0.08	0.23	0.39

Legend: B – Belgrade Stock Exchange, Z – Zagreb Stock Exchange, M – Montenegro Stock Exchange
Source: The indicators are calculated based on the data from the published financial statements.

For a full assessment of the liquidity of these companies, the average indebtedness of these groups of companies is also taken into consideration, and the median ratio of total debt to total assets is calculated for all three groups of companies, which is also given in

Table 2. The result shows that these companies are not very indebted, which may be associated with the period of research, given that lending by banks decreased due to the crisis.

Table 2 Median current ratio and Quick ratio and total debt to total asset ratio for the period from 2010 to 2012

	Median current ratio	Median quick ratio	Median total debt to total asset ratio
BELEX15 companies	2.54	2.02	22%
CROBEX10 companies	2.65	2.15	28%
MONEX20 companies	1.36	1.02	13%

Source: Calculated based on the data about liquidity indicators from Table 1.

2.2. Definition of potential determinants of liquidity

As potential determinants of liquidity, we research operating income, total assets, fixed assets, inventories, short-term debt, indebtedness ratio, capital structure ratio, long-term debt to long-term sources ratio, the share of equity in the long-term sources, the ratio of total debt to total assets, the maturity structure of debt, interest coverage ratio, equity to fixed asset ratio, rate of return on equity, rate of return on total assets, operating profit margin and ownership concentration. Potential determinants of liquidity, together with their expected relationship with the company's liquidity, are given in Table 3.

Table 3 Potential determinants of liquidity

Potential determinant	Measure	Expected relationship
Company size	Operating income	Positive
	Total Assets	
	Fixed Asset	
Indebtedness	Ratio of borrowed sources to long term sources	Negative
	Short-term debt	Positive
	Total debt to total assets	Negative
Maturity structure of debt	Share of short-term debt in total debt	Negative
Covering of interests	Ratio of operating income to interest expenses	Positive
Capital structure/Solvency	Ratio of own capital to long-term sources	Positive
	Equity to fixed asset ratio	
Profitability	Rate of return on equity	Positive
	Rate of return on total assets	
	operating profit margin (ratio of operating profit and sales revenue)	
Ownership concentration	Percentage of capital held by three largest shareholders of the company	Negative

3. THE ANALYSIS OF DETERMINANTS OF CORPORATE LIQUIDITY IN SERBIA

Using simple linear regression method, we find that the most significant determinants of liquidity measured by the current ratio for the Serbian companies are operating income, fixed assets, short-term debt, equity to fixed asset ratio, the ratio of total debt to total assets and rate of return on total assets. Table 4 shows the regression coefficients and their statistical significance. Operating income, fixed assets, equity to fixed asset ratio, ratio of total debt to total assets have a positive impact on the current ratio. A negative relationship exists between current ratio and the rate of return on total assets and short-term debts.

Table 4 Determinants of liquidity measured by current ratio for companies whose shares are part of BELEX15

Determinant of current ratio	Regression coefficient	Significance
Operating income (ln)	.602***	.000
Fixed asset (ln)	1.518***	.000
Short-term debt (ln)	-1.854***	.000
Equity to fixed asset ratio	1.078***	.000
Rate of return on total assets	-.154*	.077
Total debt to total assets ratio	.444***	.006

* significance level 0.1 ** significance level 0.05 *** significance level 0.01

The first two determinants represent the size of the company. Thus, we can conclude that the larger a company, the more liquid assets it has, which is contrary to the set hypothesis. However, theoretical considerations allow this conclusion, because large companies can hold more liquid assets, in order to be not forced to liquidate their assets. A larger amount of short-term debt means lower liquidity of the company. However, looking at the total debt in relation to total assets, we came to the opposite conclusion. Companies with a higher indebtedness ratio have higher liquidity ratio. The reason could be that companies that have a large amount of long-term debt, due to fears that they could fall into trouble if it was necessary to borrow further, hold more of their assets in the form of liquid assets. The regression coefficient of profitability ratios indicates that more profitable companies have lower liquidity, which at first seems as an illogical conclusion. However, profitable companies have less concern about debt, and therefore they are able to hold less liquid assets as a precaution. Equity to fixed asset ratio is an indicator of the solvency of the company and conclusion from the research is consistent with expectations that the more solvent a company is, the more liquid it is.

