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Editorial

The selection of the papers for this issue of the journal *Economic Themes* shows the variety of topics. Most of papers focus on the field of international trade and finance. The paper entitled *The Impact of the World Economic Crisis on Foreign Investments and the Trade Flows in the Western Balkans* written by Danijela Jaćimović, Predrag Bjelić and Ivan Marković represents a comprehensive research on the channel through which the economic defect has been transferred from the external environment to the region of the Western Balkans. The changes in the level of foreign trade activity as well as in foreign direct investment (FDI) have been identified as key to decrease in economic activity in the region. Complimentary in one part with the latter is the research presented in the paper *The Influence of Fiscal and Monetary Policy of External Balance in Serbia* by Zoran Grubišić and Marija Marčetić. The paper analyzes the presence of a persistent current account deficit and budget deficit and identifies inadequately managed fiscal and monetary policy as a cause, which classifies the problem as chronic in nature and not acute. Hence, both of papers will be probably of interest to the same readers. The paper that follows is *A Comparative Analysis of the Impact of Foreign Direct Investments on the Structure and Specialization of Serbian and Hungarian Exports* written by Srđan Boljanović. The author analyzes the connection between sectoral direction of foreign direct investment and export specialization and contributes to this issue of *Economic Themes* by successfully combining various policies for enhancing national competitiveness. In the paper under a provocative title *Get Over or Game Over: The Rise and Fall of the EMU*, Marko Malović and Srđan Marinković give a comprehensive qualitative analysis of the current situation that the European Union finds itself in. Considering the problem diagnosis, the paper has many similarities with the previous two papers, because it points to the issue of a lack of real convergence and to the nature of the problem regarding the balance of payment imbalance within the European Union. The analysis makes a significant breakthrough in alternatives discussion based on the apparatus of game theory.

Aleksandra Praščević's paper entitled *Institutional and Political Determinants of Economic Development* although it does not fall exclusively into the thematic area of economic policy, it sheds light on less perceived phenomena that shape the process of decision-making. Without such analyses, it is not possible to explain why in practice we divert from recommendations of pure economic theory.

On this occasion there are a number of contributions from the field of financial markets. All the three following papers represent specific empirical research but with different methodology employed. The paper entitled *Structuring of Optimal Investment Portfolio of Voluntary Pension Fund by Analytic Network Process* written by Predrag Mimović, Milena Jakšić and Violeta Todorović is the paper that

fills in the gaps in the methodology of optimization, experimenting with the application of the analytic network process as a model of multiple-criteria decision-making. In his paper entitled *Dynamic Interactions among International Equity Market: A Serbian Perspective*, Eldin Dobarčić analyzes causality between changes in the relevant set of stock market indices, with the application of the Granger's causality test and other methods. Almir Allihodžić in his paper entitled *Application of the CAPM Model for Securities Pricing in the Capital Market of Bosnia and Herzegovina* analyzes the possibility of application of the classical CAPM model. It has been proved that, with some limitations present especially in less developed countries, this model has certain power to explain the yield structure in the analyzed stock market. Aside from contributing to the field of empirical tests of economic theory, the findings presented in these three papers will make better consideration of flows in the region's capital markets possible.

There are some interesting contributions in the field of business science published as well in this issue. The paper entitled *Employees' Characteristics as a Factor of Business Quality Improvement* by Radenko Milojević, Marija Anđelković Pešić and Gorica Bošković is also investigation in which the theory is supported by empirical findings. This is the reason why the paper makes a very complete and persuasive guideline for human resource management. This thematic field is also covered in the paper entitled *Some Aspects of Marketing Organic Food Products* by Jovan Babović, Aleksandra Nikolić and Vuk Raičević. The paper will be useful because of its complete state analysis as well as a set of specific ideas for advancing marketing in the segment of markets for agricultural products.

Organic agriculture is the topic that reappears in the paper entitled *Challenges to Organic Culture in Bulgaria* by Marina Nikolova. The paper is a rather complete development analysis of this sector in Bulgaria, with detailed representation of efforts that the EU and Bulgaria make for the purpose of its advancement and thus can be useful to a wider reading audience. The paper *Estimation of Money Laundering Prevention and Terrorism Financing in the Banks* written by Ljiljana Fiat is an intriguing research in the current but long since neglected field of science. The Editor is pleased that the journal is selected as a means of scientific promotion of the best parts of otherwise extensive research, which is the case of this but also some other papers in this issue.

This issue of the journal includes two book reviews, which leads us back to good practice of initiating discussion on the impact of new monographic publications. Through finding reflection in scientific periodicals, these publications are given encouragement and provided a wider reading audience.

Editor-in-Chief

Prof. dr. Srđan Marinković

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THE IMPACT OF THE WORLD ECONOMIC CRISIS ON FOREIGN INVESTMENTS AND TRADE FLOWS IN THE WESTERN BALKANS

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Abstract: This economic downturn has largely influenced the domestic economic stability of the Western Balkan economies. This paper will focus on impact of the world economic crisis on the Western Balkan economies and especially on their international trade and investment flows. Since this region is closely economically tied with the European Union, the crisis spread to the region very quickly through decreasing of regional exports to the EU market and through downward trends of foreign direct investments inflows to the region. The Western Balkan economies have low competitive position in the European and world market but this crisis has even further eroded their position. During the crisis time, all regional countries have found themselves in very fragile and vulnerable position, facing very low levels of FDI and diminishing export values. The paper will also examine how the changes of the FDI inflows in the period before and during the crisis have influenced the competition level of the region.

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Introduction

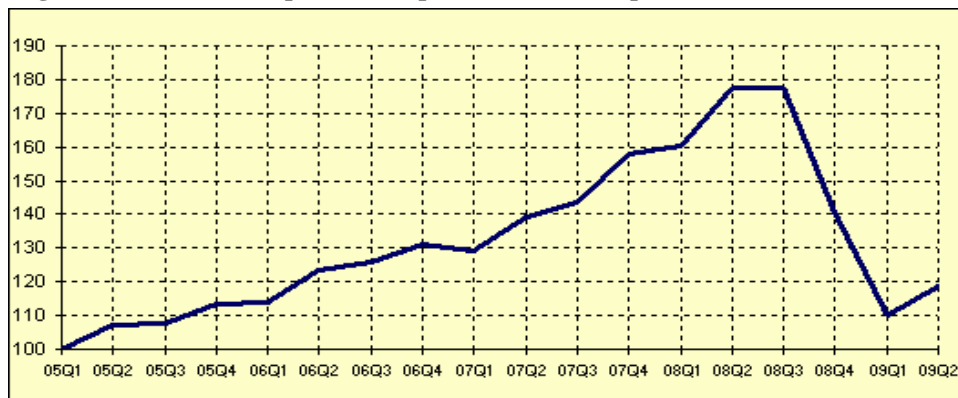
The world economy is characterised by more than ever great interdependence of national economies. International trade remains the main link between national economies in the world. However, countries do not trade

only in goods, but more and more they trade in services, intellectual property etc. One of important links between national economies in globalised world is the exchange of private capital in the form of foreign direct investments (FDI).

Rising interdependence among national economies is a great source of acceleration of economic development. However, during the period of crisis, in certain economies, particularly highly developed ones, the crisis spreads much faster to partner economies due to the high level of economic cooperation. Two main channels for spreading of the crisis from one national economy to others are international trade and exchange of foreign direct investments.

The global economic crisis of 2008 spread very quickly and the local American financial crisis became a global one in months. The most important indicator of global crisis was the fall in world export that started in the second quarter of 2008. In just 6 months, by the end of 2008, the world export reached the level that was recorded in the second quarter of 2005. In just 6 months, the volume of world exports dropped to the level that was recorded 4 years ago. The world exports started bouncing back in the second quarter of 2009 and this was the first sign of the global trade recovery. But the recovery of most of the national economies in the world is still not looming especially due to the large extent of the protectionist measures introduced in the form of non-tariff barriers by the majority of national economies.

Figure 1: Total world exports in the period 2005-2009, quarter data (Q1 2005 = 100)



Source: World Trade Organization data

The inflows and outflows of foreign direct investments in most cases supplement exports and imports of goods and services among countries. Developed countries are most important origins of FDI but also most important destinations. Developing countries and transitional countries finally opened for FDI inflows after 1990 but have not been very successful in attracting FDI so far.

In this paper we will focus our attention to the effects of the 2008 global economic crisis on economies in the Western Balkans. In these economies, the crisis was transferred from their trading partners, through decrease of exports and FDI inflows, but they are also facing their internal economic crisis. Having in mind that these countries received substantial amount of foreign capital in the period 2000-2008, it looks that capital inflow haven't build sustainable sources for development. Development of the Western Balkans countries still relays on the capital inflows to a great extent, but next wave of investments should contribute more to the sustainability of growth. The aim of this paper will be to analyze character and structure of the FDI inflows that regional countries received and its impact on growth and export and import of goods and services..

1. Effects of the world economic crisis on trade in the Western Balkans

The Western Balkan economies¹ have been exposed to their internal economic crisis resulting from economic transformation of their economies, macroeconomic instabilities, government mismanagement as well as political reasons, such as wars, sanctions etc. This situation has left this countries less developed than they were before the breakup of Yugoslavia in 1990. The dissolution of the Yugoslav market was followed by specific process of transition to fully functional market economy. Many economic sectors could not survive new conditions in world markets while some other successful sectors were privatised in a manner that did not improve their efficiency. This resulted in great structural changes of trade patterns of the Western Balkan economies.

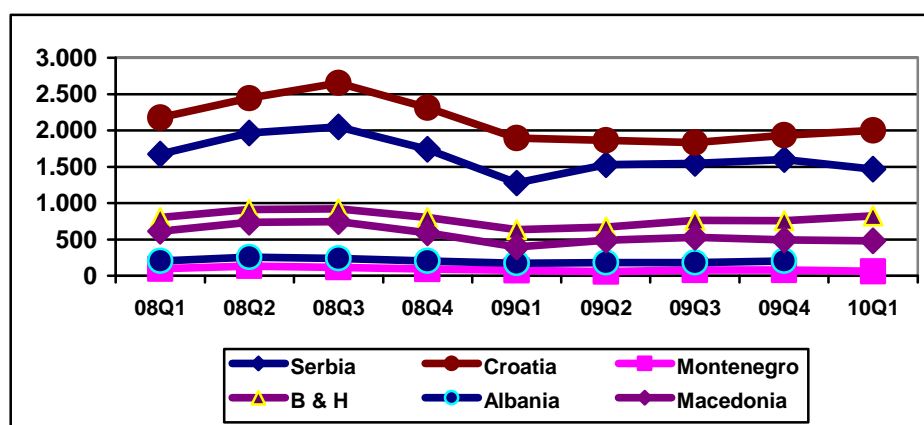
The economies in the region of the Western Balkans' export much less than their economic potential measured by export per capita or some other basic indicators. Their export predominantly consists of commodities and low value added labour intensive manufactures. They are faced with great trade imbalances and with majority of their trade partners they experience high and augmenting trade deficits.

With the appearance of the world economic crisis of 2008 the already small value of the Western Balkans' exports started to diminish. The spill over of the global economic crisis to national economies of the Western Balkan region happened just few months after the crisis appeared in the United States. This is the proof that the Western Balkan economies are significantly integrated in the global economy but more through imports and inflow of FDI than through exports to the foreign markets. Trade openness of the Western Balkan economy

¹ The term Western Balkans is used to describe the group of countries including Albania, Bosnia and Herzegovina, Croatia, Montenegro, Macedonia, Serbia and the customs territory of Kosovo defined under UNSCR 1244. Moldova is not in the focus of the author's attention but it is included in some data that represent CEFTA trade.

is generally high, above 50%, excluding Albania where it was around 40% (Gaučaitė Wittich, 2005, p. 3). The fall of the Western Balkans' exports in 2008 was significant and it was not recovered for most of the regional economies even until 2010. The Western Balkans' exports have declined by 10 per cent (Croatia) and close to 50 percent (FRY Macedonia and UNMIK/Kosovo). Exports of goods manufactured in the Western Balkans economies declined much faster than agriculture exports, except in the case of Albania and Montenegro (Handjiski, Lucas, Martin and Guerin, 2010, p.10).

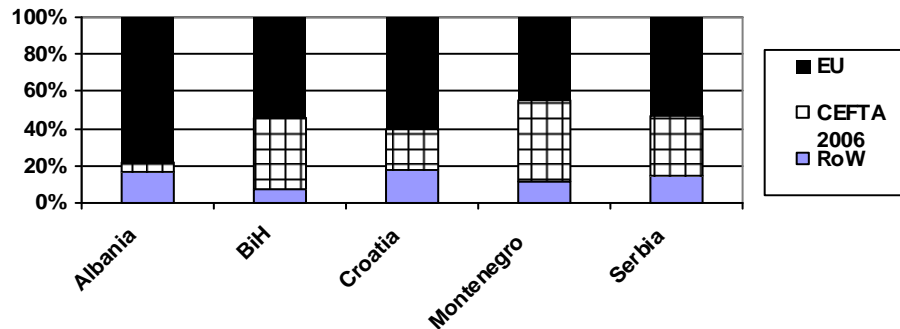
Figure 2: Total exports of the Western Balkan economies during the global economic crisis (quarterly data in million EUR)



Source: Data of Bank of Albania, Bosnia and Herzegovina Statistical Agency, Croatian National Bank, Statistical Office of Montenegro, National Bank of Serbia, National Bank of FRY Macedonia.

The European Union (EU) is the main export market for all the Western Balkan economies. Usually, more than half of exports of all Western Balkan economies are destined to the EU single market, except in case of Montenegro and UNMIK/Kosovo. This high level of dependence of the Western Balkan export on the EU market is further stimulated by EU trade preferences and prospects of EU membership of all the Western Balkan economies. However, this export dependence was a main channel for transfer of economic crisis from the EU market to the Western Balkan economies. The empirical research has shown a direct link between diminishing demand in the Western Balkans' export and the fall in their industrial production (Jovičić, 2010, p. 473). The EU is an important trade partner of the US and the financial crisis in the US has caused significantly lowered demand for import of the EU's products. Diminishing of export earnings has caused that EU companies also curtailed their imports, including imports from the Western Balkans.

Figure 3: Structure of exports of the selected Western Balkan economies by main export markets, 2009



Source: Authors' calculations based on national statistical agencies data.

Apart from disruption in foreign demand for goods, the second important channel for transmission of global crisis to the Western Balkan economies was the decline in foreign direct investment inflows. In 2008 and particularly in 2009, FDI inflows to all developing and transitional countries have declined sharply, particularly in the region of the Western Balkans. The decline was around 50% if we compare 2009 and 2008 as a base year, except in Albania and Montenegro due to large privatisation deals in 2009 (Sanfey, 2010, p. 5). The Western Balkan region is dependent on foreign capital and during the crisis foreign companies cancelled many new projects and even withdrew the capital that was already invested in short-term projects. Also, many countries in the Western Balkans have given up from the privatisation of their large state-owned enterprises since they could not obtain a good price during the crisis. Only partial foreign investments came with an aim to sustain present long-term projects. Other channels for transmission of crises have included decline in foreign remittances to the Western Balkan region and a sudden stop for internal lending to foreign affiliates in the Western Balkans (Gligorov, Havlik, Landesmann, Pöschl, Richter et al, 2010, p. 91). Apart from diminishing export and reduced inflow of FDI, some authors have observed the effects of reduced remittances and reduced bank credit lines (Bartlett and Prica, 2011, p.12).

An interesting fact is that during the crisis, decline of the Western Balkan's export to other Western Balkan countries was far less dramatic than decline of the Western Balkans' exports to the EU. Generally, export of the Western Balkan economies to EU fell by 20% on average in 2009 comparing to 2008 export levels, except in FRY Macedonia and Montenegro where this decrease was more significant. The decline of exports in intraregional CEFTA 2006 trade was as low as 12% or 16%, except in Albania and Croatia. This means that crisis hit the Western Balkans a bit later than the EU, so CEFTA was a good place to keep exporting. However, during the recovery in 2010, all Western Balkan countries, except Croatia, had significantly higher export growth rates in

its exports to the EU markets than to the CEFTA 2006 market. Considering the import side, the import flows bounced back faster in the intraregional CEFTA trade than in the trade of the region with the EU.

It is very hard to fully estimate influence of world economic crisis to the Western Balkans since apart from this global crisis which can be perceived as factor of global importance, there are many other factors of regional and country specific importance that have opposite effects. West Balkan economies, even if they are underdeveloped and with export below their economic potential, are significantly integrated into the world economy. They were in the second wave of transmission of the global crisis. The crisis came to the Western Balkans true diminishing export to the EU market and through reduced inflows of FDI from most important investment partners.

2. Effects of the world economic crisis on FDI inflows in the Western Balkans

The Western Balkan countries started their process of transition later than other countries, with more problems and challenges. Necessary changes have reflected on political, institutional, economic and social environment, demanding fresh capital while domestic sources were limited. Initiated changes have become very important with European aspirations of these countries, where future membership requires additional costs for reaching European standards in all directions.

The level of domestic savings in the Balkans is insufficient for financing of radical changes. The EU Funds are differently available to countries and depend on their competency to use them, so that financing from external sources are necessary, especially from FDI as their main components. The role of FDI in the process of transformation and association of Central and Eastern Europe countries is crucial. These investments have strongly contributed to the formation of investment, technology transfer, facilitating access to the foreign markets, strengthening the private sector and creation of market economy, as well as the elimination of macroeconomic imbalances inherited from the previous centrally planned system. (Jaćimovic, 2007, p. 125) While the flow of FDI has been very generous to Central and Eastern Europe in the last decade, only a small part was directed to Southeast Europe. Inflow of foreign direct investment in the period 1991-2002 is presented in Table 1.

The data indicate a very low level of inflows of direct foreign investment in the Balkans. Inflow of investment in early 1990s was insignificant, because of war in the region. Providing a relative political and economic stability, the inflow in the period 1995–2000 was increased significantly (about 10 times)

and it reached level of 3-4 billion USD on the regional level and this volume of funds with minimal oscillations will be present until 2004.

**Table 1: Inflow of FDI in the Western Balkan countries, 1991-2002
(in million dollars)**

	1991-96	1998	1999	2000	2001	2002
AL	58 ^e	45	41	143	207	213
BA	-1	56	154	147	130	321
HR	216	932	1,467	1,089	1,561	981
MK	15	118	32	1,777	442	77
RS and ME	66	113	112	25	165	475
Total	370	3,832	3,666	5,208	4,475	3,652

e- Estimation, 1991-1996 – average data for period.

Source: UNCTAD, FDI/TNC database (data 2003).

The expansion of capital flows across the world in the period 2005-2007 affected a significant increase of capital flow in countries of the Region. Inflow of foreign direct investment was significant and had positive effects on entire economic and political environment of countries in the Region. Single largest absorber of foreign capital was Croatia, as the most developed country of the Region with the best results of integration. Large inflow of foreign capital was recorded in Montenegro, which had one of the highest per capita FDI inflows in Europe.

The process of privatization was the main engine for the inflow of foreign investment in the Western Balkan region, and this inflow predominantly was directed into the sector of services, such as: banking, telecommunications, trade, energy and partly in real estate. Investments in industrial sector were significantly lower than share of the sector of services in foreign investment. Dominant investors were EU member countries.

The structure of investment implies that dominant inflow of capital in the region was more oriented by motive to provide quality international services to the domestic market, such as banking, telecommunication and retail sector and real estate and less in tourism and other export-oriented services. Small number of investments is oriented toward industrial sector, which had influence on increasing of export and increasing of competitiveness, which has similar effects on countries of Central Eastern Europe (Mitra, 2011, p. 5).

The financial crisis affected these flows, where decrease of foreign direct investment with most of the countries in the Region happened in the third quarter of 2008, while Albania and Montenegro achieved a slight increase in

investment in 2009 (Table 2). On the regional level decrease of FDI inflow was dramatically low for 47% in 2009 (Botrić, 2010, p.21)

Table 2: FDI flows to the Western Balkan region in the period 2004-2010

	2004	2005	2006	2007	2008	2009	2010	2011
AL	278	213	259	481	675	698	793	742
BA	567	493	611	1517	725	361	174	313
HR	950	1468	2765	3670	4192	1875	295	1048
MK	261	77	345	506	400	181	159	304
ME	53	384	493	673	625	944	574	401
RS	772	1268	3392	2513	2018	1410	1003	1949
Southeast Europe	2880	3903	7864	9360	8636	5469	2998	4857

Source: Vienna Institute for International Economic Studies Database on Foreign Direct Investment

It is interesting to analyze trade flows for the same period of time. In pre-crisis period, all Balkan countries have experienced the intensive increase of trade flows since overall they doubled in 2008 in comparison with figures in the early 2000s. The impact of crisis was evident in 2009 and trade values significantly deteriorated. It is important to point out, despite this positive trade dynamics in the region before the crisis, that the trade structure has stayed problematic. The import values almost doubled export figures for most of the countries, showing that the economies in the region are very import oriented.

Constantly present problem in trade balance in all regional countries is caused by low level of competitiveness of these countries and serious development disbalances. The FDI inflows hadn't brought significant changes in domestic markets, regarding the export oriented sectors of economies, since most of FDI went in service sector, while export dynamics mostly depended on general market (demand) expansion, during the time of global prosperity. The structural changes didn't occur for most countries, regarding improvement of export structure. (Mencinger 2007, p. 7; Becker and Weissenbacher, 2011, p. 9)

According to some authors (Mencinger, 2003, 2007, p. 7, Coccozza 2011, p.16 and Kinoshita 2011, 12) FDI influence trade balance by affecting exports and imports. Whether the effects of FDI on trade balance are positive or negative depends on the sectoral structure of FDI, and strong links between FDI and manufacturing subaccount (Aizenman and Noy, 2005, p. 5, Walsh, 2010, p. 12 and Mitra 2010, p. 3). One would expect positive effects on the trade balance, if the major aim of FDI is to take advantage of cheaper labor in the host compared to home country, and negative, if the major aim of FDI is to acquire new markets. (Mencinger, 2007, p. 10) Overall, short and long run effects of FDI on current account deficit are closely linked to the effects that FDI have on domestic savings and economic growth.

The deficit of current account in Western Balkan countries had been financed by net FDI to a large extent. (Becker and Weissenbacher, 2011, p. 11) Considerable FDI inflows had effected strongly their economic development but didn't result in sustainable increase of export activities. The question that is now in front of countries in region is: Did FDI inflows with their sector distribution contribute more to expansion of domestic consumption than to increase of export? The authors will try to answer this question in part 3 of the paper.

3. Analysis of nature of the relationship between FDI and some important economic variables during the crisis

First precondition for determining the existence and nature of the relationship between FDI inflow and export of goods and services, import of goods and services and GDP/capita is obtaining the time series of quantitative data. In this case, the sources of data have been national banks of Southeast European Countries and Vienna Institute for International Economic Studies for FDI inflow and export and import of goods and services and IMF for GDP/capita.

Table 3: FDI inflow (in million EUR) and GDP/capita (in USD current prices) in Southeast Europe in the period 1995-2011

	FDI inflow						GDP/capita					
	Al	BA	HR	MK	ME	RS	Al	BA	HR	MK	ME	RS
1995	54	/	84	7	/	/	894	/	4967	2270	/	/
1996	72	/	393	9	/	/	984	/	5203	2233	/	/
1997	42	/	479	51	/	/	701	/	4400	1883	/	/
1998	40	60	839	134	/	/	891	1434	4804	1796	/	2039
1999	39	166	1363	83	/	/	1107	1546	4368	1837	/	1444
2000	157	159	1141	233	/	56	1190	1469	4909	1786	/	1152
2001	231	133	1468	499	/	198	1327	1523	5195	1705	1893	1524
2002	141	282	1138	112	76	521	1438	1753	5974	1861	2086	2012
2003	157	338	1762	100	44	1300	1852	2197	7691	2353	2753	2613
2004	278	567	950	261	53	772	2344	2603	9241	2717	3337	3169
2005	213	493	1468	77	385	1268	2602	2783	10086	2944	3628	3391
2006	259	611	2765	345	496	3392	2858	3154	11235	3219	4323	3958
2007	481	1520	3679	506	683	2513	3393	3891	13383	3998	5759	5277
2008	665	684	4219	400	656	2018	4102	4733	15758	4828	7100	6458
2009	717	180	2415	145	1099	1410	3819	4367	14324	4550	6464	5438
2010	793	174	295	159	574	1003	3715	4255	13776	4457	6383	5142
2011	742	313	1048	304	401	1949	3992	4618	14457	5016	7317	6081

Source: National Banks, Vienna Institute for International Economic Studies and IMF

The intention of the authors has been to use the longest available time series but that was not possible in all cases. It can be seen in Table 3 that there are no data for FDI inflow for Bosnia and Herzegovina (for the period 1995-1997), Montenegro (for the period 1995-2001) and Serbia (for the period 1995-1999) and for GDP/capita for Bosnia and Herzegovina (for the period 1995-1997), Montenegro (for the period 1995-2000) and Serbia (for the period 1995-1997). As for Table 4, there are no data for export and import of goods and services for Bosnia and Herzegovina (for the period 1995-1997), Montenegro (for the period 1995-2000) and Serbia (for the period 1995-1996). One of the reasons is that, for example, the National Bank of Bosnia and Herzegovina was established in 1997 so the earliest data that could be provided is for 1998. Similarly, the National Bank of Montenegro was established in March 2001 so the earliest data could be provided is for that year.

It should be mentioned that data for GDP/Capita for 2011 are based on IMF estimates.