It is known that a rigorous Quick ratio is a better indicator of liquidity. This research shows that highly significant correlations with Quick ratio have two variables, total debt to total assets ratio and equity to fixed asset ratio. Indebtedness indicator, ratio of total debt to total assets shows an opposite effect on Quick ratio compared to the current ratio. The negative regression coefficient indicates that firms that are more indebted have a lower ratio. This is the consequence of a high share of stocks in liquid assets of the companies in the sample. It is also shown that solvency of companies affects the quick ratio in the same way as the current ratio. The higher value of this ratio indicates greater liquidity of the company. If the company is able to meet their long-term obligations, the

company will be able to settle short term obligations too. Other variables that showed statistically significant correlations with quick ratio, but at a lower level of statistical significance are total assets, fixed asset and debt ratio. Firm size presented by total assets and fixed asset shows a positive correlation with liquidity of the company.

Table 5 Determinants of liquidity measured by Quick ratio for companies from BELEX15

Determinants of Quick ratio	Regression coefficient	Significance
Total assets (ln)	.179*	.098
Fixed asset (ln)	.255*	.089
Equity to fixed asset ratio	.357***	.001
Total debt to total assets ratio	-.777***	.000

* significance level 0.1 ** significance level 0.05 *** significance level 0.01

The third measure of liquidity is net working capital. As the most important determinant of net working capital regression analysis highlights the indebtedness ratio, which represents the share of borrowed sources in long-term sources. The more long-term funding company provides by borrowing, liquidity measured by net working capital is lower. High correlation with net working capital indicates also variable that measures size of the company, fixed asset. The negative relationship that arises here shows that companies with higher value of fixed assets have less net working capital.

Table 6 Determinants of liquidity measured by net working capital for companies from BELEX15

Determinants of net working capital	Regression coefficient	Significance
Fixed asset (ln)	-.309*	.086
Indebtedness ratio	-.414**	.023

* significance level 0.1 ** significance level 0.05 *** significance level 0.01

Summarizing the results of regression analysis for companies whose shares are part of BELEX15, the conclusion is that a company's liquidity depends primarily on the firm size, its indebtedness, solvency and profitability.

4. The Analysis of the Determinants of Corporate Liquidity in Croatia

In analyzing data of the companies constituting CROBEX10, regression model set as main determinants of liquidity measured by current ratio the following: operating income, fixed asset, total assets, short term debt, the share of equity in the long-term sources, total debt to total assets ratio and operating profit margin. Regression coefficients and levels of significance for these determinants are given in Table 7.

When it comes to the determinant which presents the size of company, the conclusion is that when a company has greater total assets, it is more liquid. This conclusion coincides with the conclusion gained through analysis of Serbian companies. However, contrary to the conclusion obtained analyzing companies from the Belgrade Stock Exchange, the operating income and fixed asset indicate a negative correlation with liquidity of companies, but their regression coefficients are significantly lower than the

coefficient for total assets. Thus, the final conclusion is that larger firms are more liquid. Next determinant of liquidity, operating profit margin, shows negative correlation with the current ratio of Croatian companies. Companies that do business better can borrow at more favorable terms so they can hold less liquid assets. The capital structure indicator, as a share of equity in the long-term sources, shows a positive correlation with current ratio.

Table 7 Determinants of liquidity measured by current ratio for companies from CROBEX10

Determinants of current ratio	Regression coefficient	Significance
Operating income (ln)	-.180**	.024
Fixed asset (ln)	-.658***	.001
Total assets (ln)	2.921***	.000
Short-term debt (ln)	-2.245***	.000
Share of equity in the long-term sources	.510***	.000
Total debt to total assets ratio	.433***	.000
Operating profit margin	-.353***	.000

* significance level 0.1 ** significance level 0.05 *** significance level 0.01

The variables that are shown to be significant determinants of liquidity measured by Quick ratio are total assets, short-term debt, the share of equity in the long-term sources, the ratio of total debt to total assets, equity to fixed asset ratio and rate of return on equity (Table 8).

Regarding Quick ratio, the analysis shows that the size of the company (measured by total assets) is positively correlated to liquidity. With respect to debt indicators, two determinants, short-term debt and the ratio of total debt to total assets, have negative relationship with liquidity, which is an expected result. Capital structure, measured as a share of equity in the long-term sources has a positive impact on the Quick ratio. Companies with higher share of own capital in the long-term financing sources are more liquid, although this relationship is at lower level of statistical significance. Also, companies with fixed asset covered by a higher amount of own capital are more liquid. The last determinant relates to profitability, and it is the rate of return on equity. Companies with a higher rate of return on net assets are characterized by lower liquidity. A similar situation has already been discussed. More successful companies can, due to their sound financial position, hold less of their assets in the form of liquid assets.

Table 8 Determinants of liquidity measured by Quick ratio for companies from CROBEX10

Determinants of Quick ratio	Regression coefficient	Significance
Total assets (ln)	1.209***	.000
Short-term debt (ln)	-1.351***	.000
share of equity in the long-term sources	.185*	.076
Total debt to total assets ratio	-.225**	.011
Equity to fixed asset ratio	.375***	.000
Rate of return on equity	-.215***	.000

* significance level 0.1 ** significance level 0.05 *** significance level 0.01

The analysis of potential determinants of net working capital of Croatian companies established following significant determinants: short-term debt, the ratio of capital structure, rate of return on equity and capital concentration (Table 9). Short-term debt is expected determinant and correlation is negative, which is consistent with the influence of this determinant on other measures of liquidity. With a lower level of statistical significance, the ratio of capital structure affects net working capital so that a larger amount of long-term debt as opposed to their own sources leads to greater liquidity. That means that these companies are likely to hold more liquid assets as a precaution. The negative regression coefficient indicates that higher concentration of capital decreases company's liquidity. Much capital concentrated in a small number of owners has a negative impact on company's liquidity. It is possible that these large shareholders play a crucial role in leading the company and that they are prone to investment, rather than holding assets in the form of liquid assets.

Table 9 Determinants of liquidity measured by net working capital for companies from CROBEX10

Determinant of net working capital	Regression coefficient	Significance
Short-term debt (ln)	-.270**	.024
Ratio of capital structure	.217*	.051
Rate of return on equity	.691***	.000
Ownership concentration	-.427***	.001

* significance level 0.1 ** significance level 0.05 *** significance level 0.01

Summarizing the results of regression analysis for companies whose shares are in the CROBEX10, the conclusion is that the company's liquidity primarily depends on the size of the company, its indebtedness, capital structure, solvency, profitability and concentration of ownership.

5. The analysis of the determinants of corporate liquidity in Montenegro

The third group of companies included in this research is represented by the companies whose shares are the part of the index of the Montenegro Stock Exchange - MONEX20. The findings of the regression analysis of the determinants of liquidity measured by the current ratio point out to the following determinants: indebtedness ratio, the ratio of total debt to total assets, interest coverage ratio and equity to fixed asset ratio. The results of the analysis are shown in Table 10. Among the indebtedness indicators, a higher value of the regression coefficient and a higher level of significance has the ratio of total debt to total assets. It shows that the more indebted company is more liquid, which was also proven it the analysis of previous companies. For the first time, interest coverage ratio appears in the analysis as a determinant of liquidity. This indicator is positively related to the current ratio. More liquid is a company in which every monetary unit of interest expense is covered with greater amount of operating profit. Finally, the equity to fixed asset ratio, as in the previous analyses, is positively associated with the current ratio.

Table 10 Determinants of liquidity measured by current ratio for companies from MONEX20

Determinant of current ratio	Regression coefficient	Significance
Indebtedness ratio	-.217*	.062
Total debt to total assets ratio	.953***	.000
Interest coverage ratio	.151*	.093
Equity to fixed asset ratio	1.491***	.000

* significance level 0.1 ** significance level 0.05 *** significance level 0.01

Quick ratio of Montenegrin companies is determined by equity to fixed asset ratio and ownership concentration. Equity to fixed asset ratio affects the rigorous ratio in the same way as in the previous analyses. Between them there is a positive relationship and this is an expected result. Concentration of ownership as a determinant of liquidity appeared already on the sample of Croatian companies, but with the opposite impact. This relationship is positive, indicating that most of the capital in the hands of a small number of shareholders helps better coordination of management of the company, and this has a positive impact on the company's operations and liquidity.