Table 4: Export and import of goods and services (in million EUR) in Southeast Europe in the period 1995-2011

	Export of goods and services						Import of goods and services					
	AL	BA	HR	MK	ME	RS	AL	BA	HR	MK	ME	RS
1995	232	/	5396	1075	/	/	601	/	7083	1403	/	/
1996	296	/	6370	1040	/	/	850	/	7891	1416	/	/
1997	200	/	7105	1219	/	2913	704	/	10071	1684	/	4206
1998	262	1003	7622	1285	/	3206	837	3613	9396	1798	/	4230
1999	511	1216	7644	1373	/	1774	1040	4142	9170	1802	/	2837
2000	760	1715	9411	1777	/	2231	1645	4512	10403	2473	/	3798
2001	937	1824	10800	1564	386	2693	1986	4878	12056	2174	780	5023
2002	961	1720	11125	1450	481	3125	2187	5012	13749	2328	815	6387
2003	1028	1939	13138	1539	462	3847	2277	5313	15124	2302	710	7206
2004	1294	2373	14240	1709	702	4475	2610	5704	16136	2669	970	9543
2005	1497	2858	15269	2060	699	5329	3115	6374	17409	2948	1168	9612
2006	1788	3591	16961	2393	880	6948	3478	6463	19558	3377	1680	11970
2007	2207	4153	18271	3070	1156	8686	4292	7656	21375	4222	2306	15578
2008	2605	4654	19843	3385	1201	10170	4967	8812	23624	5138	2880	19392
2009	2522	3945	16315	2550	977	8461	4652	6792	17845	4093	1949	13982
2010	2923	4736	17713	3187	1104	10060	4773	7402	17717	4605	1960	15284
2011	3153	5270	18801	3979	1324	11471	5260	8355	18751	5563	2099	17322

Source: National Banks, Vienna Institute for International Economic Studies

In order to determine the existence and nature of the relationship between FDI inflow and export of goods and services, import of goods and services and GDP/capita we need to do correlation and linear regression analysis. A correlation coefficient gives a numerical summary of the degree of association between two variables (see more: Buxton, 2008, pp 5). The linear regression summarizes the relationship between two variables, but only in specific setting: one of the variables helps explain or predict the other. That is, linear regression describes the relationship between an explanatory variable and a dependent variable (see more: Moore, 2007, pp. 115-149).

Looking at Table 5 and correlation coefficient column we can reach to several conclusions. First off all, there is a certain level of positive association between FDI inflow and export of goods and services, import of goods and services and GDP/capita in all these countries. Second, Albania has the highest association between these variables which is almost close to perfect positive correlation.

Table 5: Correlation and linear regression analysis of the FDI inflow, export and import of goods and services and GDP/capita in Southeast Europe in the period 1995-2011 (explanatory variable: FDI inflow)

Country	Dependent Variable	N	Linear Regression results			Correlation coefficient
			Intercept coefficient	Slope coefficient	R ²	
AL	Export G&S	17	299.42	3.56	0,93	0,96
	Import G&S		950.49	5.73	0,89	0,94
	GDP/capita		904.63	4.3	0,88	0,94
BA	Export G&S	14	2286	1.58	0,17	0,41
	Import G&S		5169.8	2.23	0,28	0,52
	GDP/capita		2317.2	1.39	0,17	0,41
HR	Export G&S	17	8569	2.76	0,44	0,66
	Import G&S		9626.4	3.28	0,58	0,76
	GDP/capita		5503.5	2.2	0,37	0,61
MK	Export G&S	17	1392.8	3.2	0,33	0,57
	Import G&S		2021.9	4.56	0,30	0,55
	GDP/capita		2338	2.83	0,14	0,38
ME	Export G&S	10	630.98	0.6	0,43	0,66
	Import G&S		935.87	1.6	0,56	0,75
	GDP/capita		2987	4.32	0,57	0,75
RS	Export G&S	12	3604.3	2.1	0,39	0,63
	Import G&S		6496.6	3.48	0,44	0,67
	GDP/capita		2183.1	1.22	0,43	0,66

Source: The author's calculations based on data from Tables 3 and 4

Third, Bosnia and Herzegovina has the lowest association. Fourth, FYR Macedonia has the lowest individual value for correlation coefficient of 0.38 for FDI inflow - GDP/capita. Fifth, these results indicate that there is a need to perform Linear Regression analysis to determine the nature of relationship between these variables.

Looking at the results of the linear regression analysis in Table 5 some conclusions can be reached. First, in explaining the results of the linear regression analysis we need to start from the assumption that there is no possibility that the FDI inflow in these countries could be equal to 0, so there is no need to explain the intercept (“a”). Second, only in the case of Albania coefficient of determination (R^2) proves that the linear regression equation is reliable. About 90% of the association between changes of the FDI inflow and export of goods and services, import of goods and services and GDP/capita is explained with the linear regression equation. If the FDI inflow in Albania would increase by 1 million EUR we could expect that the export of goods and services, import of goods and services and GDP/capita would increase by 3.56 million EUR, 5.73 million EUR and 4.3 USD current prices respectively. Third, the influence of increase of FDI inflow on import of goods and services is higher than influence on export of goods and services in Albania. Fourth, with few exceptions in all other cases the coefficient of determination is lower than 0.5 which indicates that the equation is not reliable and that it could not be used for explaining the association between these variables.

Having in mind these findings, we need to find a way to make the correlation and linear regression analysis more reliable in the case of Bosnia and Herzegovina, Croatia, FRY Macedonia, Montenegro and Serbia. One of the options could be to divide the time series to pre-crisis and crisis period. If we assume that one effect of the world economic crisis could be the change in the relationship between these variables, we need to determine eventual association between them before and after 2008.

Based on the results of the correlation and linear regression analysis of the FDI inflow, export and import of goods and services and GDP/capita in Bosnia and Herzegovina, Croatia, FRY Macedonia, Montenegro and Serbia in the period 1995-2007 (Table 6) we can identify several patterns. First, except for FDI inflow - GDP in FRY Macedonia, there is a high level of correlation between variables in all other cases and countries. Second, like already mentioned, in explaining the results of the linear regression analysis we need to start from the assumption that there is no possibility that the FDI inflow in these countries could be equal to 0 so there is no need to explain the intercept (“a”). Third, except for FDI inflow - GDP in FRY Macedonia, in all other cases coefficient of determination (R^2) proves that the linear regression equation is reliable. This coefficient has the values from 51% for FDI inflow – import G&S in the case of FRY Macedonia to 91% for FDI inflow - import in the case of

Montenegro. That is the percentage of the association between changes of the variables which is explained with the linear regression equation. Fourth, if the FDI inflow in these countries would increase by 1 million EUR we could expect that their export of goods and services would increase from 0.87 to 3.71 million EUR, import of goods and services would increase from 2.14 to 4.02 million EUR and GDP/capita would increase from 0.98 to 4.33 USD current prices. Fifth, the influence of increase of FDI inflow on Import of goods and services is higher than influence on export of goods and services.

Table 6: Correlation and linear regression analysis of the FDI inflow, export and import of goods and services and GDP/capita in Bosnia and Herzegovina, Croatia, FRY Macedonia, Montenegro and Serbia in the period 1995-2007 (explanatory variable: FDI inflow)

Country	Dependent Variable	N	Linear regression results			Correlation coefficient
			Intercept coefficient	Slope coefficient	R^2	
BA	Export G&S	10	1320.8	2.12	0.80	0.89
	Import G&S		4257.7	2.56	0.82	0.90
	GDP/capita		1437.2	1.84	0.86	0.93
HR	Export G&S	13	6024.5	3.71	0.73	0.85
	Import G&S		7606.9	4.02	0.73	0.86
	GDP/capita		3644.5	2.51	0.67	0.82
MK	Export G&S	13	1209	2.41	0.53	0.72
	Import G&S		1728	3.36	0.51	0.71
	GDP/capita		2030.1	1.74	0.19	0.43
ME	Export G&S	6	477.44	0.87	0.83	0.91
	Import G&S		655.26	2.14	0.91	0.95
	GDP/capita		2395	4.32	0.84	0.91
RS	Export G&S	8	2534.7	1.7	0.79	0.89
	Import G&S		5119.5	2.81	0.72	0.85
	GDP/capita		1656.1	0.98	0.71	0.84

Source: Author's calculations based on data from the tables 3 and 4

In the period of the economic crisis (Table 7) the results of correlation and linear regression analysis of the FDI inflow, export and import of goods and services and GDP/capita in Bosnia and Herzegovina, Croatia, FRY Macedonia, Montenegro and Serbia are significantly different. First thing that draws the attention is that there is a negative correlation between variables in Montenegro. In the case of FDI inflow - import G&S the correlation is so small that there is no need to do linear regression analysis. In the case of FDI inflow - GDP/capita

the coefficient of determination is lower than 0.5 which indicates that the equation is not reliable and that it could not be used for explaining the association between these variables. In the case of FDI inflow –Export G&S 80% of changes is explained with the equation. If the FDI inflow in Montenegro would increase by 1 million EUR we could expect that the export of goods and services would decrease by 4.43 million EUR.

Table 7: Correlation and linear regression analysis of the FDI inflow, export and import of goods and services and GDP/capita in Bosnia and Herzegovina, Croatia, FRY Macedonia, Montenegro and Serbia in the period 2008-2011 (explanatory variable: FDI inflow; N = 4)

Country	Dependent Variable	Linear Regression results			Correlation coefficient
		Intercept coefficient	Slope coefficient	R^2	
BA	Export G&S	/	/	/	0.21
	Import G&S	6739.6	3.26	0.73	0.85
	GDP/capita	4220.6	0.81	0.77	0.88
HR	Export G&S	/	/	/	0.40
	Import G&S	16749	1.37	0.71	0.84
	GDP/capita	13684	0.45	0.85	0.92
MK	Export G&S	2493.8	3.1	0.41	0.64
	Import G&S	3815.8	4.1	0.62	0.78
	GDP/capita	4295.6	1.66	0.62	0.79
ME	Export G&S	1453.6	- 4.43	0.80	- 0.89
	Import G&S	/	/	/	- 0.17
	GDP/capita	7454.5	- 0.94	0.36	- 0.60
RS	Export G&S	8091.3	1.22	0.23	0.48
	Import G&S	10244	3.91	0.63	0.79
	GDP/capita	3848.1	1.21	0.94	0.97

Source: Author's calculations based on data from the tables 3 and 4

Second, in the case of FDI inflow - export G&S in Bosnia and Herzegovina and Croatia the correlation is also small that there is no need to do the linear regression analysis. Third, except for FDI inflow - export G&S in Serbia, there is a high level of correlation between variables in all other cases and countries. Fourth, as mentioned before, in explaining the results of the linear regression analysis we need to start from the assumption that there is no possibility that the FDI inflow in these countries could be equal to 0 so there is no need to explain the intercept ("a"). Fifth, except for FDI inflow - export G&S in FRY

Macedonia and Serbia, in all other cases coefficient of determination (R^2) proves that the Linear Regression Equation is reliable. This coefficient has the values from 62% for FDI inflow – import G&S in the case of FRY Macedonia to 94% for FDI inflow - GDP/capita in the case of Serbia. That is the percentage of the association between changes of the variables which is explained with the Linear Regression equation. Sixth, besides Montenegro, if the FDI inflow in these countries would increase by 1 million EUR we could expect that their export of goods and services would increase from 1.22 to 3.1 million EUR, import of goods and services would increase from 1.37 to 4.1 million EUR and GDP/capita would increase from 0.45 to 1.65 USD current prices. Seventh, the influence of increase of FDI inflow on import of goods and services is higher than influence on export of goods and services.

In the end we could conclude that there is a significant level of positive correlation between FDI inflow, export of goods and services, import of goods and services and GDP/capita in Southeast Europe in the period 1995-2011 and that if the FDI inflow in these countries would increase we could expect that their export of goods and services, import of goods and services and GDP/capita would increase too. Additionally, based on the change that could be expected as a result of the increase of FDI inflow, we could conclude that the influence of increase of FDI inflow on import of goods and services is higher than influence on export of goods and services.

Conclusion

The world economic crisis spread to all corners of the world. The Western Balkans is a region well integrated into global economy and it felt this crisis through diminishing exports to its traditional export market, such as the EU, and through reduction of FDI inflows to the region from its traditional investment partners, usually developed countries. Our region has an export much below its economic potential and its export includes agricultural and commodity products, so the effects of the crisis were less damaging than in developed countries. But due to lack of capital for economic development and high dependence on FDI inflow the crisis spread through repatriation of foreign capital and abandonment of large investment projects. An interesting fact was that crisis affected region's trade with the EU more than the intraregional trade in the Western Balkans. This gives us a good argument to foster regional cooperation and integration, to speed up the economic growth in the region.

The Western Balkan region depended extensively on inflow of FDI in the past decade. The first effects of direct capital inflow were significantly positive for Balkan countries, which lead to high (long expected and necessary) growth rates, low inflation, increasing of employment and stability in fiscal balance. However, in period of expansion, these countries have pursued deficit in current

account of payment balance, which did not represent any significant problem, because deficit was covered with significant inflow of foreign investments. Increasing trade deficit during prosperity time, turn in deficit of smaller scale during crisis, what was just result of necessary adjusting to the situation of shortage of export incomes and low level of FDIs. Decrease of inflow of foreign direct investments has slowed down economic development of the Balkan countries, and had strong influence on slowing of growth in countries of Central and Eastern Europe², putting the regional countries in very severely economic position during crisis time.

Constantly present problem in payment balance, especially in trade balance, is caused by low level of competitiveness of these countries and serious development disbalances (Jaćimović, 2012, p. 15). Structure of investment implies that dominant inflow of capital in the region was more oriented to provision of quality international services to domestic market, such as banking, telecommunication and retail sector and real estate and less to increasing of competitiveness in tourism and other export-oriented services. Limited number of investments was oriented toward industrial sector, which had positive influence on increase of exports and competitiveness, like in the case of countries in the Central Eastern Europe (Mitra, 2011, p. 25).

The significant inflow of capital in the region has led to expansionary external trading policy, where import and export increased strongly, while this dynamics were more significant at import side. The inflow of foreign investments in Western Balkan countries, have significantly influenced the increase of import, and less the export activities of these countries. Increasing imports which have not been matched by export growth, for the most regional countries have produced trade balance deficits which confirms Konoshita's research that FDI in the tradable sector is associated with higher exports and FDI in the non-tradable sector is associated with higher imports (Kinoshita, 2011, p.21)

The authors tested Kinoshita conclusions for the Balkan countries, and based findings on the results of the correlation and linear regression analysis of the FDI inflow, export and import of goods and services and GDP/capita in Bosnia and Herzegovina, Croatia, FRY Macedonia, Montenegro and Serbia in the period 1995-2011. Based on generated results we concluded that there is a significant level of positive correlation between FDI inflow, export of goods and services, import of goods and services and GDP/capita in the Balkan in the period 1995-2011 and that if the FDI inflow in these countries would increase we could expect that their export of goods and services, import of goods and services and GDP/capita would increase too. Additionally, based on the change

² These countries have experienced large inflows of FDI in period of transition, which were generator of changes, high growth and precondition of their development toward full membership in EU.

that could be expected as a result of the increase of FDI inflow, we could conclude that the influence of increase of FDI inflow on import of goods and services is higher than influence on export of goods and services for the all countries in Balkan.

This draws to conclusion that inflow of foreign investment has stimulated domestic consumption more then the growth of competitiveness of export for all regional countries. We could also say that the region has serious problems in terms of export manufacture competitiveness.

Minor influence of FDI on export manufacture competitiveness can be explained by sector structure of FDI. Investments in the industrial sector were significantly lower than share of the sector of services in foreign investment. The process of privatization was the main engine for the inflow of foreign investment in the Western Balkan region, and this inflow predominantly was directed into the sector of services, such as: banking, telecommunications, trading, and energy and partly in real estate.

Factors of attraction are significantly different among the sectors and they should be taken into consideration seriously and present in new development strategies of countries through focussing on development of respective sectors and strategies for attraction of foreign investment in the region.

Numerous studies have indicated on character of economic policy applied by countries that are successful in attracting of foreign capital (Bevan and Estrin, 2000, p. 18, De Melo and others 1996, p. 13, Merlevede and Schoor, 2005, p. 11, Garibaldi and others 2001, p. 22 and Kinoshita and Campos, 2003, p. 17) which analyzes the determinants of foreign direct investment to CEE countries. Other countries like the Balkan countries tried to copy the model of growth and transformation, building growth model on FDI inflow.

Recent researches indicated that when it comes to factors of attraction of foreign investments, extremely important role have sectors in which these investments go (Walsh and Yu, 2010, p. 24 and Mitra, 2010, p. 7). We should have in mind that FDI inflows are dominant in service sector for the Balkan countries, but on other hand that there is a need to stimulate FDI inflows in manufacturing sector.

Future EU enlargement process of Western Balkan countries will speed up reforms and improve perspectives for more growth oriented structure of FDI. The improved environment will affect new capital inflows which will contribute to more self sustainable growth, less vulnerable to future fluctuations in the world economy.

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UTICAJ SVETSKE EKONOMSKE KRIZE NA MEĐUNARODNE INVESTICIONE I TRGOVINSKE TOKOVE U REGIONU ZAPADNOG BALKANA

Apstrakt: Skorašnji privredni pad je značajno uticao na stabilnost nacionalnih privreda Zapadnog Balkana. Ovaj rad ima za cilj da ukaže na uticaj svetske ekonomske krize na zemlje Zapadnog Balkana, sa posebnim osvrtom na njihovu spoljnu trgovinu i tokove investicija sa svetom. Budući da je ovaj region blisko ekonomski povezan sa Evropskom unijom, kriza se prenela na region veoma brzo kroz smanjenje izvoza zemalja regiona na tržište EU i kroz pad ulaznih tokova investicija u zemlje Zapadnog Balkana. Zemlje Zapadnog Balkana imaju nizak nivo međunarodne konkurentnosti na evropskom i svetskom tržištu, a svetska ekonomska kriza je još više pogoršala njihovu konkurentnost. Tokom krize sve zemlje regiona Zapadnog Balkana su se našle u nepovoljnoj poziciji, usled pada stranih direktnih investicija i smanjenje izvoza. Rad će istražiti i uticaj promena u prilivima stranih direktnih investicija, pre i posle krize, na stanje konkurentnosti zemalja regiona.

Ključne reči: SDI, konkurentnost, trgovina, privredni rast.



INFLUENCE OF FISCAL AND MONETARY POLICY ON EXTERNAL IMBALANCE IN SERBIA

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Review paper

Abstract: The beginning of the transition process has generated great expectations regarding the growth and development, increasing the absorption, which is reflected through deterioration of current account. Almost all transitional economies record high current account deficits using foreign savings and borrowing for financing domestic consumption and this is the reason for external imbalance. But after the global economic crisis and the current account reversal Serbia still has higher current account deficits comparing to other countries in the region. This paper examines the reasons for high absorption and current account deficit and the role of monetary and fiscal policy in maintaining external imbalance in Serbia.

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Introduction

Current account deficits, for which economic theory does not recommend funding, occurs when the imbalance caused by excessive expansion of aggregate demand, and when the imbalance is of fundamental character. In studies of the IMF (IMF, 2009) high on the real line absorption, ie. increased domestic demand as the main reason of excessive current account deficit, are the Baltic countries - Romania and Bulgaria. Serbia is at the top of the pyramid in the group of countries where are Poland, Macedonia, Bosnia, Croatia, Hungary. However, the IMF's conclusion is that the current account deficit is not the result of Serbian absorbent booms, as in the above mentioned countries, but the result of the productivity shock. This paragraph seems contradictory to

the measures applied to limit demand in the last stand-by arrangement (IMF, 2011) in which Serbia entered. In the short term, the reason of advised policy could be found in the current request for correction of the growing fiscal deficit in the short term after a sharp drop in capital inflows due to the global economic crisis. The fiscal deficit is the theory of twins deficit reflects the current account deficit. After presenting the theoretical and empirical concerns regarding the causal relationship of twin deficits, examining their actions and existence in Serbian macroeconomic model. On the other hand, monetary policy has been restrictive for many years in order to maintain the money supply under control, and controlling credit expansion. The expansion of credit activities can encourage the growth and convergence process, but at the same time has a negative effect on the appreciation of the exchange rate, inflation increased activity due to the growth of investment and private consumption, and accordingly the deterioration of the current account abroad. In the second part of the test is a direct link between increased credit programs and the current account deficit. Result of tight monetary policy and a real appreciation of the exchange rate, which discourages exports more expensive and worsening trade balance. Restrictive policies aimed at reducing aggregate demand, gives the result as long as the indirect effect of reducing aggregate demand does not lead to lower domestic production. This paper defines a framework of a comprehensive analysis of fiscal and monetary policy in the deepening crisis of the balance of payments. Incoherent macroeconomic policy may be held liable only up to a certain limit. The beginning of the transition process has generated great expectations in terms of growth and development. All transition economies recorded a high current account deficits using foreign savings as a source of economic growth, and could be the reason that the same fundamental macroeconomic circumstances changed. One of the fundamental features of the transition process is the sudden inflow of FDI (foreign direct investment), which play an essential role in the creation and financing of external imbalances.

1. The Role of FDI in the Design and Financing of the Current Account Deficit

The modern view of the deficit in the current balance is to be viewed as a discrepancy of capital balance, that is, the current account is seen only as part of capital account imbalances. The main lever for economic growth in the past decade has been based on attracting FDI (whose income is recorded in the capital and financial account). In the period from 2000 to 2011 years, FDI amounted to 14617.1 billion. Net FDI flows to the 2011th amounted to 1,826.9 million euros, portfolio investments 1,619.1 million euros and other investments 1,107.1 mln. Thus, capital inflow in the previous years, primarily due to foreign direct investment, trade credit, and debt of the public sector. Compared with the previous year, net FDI inflows increased by about 1 billion euros, which is

significantly less than the pre-crisis years. Becoming weaker capital inflows, with the withdrawal of deposits and net repayment of industries and banks, indicating the growing problem of financing the current account deficit. FDI certainly affect the growth of imports, as foreign investors imported equipment, raw materials, and the like to run the production process. It is therefore clear that the termination of FDI inflows coming in a significant reduction in imports.

Irrespective of the positive effects of FDI on growth, and hence the current account, also dependent on the sectoral composition of FDI and its interaction with domestic investment. Flows in the primary sector may have limited beneficial spillovers, because they often involve mega projects rarely use domestically produced intermediate goods. FDI in the manufacturing sector, on the other hand, tend to have a significant impact on GDP growth because of stronger linkages between this sector and the rest of the economy. You FDI in the service sector have limited effects. Growing deficit in Serbia during the first decade of the twenty-first century is characterized by a high share of components of final consumption and insufficient participation of investment in fixed assets. It is estimated that 1/3 of FDI went to the tertiary sector. Expansion realized the transport and telecommunications, trade, financial services. Comparing Serbia with neighboring countries and the EU average is observed adverse technological structure and certainly low share of industry in GDP (Serbia 22.1 % of GDP, Environment 31.1 % of GDP in 2009). Analysis of the marginal coefficient and the coefficient of efficiency investments are showing a declining trend of investment efficiency compared to the initial years of transition. The reduction efficiency is manifested in a higher amount of investment necessary to achieve GDP growth. Insignificant effect on FDI share of fixed investment in GDP is common for most transition country. A large part of the funds obtained from the sale of capital stock to foreigners went into consumption rather than capital formation. Thus was created a negative relationship between FDI and current account (Meninger, 2003), so we can say that we have come to indirect causes of high current account deficit.

A positive effect is also important motive for entry of multinational companies in foreign markets. You should expect a positive effect on the trade balance if the main target of FDI to take advantage of cheap labor in the host country, and negative if the objective of FDI inflows to conquer new markets. Also, the entry of multinational companies in addition to raising competitiveness can cause the elimination of domestic competition. If a monopoly is a multinational company that its profit is from the mother country the situation is deteriorating. Motive of the presence of such companies in the market may be bypassing customs, the use of transfer prices for tax cuts and then the effect of eliminating competition gaining intensity. Capital importing country must take care not to provide too many tax breaks to foreign companies because then there is the so-called crowding out (crowding out) of domestic investment. Excessive

competitive power of multinational corporations reduces the ability of local firms to undertake new investment.

2. Examination of the Degree of Correlation of Twin Deficits

In theory, the frequent disputes over the size and activity correlations of twin deficits. The rule of causality increased fiscal deficit to increase in the current account deficit is promoted with certain exceptions. In this field of activity following the presentation of the theoretical and empirical concerns regarding the causal relationship of twin deficits, examining their actions and existence in Serbian macroeconomic model.

At the outset it should be noted that the views of its existence speculate about the causal relation of these deficits. Ricardian equivalence rule goes against stance on correlated twin deficits. When the government reduce taxes and increase its deficit, consumers anticipate that they will later be faced with higher taxes to pay off the national debt to be incurred. In anticipation of this, they increase their personal savings. And contrary, governments reduce government spending affect the private sector to increase spending. However, the challenges to Ricardian equivalence are related to the following objections : the link between the current deficit and future taxes is not predictable, people are short-sighted, intergenerational altruism is not so significant. Rule Ricardian equivalence will not find a place in the logic of average economic entities in Serbia, and in the hereafter will be towered counterargument. Another approach promotes the idea that a greater effect on the current account is the productivity shock than the fiscal deficit. The empirical analysis on the example of 21 OECD countries in the period 1960-2003, (Bussiere, et al., 2005), the productivity shock has a larger effect than the fiscal deficit in the current account deficit of about 10%.

Several studies discussed below deteminišu thinking about the twin deficits. A recent study by the IMF (IMF, 2009) examines the potential implications of the current account to the continuing fiscal stimulus, not only in the short term but in the long and medium term. Due to the dynamics of capital flows need several decades to observe the effects of changes in the fiscal deficit. The study was conducted in an appropriate fiscal and monetary model. In the study it is assumed that consumers plan their budget in a very long time horizon for several hundred years (the fantastic time frame has been designed for the fulfillment capabilities Ricardian equivalence). The second condition is that the interest rate is unchanging values in the long term. The results showed that the continuous increase in the fiscal deficit of 1% of GDP, if not accompanied by fiscal deficits in the rest of the world, leading to a deterioration of the current account of 0.5 % in the short run and 0.75 % in the long term for countries the size of the U.S. and 1% for small economies.

Another study (Corsetti and Muller, 2005) in the two-factor model with two economies suggests a divergence between the two deficits, but do not rule their common cyclical dynamics. The transmission of the budget deficit is a major determinant of openness of the economy and the persistence of fiscal shocks. For a given repetition of the fiscal shock, the less open economy and a longer period of time greater crowding in private investment, as well as the deterioration of the current account. Also, the response of foreign trade in closed economies tends to be weaker in the shocks increased spending. A key reason is the downturn in investment in closed economies.

In the example of the United States in the VAR model, the flexible exchange rate, the study authors Kim and Roubini (2007) also come to divergent results attributing the transmission effects of fiscal deficits on the current account deficit economic cycle. Moreover, the empirical results show that the budget deficit improves the current account deficit and depreciation of the exchange rate in the short term. These results are contrary to all theoretical models. A more detailed analysis shows that the improvement in the current account result in part rikardijanskog response of private savings, the fall in domestic investment (the crowding-out effect is probably a result of increasing interest rates), and the resulting real depreciation of nominal depreciation. The current account deficit is more a result of the shock on the output, that is induced by the shock of productivity.

Republic of Serbia, achieved a fiscal deficit for the first time in 2009. exceeded the limit prescribed by the Maastricht criteria for the level of fiscal deficit (3%). The fiscal deficit in 2010. continues the trend from the previous year with a deficit of 4.6%. So, after the stabilization of public finances and achieving a surplus in 2004. and 2005. government deficit increase in the period 2005-2011. Share of deficit to GDP increased from 1.9% in 2006. year, to 5.7 in 2011. Surpluses in 2004. and 2005. year should be seen in the relationship with the IMF. Serbia since the beginning of transition until February 2006. years had in place agreements with the IMF that required strict adherence. Due to the need for fiscal consolidation in the period to 2005. Serbia leads relatively responsible fiscal policy, which resulted in a significant improvement of the fiscal results. The relatively high deficit in 2009. year is the result of falling revenues due to recessionary trends and oversized spending (particularly in the area of expenditure on pensions), while the tendency on current account deficit during this period is opposite. Most of the mentioned deficits is financed by borrowing, issuing treasury bills in the domestic financial market and therefore can be concluded that most of the fiscal deficit topped in the public debt.

Serbia before the crisis, in the period of 2006 – Mid of 2008 led the procyclical fiscal policy, which means that in good times when tax revenues were above the average made fiscal deficit and significant privatization revenues

spent on its cover (Basic, 2007). Much of the revenue from privatization is neutralized through government spending. In a simple intertemporally model fiscal expansion with increased government spending reduces the resources that the private sector can initiate an external deficit. Consumers borrow on international markets to smooth the consumption against fluctuations in wages between disposable income and permanent income. The Mendel-Fleming model, expansionary fiscal policy raises the disposable income and domestic demand and leads to the appreciation of the exchange rate, which influences the negative trade balance. Direct link between the current account deficit and fiscal deficit is sought from known relationships of basic macroeconomic entities:

$$TB = Sp - I - (G - T)$$

It should be noted that the previous relationship is identity that can only be accepted with a valid economic model. The data that we need for defining relationships between the "twin" deficits are saving and investment (SI). Will also use the data on fiscal deficit (G - T) and the current account deficit (TB).

Table 1: Relation of the fiscal deficit and current account deficit

	2004	2005	2006	2007	2008	2009	2010	2011
S-I	-12,1	-8,7	-10,2	-16,0	-21,4	-7,1	-7,2	-7,6
G-T	0,8	0,9	-1,9	-2	-2,5	-4,5	-4,8	-5,7
TB	-13,8	-8,8	-10,1	-17,7	-21,6	-7,2	-7,6	-11,0

Source: In formula are used NBS data (fiscal deficit) and IMF (SI), Republic of Serbia: Seventh Review and Inflation Consultation Under the Stand-By Arrangement; Republic of Serbia: Request for Stand-by Arrangement - Staff Report, Staff Statement, Press Release, and Statement by the Executive Director for the Republic of Serbia. Series: Country Report. 11/311

The budget is not in deficit 2004th and 2005th year, and therefore it is impossible to claim the existence of twin deficits. The current account showed a significant increase to 2009th and a crisis, while the fiscal deficit only then escalates. Relationship can not be considered causal, and the cause is not just a fiscal deficit as low domestic savings has a decisive role in creating the deficit. The current account deficit is the result of low domestic savings, is less likely to be sustainable than that which is the result of high rates of domestic investment. Indirect relationship between the fiscal deficit and the current account we find in the following way - fiscal expansion is hard keeping inflation under control and this resulted in loss of competitiveness of the economy, discouraging exports and the growth of the current account deficit.

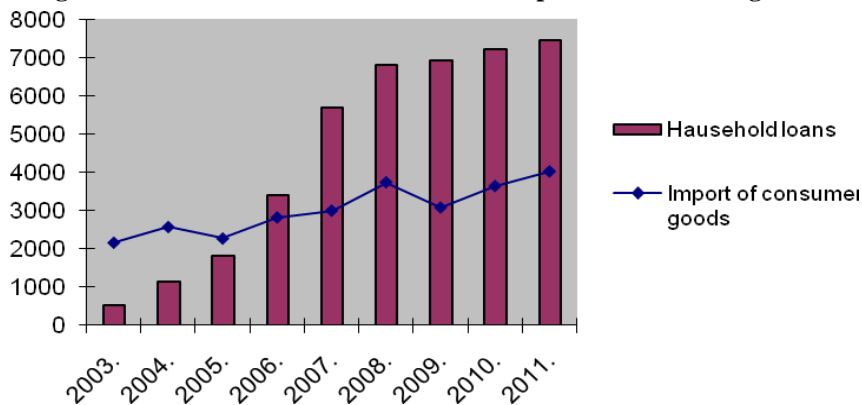
Serbia is in the regime of flexible exchange rates (since the beginning of 2006), and the effect of fiscal expansion has a higher than nominal real significance. In developing countries increase fiscal expansion of 1% increase in GDP of 0.79 %, the rest is overflowing on imports and consumption. If a country has a high foreign debt, for fear of creditors, a multiplier effect is also reduced. The share of public investment as a share of GDP in Serbia is among the lowest in the region (except for Hungary and Croatia). Achieved percentage of public investment in Serbia is unsatisfactory given the revenue from privatization. The current structure of public expenditure does not provide sustainable economic growth in the long term. Another bad indicator of the composition of public expenditure share of capital spending, which fell from 8.7% in 2005-2008. year to 7.4 % in the 2009th year. Public investments have a significant impact on output growth in developing countries than in developed economies. In developing countries increase public investment by 1 % leads to an increase in production of 0.6% in the first quarter and in the medium term the increase is about 1%. The rule is that countries in transition and developing countries need to stimulate economic activity through increased public investment, not current public spending. Thus, the adjustment should be achieved through re-composition of public expenditure. Since the main components of public spending wages and pensions, the adjustment more difficult. Serbia is one of the recorder by the amount of participation of payroll expenditures to GDP among the countries of Central and Eastern Europe. In the period 2001-2008. was a dynamic growth in net earnings (13.7 %). Annual wage growth is much faster than the growth of GDP (5.4%) and productivity growth (6.0%). The growth rate of net income in periodu 2009-2011. year recorded a modest 0.3%. It is known that when the economy grows, workers expect an increase future revenue as a result of increased current consumption. (Tobin, 1967; Farrell, 1970 ; Summers, 1981). Acting as a component of aggregate demand, salaries in the public sector has grown faster than the growth of aggregate demand, causing an imbalance. Although salaries in the public sector accounts for about 20 % of the total value of imports, it can be said that to some extent affected the movement of imports through the direct impact on imports of consumer goods and by providing a basis for credit growth and the appreciation of the dinar (Ilic, 2010). The limitation of this trend and reduce administration has already agreed in the loan agreement with the IMF (stand-by arrangement 2009).

3. The Expansion of Consumer Credit and the Impact on Imports

The expansion of credit activities can encourage the growth and convergence process, but at the same time has a negative effect on the appreciation of the exchange rate, inflation increased activity due to the growth of investment and private consumption, and accordingly the deterioration of the current account abroad. Enhanced emission credits may also lead to a banking

and financial crisis. According to empirical study, Demirguc-Kunt and Detragiache (1997), the initial value of the loan growth of 10% will increase the likelihood of financial crises by 5.5%. A study conducted by the IMF (2004) showed that in 75-80% credit growth in the economy was associated with the emergence of banking and currency crises. For this study is an important link between credit growth and consumption trends. Most recent empirical studies (Coricelli and Masten Masten, 2004) showed the relationship between the dynamics of change in loans and consumer trends. This trend should be compared with the data in Serbia, drawing on the fact that the elasticity of demand for loans is low, probably due to the low liquidity in the economy. The impact of loans on the balance of payments simply by comparing time series of consumer goods and retail loans showed no correlation.

Figure 1: Relation of consumer loans and imports of consumer goods



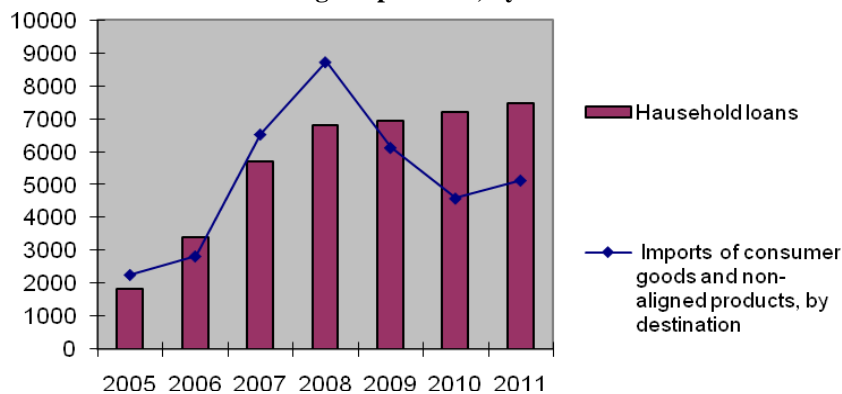
Source: Author's view according to NBS data

The appropriate relationship is not found between consumer loans and imports of consumer goods. The share of imports of consumer goods in total imports has been relatively stable. It cannot be concluded credit boom significantly change the structure of imports and that loans are the main generator of growth in imports. In the following analysis, we added the non-aligned products, by destination.

Degree of correlation between credit and imports of consumer goods with non-aligned products by purpose shows a link that might be relevant. Loans show steady growth, but imports respond to the contraction in economic activity in 2009. Therefore we conclude that the relationship between the growth in imports of consumer goods and other economic variables is stronger than the impact of loans to households. We should consider the effect of credit inflation on balance of payments. The scenario may be as follows: high growth in private sector credit, which together will lead to significant growth in domestic demand, it will cause

deterioration of the already high current account deficit, and is likely to put pressure on inflation; NBS reacts by increasing interest rates and restricting credit growth leading to suppression of the private sector by the state and slowing its growth. Rising interest rates will encourage appreciation of the dinar, which will further worsen the current account deficit. Research show that the nature of Serbia's inflation inertia is autonomous in relation to the corporate loans. Moreover the conclusion that the loans have antiinflation impact. (Vukovic, V., 2008). It is estimated that credit growth in Serbia has the development dimension, as many investors because of the risk aversion move from direct to credit financing. The share of loans of the economy accounts for about 25%, 14% of the population and GDP, which means a total share of loans in Serbian GDP, is about 40%. GDP. Real growth of loans since 2003. to 2009. Serbia was about 33% per year, of which the corporate sector about 17% and 49% of the population. Growth in loans in 2010. of 23.5% is still high compared to neighboring countries. In comparison with EU countries and most countries in Central and Eastern Europe, the share of loans in the gross domestic product of Serbia is lower than in Bulgaria (60% of GDP), Croatia (49% of GDP) (Sorsa et al. 2007). Credit growth may be due to the need of providing funds to finance investment and financial deepening. This credit growth is not threatening the macroeconomic stability, but rather helps the growth and development, productivity, export.

Figure 2: Relation of consumer loans and imports of consumer goods and non-aligned products, by destination



Source: Author's view according to NBS data

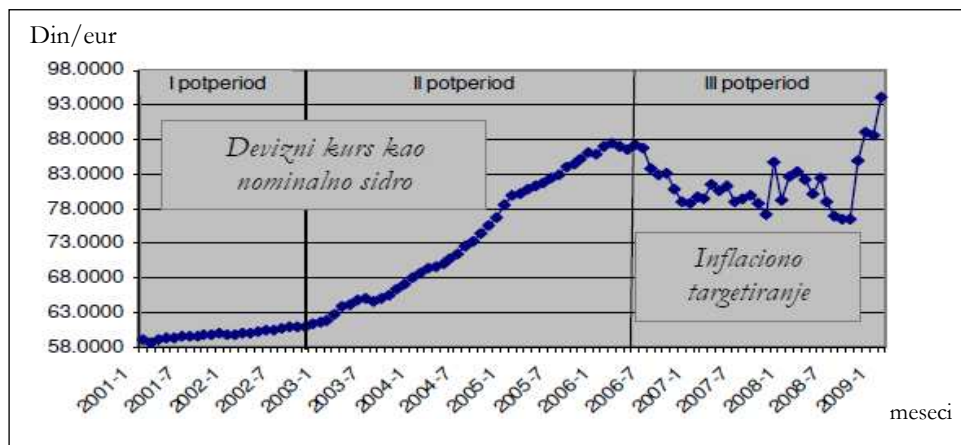
4. Monetary causes of external imbalances

By identifying the applied exchange rate regimes with the corresponding nominal anchor we found a significant correlation with the current account deficit. The growing current account deficit did not react to the changed framework of the monetary regime. Since the introduction of conventional fixed

parity to the end of the third period, the growth of deficit, especially the balance of trade in goods and services, is obvious.

Changes in nominal anchor 2006th year, did not stop this trend. Monetary regimes are the reason for the deficit if they are a reason of appreciated exchange rate. The NBS achieves inflation targeting action on the exchange rate which is not optimal because in this case there is no free float. If there is an overflow of the depreciation rates on prices NBS reacts by reducing aggregate demand and raising the repo rate, attracting portfolio capital and thus influence the exchange rate appreciation. And other transition economies with current account deficit problem have different solutions in terms of monetary and exchange rate regimes.

Figure 3: The identified sub-periods of exchange rate regime and monetary policy in Serbia in the period 2001:1-2009:01



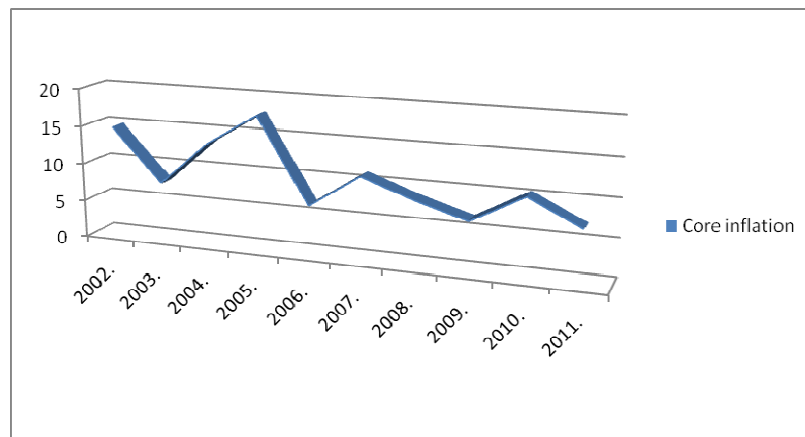
Source: Pučar, E., (2010) Upravljanje fluktuiranje deviznog kursa u režimu inflacionog targetiranja u tranzicionim ekonomijama sa osvrtom na Srbiju, Ekonomski fakultet Subotica.

It remains to deal with inflation as a monetary phenomenon and its impact on balance of payments. Unambiguously is known positive correlation between inflation and current account balances - inflation increases the demand for domestic products (if there is a substitute for production of export goods). But in our case, low import elasticity effect is quite different. Any excess aggregate demand over supply creates inflationary gap manifested in the form of growth of price. In one country prices grows faster than prices in the second, and the country is facing balance of payments difficulties. The current account deficit in 2005. and 2008 occurred due to inflation monetary causes.

According to the chart, inflation reached three peaks 2005, 2008. The rapid rise of inflation 2005th year, we can associate with a strong inflow of foreign

capital and current account deficit that caused destabilization. The growth in reserve money in the absence of adequate sterilization has caused inflationary pressure. The increase in net foreign assets of the National Bank of Serbia, lead to the creation of base money, and the effect of monetary multiplication is then transmitted to other monetary aggregates, which are increasing faster than the demand for money. That stimulates inflationary pressures and inflation. Sterilization, however, does not always produce the desired results. Although the central government was able to sterilize about 81% of monthly changes in net foreign assets, sterilization of reserve money is not complete, so that there was a higher growth in reserve money through the monetary multiplier and the higher growth of money supply. The central bank has failed to significantly affect the decrease in net domestic assets and thus prevent monetary expansion, which resulted in the acceleration of inflation (Palic 2005). The solution for this problem is to be sought in capital controls. In 2008. and 2005. Serbia has the highest inflation rates in the region. In fact, one of the conditions for considering inflation the main culprit for deficit on current account is that the rate of domestic inflation is higher than abroad, which coincides with the reality of the Serbian economy at the moment. The most dangerous zone is a combination of inflation and deficit because in the long term, this combination of internal and external imbalances is unsustainable.

Figure 4: Core inflation in the period 2002-2011



Source: Author's view according to NBS data

Monetary policy in a decade of transition has not been successful in achieving price stability as the main objective of monetary policy. Serbia in all the years of the transition period had high inflation, even in 2009. (6.6%) when there are powerful deflationary pressures due to reduced demand. Inflation in Serbia in all years was above the level in comparable countries.

Table 5: Inflation in the neighboring countries, the end of the period of 2008, %

Serbia	Monte negro	BI H	Macedonia	Croatia	Bulgaria	Romania	Hungary
8.6	7.2	3.8	4.1	2.8	7.2	6.3	3.5

Source: IMF, *WEO*, 2009.

5. The Cause of the Increased Absorption-Deficit: Appreciation of Real Exchange Rate

During the ten-year transition process, the exchange rate is formed predominantly on the basis of trade laws and has not fluctuated freely. Appreciation of the exchange rate lasts from the beginning of the transition process and the causes are largely of fundamental character. The main impact on appreciation had the nature of the transition process, increase productivity, BS effect (Josifidis, Supić and Becker, 2009). How we can add the inflow of FDI, expansionary fiscal policy, tight monetary policy. NBS intervened in the foreign exchange market whenever it is estimated that threatened the stability of financial markets. Besides the repo interest rate it is used the rate of required reserves and the foreign exchange market intervention. In terms of expansionary fiscal policy and moderately restrictive monetary policy, exchange rate was not realistic. To finally reach the long-sought conclusion that the appreciation is direct cause of external imbalances in the past or, in other words, would the optimal exchange rate depreciation led to a decrease of such a (de)balance is necessary to examine the fulfillment of the Marshall-Lerner theorem. The answer depends on a priori judgments, and the empirical determination. In order to improve the trading account, value of exports in local currency must exceed the percentage of real depreciation, which would be the case if the elasticity of exports is greater than one. If the elasticities are not large, relatively drastic devaluation is necessary to correct the small trade deficits. If we rely on the study of NBS (Zdravkovic and Tasic, 2008), exports is more responsive to changes in world demand rather than to depreciation of the real exchange rate (5% depreciation), while imports is inelastic to changes in real exchange rates. Alternative options related to the depreciation of the real exchange rate (Malović, 2008) proposed 30% reduction in value. The logic of this extreme proposal for small countries with low credibility of monetary authorities and the rich history of devaluation is that timid devaluation is creating expectations of future devaluations. (Krugman, 2010). Also ML condition is assumed, relying on prior is that devaluation is successful if the output value exceeds the value of aggregate demand or absorption. We recall on existing production gap of Serbia, and it is not possible in the short term to direct absorption of imported to domestic products, and devaluation would worsen the balance making imports expensive. Countries with based export on primary products, are risking that

devaluation does not play a role that is expected of them. In the literature there is a prevailing opinion that every percentage of devaluation "pull" inflation 0.3-0.4%. Trade-off in Serbia is low inflation, not reduced current account deficit. Money supply has a major impact on production because higher interest rates in the short term can cause great damage because of the limited self-financing business. If we add that the supply of imported inputs is foreign, the increase in imports due to devaluation has an additional cost pressure. Depreciation costs are high due to the high euroisation that would lead to an increase of debts already burdened economy. The problem of the deficit can be seen from the angle and lack of export diversification and negative, low-price competitiveness, structural problems of the economy.

Conclusion

External imbalances in Serbia is mainly the result of inappropriate macroeconomic policies. Pro-cyclical fiscal policy during the entire transition process led to a significant reduction in resources and the crowding-out of domestic private investment. This Keynesian model of economic regeneration is not recommended to Serbia by the IMF. Any further attempt to "stimulate" the economy would not be sustainable in the current environment of macroeconomic. In the future the perception of country risk management will be the key responsible fiscal policy and public debt. Deviation of reducing the budget deficit and further growth of public debt could affect the strengthening of inflation, risk premium and the growth of aggregate demand. On the other hand, the restrictive policy, in charge of the reduction in aggregate demand will have effect until the direct effect of reducing import restrictions due to higher demand from indirect stimulation increased imports which occurs due to the reduction of domestic production. In this regard, after the absorption of limitations in the short term, a necessary condition for the further development of the increase novostorene values. In the long term, it is necessary to reduce the production gap that shows no significant fluctuations over the years (there are clear indications that the current account deficit is a result of the productivity shock, before rising absorption).

Obviously, the external imbalance is independent of the applied exchange rate regime and monetary policy, pointing to the fact that it is structural problem. By identifying the applied exchange rate regimes with the corresponding nominal anchor we did not find a significant correlation with the current account deficit. The deficit did not react to the changed framework of the monetary regime. The impotence of monetary policy is highlighted by its "original sin", the high euroisation, and strong fundamental process. The monetary causes of the current account imbalances caused by inflation of demand are only the manifestation of endogenous disorders.

We found a correlation between changes of credit loans and consumption trends. Degree of correlation between credit and imports of consumer goods with non-aligned products by purpose shows a link that might be relevant. Loans show steady growth, but imports respond to the contraction in economic activity in 2009. Therefore we conclude that the relationship between the growth in imports of consumer goods and other economic variables is stronger than the impact of loans to households. The effect of the appreciation is relativized with respect to the incompleteness of the Marshall-Lerner criteria. The problem of the deficit can be seen from the perspective of under-diversified exports, and unfavorable, low-price competitiveness, structural problems of the economy. The exchange rate is only a reflection of the entire economy.

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UTICAJ FISKALNE I MONETARNE POLITIKE NA EKSTERNU NERAVNOTEŽU U SRBIJI

Abstract: The beginning of the transition process has generated great expectations regarding the growth and development, increasing the absorption, which is reflected through deterioration of current account. Almost all transitional economies record high current account deficits using foreign savings and borrowing for financing domestic consumption and this is the reason for external imbalance. But after the global economic crisis and the current account reversal Serbia still has higher current account deficits comparing to other countries in the region. This paper examines the reasons for high absorption and current account deficit and the role of monetary and fiscal policy in maintaining external imbalance in Serbia.

Keywords: current account, absorption, FDI, fiscal deficit, loans, monetary policy



A COMPARATIVE ANALYSIS OF THE IMPACT OF FOREIGN DIRECT INVESTMENTS ON THE STRUCTURE AND SPECIALIZATION OF SERBIAN AND HUNGARIAN EXPORTS

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Abstract: Foreign direct investments can affect the structure and specialization of the host country's exports directly, if the products of foreign companies differ from the existing export structure, and indirectly, through spillover effects. The effects of foreign direct investments on the structure and specialization of exports depend on the level and type of foreign direct investments, sectoral distribution and technology used in the production as well as absorption capacity of domestic enterprises. Foreign direct investments in Serbia in the past were largely directed to the market-oriented activities that belong to the tertiary sector, which did not contribute to solving the problems of permanent trade deficit. On the basis of comparative analysis of the impact of foreign direct investments on the structure and specialization of Serbian and Hungarian exports, the aim of this paper is to highlight the importance of foreign direct investments for raising export competitiveness and determination of the degree of export specialization that positively affects the valuation of exports and troubleshooting trade deficit.

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Keywords: foreign direct investments, export structure, specialisation of exports, competitiveness.

Introduction

Serbia like other countries of Southeast Europe, bases its economic growth on a high level of consumption, growth of services, bank's credit expansion and foreign borrowing. Permanent current account deficit is a result of the trade deficit, which is a reflection of the lack of competitiveness. In the past, foreign direct investments in Serbia were mostly aimed at profitable activities that are market-oriented and belong to the tertiary sector: financial services, wholesale and retail trade, real estate, telecommunications. In this way, foreign direct investments not only doesn't contribute to creation of conditions for

strengthening the export sector but also have a direct (through credit expansion) and indirect impact on the consumption generation and the creation of the current model of economic growth, which has a negative impact on the trade balance. Unlike Serbia and other Southeast European countries, the transition economies of Central Europe, such as Hungary and the Czech Republic, were in the transition period much more successful in attracting foreign direct investments in the manufacturing sector (mainly export-oriented greenfield investment) which contributed to solving the problem of permanent trade deficits and changes in the export's structure and specialization.

Foreign direct investments can influence the change in exports structure and specialisation directly and indirectly. Direct influence occurs when the products of enterprises with foreign ownership differ from the existing structure of a host country's export. Foreign direct investments make indirect impact on exports structure through spillover effects: demonstration effect, transfer of modern technology and knowledge, creation of human capital, increasing the level of competition as well as the inclusion of domestic suppliers of inputs into global distribution network. In addition, multinational companies in the home country can lobby for preferential treatment of host countries exports, which could reduce the costs of entry into foreign markets for domestic producers and influence the volume of exports (Vukšić 2006, 11). Impact of foreign direct investments on the structure and specialization of exports depends on several factors such as: level of stock of foreign direct investments, type of foreign investments (greenfield investments directly affect increase in the level of gross investments as opposed to acquisitions and purchases related to the process of privatisation where there is only a change in ownership), the sectoral distribution (only investments in the tradable sector may affect the change in the exports structure), type of technology that companies with foreign ownership use in the production and absorption capacity of domestic enterprises.