Table 11 Determinants of liquidity measured by Quick ratio for companies from MONEX20

Determinants of Quick ratio	Regression coefficient	Significance
Equity to fixed asset ratio	.626***	.000
Ownership concentration	.248**	.021

* significance level 0.1 **significance level 0.05 ***significance level 0.01

The remaining analysis of the determinants is the analysis of determinants of net working capital of Montenegrin companies. The regression model indicates three determinants of liquidity: fixed asset, debt ratio and equity to fixed asset ratio. The results show that their relation to the net working capital is exactly as expected. More liquid companies have higher amounts of fixed asset. Indebtedness indicator is negatively connected with net working capital. Solvency indicator shows that firms that are more solvent are at the same time more liquid.

Table 12 Determinants of liquidity measured by net working capital for companies from MONEX20

Determinant of net working capital	Regression coefficient	Significance
Fixed asset (ln)	.430***	.000
Indebtedness ratio	-.259**	.017
Equity to fixed asset ratio	.809***	.000

* significance level 0.1 ** significance level 0.05 *** significance level 0.01

Summarizing the results of regression analysis for companies whose shares are part of MONEX20, we conclude that the liquidity of the company depends on the size of the company, debt ratio, solvency, interest coverage ratio and concentration of ownership.

CONCLUSION

The paper analyzes the micro determinants of corporate liquidity by using a sample of 40 companies operating in the real sector whose shares are parts of the stock market indexes of three stock exchanges - Belgrade, Zagreb and Montenegro Stock Exchange. On the basis of obtained liquidity ratios in the sample, we can conclude that the companies whose shares are part of BELEX15 and the CROBEX10 have better liquidity ratios compared to Montenegrin companies, which have shown unsatisfactory liquidity, but also less indebtedness.

The analysis of the determinants of liquidity of companies in our sample indicates similar determinants of liquidity of the companies from Serbia, Croatia and Montenegro. These variables are also emphasized in other empirical studies of the determinants of liquidity on both developed and undeveloped capital markets. Firm size has proved to be an important determinant and in our sample relation with liquidity is positive - larger companies have higher liquidity, which is contrary to the first hypothesis. In analyzed markets, companies cannot still count on the fact that they will always be able to borrow conveniently due to the many risks they face, especially political risks. In the period after the global economic crisis, at the time of instability of financial markets, large companies, wherever they are located, must be mindful of their liquidity, instead of believing that they can borrow easily. Indebtedness of the company, as a determinant of liquidity, gave different results depending on the chosen measure of how much the company was indebted. However, more variables pointed to the fact that companies out of precaution hold more liquid assets. Profitability has proved to be a significant determinant in Croatian companies, while in the Serbian and Montenegrin case showed no great importance.

Finally, we would like to address some limitations inherent to this study. In the first place, there are limitation concerning the sample size and the analyzed period. In this respect, future research should comprise a more comprehensive set of explanatory variables (including cash-flow indicators), should be based on a larger and comprehensive database and should include the period after 2012, which will allow a deeper analyses of the impact of post-crisis market conditions on company liquidity management.

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UPRAVLJANJE LIKVIDNOŠĆU PREDUZEĆA: IMPLIKACIJE I DETERMINANTE

Na likvidnost preduzeća utiču brojni faktori, koji potiču kako iz samog preduzeća, tako i iz okruženja. Ovaj rad bavi se internim determinantama likvidnosti preduzeća. Cilj rada je da pokaže od kojih pokazatelja poslovanja preduzeća zavisi likvidnost preduzeća u Srbiji, Hrvatskoj i Crnoj Gori i da li su te determinante specifične za preduzeća na ovim prostorima. Preduzeća koja čine uzorak su nefinansijska preduzeća čije su akcije u sastavu berzanskih indeksa berzi u regionu - BELEX15, CROBEX10 i MONEX20. Vrednosti pokazatelja likvidnosti ovih preduzeća upućuju na solidnu likvidnost. Najznačajnije determinante likvidnosti su veličina preduzeća, zaduženost i struktura kapitala Rezultati pokazuju da je dominantan motiv držanja likvidnih sredstava u našem uzorku predostrožnost,što pokazuje na koji način je kriza uticala na analizirana preudzeća.

Ključne reči: *pokazatelji likvidnosti, determinante, post-krizni period, tržišni indeks*

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