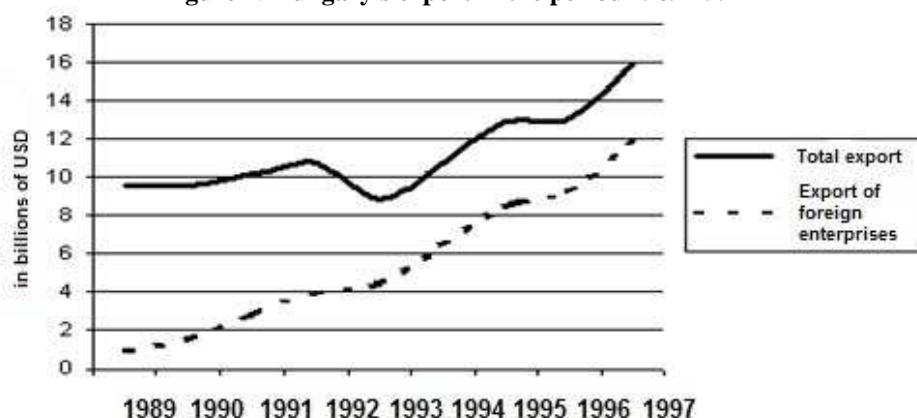
The impact of foreign direct investments on the exports structure and specialisation will be analysed on the basis of comparative analysis of the impact of foreign direct investments on the structure and specialisation of Serbian and Hungarian exports. The choice of Hungary as a country with which to perform comparative analysis of Serbian exports are credited to the following factors: large stock of foreign direct investments, which especially in the initial period of transition were directed in the manufacturing industry, investments in the manufacturing sector was aimed at those activities which are export oriented and act as multipliers of the general economic and business activities (such as investments in machine building, electrical industry, automotive industry), investments in the manufacturing sector were predominantly greenfield investments that directly affect the increase in the level of gross investments.

1. Comparative analysis of the impact of foreign direct investments on the structure of Serbian and Hungarian exports

Before the start of the transition process level of foreign direct investments in Hungary and other Central and Eastern Europe countries was negligible and therefore their importance and participation in trade of these countries. After dissolution of the Council for Mutual Economic Assistance and the start of the transition there was a significant drop in trade among the Central and Eastern European transition countries and also a change in the geographic orientation of trade flows. The European Union became an important trading partner which is best illustrated by the fact that in the 1984 share of total exports of these countries which went to the European Union was 30% and in 1993 it was about 60%. Success in Western markets, where the level of competition and demand for quality are at a much higher level than in transition countries, depended largely on the ability of countries to carry out the change of exports structure and specialisation, and foreign direct investment had a very important role in that process. In the initial transitional recession participation of European transition countries in world merchandise exports fell from 3.1% in 1990 to 2.7% in 1991, while since then it is permanently growing (Stanišić 2008, 330).

The reorientation of Hungarian exports began as early as the eighties and was dramatically accelerated at the start of transition (in 1990 one third of Hungarian exports went to the EU while in 1996 more than 2 / 3 of exports went to EU). Hungary, in its initial phase of transition has attracted a significant level of foreign direct investments (which is more important greenfield investments) in the industrial sector, which were export-oriented as can best be seen from **Figure 1**. From Figure 1 we can clearly see the increase in the share of foreign enterprises total exports (from 10.41% in 1989 to 74.21% in 1997).

Figure 1: Hungary's export in the period 1989-1997

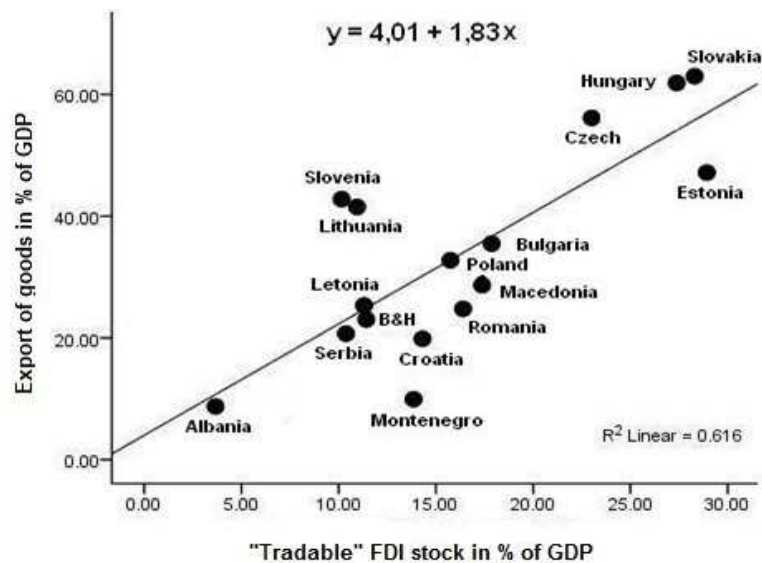


Source: Kaminski, Riboud 1999, 21

Countries that have more success in attraction of foreign direct investments in the tradable sectors (the "tradable" foreign direct investments are considered to be those that target manufacturing sector, agriculture and mining) can significantly improve their trade balance because only this type of investments are export-oriented and may affect export expansion and change in the exports structure and specialisation.

The relationship between foreign direct investments in the production of tradables ("tradable" FDI) and exports when countries of Central and Eastern Europe are considered is shown in Figure 2 and it's based on data of foreign direct investments stock at the end of 2009 and exports of goods made in that year. Tradable foreign direct investments stock in percent of GDP is calculated on the basis of the data about foreign direct investments stock in percent of GDP (source -Unctadstat) and data about sectoral distribution of foreign direct investments (source – central banks of Central and East European countries), while data about exports in percent of GDP were captured from the World Bank's statistics.

Figure 2: Relationship between "tradable" FDI and exports

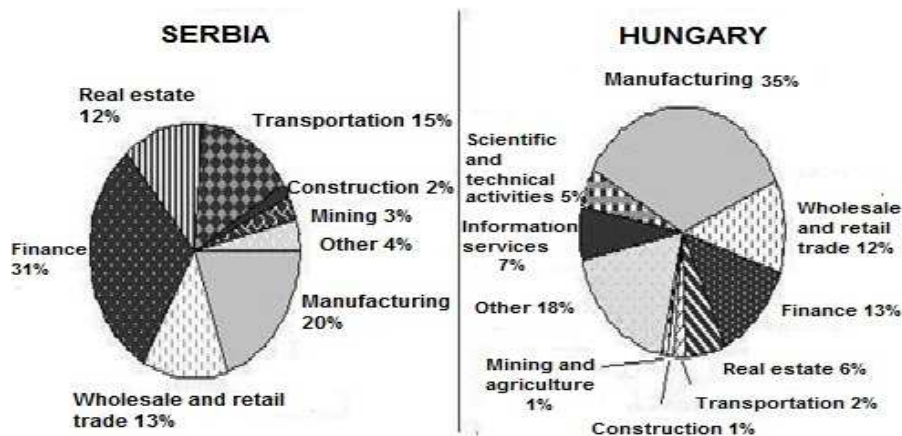


Source: The author's calculation based on data from Unctadstat (<http://unctadstat.unctad.org>) and World Bank (<http://www.worldbank.org/>)

Pearson's correlation coefficient is $r = 0.785$ ($n = 16$, $p < 0.05$) which means that very strong positive correlation between variables exists. Coefficient of determination is $r^2 = 0.616$ which means that 61.6% of variation of export of goods can be explained by foreign direct investments stock (regression equation

shows that changes in foreign direct investments stock by 1% increases the level of exports by 1.83%). From figure it can also be observed that Serbia is among the countries with very low level of “tradable” foreign direct investments stock to GDP ratio and low ratio of export compared to GDP (only Albania has a smaller tradable stock of FDI relative to GDP). Hungary, Slovakia, Czech Republic and Estonia, which have the largest stock of “tradable” foreign direct investments relative to GDP have the highest exports in relation to GDP. From **Figure 3** which shows the structure of foreign direct investments stock in Serbia and Hungary at the end of 2009 we can see that stock in the case of Serbia “tradable” foreign direct investments accounts for only 23.7% of total stock (20% manufacturing, 3% mining and agriculture 0.7%), whereas in the case of Hungary the share of “tradable” foreign direct investments in the total foreign direct investments stock is 36%. Beside that it directly affects the export expansion, “tradable” foreign direct investments also have the impact on the rise of the level of competition and the possibility of linking domestic suppliers of inputs into global distribution network.

Figure 3: A comparative overview of the foreign direct investments stock in Serbia and Hungary, the year 2009



Source: Narodna Banka Srbije (<http://www.nbs.rs>) and Hungarian National Bank (<http://www.mnb.hu/>)

Depending on the type of the industry of investments, under influence are the type of technology transferred to foreign affiliates and the possibility of diffusion, i.e. technology spillovers to domestic firms (either horizontally or vertically), which has important implications for the structure and specialization of host countries export. Industries that utilize high technology have participation of over 30% of total production in 14 of 16 countries in Western Europe, while in the case of the Central and Eastern European countries only half fulfill this criterion (Olteanu 2006,3). Tehnological structure of foreign

direct investments stock in the manufacturing industry, presented in Table 1, was obtained from the data on the structure of the stock of foreign direct investments by sector at the end of 2010 (for Serbia data from NBS on foreign direct investments inflows by sector in the period from 2004 to 2010 was used) and technological classification of manufacturing and service sectors used by the OECD (OECD, 2003). From Table 1 we can see that Hungary was much more successful in attracting foreign investments that use high and medium-high technology while in the case of Serbia, the biggest share of investments are in those industries which use low technology. Better technological structure of foreign direct investments stock means that there is a transfer of modern technology, thus creating conditions for positive technology spillover effects. As estimated by the World Economic Forum, in the current edition of the Global Competitiveness Report's (WEF, 2011), Hungary is ranked 11th on the technology transfer from foreign direct investments unlike Serbia who is on 110th place out of 142 countries.

Tabela 1: Comparative review of the technological structure of foreign direct investment in the manufacturing industry

Serbia		Hungary	
High technology	2.01%	High technology	2.01%
Medium-high technology	34.19%	Medium-high technology	34.19%
Medium-low technology	27.14%	Medium-low technology	27.14%
Low technology	36.66%	Low technology	36.66%

Source: The author's calculations, based on data from the National Bank of Serbia (<http://www.nbs.rs>) and Hungarian National Bank (<http://www.mnb.hu/>)

By attracting these types of foreign direct investments, Hungary has managed to change not only the structure of exports but also the structure of imports, which can be seen by analyzing the data from Table 2 and Table 3. From Table 2, we can see that in the period from 1990 to 1995 there weren't any significant changes in the exports structure. Drastical changes in the structure of exports were made during the period from 1995-2000 when the share of finished goods in total exports increased from 65.9% to 86.1% of which is particularly impressive growth in the share of machinery and transport equipment from 25.2% to 59.6%. Changing the structure of export toward products with higher level of processing and higher value-added demands application of modern production processes, application of new technologies, implementation of modern methods of management and control, which was the case of Hungary was enabled by high inflow of foreign direct investments in industry (about 40% of the total inflow of foreign direct investments in Hungary in the period of 1990-1996 represent investments in the industrial sector). Presence of large multinational companies and their access to distribution channels had a major role in the incorporation of production

facilities located in Hungary in the international production and trade network (as an example of such companies, we can state IBM, Philips, General Motors, Volkswagen, General Electric, Suzuki, etc.)

Table 2: Structure of Hungarian exports by main SITC Revision 3 product group

	1990	1995	2000	2005	2009
All food items	22.8	20.7	7.3	6.2	7.5
Agricultural raw materials	2.8	2.3	1	0.6	0.6
Fuels	3.1	3	1.6	2.6	2.5
Ores and metals	5.9	4.8	2.2	1.9	1.5
Manufactured goods	62.8	65.9	86.1	85	87.9
Chemical products	12.4	11	6.1	7.9	8.2
Machinery and transport equipment	25.6	25.2	59.6	59.7	62.2
Other manufactured goods	24.7	29.7	20.4	17.5	17.4
Not specified	2.6	3.3	3.7	0	0

Source: UNCTAD 2000-2010.

From 2000 to 2009, as it can be seen from Table 2, there were no significant changes in the exports structure. Slight increase in the share of finished goods in total exports from 86.1% to 87.9% was recorded, of which the share of machinery and transport equipment increased from 59.6% to 62.2%. Such a phenomenon can be seen as a natural process and is consequence of the fact that the structure of Hungarian exports closed to its full potential which is best illustrated by the fact that Hungarian exports became very similar to the exports structure of Western countries.

Table 3: Structure of Hungarian imports by main SITC Revision 3 product group

	1990	1995	2000	2005	2009
All food items	7.6	5.7	2.9	4.1	4.9
Agricultural raw materials	3.6	3	4.5	1.1	1
Fuels	14.2	11.9	1.8	10.1	10.2
Ores and metals	3.8	4.3	2.7	1.9	2
Manufactured goods	70.4	75.1	83.9	77.5	81.9
Chemical products	14.9	14.5	8.6	9.1	10
Machinery and transport equipment	20.8	30.1	50.9	49.8	51.5
Other manufactured goods	34.6	30.5	24.3	19.5	20.4
Not specified	0.4	0	4.2	5.3	0

Source: UNCTAD 2000-2010.

Changes in the structure of exports required previous changes in the structure of imports which can be seen from Table 3. Unlike the exports, structure of imports changed in the early stage of transition (1990-1995) of

which is particularly noticeable increase in the share of machinery and transport equipment in total imports from 20.8% to 30.1%. This phenomenon is expected because the transition economies of Central and Eastern Europe were characterized by high non-productive capital stock (physically and morally obsolete machinery and equipment) and the import of modern machinery and equipment was a precondition for reducing the technological gap and increasing the competitiveness. The fact that import of modern technology did not immediately lead to changes in the structure of exports can be explained by the fact that for the construction of new production facilities (or upgrading the existing) and for starting a production, appropriate time is needed. The biggest changes in the structure of Hungarian imports originated in the same period of time as drastic changes in the structure of exports (in the period from 1995-2000). Share of machinery and transport equipment rose from 30.1% to 50.9%, which was not significantly changed during the period from 2000 to 2009 and also applies to the structure of imports as a whole.

Unlike Hungary, which managed to significantly improve the competitiveness and thus improve exports structure, Serbia hasn't been successful in that process. Structure of Serbian exports can be seen in Table 4. Exports structure in 1990 (data from 1990 are related to the SFR of Yugoslavia and for 1995 and 2000 to SR Yugoslavia) was far better than existing export structure is 20 years later. Deterioration of Serbian exports structure in the period from 1990-2000 was a consequence of the general political, social and economic situation and the sanctions of the United Nations. Unlike Hungary, which in the first 10 years of transition, dramatically improved the structure of its exports, the transition process in Serbia, regardless of the inflow of foreign direct investments has not lead to changes in the structure of exports which can be seen by looking at data relating to the period from 2000-2009.

Table 4: Structure of Serbian exports by main SITC Revision 3 product group

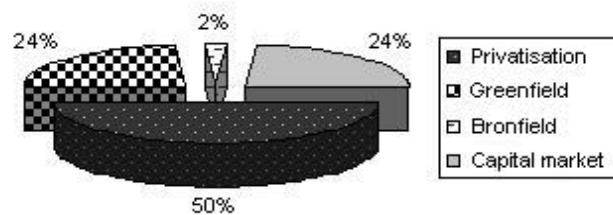
	1990*	1995**	2000**	2005	2009
All food items	7.3	28.2	17	19.8	22.8
Agricultural raw materials	4.3	4	5.7	3	1.5
Fuels	2.5	2.1	0.3	3.7	4.7
Ores and metals	8.9	14.8	15.6	9.2	7.1
Manufactured goods	76.7	49	61.4	64.2	62.5
Chemical products	9.6	9	8.4	11	7.9
Machinery and transport equipment	29.9	12.1	12.5	9.9	17.8
Other manufactured goods	37.2	27.9	40.5	43.3	36.8
Not specified	0.3	1.9	0	0.1	1.4

*SFRJ,**SRJ

Source: UNCTAD 2000-2010.

Unlike Hungary, where a significant level of greenfield investments was recorded, in Serbia, the largest share of foreign investments inflow is related to the privatization process, which can be seen from Figure 4, which doesn't contribute to direct rise of the gross investments level since there is essentially only a change in ownership. Unfortunately, the inflow of capital through privatization, was not used for investments purposes, it was used primarily for consumption, and in this way, never came to the indirect influence of this type of foreign direct investments to the level of gross investments. Successful restructuring of privatized enterprises can cause an increase in the level of productivity, output and exports, but there are no many positive examples in practice, when it comes to Serbia. Also these investments do not contribute to the creation of a new vertical links with local companies since existing cooperation and coordination routine significantly reduces costs and it's unlikely that change in ownership of the company will lead to rupture of long-term business relationship and therefore domestic enterprises are not very motivated to significantly improve product and service quality, efficiency and productivity.

Figure 4: FDI inflows in the period 2000-2007 by type of investment



Source: Petrović, Stanković 2009,18

Unfavorable technological structure of foreign direct investments stock with a low absorption capacity of domestic firms due to low investments in research and development (by ratings of the World Economic Forum, Serbia is ranked in 136th place on domestic enterprises technology absorption level) and poor cooperation of domestic suppliers of inputs with foreign affiliates¹ did not contribute to significant positive technology spillover effects or the inclusion of domestic suppliers of inputs into global distribution network. By comparison of Tables 2 and 4 it can be seen that the structure of Serbia's exports at the end of the first decade of the 21st century is very similar to the structure of Hungarian exports 20 years ago and that Serbian competitiveness is based on the products of a lower level of processing and less value added.

¹ Foreign affiliates to a large extent use inputs that are not available in Serbia, the sample of 27 major exporters among foreign owned enterprises in industrial sector in 2010 recorded exports of 2837 million USD and imports of 2445 million USD - Source: calculation based on data obtained from Serbian Chamber of Commerce, on author's personal request

The structure of imports, as in the case of export is much worse than it was 20 years ago, which can be seen from Table 5.

Table 5: Structure of Serbian imports by main SITC Revision 3 product group

	1990*	1995**	2000**	2005	2009
All food items	12	14.2	9.3	7.1	16
Agricultural raw materials	4.7	4.1	3.5	1.5	1.3
Fuels	17	13.9	20.1	19.4	14.8
Ores and metals	3.6	7.1	3.6	6.2	3.8
Manufactured goods	62.3	59.8	57.8	65.5	55
Chemical products	12.5	14.3	14.6	14	12.7
Machinery and transport equipment	26.6	19.4	21.1	25.7	20.3
Other manufactured goods	23.2	26.1	22.1	25.8	22
Not specified	0.4	0.9	5.7	0.3	9.1

Source: UNCTAD 2000-2010.

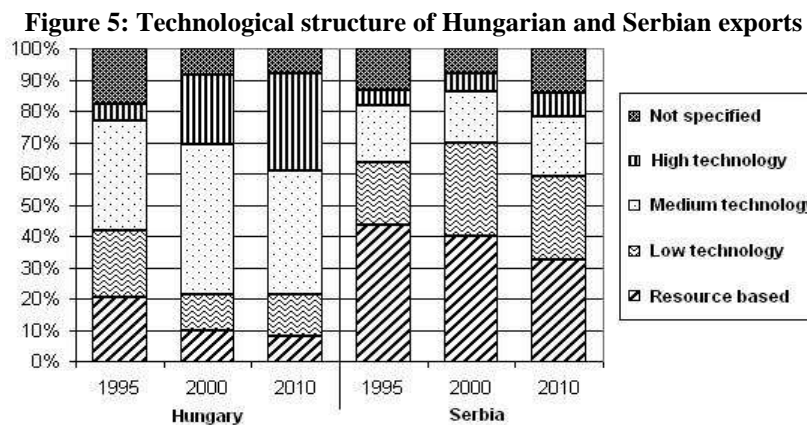
*SFRJ,**SRJ

At the beginning of the transition process, increase of the share of machinery and transport equipment in total imports was expected to occur, in order to modernize production facilities and reduce technological gap to developed countries. However, the data in the table suggest that this didn't happen, because the share of machinery and transport equipment is constantly around 20% of total imports. Analyzing the data of the imports structure in the period from 2000 to 2009, it could be seen that there is even a deterioration of the imports structure since there is a reduction of the share of fuels and raw materials required for industrial production, but it should be noted that the global economic crisis had an impact on this trend.

For production of quality and price-competitive products of a higher level of processing (finalisation) it's necessary to use modern technology that leads to increase of supply, reduce of production costs, more efficient use of production factors, improvements of products and increase in export revenues. Figure 5 shows the technological structure of exports of Hungary and Serbia, which was made on the basis of data on the structure of exports by commodity groups SITC (for used methodology see Hungarian National Bank 2009, 34-35). Products that are based on the use of resources and low technology are characterized by a lower level of finalisation and lower value added while products based on high technology are characterized by a higher level of finalisation and higher added value which has an impact on the total value of exports.

Looking at Figure 5, it can be seen that, in the case of Hungary, quality of exports was greatly improved in the period from 1995-2000 where especially noticeable is the growth of products based on medium and high technology and

decline the share of products produced by using low technology. In the period from 2000-2010 qualitative improvement in the exports structure was also recorded (which we could not discern just by looking at the exports structure by main SITC product groups) by increasing the share of products based on high technology. In the case of Serbia, big difference compared to the technological structure of Hungarian exports can be seen as most products are based on resources and the use of low technology. In 2000, about 70% of Serbian exports were based on products of lower phase of finalisation while in 2010 share of these products was just under 60% (for comparison in Hungary in 2010 the share of these products is below 20%) It could be seen that there was a slight improvement of the quality of Serbian exports, and the same conclusion can be obtained by looking at the share of products based on high technology (saw a slight increase from 5.80% to 7.74%).

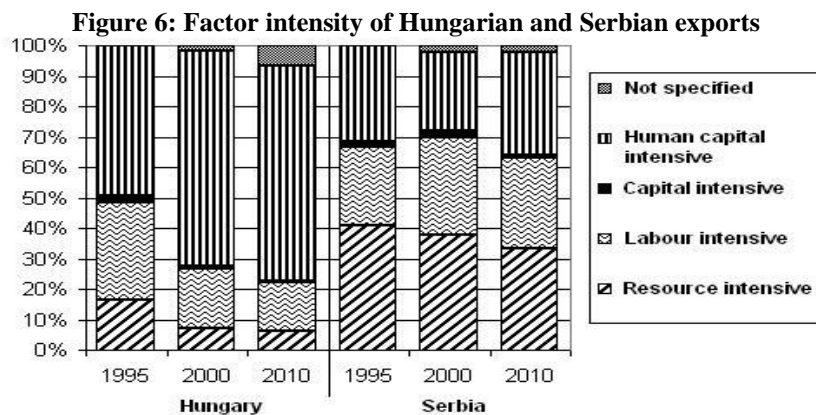


Source: The author's calculations based on data from Unctadstat (<http://unctadstat.unctad.org>) and UNComtrade (<http://comtrade.un.org/db/>)

Serbian export growth in recent years hasn't been accompanied by significant qualitative improvement of its structure but by forcing products in whose production a low technology was used and this situation is reminiscent of the beginning of the eighties, when the balance of payments crises promoted policy of "export at all costs". Comparing the technological structure of Serbian exports to Table 1 (technological structure of foreign direct investments stock in manufacturing industry), many similarities could be seen since, in the case of foreign direct investments, most of the investments were in sectors that use low and medium-low technology. Because of its exports structure, Serbian country is like other CEFTA countries, vulnerable to a "price war" with competitors from other regions. Broadening the industrial base and deepening the liberalization of service sector (liberalization is needed in order to increase the competitiveness of the manufacturing sector) should be a key element of the strategy of sustainable development for Serbia (Kovacevic 2009,76).

According to the Heckscher-Ohlin's model, depending on the availability of factors of production (land, labor and capital), the country will export those goods whose production uses more factor that is abundant, and will import goods whose production is increasingly using factors that are rare in the country. Given the fact that countries in transition is characterized by an abundance of cheap labor and rich natural resources, it is expected that exports of these countries will be mainly composed of products whose production is dominated by the simple use of labor and natural resources. Factor intensity of Hungarian export in the initial phase of transition confirmed the Heckscher-Ohlin hypothesis stating that most of the exports consisted of products that are labor and resource intensive. Drastical turn to products that are capital-intensive and human capital intensive is formed due to the inflow of foreign direct investments that have brought the capital in order to take advantage of significant level of highly skilled labor that was available at low cost (relative to labor costs in Western countries).

The factor intensity of exports of Hungary and Serbia (which as well as technological structure of exports, represents a measure of the quality of exports, but from a slightly different angle) is shown in Figure 6. In order to create Figure 6 Legler-Schulmeister methodology was used (Jefferson Institute 2003, 118-119), with an emphasis that this methodology is used exclusively for the analysis of the factor intensity of exports of manufacturing sector (the analysis does not include the export of primary sector).



Source: The author's calculations based on data from Unctadstat (<http://unctadstat.unctad.org>) and UNComtrade (<http://comtrade.un.org/db/>)

Resource-intensive sectors include high share of agricultural and mineral raw materials (primary products), labor-intensive sectors are characterized by low-skilled labor (such as production of textiles, leather, paper, footwear), human capital-intensive branches of the industries in which highly skilled labor

is necessary for the production (work of scientists, engineers, researchers), in capital intensive industries are classified according to this methodology, those capital intensive industries that are not classified as resource-intensive and intensive human capital.

From Figure 6, it can be seen that factor intensity of Hungarian exports is much more favorable. In the period from 1995-2000, there was a major improvement in the factor intensity of Hungarian exports, while during the last decade there has been no drastic changes in the factor intensity of both Hungarian and Serbian exports. Factor intensity of Serbian exports, dominated by labor and resource intensive products, is unfavorable and is characteristic for undeveloped countries.

Given the previously mentioned indicators, we can conclude that Hungary, in its transition, due to the reforms, privatization, and especially foreign direct investments have made changes and the transition of structure of its exports towards products of higher degree of finalisation. Those drastic changes of exports structure occurred in a relatively short period of 5 years. "The transition process" in Serbia is characterized, on the other hand, not by transition but by a stagnation in changes of both imports and exports structure. From this perspective, we may ask why transition was carried out at all if industry's competitiveness is at the same level as before the transition and how is possible to achieve better results in the future. Will Serbia, like countries that have had more success in transition, achieve a drastic change in exports structure towards increasing share of products with higher degree of finalisation in the next period? The answer to this question largely depends on the inflow of foreign direct investments, their types and sectoral distribution. Since the possibility of foreign direct investment inflows related to privatization tapers over the time, it is necessary to activate the premium quality foreign direct investments, export-oriented greenfield investments but current trends in the global economy and slow construction of the appropriate business environment for foreign investments doesn't inspire great confidence in Serbia's ability to attract significant levels of greenfield investments in the next period.

2. Comparative Analysis of the Impact of Foreign Direct Investments on Specialisation of Serbian and Hungarian Exports

According to the theory of absolute advantage developed by Adam Smith, countries should specialise in exporting those products in which production have an absolute advantage over the other countries. Specialisation in production of certain products depends on the availability of natural, human and technical resources that country possess. More than half of Western countries have specialized in manufacturing that uses high and medium-high technology, while it's the case with only 1/3 of the total number of countries in Central and

Eastern Europe (Olteanu 2006, 3). Multinational companies, thanks to the benefits that certain regions provide, are more and more tempted to locate certain stages of the production process in different countries, which leads to a specific type of specialization - specialization by production stages. Intermediate goods (spare parts, components) can be exported to the country of a multinational company or in any of the countries where next stage of the production process is located. The country, depending on the available factors, either specialize in the production of basic products of lower stages of finalization, manufacturing subassemblies and parts, capital goods or assembly of the final product.

Table 6: Ten SITC commodity groups with the largest share in Hungarian exports

Year: 1995			Year:2008-2009		
SITC	Description	in % of exports	SITC	Description	in % of exports
334	Petroleum and mineral oils	3.72	764	Telecommunicate equipment part nes	11.60
012	Other meat and edible meat offal, fresh, chilled or frozen	3.72	713	Internal combustion engine part nes	8.10
713	Internal combustion engine part nes	3.27	781	Passenger cars and race cars	6.20
784	Motor vehicle parts and accessories	3.21	752	Computer equipment nes	4.10
773	Electrical distribute equipment nes	2.72	761	Television video receive project	3.90
851	Footwear	2.53	784	Motor vehicle parts and accessories	3.70
542	Medicines including veterinary	2.27	772	Electrical circuit equipment	2.50
842	Women coats, overcoats	2.26	773	Electrical distribute equipment nes	2.50
778	Electrical machinery apparatus nes	2.23	542	Medicines including veterinary	2.50
684	Aluminium	2.15	778	Electrical machinery apparatus nes	2.20
TOTAL		28.08	TOTAL		47.30

Source: Unctadstat (<http://unctadstat.unctad.org>) and UNCTAD 2010

One way of analyzing the degree of country's exports specialisation is observation of group of products with the largest share in total exports. In the case of Hungary and Serbia, 10 SITC commodity groups with the largest share in total exports will be observed, as shown in Tables 6 and 7. From Table 6 it could be concluded that there has been increase in specialisation of Hungarian exports. The share of 10 SITC commodity groups with the largest share in total exports increased from 28.08% (in 1995) to 47.30% (in 2008-2009). It could be seen that 9 out of 10 commodity groups belongs to 7th SITC sector (machinery

and transport equipment) as opposed to 1995 when only 4 commodity groups were from 7th sector which confirms previous findings about changes in exports technological structure and factor intensity. Also it could be seen that 4 commodity groups from 7th sector which in 1995 were among the 10 largest in the share of exports maintained and increased its share in total exports, which suggests that through FDI inflows there has been an increase in specialisation and better use of existing comparative advantages. Comparative advantages of Hungary, thanks to the foreign direct investments in industrial sector drastically changed, which resulted in a change in the type and the degree of Hungarian exports specialisation.

On the other hand, looking at Table 7, it could be concluded that there was a reduction in specialisation of Serbian exports

Table 7: Ten SITC commodity groups with the largest share in Serbian exports

Year: 1995*			Year: 2008-2009		
SITC	Description	in % of exports	SITC	Description	in % of exports
682	Copper	8.24	673	Flat-rolled products of iron or non-alloy steel	7.70
058	Fruit, fruit preparations (excluding fruit juices)	4.86	682	Copper	3.60
041	Wheat (including spelt) and meslin, unmilled	3.84	058	Fruit, fruit preparations (excluding fruit juices)	2.80
122	Tobacco, manufactured	3.43	625	Rubber tyres, etc.	2.40
684	Aluminium	3.41	893	Articles, n.e.s., of plastics	2.30
673	Flat-rolled products of iron or non-alloy steel	3.07	851	Footwear	2.20
044	Maize, unmilled	2.41	044	Maize, unmilled	2.20
821	Furniture and parts thereof	2.40	846	Clothing accessories of textile fabrics	2.10
773	Electrical distribution equipment	2.39	684	Aluminium	2.10
248	Wood, simply worked, and railway sleepers of wood	2.27	674	Flat-rolled products of iron or non-alloy steel	2.00
TOTAL		36.32	TOTAL		29.40

*SRJ

Source: Unctadstat (<http://unctadstat.unctad.org>), UNCTAD 2010

Proportion of 10 commodity groups SITC with the largest share in total exports decreased from 36.32% (1995) to 29.40% (2008 to 2009), indicating that after the foreign trade liberalization there has been a diversification of exports. Absence of a recognizable export product suggests that country hasn't mastered the production and sale of a particular product group and that there

was no increase exports competitiveness. In the same time, this phenomenon points to the lack of any export strategy. From Table 7 it could be seen that structure of Serbian exports is dominated by products of lower degree of finalisation which confirms previous findings about technological structure and factor intensity of exports. Lower specialisation of Serbian export has some positive sides and they are reflected in a reduced risk of exposure to a drastic decline in export activity due to external shocks and the corresponding decline in demand for specific export products. Given the indication of the deepening of global economic crisis, fall in the industrial production at the global level could be expected which will reduce demand for raw materials and intermediate goods and their prices will fall. Therefore, negative impact of this phenomenon on the valuation of Serbian exports could be expected, and this negative impact would be even greater in the case of a higher degree of exports specialization.

Table 8: The share of 10 commodity groups with the largest share in exports (2008-2009) in total world trade

Serbia				Hungary			
Description	in %			Description	in %		
	2000	2005	2009		2000	2005	2009
Flat-rolled products of iron or non-alloy steel	0.47	0.64	0.48	Telecommunicate equipment part nes	3.50	3.44	3.08
Copper	0.52	0.61	0.70	Internal combustion engine part nes	1.08	1.08	0.84
Fruit, fruit preparations (excluding fruit juices)	0.09	0.10	0.11	Passenger cars and race cars	4.77	4.67	3.51
Rubber tyres, etc.	0.39	0.42	0.46	Computer equipment nes	3.12	2.64	2.11
Articles, n.e.s., of plastics	0.85	0.82	0.80	Television video receive project	0.45	0.55	0.68
Footwear	0.73	0.63	0.65	Motor vehicle parts and accessories	2.24	2.24	1.83
Maize, unmilled	0.14	0.11	0.16	Electrical circuit equipment	1.51	1.36	1.29
Clothing accessories of textile fabrics	0.20	0.17	0.17	Electrical distribute equipment nes	0.68	0.59	0.59
Aluminium	0.79	0.76	0.64	Medicines including veterinary	1.19	1.99	2.49
Flat-rolled products of iron or non-alloy steel	0.30	0.33	0.30	Electrical machinery apparatus nes	1.62	1.42	1.27
TOTAL	4.49	4.60	4.48	TOTAL	20.16	19.97	17.70

Source: Author's calculations based on data from Unctadstat (<http://unctadstat.unctad.org>)

The analysis of share of commodity groups with the largest share in exports in total world trade, which is shown in Table 8 (analysis covered

commodity groups with the largest share in exports in 2008-2009) shows that commodity groups that have the largest share in Hungarian exports have much higher share in total world trade, which means that demand for such products on a worldwide level is much higher than those commodity groups that have the largest share in Serbian exports. In the case of Serbian export it could be seen that there was no drastic change in the share of these commodity groups in total world trade from 2000 to 2009 despite the global economic crisis so it could be concluded on that basis that elasticity of demand for these commodity groups is not high. Also we can see that there is no trade group who participate more than 1% in the total world trade. In the case of Hungarian exports, it could be seen that, due the global economic crisis, there has been a certain decrease in the share of some product groups (primarily telecommunications equipment, cars, machine aop units, parts for motor vehicles) in total world trade, which means that demand for these product groups is elastic, while for example in the case of drugs (which has the lower elasticity of demand) there has been increase in their share in total world trade.

As one of the methods for analyzing the degree of specialisation on the sample of total exports, in the literature Herfindhall-Hirshmann concentration index is used. Concentration index takes values between 0 and 1. When concentration index value is closer to 0, specialisation is lower because there is a wide dispersion of an observed phenomenon. Concentration index of export is obtained by using the following formula:

$$H_j = \frac{\sqrt{\sum_{i=1}^n \left(\frac{x_i}{X}\right)^2} - \sqrt{1/n}}{1 - \sqrt{1/n}}$$

H_j - concentration index of exports of the country; x - value of exports of certain products; X - value of total exports, n - number of products.

Concentration indices for the countries of Central and Eastern Europe are shown in Table 9. Indices were formed using the data on those commodity groups (SITC, rev. 3) who have a valuation of exports more than \$100,000 or share in total exports of at least 0.3%. From Table 9 we can see that Serbia has the lowest concentration index value of all the countries in 2009 which indicates presence of low specialisation and export diversity. Small countries generally, due to scarce resources and the size of the domestic market can't develop all economic sectors and achieve the diversification of exports, but opt for the development of those industries in which they can achieve comparative advantage (it is a labor and resource intensive industries). Indices of concentration of these countries are generally higher as can be seen from Table 9 in the example of Montenegro and Macedonia as a country with the highest

index of concentration in 2009. A little lower concentration indices of countries with advanced export structure are explained by the fact that these countries produce a wide range of finished products that allow them to have a superior position in the world market compared to other countries. Structure of exports dominated with products of higher degree of finalisation enable these countries to have better valuation of exports and export diversification reduces exposure of these countries to changes in the global market. Serbia, given to its characteristics, should belong to the group of countries with a greater degree of exports concentration and the fact that it has the lowest index of concentration is not a sign of a competitiveness of Serbian economy and wide range of products that can be offered to the world market but lack of export strategy and distinctive products. From Table 9 it could be also seen that the concentration indices for most countries deteriorated compared to 2000 which could be expected given the increase in the current account deficits, which have promoted a policy of “export at all costs”.

Table 9: Indices of concentration and export diversification in Central and Eastern Europe

Country	Concentration indices		Diversification indices	
	2000	2009		2000
Albania	0.251	0.121	Albania	0.251
B&H	0.211	0.105	B&H	0.211
Bulgaria	0.129	0.107	Bulgaria	0.129
Czech	0.085	0.101	Czech	0.085
Montenegro		0.274	Montenegro	
Estonia	0.219	0.132	Estonia	0.219
Croatia	0.140	0.094	Croatia	0.140
Letonia	0.209	0.078	Letonia	0.209
Lithuania	0.162	0.170	Lithuania	0.162
Hungary	0.124	0.138	Hungary	0.124
Macedonia	0.183	0.255	Macedonia	0.183
Poland	0.077	0.083	Poland	0.077
Romania	0.132	0.097	Romania	0.132
Slovakia	0.152	0.158	Slovakia	0.152
Slovenia	0.105	0.126	Slovenia	0.105
Serbia	0.104	0.066	Serbia	0.104

Source: Unctadstat (<http://unctadstat.unctad.org>)

Export diversification index shows how much structure of country's exports differs from the structure of average exports at the world level. Diversification index also takes a value between 0 and 1, where values closer to 1 indicate a

larger difference from the average structure of export at world level. Diversification index represents modified Finger-Kreinin index for measuring the similarity of trade and its obtained by measuring the absolute deviations of the share of product in country's exports in relation to its share in total world trade, which is represented by formula:

$$S_j = \frac{\sum_i |h_{ij} - h_i|}{2}$$

where h_{ij} - share of product i in country's j total exports, h_i - share of product i in total world trade.

From Table 9, it could be seen that countries with advanced structure of exports have smaller value of diversification index (Hungary as a country with the most advanced structure of exports in this group along with the Czech Republic has the lowest value of index). Serbia is among the countries with the highest index of export diversification (higher index of diversification only have Albania, Bosnia and Herzegovina, Montenegro and Macedonia), which could be expected given the unfavorable structure of Serbian exports.

Based on the analysis of the share of 10 commodity groups with the largest share in exports, the index of concentration and diversification, it is clear that foreign direct investments can play an important role in the changes of exports specialization and resolving the problems related to foreign trade deficit. When role of foreign direct investments in solving the problems of the current account deficit is considered it should be emphasized that the repatriation of profits from foreign investments can lead to significant capital outflows from the country thus making income account deficit main cause of current account deficit. This phenomenon is especially present in those countries with a large inflow of foreign capital and in which also includes many companies with foreign ownership that are considered to have reached full market potential, so the lower part of the profits is reinvested while dividends and distributed profits make up a larger part. For these reasons in addition to attracting foreign direct investments in the industrial sector, it is necessary to create conditions for domestic investments in industrial sector, for construction new and modernization of existing production capacities and increase in the level of absorption of domestic enterprises (better linking of science and economy and investing in research and development) which would lead to the creation of new jobs and creation of human capital.

Conclusion

Comparative analysis of the structure of the Serbian and Hungarian exports by major product groups SITC, technological structure and factor intensity of exports has shown that the current inflow of foreign direct investment, in the case of Serbia, did not significantly affect the change in the export structure. This phenomenon is the result of: **lack of foreign direct investments**, compared to most transition countries in Central and Eastern Europe, **unfavorable sectoral distribution** (only Albania had lower levels of “tradable” foreign direct investments) and **types of foreign investments** (most of the foreign investments are acquisitions and purchases of companies in the privatization process). Also, the **technology** used by companies with foreign ownership in the manufacturing process and the **absorptive capacity of domestic firms** are such that there is no basis for the emergence of more powerful positive effects of technology spillover. As illustrated by the example of Hungary, the existence of highly educated people is a prerequisite for attracting investment in those sectors that are using high and medium high technology, so one of the preconditions for future changes in the structure of Serbian exports are investments in education and research, scientific and development research centers and linking science and economy.

Analysis of the participation of 10 commodity groups with the largest share of exports, concentration and diversification indices showed that the level of specialization of Serbian exports declined since the beginning of the transition process. Changing the export structure and specialization is not possible without the use of modern technology, improvements in labor productivity, investment in research and development, creation of human capital and use of modern knowledge in the field of marketing and logistics. Foreign direct investment can play a significant role in this process in if their form and sectoral distribution are in line with the needs of the Serbian economy. Investment in modern technology and equipment, new production processes as well as the positive effects of technology spillover in the industry can contribute to solving the problem of Serbian export specialization that marks quite dispersed export structure without recognizable products. With a choice of possible production processes in the national economy, intense inflow of foreign direct investment in industrial capacity could determine the future direction and degree of export specialization. Delays in the construction of a suitable environment for attracting foreign investments, and the global economic crisis, do not inspire much confidence in the possibility of Serbia to attract significant levels of export-oriented greenfield investments in the near future that would help in solving the problem of a permanent trade deficit.

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KOMPARATIVNA ANALIZA UTICAJA STRANIH DIREKTNIH INVESTICIJA NA STRUKTURU I SPECIJALIZACIJU SRPSKOG I MAĐARSKOG IZVOZA

Apstrakt: Strane direktne investicije mogu uticati na strukturu i specijalizaciju izvoza zemlje domaćina direktno, ukoliko se proizvodi preduzeća sa stranim vlasništvom razlikuju od postojeće izvozne strukture, i indirektno, putem efekata preliivanja. Uticaj stranih direktnih investicija na strukturu i specijalizaciju izvoza zemlje domaćina zavisi od nivoa i vrste stranih direktnih investicija, sektorske distribucije, tehnologije koja se koristi u proizvodnji, kao i apsorpcione sposobnosti domaćih preduzeća. Strane direktne investicije u Srbiji su u prethodnom periodu bile u najvećoj meri usmerene u tržišno orijentisane aktivnosti koje pripadaju tercijarnom sektoru što nije doprinelo rešavanju problema sa permanentnim spoljnotrgovinskim deficitom. Cilj rada je da na osnovu komparativne analize uticaja stranih direktnih investicija na strukturu i specijalizaciju srpskog i mađarskog izvoza ukaže na značaj stranih direktnih investicija za podizanje nivoa izvozne konkurentnosti i određivanje stepena izvozne specijalizacije koja pozitivno utiče na valorizaciju izvoza i rešavanje problema sa spoljnotrgovinskim deficitom.

Ključne reči: strane direktne investicije, struktura izvoza, specijalizacija izvoza, konkurentnost



GET OVER OR GAME OVER: THE RISE AND FALL OF THE EMU*

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Abstract: After two decades of being a monetary unification gospel, EMU is at a brink of dissolution. The European (Monetary) Union, including its political significance and economic future has been hanging in balance ever since the May of 2010, most recently reaching the very end of the rope. This paper attempted to discern historical and constructional origins of the Eurozone crisis, layers or ingredients of the ongoing peril as well as to identify a short-term technical policy response, necessary for avoiding the imminent break-up of the EMU. Last but not least, the article developed a game theoretical pay-off matrix in order to consider the menu and tentative likelihood of representative agents' available strategy pairs, that in turn revealed three distinct equilibria, one of which will decisively shape the immediate outlook and ultimate fate of the Eurozone. However, the current pairs in the core vs. periphery pay-off matrix of apparently pursued strategies do not lead to the desirable, superior Nash equilibrium. Out of three bargaining equilibria possible, only two are Nash-stable and only one associated with EMU's survival. It is hard to say whether the EMU will be lucky and wise enough to weather this crisis. It is easy to say that feasible macroeconomic solutions won't be pleasing for many of its members.

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“We must reflect, time and again, why are we together in Europe?”

-Angela Merkel-

“(...) Because I think we need to decide whether we’re going to be one player or eight tennis balls”

-Sir Peter Ustinov-

Introduction

The E(M)U is and always has been a highly political creature. As such, it seems to have been driven by notorious discretion more than by any recognized piece of economic theory or level-playing-field rules, at all times and instances except when it really did not make any sense to firmly stick to them. Both retrospect and prospect of European monetary integration have repeatedly illustrated this trait (Malovic, Djukic and Redzepagic, 2011). As a consequence, after two decades of being a primer in monetary integration, successful launch and immediate benefits of the common currency union, the EMU is at a brink of dissolution. Orderly Greek default and the biggest debt swap in the history of sovereign indebtedness did not solve the matter at all, quite to the contrary, it pushed the Eurozone crisis in its ever more complex and most dangerous phase. Many other peripheral Eurozone members are in deep incoming troubles themselves, and rest assured, Greek debt crisis will resurface again in the late 2013. The immediate questions that arise are: Will euro survive at all? What does it take for the euro to survive? Would all the current Eurozone members survive the euro’s survival?

By briefly reviewing the rise, along with the constructional flaws of the Euro project, as well as by elaborating the structural, economic and political ingredients of the Eurozone crisis, this paper is trying to address the game theoretical reasons for sequential, ‘too little too late’ approach in dealing with the crisis. In parallel with normative analysis, this paper identifies the three item policy package as *sine qua non* for averting the break-up of the EMU.

The rest of the paper is organised as follows: section 2 deals with constructional flaws of the EMU which have been casting shadows on otherwise stellar success of the euro in its early years, section 3 touches upon origins of the crisis, section 4 introduces three-item financial policy package required for the crisis resolution, while the section 5 wraps up with game theory considerations which might stall or prevent the implementation of optimal policy mix. Section 6 concludes.

The Rise of the EMU and the Flaws of Maastricht

For the casual observer, the first decade of euro had been nothing short of a thundering success. At least until the global financial crisis mutated into the Eurozone crisis, indisputable benefits of the EMU were: elimination of currency risk as well as cross-currency conversion costs, converging and subsiding reflation (falling to 2% on average), great moderation with dropping long term interest rates to half of what they used to be in the late 1990s, steady and almost perfectly balanced public finances with roughly four times lower deficits (if any) as compared with the 1990s, international seignorage and politico-economic weight of the euro as a rising global reserve currency and, more importantly, invoicing currency in international trade and, lastly, greater competition, wider variety coupled with often lower prices of goods and services in the Euroland (European Commission, 2008). Moreover, one could also argue that the sheer growth in size and relative weight of the EMU, from 11 members in 1999 to 17 in 2012 is a clear-cut sign of success (Jovanovic, 2012).

Be that as it may, the Maastricht criteria, as the backbone of Europe's common currency and the Eurozone, are actually rather arbitrarily designed. From their onset, times and again, they've been only briefly fulfilled and often manipulated with. In order to qualify for the Eurozone, apart from having to be a member of the EU, each candidate country must conform to at least five well-known convergence criteria- defined 21 years ago in the famous Maastricht Treaty.

Nevertheless, those nominal Maastricht criteria, articulated with ostentatious numerical precision, clearly disregarded much of the optimum currency area scientific legacy pioneered by Mundell (1961)¹ and introduced set of indicators instead, which actually scream 'arbitrary' in multiple respects. They are not supported by any other coherent piece of economic theory either, it is unclear why specific numerical targets were chosen (or where it is clear - the reasoning is painfully too linear, to put it mildly), only to culminate with evident (and arguably deliberate) absence of real convergence criteria, calibrated ones at least.

Inflation convergence thresholds aim at enforcing the German-style "culture of price stability" in both short and longer run as a top monetary priority in the E(M)U. This in turn bears consequence also for exchange rate criterion, to be discussed later. Inflation criterion, nonetheless, is numerically arbitrary beyond reasonable doubt. These rules of thumb, even if correspondent to EU's reality ones upon a time, nowadays pertain to no more than drastic ego-centrism of the strongest founders and their obsolete arithmetic.

¹ Although one is bound to remark that, he himself had dramatically altered the theory of optimum currency area in 1973 as opposed to his 1961 piece, clearly inspired by demise of the Bretton-Woods international monetary system and abandonment of pegged exchange rate regimes (De Grauwe, 2006).

Similarly, fiscal criteria too were arbitrarily designed, often unfulfilled and patently window-dressed. Baldwin and Wyplosz (2009) remind that the EMU's budget deficit criterion has been set as equivalent of the usual German golden rule for annual public investment (the only acceptable cause of budget deficit for them at the time) which typically amounted to some 3% of GDP. Cumulative public debt ceiling, again, has been pinpointed at 60% of GDP, according to one school of thought, simply because that was the average EU debt level back in 1991 when Maastricht criteria were being formulated.

Finally, the last, but not least binding, criterion fixes the value of national currency before finally melting it into the euro, which leaves us with one-size-fits-all-monetary policy, no interest rate nor exchange rate as previously available national instruments at hand.

While it doesn't explicitly quantify them, Maastricht Treaty indeed does mention, albeit in a low key, additional so-called real convergence criteria, such as the position and size of the balance of payments disequilibria, developments in unit labour costs and other price indices, employment rates etc (Lavrač, 2004). These valuable and meaningful criteria, also related (for a change) to theoretical pillars of the OCA theory, up until couple of months ago have been virtually forgotten even in academic circles, much less in European bodies and general discourse, precisely because they have never ever been called upon let alone applied in the case of the current Eurozone members, young nor old.

Contents of the Crisis: A Day in Life or a Chronicle of the Death Foretold?

Political unwillingness to deploy non-trivial elements of (quasi)fiscal federalism stems from heterogeneity of political and economic interests of Eurozone particles, but also from cultural heritage and the deep-rooted crisis of trust across the E(M)U (Eichengreen, 2011; Jovanovic, 2012).² While the Eurozone's monetary affairs were centralised, fiscal policies were left in the national domain. Now, every macro textbook swiftly reveals how formidably hard it becomes to run such a monetary union in the face of asymmetrically spread adversity. Hence, the objective of the old Stability and Growth Pact was to keep the Eurozone on track by means of rigidly imposed fiscal prudence. To put it bluntly, even back then, Germany mistrusted Italy, let alone others to come, in budgetary affairs. Many economists, like Krugman (2011a), Feldstein (2011) as well as Corsetti and Pesaran (2012), however, agree that indeed some degree of budgetary integration is a necessary condition for smooth running of a

² In the international coordination game of such size and sensitivity, there are trust deficits between politicians and their electorate, between Eurozone and the rest of the EU (e.g. Britain), between Eurozone's core and periphery, between smaller EMU members and the two biggest ones, between Germany and arguably everyone else etc.

currency union after all. Nonetheless, it is cumbersome to envisage a full-fledged fiscal federalism as modality likely to work in the context of the EMU, due to stark differences in economic structure and development level among the members (which require taxing etc. to remain national prerogative in order to preserve the euro after EMU members have been deprived of all the other economic policy instruments available for fine tuning to indigenous national circumstances) as well as due to the historically rooted international mistrust within EU in respect to each other's prudence or intentions even. Furthermore, full-fledged fiscal federalism at this stage is not at all necessary; it would be too expensive and ultimately detrimental for financial stabilisation in today's fragile Eurozone (Gross and Mayer, 2011). Even so, the current system of unified monetary policy and separate fiscal policies is equally unsustainable as well³: it instigated "(...) profligate expenditure policies in the countries with weak stability culture⁴ that profited from the" initially "high credibility (i.e. lower interest rates) of the common currency. Once in trouble, countries could not counter financial difficulties on their own" (Jovanovic, 2012, p. 5). And yet, it would be too hypocritical to blame it all on Southerner's fiscal profligacy and absolve the Eurocrats and other Northerners from responsibility of knowing that all along, irrespective of whether they were just tolerating it or even horse-trading from the constellation.⁵ Luckily, it is possible, advisable and efficient to cut the middle ground in this matter, as we shall propose in the next section.

The second layer of the crisis, the so-called twin crisis or simultaneous explosion of balance of payments (hereafter BoP) imbalances, budget deficits and subsequently sovereign indebtedness, is well known in international finance theory. However, in a financial/capital account view, there are also some important portfolio insights from defining BoP (dis)equilibrium, and namely: Sufficient is but a glance at Eurostat's budget deficit as well as public debt-to-GDP ratio time series from 1999-2007 to become aware that the usual culprits (namely GIIPS countries) do not lead, let alone monopolise those charts! From applied econometrics we know that twin-deficits are co-determined hence the causation is likely to work in both directions:

³ For counterfactual example, contemporary African monetary union and the East Caribbean monetary union operate under supranational fiscal rules (Wyplosz, 2011).

⁴ For instance, in the face of falling macro-vitals, Greeks were used to pocketing 13th and 14th monthly installment of their annual salary, Transparency International's corruption index ranks Greece 80th in the world, and, in September 2011, the Greek Treasury had carried out only 31 of the 75 tax audits of high-income individuals promised for the year as a whole (Pisany-Ferry, 2012).

⁵ Anecdotal evidence of Goldman Sachs' cross-currency swaps that helped the fiscal window-dressing in Greece, as well as highly remunerative deals landed to French and German companies as reflection of accumulating budget deficits in the EMU's periphery, were probably crowned by the Siemens's out-of-court settlement whereby German giant agreed to pay Greece some €170 million compensation for alleged bribery of local politicians key to the commissions the firm won over there in the past (Financial Times, March 9th, 2012).

$$B=S-I=(T-G)+S^P-I \quad (1)$$

$$D_t^F = \sum_{t=1}^{\text{present}} (B_t r^{t-1}) - \mathcal{L}_t^{\text{gross}} ; r = 1+i, \mathcal{L}_t^{\text{gross}} = \Gamma_t + iD_t^F \quad (2)$$

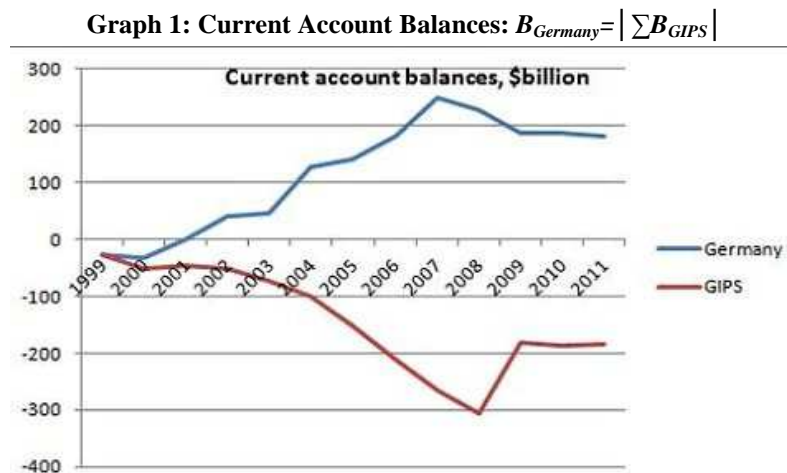
$$\mathcal{L}_t^{\text{net}} = \Gamma_t + iD_t^F - L_t^{\text{new}} < K^* \quad (3)$$

$$PD = D^F + D^D \quad (4)$$

Here B notifies BoP imbalance, S stands for aggregate savings, G for government spending, T for fiscal revenue, S^P for private sector savings, I for investment, D^F and D^D for external and internal component of public debt, i is interest rate, r discount factor, t time operator and \mathcal{L} debt installment in a given EMU member state. This capital-account view reads that eventual current account deficit has to be financed by surplus of aggregate investment in the country over domestic accumulation, i.e. that capital/financial account balance countervails the sum of net government and private savings. Similarly, if one abstracts from foreign exchange reserves depletion, the capital gain/loss and alike marking to market phenomena, external sovereign debt could be approximated as the sum of discounted BoP deficits over time decreased for the gross transfer of resources to creditors (portion of principal plus the interest). Net transfer of resources is obviously smaller for the amount of new borrowing, and has to be less than confiscation and reputational punishment K^* obtainable by creditors, in order to make default an inferior strategy. Having said that, distinction between domestic and foreign sovereign debt becomes ever more blurry, since with more integrated European financial markets for many Eurozone member states more than half of their government bonds outstanding are still held outside the country of issue (De Grauwe, 2010). In a nutshell, we might be witnessing BoP crisis as much as if not primordial to the sovereign debt crisis in EMU.

In terms of relationships (1) and (2), available statistics reveals a rather interesting genesis as represented in the Graph 1, namely that German current account surplus in the 1999-2011 interval represents a mirror image of the sum of current-account deficits in GIPS. Now, during the process of accession to the Eurozone, some economically weaker member countries (for instance, Greece, Ireland, Portugal and Spain) experienced a rapid increase in credit availability fueled by the fast convergence of interest rates (Coimbra, 2010). Hence, a typical 'German explanation' is that an abrupt and steady build-up of current account-deficits in EMU periphery is just a mirror image of cheap credit bonanza from the Eurozone core which fed the domestic import demand (Young and Semmler, 2011). Obviously, in many cases, it is still horrendously hard to detect which international transactions are autonomous and which may be compensatory in the J.E. Meade's dichotomy, yet chances are that strong euro disarmed peripheral EMU members of their price competitiveness and fully exposed them to mighty German (but also Finnish, Dutch and Austrian)

manufacturing industries, thereby enabling the core to increase its export surpluses at the expense of the E(M)U's periphery.



Source: Krugman (2011b)

Although Corsetti and Pesaran (2012) clumsily dismiss such a conclusion on empirical grounds of weak cross-country correlation between external deficits and excessive risk premia on their government bond yields, Blanchard (2011) and De Grauwe (2010), *inter alia*, assert that risk premium jumps may well be either the by-product of financial contagion, or the corollary of sovereign's inability to print and reflate its own currency. Spain (and to lesser extent Ireland and Portugal) did amass loads of bank loans from the core in the run up of their real estate bubbles, but arguably W. European banks had their cut in those windfall gains too, perhaps even bigger than confused and suddenly uncompetitive industries in the EMU's periphery. Consequently, Greece, Portugal and Spain have run massive trade deficits, starting with euro launch and almost to the penny equal to German trade surpluses! Although they were not just lazy spenders, for they have simultaneously achieved surpluses in trade in services, services they have traditionally been good at, new realities brought about by monetary union could not overturn the final result. Sluggish, but price competitive Germany grew solely through structural current account surplus, originating largely from the Euro project and her compatibility with common monetary policy formulated in Frankfurt. In addition, one should bear in mind that since the introduction of the euro, some 40-65% of German trade has been directed into the Eurozone, whereas roughly 80% ends up in the EU and its candidate/accession countries!⁶ For the greatest part of euro's existence,

⁶ It is also worth pointing out that the overall Eurozone's BoP with the rest of the world is by and large in balance (Lapavitsas *et alia*, 2010; Young-Semmler, 2011).

German growth has been somewhat anemic⁷, while her once vastly superior technology has slackened faced with flat investments, high unemployment and stagnant consumption at home (Lapavitsas *et alia*, 2010).

Moreover, in an analytically brilliant but conclusively biased paper by Sinn and Wollmershaeuser (2011), the authors illustrate just how important this trade finance *sui generis* has been for Germany: once (back in 2008) German banks and exporters felt the heat and refused to rollover their claims/lend to the importers from the periphery, the ECB (read: effectively Bundesbank) decided to step in and continue with financing of GIIPS BoP deficits with respect to Germany via so-called Target loans. Target balances are interest bearing IOU flows between the ESCB⁸ that measure outside money created vis-à-vis loans extended by the BoP surplus state's central bank to the BoP deficit country's central bank. Although this mechanism in a way represents a discrete rescue facility before the rescue facility, it is automatic, it protects German exporters' interest and it does not amount to a gift since it has to be repaid in accrued sum.⁹ Further still, more volatile financial and capital account flows between Germany and GIIPS occasionally alter the direction but not the logic or origins of the current account imbalances, in other words, that is to say that recent massive capital flows back to Eurozone's core are also partly engineered by constructional flaws of the EMU itself. Hence, we'd characterize as misguided if not hypocritical Sinn's and Wollmershaeuser's (2011) conclusion that Germany should discontinue her overextended support to the EMU's indebted periphery, even more so as most of the funds used for Target loans (and German domestic boom) came from vast EU capital supply fleeing that same crisis-stricken periphery into the safety of German financial assets! After German banks and the rest of the private capital from the core had their go in once remunerative and prestigious endeavours in the EMU's periphery, they decided to leave without sharing the bill, sticking to super-safe domestic investment for a change. As a consequence, Bundesbank and German tax-payers have been lured in those stealth bails.¹⁰ This outcome, from an international point of view, is almost fair, since if unsuccessful in bailing in the banks and exporters- Bundesbank has after

⁷ ...yet slowly gaining momentum over time by almost exclusively relying on price competitive exports within the EMU. Thus, the "sick man of Europe" has now moved to outperform the Eurozone average growth since the second quarter of 2010 (Young-Semmler, 2011).

⁸ Thus, one wouldn't find them on the ECB balance sheet since they're supposed to cancel each other out, but on national central bank's accounts under *Intra-Eurosystem Claims and Liabilities* and in BoP statistics under *Other Financial Transactions with Non-Residents* position (Sinn-Wollmershaeuser, 2011).

⁹ To clarify, if the credit-receiving state should go bankrupt, all EMU members would be liable to pay to, say, German exporters via Bundesbank, in proportion to their capital shares in the ECB (Sinn-Wollmershaeuser, 2011).

¹⁰ For the record, before 2007, in fair weather times, Bundesbank was a net-debtor in the Target payments network, i.e. has been printing money approved by other EMU members' national central banks (Jobst, 2011).

all been protecting the interests of German businesses; it is additionally reasonable since any more pronounced restrictions of Target balances would hit Germany first. Therefore, although perhaps not right on the Target, Bundesbank's reaction is primarily insufficient at this stage of the Eurozone crisis.

But, before proceeding to the last layer of the EMU's predicament, let us reflect upon the banking crisis. Once international interbank market is convinced that there's a non-negligible possibility of default, interest rates shoot up, until market access is lost altogether, whereas creditor-banks' shares plummet way below their book value. Systemic risk of bank runs and cascaded failures of financial intermediaries thus present a likelihood to account for. Furthermore, balance sheet mismatches of leveraged entities provide the most direct quantitative indicators of potential instability, much more so than BoP deficits, though the deficits and debts may well be a symptom that deeper financial threats are gathering (Obstfeld, 2012). Anyway, provided that indebted government doesn't suffer from the so-called original sin, and if anything the EMU certainly doesn't, there are two simple ways to deal with a sovereign debt overhang: to reduce payments by restructuring the debt including possible partial forgiveness or to inflate your way out of the debt noose. Alas, there are also two problems with these: absent fully-functional political union, the EMU is not a sovereign, European banks are largely governed by national regulations and yet they expanded their balance sheets as well as their risk taking all over the EMU (Goodhart, 2011), and in both cases, the bitter opposition to removing the debt overhang in the Eurozone came from mainly European bankers, who claimed that it would wreak twofold havoc in global financial markets (Acemoglu and Johnson, 2012). Firstly, as the story goes, banks were the primary creditors, and the large losses they may face in any restructuring are bound to trigger a domino effect, with waves of pessimism stirring up interest rates and ruining other borrowers' prospects. Secondly, banks would additionally suffer because they had sold insurance against default, the so-called CDS. If these swaps were to be activated, the banks would incur further crippling losses (Acemoglu and Johnson, 2012). So, did we face the Armageddon after the Greek (orderly) default along these lines? Nothing of the kind. Banks did not have to take considerable haircuts, since they were effectively compensated by official sector involvement for much of the nominal forgiveness they provisionally agreed to, depositors –need be- are pretty much covered by national deposit insurance schemes (which due to moral hazard concerns ought to be pan-European though), there's no serious domino-effect on horizon as yet anyway, while borrowers' prospects do deteriorate indeed but for exactly the opposite reasons: because Eurocrats chose to protect their banks rather than their sovereign states and the EMU as a whole. To add insult to injury, even though the whole quantitative easing (in European discrete version, two big LTRO shots from ECB liquidity guns) idea was meant to prevent banks from going bankrupt and buy them time to deleverage and restructure, generous

liquidity injections coupled with no sign of tumbling dominoes have been read as encouragement not to deleverage too much too soon. Banks in France, the UK, Ireland, Germany, and Spain have already unveiled plans to slash a total of €775 billion of assets in the next year, according to Bloomberg (Chassany *et alia*, 2011). However, the EBA tests indicate that approximately one-third of banks sampled needed stronger capital reserves to meet the June of 2012 deadline (Kinsella-O'Sullivan, 2011). Moreover, judging by the last year's research from Morgan Stanley, thus far recorded deleveraging appears to be just a game theoretical foreplay, whereby only when/if credibly cornered by their sovereigns and supranational authorities, European banks would have to reduce their balance sheets by 1.5-2.5 trillion € over the course of the next 18 months to meet more stringent capital requirements. Compared to their likely future losses, European banks have raised relatively little capital since the onset of LTRO – and much of this has been creative accounting, rather than truly loss-absorbing equity (Acemoglu and Johnson, 2012). In retrospect, even if cut and dry bailing in of the too-big-to-fail European banks was not always entirely feasible, bailing them out had to establish a lot more supervisory attachments.

Finally, the last ingredient of the Eurozone crisis is the crisis of the Euro itself. Despite the fact that ECB's foreign exchange reserves are way too large for classical speculative attack to be successful (for the time being), lack of real convergence in the EMU represents clear and present danger for common currency's survival. This is the case both in the face of asymmetric shocks and symmetric shocks with asymmetric adverse effects throughout EMU (Baldwin and Wyplosz, 2009). Whatever the sources of BOP and fiscal imbalances, they ultimately translate into real currency appreciation. In a currency union, this means rising inflation differentials (Corsetti and Pesaran, 2011). Ironically, peripheral countries have joined the euro at unrealistically high rates of exchange to begin with, proverbially to control for inflation, thus signing away some of their price competitiveness on the outset (Lapavistas *et alia*, 2010). Moreover, Germany's unrelenting wage moderation was tantamount to real exchange rate depreciation vis-à-vis periphery of the EMU, since her unit labour costs rose (if at all) at lower rate than in fact any other E(M)U member (see Table 1). Hence, Germany's beggar thy neighbour policy has been effectively adding to the organic asymmetry of macroeconomic shocks hitting the EMU. When confronted with sticky prices, the nominal exchange rate represents the only easy way of adjusting a country's price competitiveness to changing conditions: in a monetary union, however, if an asymmetric trait in a shock occurs, the common currency float cannot insulate all members simultaneously (Baldwin and Wyplosz, 2009). Therefore, if nominal exchange rate adjustment cannot do the trick, members of monetary union must resort to somewhat coordinated real exchange rate manipulation to maintain economic and political harmony!

Table 1: Unit Labour Costs in Selected EMU Members (1996-2010)

EU(27)=100	Aggregate rise in unit labour costs (in %)
Germany	8
France	15
Portugal	24
Spain	35
Italy	37
Greece	59

Source: The Economist (2012), www.economist.com

As evident from Table 1, during the years of easy money, wages and prices in south rose substantially faster than in north of the EMU. Hence, one shouldn't be surprised that Corsetti and Pesaran (2011) have found the highest cross-country correlation between sovereign debt crisis and inflation differentials among the Eurozone's core and its periphery.¹¹

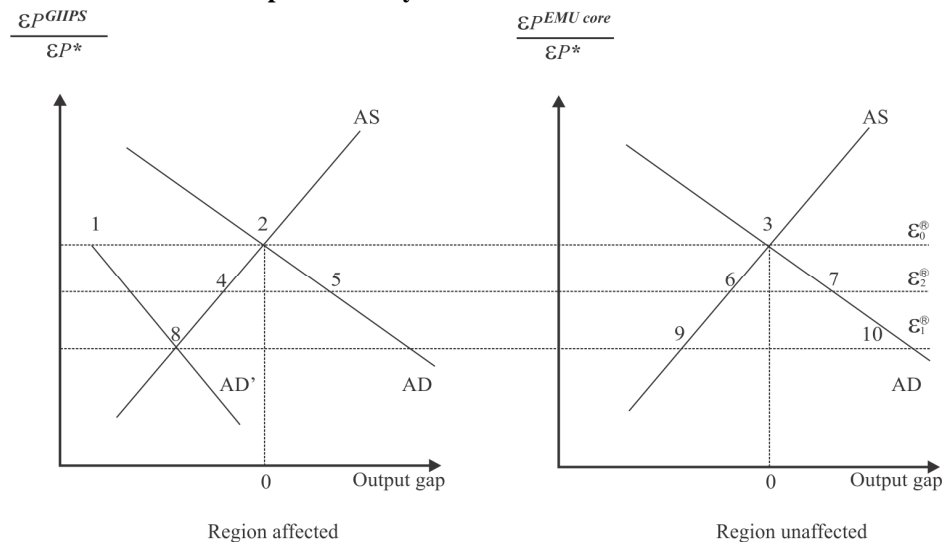
This price level/reflation divergence needs to be reversed, either through falling prices in the EMU periphery, rising prices in the EMU's core or some combination thereof (Krugman, 2011). As outlined in Graph 2, nominal wages and general domestic price levels are the only ingredients of a real exchange rate that union members can still tackle to scratch their own back. Their common central bank, the ECB, holds the authority to make a collective choice. For as long as it cares more for EMU's core, it will keep the nominal exchange rate unaltered, which would initially fix the real exchange rate at its \mathcal{E}_0^{\otimes} level too. This constellation is fine for the core but unbearable for periphery which faces excess supply as measured by the 1-2 distance. Hypotetically, if the ECB cared exclusively for GIIPS, it would allow for nominal depreciation of the euro which would (under sticky prices) render the real exchange rate at its mutual \mathcal{E}_1^{\otimes} level. This outcome is very comfortable for GIIPS but melts the price competitiveness of the EMU's core towards GIIPS by opening potentially inflationary excess demand in the Core, as measured by the distance 9-10. Finally, if the nominal euro exchange rate floated freely, it should depreciate but not all the way to \mathcal{E}_l . As originally elaborated by Baldwin and Wyplosz (2009), it would decline to an intermediate level wich corresponds with real depreciation onto \mathcal{E}_2^{\otimes} , so that outcome remains linear combination of excess supply for GIIPS and excess demand in the EMU's core, as measured by the distance 4-5 or 6-7. In reality, however, those distances need not be equal and

¹¹ After the introduction of the euro, cumulated inflation differentials relative to Germany were as high as 21% for Greece, 16% for Spain, 14% for Ireland, 12% for Portugal, and 8% for Italy (despite the low Italian growth rate). For comparison, cumulated inflation differentials across states in the US rarely exceed 8% over a period of 10-20 years (Corsetti and Pesaran, 2011; Feldstein, 2011).

such adjustments might still be insufficient: even though real exchange rate is correct on average, it may nevertheless be too strong for GIIPS and too weak for the EMU's core, which may be overheating.

However, the EMU's core is not quite overheating yet, although their real exchange rate is less overvalued than GIIPS's. Luckily, if such an adjustment to economic imbalances remains asymmetric with still most of the pressure applied to BoP deficit countries, coordinated adjustment of domestic price levels may be administered additionally. Problem with that is German insistence that this kind of exercise would topple down painfully won price competitiveness of the EMU's core not only vis-à-vis the GIIPS, but also *versus* the rest of the world – an outcome with potential to make Germany poorer in relative and the entire Eurozone in absolute terms. Therefore, at last, Germany seems to be uttering readiness to participate in the twin-crisis adjustment burden, but not in the adjustment manouvres (Weidman, 2012). In absence of somewhat higher inflation in the BoP-surplus countries, say, at least 4-5% a year, much along the lines of the classical Hume's mechanism, adjustment would require tremendous deflation in the crisis countries to solely bring about a huge relative decline in production costs over time. As rightly pointed by Krugman (2011^a), in practice, such deflation could be achieved only at the expense of high unemployment and social upheaval. It is therefore unclear whether the current strategy of combining fiscal austerity and deflation is even politically feasible (while it's quite clear it is being economically disastrous), which in turn explains the huge uncertainty hanging over the entire EMU.

Graph 2: An Asymmetric Shock in the EMU



Source: Adapted from Baldwin and Wyplosz (2009)

All considered, the EMU is in the gravest crisis ever, and the way things are going at the time of this writing, it is not in the slightest inconceivable for the Eurozone to fall apart by late 2013. In the end of the day, it wouldn't be the first time for currency unions to effectively break: the EMS crisis of 1992 is a child poster of what could happen when Germany's policies detach themselves from other members' needs. Similarly, it would not be the first time for EMU members to default either: Gianviti *et alia* (2010) remind that, among the member states of the Euro area, Austria, Greece, Germany, Italy, Portugal and Spain have each experienced at least one case of sovereign default since 1824.¹² Most of these defaults occurred during the Gold Standard. This is crucial, because the Gold Standard, like membership in the Eurozone, implied that a national government could not revert to high inflation to rid itself of an excessive debt burden except by leaving the Gold Standard. The only chance to repay the debt is to become competitive enough to earn a BoP surplus. That requires becoming cheaper — a task relatively easy if a country exits from the euro, but formidably difficult if it stays in (Sinn, 2012).

Policy Proposal for Avoiding the Break-Up

In a nutshell, Brussels's official response to the Eurozone crisis so far has been enforcing the fiscal compact as well as forming and subsequent beefing up of the so-called EFSF (European Financial Stability Facility). These efforts fall anywhere from being semi-legal, inefficient, insufficient to ill-conceived or dead-wrong even.

Supplementing obsolete and creatively interpreted Stability and Growth Pact with additional set of fiscal rules, budgetary standards and constitutional "debt breaks", won't do much good at this next to terminal phase of the EMU crisis.¹³ The fact is that quantitative restrictions on public borrowing would cause misery without reassuring the markets. We have plenty of examples of countries (Japan with public debt-to-GDP ratio of 233% and 600% of total debt, Britain close to 100% public with 950% total debt-to GDP) with astounding deficits and debts not charged significant let alone punitive risk premia, while there are countries (Spain with a debt-to-GDP ratio of 69%) that have conducted their fiscal affairs prudent, yet they are forced to pay prohibitively high premia. Since Eurozone members can't print money even in an emergency, they're subject to funding disruptions, downgrades and capital flow reversals just like emerging market countries have been (De Grauwe, 2010). The truth being that we need some sort of cross-subsidisation either in the form of fiscal or quasi-

¹² Germany alone defaulted on its sovereign debt three times in the past 100 years.

¹³ Instead of fighting for automatic countercyclical stabilisers, fiscal compact once again fought for automatic penalties for undisciplined southern partners. That notwithstanding, fiscal compact does recognise and leave room for 'structural budget deficits' above cyclically tolerated 0.5% of GDP *p.a.*

fiscal transfers. Bullying the EMU's periphery into overnight fiscal consolidation would be precisely the worst thing to do, both for them and the Eurozone as a whole. After all, as Blanchard (2011) correctly asserts, global investors proved to be schizophrenic about fiscal consolidation and growth. They typically react positively to news of fiscal consolidation, but then react negatively later, after consolidation has led to lower growth – which it often has. All in all, insisting on severely limiting government expenditures (and consequently budget deficits) in a situation of deep depression, high foreign debt and sky-rocketing unemployment in the EMU's periphery, is a recklessly bad idea: to say the least, public sector cutbacks today do not solve the problem of yesterday's fiscal profligacy (Stiglitz, 2011). According to Ball *et alia* (2011), who empirically analyse 173 fiscal retrenchment episodes over 30 years, fiscal restriction does exactly the opposite: decreases growth, lowers wages and raises (particularly long-term) joblessness.

On the other hand, and unlike loud reaction of leading world economists against fiscal consolidation, just a handful of academics stood up to German insistence on using the EFSF primarily as the bank redemption fund. Indeed, the EFSF has chosen to provide abundant liquidity to European banks, but at the same time pretty much has kept clear of the GIIPS sovereigns' needs. Economic costs of such a political decision as well as the moral hazard (both on behalf of banks and the Eurocrats themselves) it pertains to, are fairly straight-forward. Hence, we shall argue against EFSF as the cover for bailing-out systemically important banks, but rather for using the EFSF as the permanent fiscal or quasi-fiscal rescue fund focused on sovereign debt stabilisation.¹⁴

But what might, then, be the more functional alternative? What would be the contents of the short-term policy package that would enable credible and sustainable exit from the Eurozone crisis without exiting the EMU itself? In our opinion, durable economic policy response must immediately deploy at least three sets of life-support measures:

First of all, an inevitable the ECB's issuance of European *a la* Brady bonds, up to the 60% of the battered countries' pre-crisis GDPs, in accordance with the habitual (if not entirely theoretically founded) Maastricht criterion. Akin to Holland's and Varoufakis's (2011) idea, this IOU launch wouldn't amount to any kind of international fiscal transfer, i.e. it would not imply putting European hands (of the poorer catholic-orthodox South) into national taxpayers' pockets (of the richer but also thriftier protestant North). Moreover, creating Eurobonds spawned and guaranteed by the ECB wouldn't represent debt write-off or moral hazard either, since Modigliani-Miller theorem doesn't really apply here: ECB's credibility and firepower alters the financial appeal of the summed up obligation

¹⁴ Bailing-out banks is most of the time considerably more expensive than bailing-out sovereigns.

to the benefit of both the EMU's periphery and core. Namely, this could merely be the tranche transfer, since member states would remain liable all along, not only for the principal but also for servicing the interest on their sovereign debts, albeit at much lower rate. Needless to say, the ECB should be in a position to capture fairly deep discounts at which many distressed sovereigns' bonds currently trade. Thereby, Brady like European bonds differ from Muellbauer (2011) proposal in two important traits: 1) in our opinion, it would be dangerous to enforce different spreads to nominally mutualised debt this late and this deep into indebtedness game and 2) there's no obvious need for conditioning spreads on the effort to cut down unit labour costs, since collateral taken against- and/or financial market reaction to remaining two classes of public debt do that automatically ever since the crisis broke out. Those presumably still not ready for price level adjustment after shielded under such a jointly assumed Eurobonds mechanism would have to be forced out of the Eurozone anyway. This last eventuality aside, such a measure would treat the EMU with additional two by-products: it could support longer term fiscal responsibility and would likely attract massive international capital inflows from overseas, so as to increase liquidity in the EMU and strengthen the shaky position of the euro as the world currency number 2. For as long as Germany stubbornly dismisses the joint Brady bonds idea, EMU as a whole is accelerating towards the point of no return. Ironically, all of her chief concerns with respect to the ECB's lender of last resort imperative, in regard to legality of such a measure, moral hazard concerns and its independence, have been expertly dismissed already by Wyplosz (2011b). In contrast to the ongoing conundrum, this simple measure, involving the ECB's Brady bonds issuance to cover 60% of the EMU's public liabilities, if introduced credibly, could on its own reduce default risks of all member states (apart from Greece, which would undoubtedly still be some 25-35% over the threshold) to loosely manageable levels.

The second measure, in terms of public liabilities exceeding the Maastricht 60% threshold up to 100% of the pre-crisis debt, where applicable, asks for non-trivial fiscal or quasi-fiscal transfers on the monetary union level, according to pre-determined fixed weights and distributed against top quality collateral (gold bullion, SDR, non-Euro foreign exchange reserves). Fixed weights ought to be determined through proxy for the level of asymmetry of shocks hitting the Eurozone members (e.g. inflation differential), until structural adjustment and real convergence deem such transfers unnecessary. Like in the US, then, and only then, EMU members should have more or less balanced budgets and receive modest federal transfers strictly in the form of infrastructure loans (Feldstein, 2011). Absent real convergence across the monetary union, somewhat larger fiscal transfers are imperative for its survival. As hinted in the opening sentence, there are two alternatives to carry out those transfers, pending on the extent of political consensus possible. Classical fiscal transfers would require collecting some percentage of national fiscal revenue into the common

purse of EFSF/ESM (European Stability Mechanism, Eurozone's supranational vehicle to inherit and succeed the EFSF in 2013), to be distributed to needy yet diligent union members. The other, less ambitious alternative would aim at monetary expansion instead, in other words, for the ECB to expand its balance sheet so as to supply the EFSF/ESM with funds to buy out discounted national sovereign bonds in the secondary markets. This should again be done -provided that SGP guidelines are met- against the top quality collateral, which is obviously insufficient to fully insure the ECB in the event of default, but significant enough to prevent moral hazard and deliberately engineered debt repudiation and euro exit by the national sovereigns. Considerable opposition to this measure comes from the German monetary conservatism and southern fiscal profligacy fable: the former is not good for anybody and at all times, while the latter is not the only or principal culprit. In fact, the EMU badly needs a bit of inflation in its core and weaker Euro, since today's devil to curb is not inflation but anemic growth, huge unemployment and overall financial instability quite unimpressed by the low inflation merit (Stiglitz, 2012). Considerable novelty of this quasi-fiscal alternative, however, lies in the ability of the ECB to utilize those repurchased sovereign bonds for further credit securitization: by enabling EFSF/ESM to issue European CDO derivatives and resell those loans back to private investors and financial intermediaries! The beauty of such an expansion of the ECB's balance sheet would be in the fact that it would finally be achieving quantitative easing rather than credit easing, but at the expense of the global financial market, rather than the EMU's taxpayer. European CDOs would consist of the super-safe ESB (European Safety Bond) tranche guaranteed by the ECB and meant for banks primarily and junior risky tranche presumably desired by hedge funds, vulture funds, country funds and alike. The original proponents of this daring idea are Harald Uhlig and several academics from the LSE (Euro-nomics group) (Uhlig, 2011). However, our proposal departs from theirs in several important respects: 1) unlike Euro-nomics group, we don't think it's sane or feasible to convert the entire sovereign debts outstanding into ESM's synthetic bonds if we are to maintain its credibility and develop the market for supranational CDOs in the aftermath of financial crisis brought about by credit derivatives; 2) while Euro-nomics people furiously reject any (quasi)fiscal transfers or cross-subsidisation and consider it not only undesirable but unnecessary under their proposal's design, we think mutual guarantees and 'federalised' stand-by rescue mechanisms are not only unavoidable this late in the game, but are already with us. CDOs by design imply sharing the reputation and somewhat mutualising the risk involved, and to the extent its cash-flow waterfall is separable, its super-safe senior tranche would be implicitly cross-subsidised. In the end of the day, global trend of rising public liabilities (which according to Bank of America/Merril Lynch exploded from 11 trillion US\$ in 2001 to 31 trillion US\$ in the end of 2011) reestablished a secondary market whose biggest players are

not institutional investors nor hedge funds, but central banks themselves—therefore, cross-subsidisation (or joint risk bearing), write-offs, official aid and partial forgiveness are tacitly indigenous to sovereign debt restructuring, even when countries in question do not belong to the common currency area. While essential benefit of Euro-nomics idea is preserved - ECB's super-guarantee would assume ESBies only, while total exposure should be returned to private investors, another convenience of our variation is economical—if the object of quasi-fiscal transfer is only the debt in excess of 60 and up to 100% of GDPs, the cost of the whole operation should be much lower. As a matter of fact, back of the envelope calculation shows that, with any luck, this transfer shouldn't amount to more than several percentage points of the EMU's GDP. Lastly, our proposal distinguishes itself from the Bofinger *et alia* (2011) European Redemption Pact, because it doesn't prescribe that penalising sovereigns suffering from debt overhang with differentiated spreads is going to help either them, or the credibility of nominally joint ESM issue, as well as because it doesn't administer ESM responsibility for the entire debt over 60% of EMU members' GDPs.

Third component of this three-item short-term policy package implicitly deals with managing debts over 100% of distressed Eurozone members' GDPs. Although those 'red bond' portions formally remain the sole responsibility of the debtor countries, following Holland and Varoufakis (2011), we support growth-oriented supranational financing mechanism orchestrated by the EIB bond issues, which could implicitly vouch for GIIPS's (and other underdeveloped EU members') future repayment capacity. In the spirit of Lisbon Treaty guidelines and the so-called European Recovery Programme, European Investment Bank as its investment arm has already begun with more aggressive involvement in growth- and recovery- conducive projects, recently quadrupling the size of its outstanding balance from 1997. The EIB should continue to be funded by its own (jointly guaranteed) bonds and to a smaller degree from European bonds debt service. The EIB should enhance its investment in rigorously appraised projects including co-financing infrastructure, equity stakes in high tech start-ups, education, SME loans, environmental protection and regional development. The underlying rationale being that reputation of the EIB and profitability of its growing portfolio ought to be credible guarantor for private investors purchasing its recovery oriented EIB bonds. More balanced growth and structural reforms in underdeveloped regions of the EMU are in any case perfectly aligned with the EIB's original mission. Finally, it would be advisable to temporarily decrease the mandatory co-financing participation of recipient countries (from 50% to say maximum 20%) or at least abolish the inclusion of sovereigns' EIB-related co-investment expenditures in public debt and budget deficit ratios.

Whatever happens, the E(M)U members urgently need growth, TFP rise and technological advances that would enable them. Once more comprehensive growth is under way, every public debt is just a number. But in order to overcome the sovereign debt crisis, the EMU will have to simultaneously address the remaining three layers of the crisis. This is a monumental and challenging task, for success of which outlined policy package represents but a kick-off. Immediate outlook and possible strategic developments beyond the outlined tripartite response are briefly discussed in the next section of the paper.

Game-Theoretical Considerations and Immediate Outlook for the Eurozone

Short term and long term payoff matrices may well differ drastically, especially depending on whether countries that exited or were kicked out remain outside the EMU alone or several others would join them. Both the EMU's core and its periphery have a lot to lose should Eurozone fall apart. However, in medium run, it appears that periphery stands to gain more than the core countries by leaving the EMU, although voters in the core often nag about profligate Southerners costing them too much without contributing too significantly. Both might be wrong, of course. Indeed, if it happened, exit from the euro would prove to be a messy affair, technically, politically, and no less financially. Sadly, the EMU's demise is at present a possible scenario, as national leaders are reclaiming their jurisdictions at the expense of the Community method and its institutions, blunt nationalism and tacit protectionism are on the rise, while political populism is threatening to reinstate back the border control within Schengen area.

Be that as it may, the EMU's periphery is advised to carry out so-called fiscal devaluation, i.e. reach out for mild fiscal expansion cocktail of VAT increase and uniform cut in payroll taxes (Farhi *et alia*, 2011), and yet the EMU's core is still mercilessly pressing for fiscal restriction. Under the circumstances, short term payoff matrix and strategies likely to be chosen by the EMU's core and periphery economies, are crucially dependent on the inbound (τ_m from the peripheral country's point of view) and the outbound (τ_n from the core member's viewpoint) transfer size. Namely, provided that

$$\sum \tau_{n,m} C_m^F \leq \sum B_n^{CORE} \quad (5)$$

holds, i.e. the core's share of the cost of fiscal adjustment of the EMU's periphery doesn't exceed the core's benefits in present value terms, one can suppose that battered m peripheral countries (hereafter GIPS) may negotiate a (quasi)fiscal transfer and thereby pass some of the fiscal adjustment costs onto Eurozone's core n members, due to potential negative externality arising from peripheral m -th country's default, in as much as the EMU's survival is

considered a common good (Fahrholz-Wojcik, 2012). However, we depart from the Fahrholz-Wojcik model by establishing the following propositions:

$$\sum \tau_n C_m^F = \tau_m C_m^F = C_m^{Tnsf} \tag{6}$$

$$C_m^F - B_m^{GIPS} - C_m^{Tnsf} \leq (i-g) PD_m^{GIPS} / Y_m^{GIPS} = const. \tag{7}$$

Since every indebted government has to tie down its primary surplus by making sure that, in present value terms, respective public debt grows more slowly than its respective tax base, they won't be able to credibly commit to repaying more than right hand-side of (7), as opposed to the present value of their effective costs, net of their own benefits from being part of the EMU and the bail-out transfer from the core, on the left hand-side. In addition, both the EMU's core and periphery would necessarily compare not only their costs vis-à-vis their benefits while being in the Eurozone, but also their individual shares in the costs of preserving the EMU against their individualised losses from its hypothetical dissolution:

$$C_m^F - B_m^{GIPS} - \tau_m C_m^F = (1 - \tau_m) C_m^F - B_m^{GIPS} \Leftrightarrow B_m^{GIPS} + C_m^F (\omega + \rho) \tag{8}$$

$$C_m^F (\omega + \rho) \approx K^* \tag{9}^{15}$$

$$\sum \tau_m C_m^F = \tau_n C_m^F = C_n^{Tnsf} \tag{10}$$

$$\tau_n C_m^F - B_n^{CORE} \Leftrightarrow B_n^{CORE} + C_m^F (1 - \omega - \rho) \tag{11}$$

Relationships (8) and explanatory (9), thus, depict 'stay or leave' considerations of heavily indebted EMU members, while relationship (11) confronts costs of maintaining with costs of dissolving the EMU from the Eurozone's core country viewpoint.¹⁶

Evidently, it is profoundly cumbersome to grasp member countries' preferred strategies and subjective weights attached to their own and their counterparties' deliberations. Table 2 sketches the generally available strategies for the representative agents from the union's core and periphery, as well as possible outcomes from pairs pursued.

Once again, it is immediately visible that EMU members encounter multiplicity of likely equilibria, two of which are saddle-point stable (only one of which implies Eurozone's survival though!), while the third mostly preferred thus far nevertheless represents inferior, temporary, and increasingly unstable phenomenon.

¹⁵ ω corresponds to confiscating ability of international creditors, whereas ρ captures reputational consequences of sovereign debt repudiation and exiting the EMU.

¹⁶ Both (8) and (11), on right hand-sides, contain foregone benefits of E(M)U membership as opportunity costs of their giving up the EMU.

Like most bargaining games, negotiating the size and terms of the (quasi)fiscal transfer takes place step by step rather than in one shot. Both parties — the powerful core (say, Germany) and the weaker periphery (such as GIPS) — apparently keep their exit clauses open, at least in theory. They could both decide to leave the monetary union and endanger everyone's — including their own — growth, reputation and long-term prosperity.

It should be in the interest of both parties to maintain this bluff as a realistic alternative while the equilibrating transfer is being played out. Only after both sovereign parties test each other's limits in bearing the imminent proximity of exercising the threat, somehow (more or less) engaging taxpayers as well as the too-big-too-fail banks in the process, solution could finally be met. Consequently, markets tend to get increasingly weary as the bargaining proceeds, and bounce on a resolution, yet only for the whole pattern of this (quasi)fiscal transfer negotiation to repeat itself again if neither of Nash equilibria has been chosen. However, amidst the crisis of trust bargaining parties often fall pray of the so-called Prisoner's dilemma, thus failing to reach mutually beneficial first best solution. Or any solution at all. History of human conflict remains the crown witness and the fair warning of such failures.

Table 2: Generally available strategies for the EMU's core and periphery

CORE \ GIPS	CONSOLIDATE AND ADJUST	DEFAULT AND EXIT	STALL
OFFISH – LOW OR NO τ	Worse for GIPS Better for CORE	NASH EQ. Worst for Both	Bad for GIPS (Failed Bluff?)
LAVISH- HIGH τ	NASH EQ. Best for Both	Unwise for GIPS Worst for CORE	Best for GIPS Worse for CORE
STALL	Worst for GIPS Best for CORE	Bad for CORE (Failed Bluff?)	WEAK EQ. Bad for Both

Understanding changes in the desirability to exercise the exit clause is critical in predicting the outcome of this entire nerve-wracking, iterative bargaining process. In fact, there's neither time nor economic rationale to procrastinate any longer. Germany has to decide: either to accept the significant fiscal transfers or to allow for the expansionary monetary policy and Eurobonds

(co-financing the bailouts again), thereby depreciating the Euro more significantly. Weaker Euro should be in all members' interest.

Indebted sovereign in the EMU cannot endure the depth and length of fiscal consolidation and structural adjustment imperative under asymmetric and dysfunctional monetary union of the day. Governments that can borrow at unprecedentedly low rates (currently close to 0% in real terms over 10 year bonds in the case of Germany) simply must play their role in supporting the aggregate E(M)U demand. Banks could and should help them along that path, big time. Belcerowicz (2012) argues against bailing them out if national deposit insurance schemes' reserve isn't binding, since bailing out banks and bailing out sovereigns are two diametrically differing exercises. At present practice, sovereign bonds still yield much higher returns than banks' recap loans, are *nolens-volens* acceptable as collateral with the ECB, and are implicitly guaranteed if things go wrong: such a *carte blanche* should be knocked out of the private banking sector hands and with a penalty shot at that.

Finally, we seriously doubt in credibility or viability of Euro sabbaticals and the like palliative solutions, which propose temporary exiting and reentering the EMU at one's own convenience. Political arm twisting, procedural window-dressing and financial sleight of hand simply won't do this time. Get over or game over – it's for leaders of the E(M)U to decide!

Conclusion

This paper attempted to discern historical and constructional origins of the Eurozone crisis, layers or ingredients of the ongoing peril as well as to identify a short-term technical policy response necessary for avoiding the imminent break-up of the EMU. Last but not least, the article developed a game theoretical pay-off matrix in order to consider the menu and tentative likelihood of representative agents' available strategy pairs, which in turn revealed three distinct equilibria.

Proposed three-item policy package addresses most of the issues raised. ECB has been obsessively enchanted with low inflation zeal, every bit as much as national leaders in the EMU's core have been with fiscal austerity. The essence of our policy response relies on thus far still lacking consensus that both of those ideas are recklessly erroneous. Main takeaways, hence, cluster around the imperative of Brady like pan-EMU bonds to lower the servicing cost of the legitimate debt segment, minimal but resolute (quasi)fiscal transfer which would ideally bail in the principal beneficiaries of the monetary union and growth-inducing EIB bonds to pull the EMU's wheels out of recessionary mud.

Should the EMU prove incapable of reaching the aforementioned policy consensus, the only alternative for several countries would be to opt out of the

Eurozone. That would reduce the monetary union to something of a more manageable size and decrease the extent of asymmetry of macroeconomic shocks affecting the area. That would, however, have unprecedented corollaries for the irrevocable success planned out by the European technocrats and the Franco-German axis. Let alone the formidable complexity with which the responsible, orderly exit would have to be codified.

Regrettably, due to the so-called Prisoner's dilemma effect of intra-EMU bargaining process and false security of unsustainable simultaneous stalling, partial break-up of the Eurozone at the time of this writing seems to be much more likely than achieving the critical mass of (quasi)fiscal federalism required for superior Nash equilibrium.

It is hard to say whether the EMU will be lucky and wise enough to weather this crisis. It is easy to say that feasible macroeconomic solutions won't be pleasing for many of its members. Incoherent responses to crisis have already cost the Eurozone's taxpayers twenty four months of despair and quite a few Euros more. Eurozone's economies might easily take another decade to get back to normal. Yet, for health to kick in, one must look one's illness in the eye, accept the diagnosis and start the treatment accordingly. Oh yes - even prior to that, one has to be unambiguous in regard to one's own resolution to recover.

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PREVAZIĆI ILI ODUSTATI: USPON I PAD EMU

Apstrakt: Nakon što je tokom dve decenije oličavala jevandelje monetarnog ujedinjenja u praksi, EMU je na rubu raspada. Evropska (monetarna) unija, uključujući njen politički značaj i ekonomsku budućnost, nalazi se na prekretnici još od maja 2010, odnedavno dosegnuvši sam kraj „užeta za spasavanje“. Ovaj članak pokušao je razabrati istorijske i konstrukcione uzroke krize u Evrozoni, slojeve ili sastojke nevolje koja je u toku, kao i identifikovati kratkoročni, tehnički odgovor makroekonomske politike neophodan za izbegavanje pretećeg raspada EMU. Konačno, ali ne najmanje važno, članak je u duhu teorije igara razvio matricu isplativosti, kojom se uzimaju u obzir raspoloživ meni i preliminarno izgledni parovi dostupnih strategija, matricu koja je zauzvrat identifikovala tri osobene ravnoteže, jedna od kojih će odlučujuće oblikovati neposredne izgledne i dalju sudbinu Evrozone. Međutim, aktuelni parovi očito odabranih strategija u „jezgro vs. periferija“ matrici isplativosti nesumnjivo ne vode poželjnoj, superiornoj Nashovoj ravnoteži. Od tri moguće pregovaračke ravnoteže, samo dve su stabilne u Nashovom smislu a samo jedna od njih obezbeđuje opstanak EMU. Teško je reći hoće li EMU biti dovoljno srećna i dovoljno mudra da prebrodi ovu krizu. Lako je reći da izgledna makroekonomska rešenja neće biti ugodna za mnoge njene članice.

Ključne reči: kriza u Evrozoni, kriza evra, neravnoteža platnog bilansa, evropski javni dug, evropsko finansijsko participiranje, (kvazi)fiskalni transferi.



INSTITUTIONAL AND POLITICAL DETERMINANTS OF ECONOMIC DEVELOPMENT

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Abstract: The paper discusses the major issues of institutional and political instability impact on economic development. Among the factors that lead to differences in the achieved level of economic development between the countries, and the differences in the level of institutional development. First, the paper discusses the issues of defining institutions, differences between economic institutions, political institutions and political power. The paper discusses the possibility of integration of the endogenous growth theory with endogenous economic policy (developed in political macroeconomics) in order to consider economic policy that will have an impact on economic growth on the basis of aggregating the preferences of voters in a single economic policy that is politically motivated (primarily according to opportunistic motives). In this context, it is considered that the existence of political instability that produces uncertainty regarding the viability of institutions, as well as future goals and measures of economic policy, will have the impact on the reduction of economic growth. This paper discusses an example of the major institutional change that occurred in the former socialist countries that have opted for economic transition and building a democratic society. In this regard, the paper considers the institutional factors that contributed to the success of the transition process, as well as the factors that are dictated by differences in building the institutional framework in these countries.

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1. Introduction

The economic science has, from its early days, been preoccupied with the question of *which factors determine wealth, i.e. the level of development of a nation, or a country*. Thus, the most famous work of the founder of classical

political economy, Adam Smith (1723-1790), entitled: *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776). Economists have dealt with this issue primarily for the purpose of establishing the determinants that promote economic development, in an attempt to identify the causes which lead to the fact that countries are at different levels of development, and suggest to the policymakers the ways and instruments to stimulate economic development.

Among the many factors that have been connected with economic development during the development of economic thought, certainly of great importance today are those relating to the development of economic and political institutions and their impact on the accumulation of physical and human capital, but also the encouragement of innovation and use of new technologies, as previously defined, the most important factor of economic development of a country. Unlike factors such as geographic differences or cultural factors that can be used to explain the differences between countries in the available technologies, or the differences in the level of investment in physical and human capital, institutions are the fundamental factor of the differences in economic development between countries.

The development of modern theories of economic development can be observed in the context of two phases – the first one, present in the theory and practice from the mid-1950s to the early 1970s and the second phase – from the mid-1980s to the present (Helpman 2004). It is in this second phase that the factors related to the socio-economic structures came into focus as the determinants of economic development. Namely, the earlier emphasis on the accumulation of productive inputs was replaced by a focus of fundamental factors, such as technological or institutional factors, which could explain the differences in the amount of income per capita, or in the rates of economic growth achieved in different countries, more accurately. This allows us to understand why some countries are poor - because they have dysfunctional institutions, but a much more complicated and difficult question is why countries accept and opt for such dysfunctional institutions.

The formation and development of institutions is stated as the key source of transformation of the Western European countries into modern economies based on knowledge and its application in the development of new technologies. The protection of property rights and encouragement for the processes of modernization required the existence of appropriate political institutions which could limit the impact of those interest groups that were opposing modernization because of their own interests. Thus, the institutions of developed economies played the key role in stimulating innovation and the use of new technologies. The accumulation of capital, and knowledge, as well as investing in the development, would not be possible without the protection of property rights and the institutions that promote the rule of law, adherence to contractual obligations and limit the influence and power of those who define

the rules. That is why institutions emerge as the factor in the protection of individuals from one another, but also as the factor which protects individuals from the actions of the state itself.

Political macroeconomics is a macroeconomic discipline that tends to see macroeconomic trends in the context of political influences that affect them, and the most important among them is the influence of political electoral cycles. The most important macroeconomic indicators such as an inflation rate, an unemployment rate, or the rate of growth of income (economic growth) record cyclical fluctuations that may be related to political factors, and even more so the choice of economic policy goals by policy makers. This is due to the fact that the policy makers (governments) are politicians who win voters' support for a particular policy in elections. In elections, voters chose according to the results of economic policy makers, as well as to their own party affiliation (Downs 1957). This is why economic policymakers are trying to present economic results better than they really are, aware of voters' preferences in relation to unemployment, income and inflation, creating economic policy based on opportunistic motives of achieving victory in the upcoming elections (Nordhaus 1975). In addition to opportunistic motives that equate the behavior of policy makers, regardless of their party or ideological affiliation, it is important to note that when creating economic policy, policy makers can focus on their party goals - to improve the position of those segments of the society which belong to a certain party or which support a particular party in the election (by voting for it). Thus, it happens that left-wing parties have as their goals lower unemployment rate and greater equality in income distribution, and right-wing parties have opposite goals because they address a variety of potential voters (Hibbs 1977). This is the essence of the well known scheme of the politico-economic model (Snowdon, Vane 1997), which shows the basis of numerous models of political macroeconomic cycles.

A key limitation of political abuse of economic policy is the rationality of voters and their awareness of the real motives of politicians, which prevents policymakers from deceiving voters by pre-electoral manipulation. However, even in the case of rational, rather than naive voters, there are sources of abuse that are primarily related to the information asymmetry that exists between voters, on the one hand, and policy makers, on the other hand, in relation to their competence in terms of economic policy making (Rogoff, Sibert 1988, Rogoff 1990). In addition, an important limiting factor leading to significant politically generated fluctuations is the electoral uncertainty resulting in political instability, which becomes more important with greater differences in economic objectives between political rivals who compete in elections (Alesina 1987). Therefore, as a way to overcome the possible abuse of economic policy, there are different institutional arrangements which limit political influence of the policy makers, especially in the area of monetary policy in the way that it is

left to an independent central bank, as well as by overall commitment to rejecting the discretionary rights and accepting the economic policy making rules. Fiscal policy, which is still in the hands of governments - politicians, remains the most likely source of economic policy abuse, which is why there are political budgetary cycles.

Although the analysis of macroeconomic policy is adequate for the countries with developed parliamentary democracy, it happened to be applicable to transition economies as well, characterized by the political system of transition to a consolidated democracy. The two processes of economic and political transition proved to be interrelated and, due to the faults characteristic for a political system in transition, as well as the costs economic transition imposes on the entire society, the most to the poorest, the abuse of economic policy for political purposes is more present than in developed democracies (Brender, Drazen 2005). The economic and political developments in Serbia, characterized by extreme political instability and slowing economic reform, as well as frequent mismanagement of fiscal policy for political purposes, but also the acceptance of the model of economic development based on aggregate demand and aggregate domestic consumption, which provides opportunities for misuse for political purposes, fit these characteristics.

1. The importance of institutional changes

Changes, with economic consequences, have occurred in the history of mankind and can be regarded as the way in which the institutional development influences economic growth and development. This can be applied even to the oldest forms of organization of human society, when the development of agricultural production had to be designed together with the appropriate system of ownership and property rights. At first, this system was based on communal property, and then evolved towards the separation of the state and private property, causing significant economic changes. The collapse of the Roman Empire, just as the Industrial Revolution later, can be observed in the context of significant institutional and organizational changes, which occurred in both cases. Of course, history can be seen through the rises and downfalls of nations and empires, the success or failure of an organizational solution are related to the progression or regression of societies, while technological progress is a necessary condition but not sufficient for success. The key role, however, is that which institutions play in promoting economic and social development.

The dominant influence of institutions on economic growth requires their clear definition and distinction between the institutional characteristics - economic institutions, political institutions and political power (Acemoglu 2010, 111). Institutions can be defined as the "rules of the game in society, or more formally, are the humanly devised constraints that shape human

interaction” (North 1990, 3). Economic institutions shape the motives of key economic players in a society, affecting investment in physical and human capital, as well as in technology, but also determine the organization of production. Economic institutions influence the differences in the degree of effectiveness and the potential of a country for economic growth, but also the differences in the distribution of profits between individuals and social groups. Economic institutions are the result of collective choices that a society makes. In terms of the choice of economic institutions, there are conflicts of interest between different groups and individuals.

Economic institutions have the following characteristics: they regulate economic behavior in a way that in the short term may be conflicting with individual preferences; they derive from common expectations that are the result of tradition, trust, legal frameworks and the like; the best results are obtained if economy is perceived as “a game that is replayed” in which most transactions happen many times; work for all individuals in the same way, regardless of the identity of the economic entity conducting a transaction (anonymity). Institutions thereby provide key economic functions: protection of property rights and contracts; the existence, operation and regulation of banks and financial markets; social policy and social security (labor market institutions); clear tax policy that can be considered fair, predictable and imposed on all economic entities; the policy of competition, industrial policy and trade policy; the trust between economic agents, trust and honesty actions of public institutions (lack of corruption, the reliability of law enforcement and the like) (Hare 2001, 5-6).

Taking into account the characteristics of economic institutions, they can be considered specific public goods that market cannot provide, and those provided by the market, would be regulated by the state in accordance with public interest. Therefore, the role of the state in the creation and functioning of institutions is high. At the state level, politics plays crucial role in deciding on these matters.

Political power occurs as a decisive factor in resolving conflicts over the choice of economic institutions and in their shaping. Political power *de jure* (formal) originates from the political institutions that determine constraints and motivations of key players in the political sphere. Thus defined political power involves the form of a government (democracy versus dictatorship) or the scope of limitations for politicians or political elites. The *de facto* political power may be in the hands of those who were not allocated such power through political institutions, but rather through their ability to impose their desires and motivations to the whole society using different methods. This ability can originate from their economic power, or the economic resources available. (Acemoglu 2010, 112).

There are different approaches to defining institutions. One of the most common is that institutions cannot be identified with organization. In the terminology of the game theory, institutions are the rules of the game, while organizations are the players themselves. Organizations can comprise groups of individuals who may have a common interest. Their action is limited by the rules of the game, although they, in turn, influence the evolution of these rules. (North 1990) A broader concept of defining institutions includes the previous one, but also includes their definition in sociology and political science, so that they represent a system of institutional elements, as nonphysical factors that are created by mankind, who together generate regularity in behavior. These institutional elements are exogenous to the individuals whose behavior they affect, and include rules, beliefs and organizations. The rules determine effective behavior of individual players. Even when there is a strong formal structure of an organization, individuals still have to be motivated to obey the rules. This becomes especially important for the sustainability of the institutions in which there is an informal structure, in which the players need to know that certain actions, i.e. certain behavior will be followed by a reward or punishment. Individuals thus decide on accepting the rules and engaging in expected activities in order to secure the best outcomes in a given institutional structure.

Institutional analysis often involves contextual character of institutions, which, on the one hand, explains that more than one group of different institutions may be created in certain circumstances, and, on the other hand, that the emergence of certain institutions and their sustainability and development, stem from historical development, because there is a historical causality in the evolution of institutions.

2. Models of influence of political instability on economic growth

Political instability is included in economic models as a factor that influences the decision-making of individual economic agents and policy makers in a way that they do not choose the optimal solution. Although political instability can be defined in different ways - from frequent changes of government - policy makers, regular - in elections, or irregular – in upheavals or revolutions, through ethnic and political conflict in the society, it has two important characteristics (Carmignani 2003, 1). The first is the inability to resolve conflicts within institutional frameworks, which is why economic, ideological or ethnic problems and conflicts are resolved through violence, politically motivated murder, or revolution, which is typical for non-democratic societies. The other is connected with certain political events that cause instability and uncertainty. Such events are frequent changes of government or electoral surprises that occur as a result of increased differences in interests and objectives between political rivals, as well as changes in the preferences of the voters. Such instability is present in the semi-democratic and in democratic societies.

The impact of political instability on economic development is reflected in generating uncertainty about the stability of institutions, as well as about future economic policy of the government (inflation rates, tax burdens, government expenditure, exchange rate policy, the amount of aggregate demand). This can affect the security of property rights, the inflow of funds from abroad, capital productivity, which in turn influences the decisions of economic agents to invest, but also on the decisions of economic policy makers themselves, which can be triggered by the abuse of economic policy in order to increase their chances of staying in office or to tie the next government's moves to their current decisions. The greater probability of losing in the elections, the more encouraged are policymakers to abuse economic policy.

One of the important consequences of political instability is the one it has on economic growth. If we start from the well-known new classical production function, which for firm i reads as follows (Carmignani 2003, 3-5):

$$Y_i = A(K_i)^\alpha (KL_i)^{1-\alpha} \quad (1)$$

political instability affects the part of the income (Y_i), which remains the company i , so that increased instability leads to increased uncertainty whether the company is able to remain the owner of its entire income. This affects the amount of expected profit (π_i) via the probability (σ) that the company will appropriate the λ part of the income ($0 \leq \lambda \leq 1$):

$$E(\pi_i) = (1 - \sigma + \sigma\lambda)Y_i - wL_i - (r + \delta)K_i \quad (2)$$

The intensity of political instability, or uncertainty, as a universal index of political uncertainty is: $(1 - \sigma + \sigma\lambda) \equiv p$, ($0 \leq p \leq 1$), and influences the decisions of entrepreneurs and investors, based on their perception of the extent to which they will be able to appropriate the realized profit. The reduction in economic activity can be expected as a result of mistrust of economic agents, i.e. political instability, which in more general literature is not linked only to political choices and uncertainty about winning the elections (when can changes in economic policy occur), but also about guarantees for property rights and the rule of law in general (the anti-corruption and anti-trust laws). All of this applies to the wider context of the development of institutions and their impact on economic development. It may be formally presented by the equation of profit maximization of a firm, with technological limitations presented in the following production function:

$$r = p\alpha AL^{1-\alpha} - \delta \quad (3)$$

Including households that maximize their intertemporal utility into the model brings the problem of maximization to the well known Euler equation:

$$\frac{\dot{c}}{c} = \frac{1}{\theta}(r - \rho) = \frac{1}{\theta} [p\alpha AL^{1-\alpha} - \delta - \rho] \quad (4)$$

According to this equation, higher index of political instability causes a lower rate of economic growth, reducing the accumulation of capital, as well as consumption and income growth.

The development of endogenous growth theory focuses on political and, within them, the institutional factors that affect economic development, questioning whether the poor countries actually chose the low rate of economic growth and how economic policy can play a crucial role in economic development. Economic policy, in fact, cannot be taken as exogenous in the model because it is not a random variable, defined outside the system. It is actually the result of decisions, determined by deliberate and specific goals, of individuals and groups who have motives (goals) and restrictions similar to those of economic agents in microeconomic optimization models. Therefore, the need arises to associate the theories of endogenous growth with the theory of endogenous economic policy¹ (Persson, Tabellini 1992, 5). This would provide an appropriate analytical framework for considering the factors of economic growth and development, with the aim of identifying the reasons why the differences in economic policy have the dominant effect on the differences in the levels of economic development among countries. This requires the analysis of political motives and political institutions. The distribution of political power in the society is endogenous. In this context, we consider the effects of economic growth on the protection of property rights, primarily through the influence of the motives of investors to invest.

This analysis can be performed without direct involvement of political institutions and mechanisms of political influence - where there are two groups of agents, those who invest and those who consume, and inadequate protection of property rights affects the motivation to redistribute resources between them in favor of consumption, which reduces accumulation and growth (Benhabib, Rustichini 1991). Direct involvement of the political process and mechanisms of policy formulation is also possible, when the effects of political conflicts are considered in relation to the size (portion) of the income to be redistributed in a democratic society. In this case, with the presence of rational voters, the result, in the form of equilibrium tax rates, depends on the presence of inequality in the society (Meltzer, Richard 1981). In the overlapping generations model (Persson, Tabellini 1991), redistribution is bad for growth, and greater inequality causes slower growth, unless that redistribution means greater investment in education (Perotti 1990, Saint-Paul, Verdier 1993). Another group of theories analyzes the

¹ This is what the theory of macroeconomic policy relating to the formulation and implementation of economic policy is often called in the models that include preferences of politicians arising from their opportunistic or partisan motives.

functional distribution of income and its impact on economic growth (Alesina, Rodrik 1991, Bertola 1990), unlike previous models in which the distribution of income was related to determining the equilibrium of the general income tax, functional distribution affects the cross-sector differences in tax rates.

Therefore, political institutions occur as a decisive factor for the aggregation (reduction) of conflicts that exist between individual interests into one public policy that is implemented. Because of this, in democratic societies, income tax depends on the degree of inequality present, in contrast to the non-democratic societies where inequality does not necessarily cause taxes in favor of income redistribution. However, cross-sector differences in taxation, in democratic societies, like in non-democratic regimes, may primarily stem from the influence of certain interest groups that can lobby and exercise various forms of pressure. Thus, the differences in taxation do not arise from the differences in the number of those who experience positive or negative effects of taxation, but from the question who and what groups are more or less taxed and what is their political influence. Consequently, higher growth is achieved in those democracies which have achieved greater equality in the distribution, which is not true for non-democratic society. On the other hand, higher concentration of power and influence of land owners (for example, as one of the factors of production) results in slower growth, regardless of whether it is a democratic or a non-democratic society.

3. An example of the influence of institutional and political changes in transition economies

The countries that have started economic and political transition, in order to build market economic system and a democratic society, have in fact changed two important factors for economic development – the political institutions and the distribution of economic resources in the society. Both elements are usually relatively stable and slow to change, but the transition was a chance for this. Political institutions occur as results of collective choices, and their evolution is determined by the distribution of political power in the society, which is why they are relatively unchangeable. Political institutions allocate *de jure* political power, and those who have the political power to influence the evolution of political institutions seek to maintain political institutions that secure political power for them. The allocation of resources in which one group is richer than others secures it *de facto* political power, so it uses economic and political institutions to its advantage, in order to maintain the initial disparity. However, the “shocks” such as transition, have the potential to change political institutions, which results in changes in economic institutions and economic growth. The two most important market institutions are: the protection of property rights and the rule of law.

Political instability is more pronounced in the non-developed democracies: transition and semi-democratic political regimes². It is transition economies that have the characteristics of such political regimes, while the development of the market economy system is implemented in parallel with the process of building a democratic political system. These two processes occur as mutually conditioned, so that the success of economic reforms depends on the stage of development of the democratic system. At the same time, because of the costs that economic reforms, especially in the early stages, impose in the form of increased unemployment and reduced income, it happens that further implementation of economic reforms depends on political decisions made by economic policy makers, who, depending on their opportunistic motives - to remain in power, can choose slower reforms or abandon certain policy measures in order to ensure greater public support in elections. This is precisely why some political forces occur as the main culprits of slow progress in economic transition in some countries (Cerovic 2012, 395).

The decision to develop market economy in former socialist countries coincided with the choice to develop a democratic political system. The third great wave of democratization³ happened in the 1990s, in these countries, with the fall of the Iron Curtain and the collapse of the socialist economic system. Although it is possible to develop a market economy within a non-democratic - authoritarian regime, the changes that occurred in these countries were ideological in nature, since they implied a break with their previous non-democratic system and an intention to develop political and economic systems in the spirit of democratic European tradition. Most of these countries were strongly motivated to join the European economic and political integration (the European Union). All these and joining the European Union in particular, meant that the development of democratic systems in these countries was predetermined, as one of the main goals to be achieved.

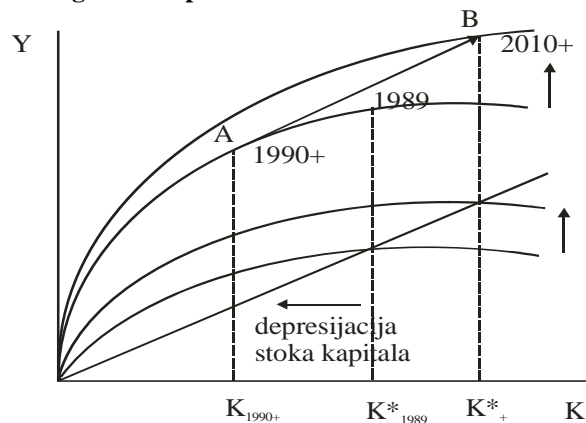
At the same time, the benefits of the development of a democratic system in the center of which is an individual with his/her rights, because: "a system of a representative government by majority rule in which some individuals rights are nonetheless protected from interference by the state and cannot be restricted even by an electoral majority" (Dunleavy, O'Leary 1987, 5) should have been significant incentive for the support for the reforms despite the initial costs that affected the poorest segments of the population the most. The initial effects of the economic reforms taken were the decline in income and economic growth. The decline in income compared to that achieved the 1989 in these countries

² Classification was made by Gasiorovski: democratic, semi-democratic, authoritarian, and transition regimes (Gasirowski 1993, 2). The classification of Freedom House is similar, based on the development index of the democratic system.

³ The first two waves were: before WWI and after WWII – with the abolishment of the colonial system (Acemoglu, Robinson 2006).

was between 10% and 20%, with the exception of a far more drastic drop of nearly 30% in Estonia, or up to 45% in Russia. Such a drastic drop in income levels was unprecedented in economic history, and even higher than that which occurred in the capitalist countries during the Great Depression in the 1930s, when the cumulative drop in income in the USA was 27%. Also, it took 10 years to almost all the countries to achieve the income level from 1989 (except for Russia, where it was achieved as late as in 2006).

Figure 1: Changes in the production function of economies in transition



Source: Gartner 2009, 254

As part of a comprehensive amount of literature dealing with the determination of the reasons for the drop in income that occurred in the early stages of economic transition (transition - transformational recession), lists a wide range of factors for this phenomenon: systematic reasons (Kornai 1994, Blanchard, Kremer 1997), external trade shocks (Rodrik 1994) and errors of economic policy (Calvo, Coricelli 1993, Taylor 1994). The factors that caused the drop in income originated both from the aggregate demand and aggregate supply sides. The fall in aggregate demand in the initial stage of transition was accompanied by a recovery of income in the later stages that originated from the aggregate supply side - primarily due to changes in technology (Figure 1). On the other hand, the drop in income can be explained by the factors of aggregate supply - from the changes in relative prices due to the need for removing the distortions accumulated in the socialist period, the necessary technological changes with respect to changes in the structure of production, as well as the factors of disruptions in supply chains between the producers within an economy, and the necessity of opening to the world market. Thus, the factors that caused transitional recession are combined. Similar situation is true when it comes to the factors that explain the economic trends and economic recovery during the transition, as well as the significant differences that can be observed in realized GDP growth rates across the transition economies (Table 1).

Table 1: Performance and results determiners in transition economies

The factors that predominantly determine growth and performance of transition economies	The factors that determine growth and performance of transition economies to a lesser extent
Certain initial conditions (past experiences with the market and market institutions)	Certain initial conditions (pre-transition reforms, having natural resources)
Structural reforms (restructuring of the companies, the financial sector reforms)	The speed of the reforms
The possibility of penetration and competition	Ownership and privatization
Macroeconomic stability	One digit inflation rates
International trade, export	Foreign currency exchange rates
Lack of wars and conflicts	The production factor inputs
Institutions and development of institutions	Institutions with good practice
Political restrictions	Capital account convertibility and trade control
Good management and effective capacity of the state	Democracy

Source: Turley, Luke P 2011, 263

4.1 The influence of distribution inequality on economic growth in transition economies

Countries in transition had the unique opportunity to direct their economic and political reforms towards achieving the goal of rapid economic development, following the conclusions of very extensive writings on the impact of political factors and income distribution in a country on its economic development. According to these findings, countries with greater equality in the distribution of income (or total stock of capital or of a country) manage to provide rapid economic development, and thus improved living standards. This fact corresponds to the requirement that the economic reforms are conducted so as to avoid widening of the gap between the rich and the poor, and to strengthen the position of the middle class, which would constitute the basis for sustainable economic development.

One of the channels of the impact of inequality in the distribution of income and wealth on economic growth is through the political and institutional system. Since endogenous growth models include the impact on a long-term economic growth, the government's decisions become important factors and mechanisms that lie behind the choice of economic policy. Among them, the key ones are political and economic factors that determine the transformation of political

preferences of the population (voters) in the electoral process, the choice of economic policy by the politicians in power. For the methodological framework for analyzing the impact that the distribution of income and wealth policy (ownership of the production factors - capital, highly skilled labor and technology) have on economic growth, which can also be applied to transition economies, we can use the Alesina and Rodrik model. (Alesina, Rodrik 1994). It allows us to connect the concepts developed in the theory of endogenous growth with the macroeconomic concepts related to the question of the impact of preferences of most voters on tax rate (model of opportunistic political cycles).

This model proves that the inequality in the ownership of the factors of production (there is a distinction between accumulated and non-accumulated factors) leads to slower economic growth. Growth is determined by the expansion of the capital stock (accumulated factors), which is determined by individual decisions on the amount of savings. Services (and goods) provided by the state are financed from the tax on capital (accumulated factors). Everybody benefits from low taxes on capital, but individuals differ with respect to the preferred ideal tax rate, or, since it affects capital accumulation, there are differences in the preferred rate of economic growth. Individuals who receive income exclusively from capital prefer to maximize the growth rate of the economy, all other favor higher taxes and lower growth rates. The lower the income from capital (all forms of physical capital, human capital and technology), relative to income from labor (unskilled labor), the higher preferred ideal higher taxes, and the lower the rate of economic growth. These individual preferences are aggregated through economic policy, resulting in a particular fiscal policy. Taxes on capital in this model refer to any form of redistributive policies that transfer income to unskilled labor, while reducing the motivation for accumulation.

According to the well known models of political macroeconomics, policy makers are trying to formulate economic policies to meet the preferences of the so-called median voter, and thus increase their chances of gaining public support for the economic policy they advocate, and increase their chances of winning the elections (opportunistic motif of the politicians). Thus, if we maximized the equality of income distribution, this would mean that the stock of capital available to median voter is also increased, which would generate a lower equilibrium tax rate, preferred by the policy makers, and thereby secure higher economic growth rate.

Can economic policy still resist the demands for redistribution that will obviously reduce the rate of economic growth? The answer is that it cannot if the majority of the population is affected by the problem of uneven distribution of the production factors. This will have an impact on the stated fiscal policy, even in the situation of a non-democratic - a dictatorial regime, because the politicians in power always opt for higher taxes and lower growth rates, in order

to avoid the descent from power. Even those dictatorial regimes for which voting in elections is not an important determinant when choosing economic policy must take into account the needs of the society and social conflicts. However, given the nature of a dictatorial regime, the tax rate chosen by a dictatorial regime, and consequently the rate of economic growth, depend on the preferences of the dictator – a technocratic regime favors minimizing redistribution and maximizing growth, a populist regime has opposite preferences.

Conflicts in the society over the distribution have negative effects on economic growth - the greater the inequality in the distribution of income and wealth, the lower the rate of growth (Alesina, Rodrik 1994, 477). The link between growth and distribution is determined by the redistribution policy. At the same time, an indicator of the redistribution policy does not necessarily have to be just tax on capital (accumulated factors of production), but it can be a much broader concept that also takes into account the following: the progressive income tax, the introduction of legislation on minimum wages, trade restrictions and limitations on capital flows, the structure of government expenditure.

When it comes to determining the distribution of wealth and ownership of resources, it is also a very complex task that can take into account different indicators – the Gini coefficients (including the Gini index for land ownership, which is a very approximate indication of the distribution of wealth), the initial level of income per capita (to discuss the possibility of convergence) and the rate of primary school enrollment (initial indication of the level of human capital). However, the distribution of wealth, resources in an economy, does not remain constant over time, but is influenced by growth. In this way, a vote for a particular policy at present affects the rate of growth in future periods, as well as the distribution of income and wealth in the future. Future choices of the society depend on the decisions made in elections today. Therefore, when deciding, voters must take into account the dynamic problem of a social choice.

The model proves that there are two channels that transmit negative impact of inequality on economic growth:

1. the impact of growing inequality on the growth of redistributive policies,
2. the negative effect of redistributive policies on growth.

The model defines redistributive policies very strictly, because it can relate to those elements which do not limit, but rather the opposite – encourage economic growth. Such redistributive policies that encourage investment (additional taxation of high profits, but in certain situations also receive transfers to cover losses), as well as investment in education and human capital would otherwise be suboptimal if left solely to the decisions of households. Also, we should take into account that insufficient volume of redistributive policies when they are necessary, i.e. when there are inequalities because of which a large part of the population is facing dire economic conditions

(poverty), can result in different forms of expropriation of wealth, through the use of non-institutional solutions: theft or revolutions. Both ways have negative effects on investment: increasing the risk of investment, or increasing the resources that are used to protect property rights.

All of the above components of the analysis of the impact of inequality in the distribution of economic growth are also applicable to transition economies, especially if we take into account that it was the transition that implied a change in the previous ownership structure of resources, due to the fact that its most important element was privatization. Therefore, in the early stages of the transition, there was an increase in inequality and increasing poverty in the countries that before the transition recorded the lowest inequality in the world, and in just a few years, they had an alarmingly high inequality - comparable to the countries with the highest inequality in the world. In addition to privatization, which had strong effects on the distribution of income and wealth, changes in government spending that originated from the transition from a socialist to a capitalist economic system, were also very important for growth and distribution. In socialist economies, there were principles of equality and redistribution, which implied significant social costs for the state that provided a high level of education (free of charge), health and social care, so that the circumstances under which the transition began conditioned that the problems of distribution and inequality and poverty were not considered a priority for the policy makers, and for the public as well, who at first was not aware of the changes in the distribution that the introduction of market economy would bring.

The pre-transition, socialist system was characterized by: universal access to health care and education, official absence of poverty, official absence of unemployment, substantial equality in income distribution, high participation rates of women, small differences in the amount of wages, small accumulation of wealth by individuals, universality of transfer payments (pensions, unemployment benefits and benefits for low-income families and the like) (Turley, Luke 2011, 99). Market reforms, however, soon widened inequalities in the society, its divisions and increasing poverty in the countries in transition. This was particularly present in some of them, for example in the republics of the former Soviet Union, among which, according to the poverty index, the most prominent ones were the countries of Central Asia, where the poverty index between 1993 and 1995 exceeded 60%, as compared to other countries in transition in Central Europe, where it was of about 2% in the same period.

Inequality, measured by the Gini coefficient, increased during the first years of economic transition, although there were very marked differences between the countries that coincide with success of the countries in the implementation of transition, as well as with the level of economic growth realized. Thus, the countries of Central Europe registered low growth in inequality and the Gini coefficient remained within the limits that are comparable with the developed

economies of Western Europe, ranging from 0.19 to 0.28 , while the countries of Central Asia recorded extremely high percentages - of more than 50%. The situation was similar in most countries of the former Soviet Union that were close to 50% (in Russia the coefficient was 48%), which ranked them among the countries with the highest inequality, such as some countries in Asia and Latin America. (Milanovic, 1998)

It is possible to observe a significant correlation between the actual economic growth and the changes in measured inequality (the Gini coefficient), so that during the first 8 years of transition (1990-97), the countries with better growth performance registered lower growth in inequality (Keane, Prasad, 2000).

The reasons for such a drastic difference between the transition economies, which had significant effects on economic growth are numerous, and they are primarily related to the historically conditioned institutional conditions in which the transition started – the lack of strong institutions and traditions of democratic government, which led to the fusion of political and economic power, freezing reforms, increased corruption and “capture” of the state. The decisive role in this belonged to the interest groups - financial and industrial oligarchs, who were able to see themselves as losers in the process of implemented reforms (economic transition and the development of democratic society), which is why they used their power to usurp many instruments and the policy measures that resulted in an increase of their own economic well-being and further increase of their political power. These were the reasons why in the transition economies, which did not have an appropriate development strategy, relevant institutional structures, there was a decline in income, rising inequality and poverty. Such negative economic trends have also influenced the reduction of support for the reform transition process, as well as the building of a democratic society that the public mistakenly labeled as the perpetrators of these developments. Instead, because of the power of individuals and interest groups who in the conditions of insufficient democratic reforms overpowered the institutions, the solution appeared in the form of a less democratic regime - but with clear preferences in the area of economic growth and development, reducing poverty and inequality, as well as strong redistributive policies. Such a regime could secure adequate support from the votes, whose position improved by introducing a strong personality as the head of state ("the ruler" in the form of the president or the prime minister). Such an example is Russia, where the acceleration of economic reforms, economic growth and reduction of the Gini coefficient happened under the leadership of Vladimir Putin. At the same time, in spite of favorable economic indicators, there has been no corresponding progress in the development of a democratic society, so that Russia still belongs to the group of consolidated authoritarian regimes (Freedom House).

4.2 Initial conditions, the development of a democratic political system and economic growth of transition economies

In the second decade of the implementation of economic transition (the second generation reforms) the role and importance of institutions are becoming increasingly important. Similar conclusions can be drawn for the development of a democratic political system. This is especially important for those former socialist countries that have the goal of joining the European Union, whose results in the development of democratic systems differ from those countries that did not have such a goal. Determining the sequence of steps of the reform process gets an extra dimension if we include the development of a democratic system, when it becomes important to what extent the development of a democratic system can be stimulating, or the opposite - a limiting factor in economic transition.

Taking into account that a democratic political system requires that economic policy, and beyond that - economic reforms, must have the support of the majority to be formulated and implemented, in the context of macroeconomic policy, it could be concluded that in the first phase, they should develop market institutions and undertake unpopular reforms, and then complete democratization, without fear that the political process will be used to stop the reforms, primarily due to opportunistic motives of the policy makers who want to remain in power. For this, they would be willing to give up some reforms that could create significant costs to the voters, and thus reduce their chances of winning the election. However, in determining the sequence of moves of economic and political reforms, they must be aware that empirical research suggests that the introduction of a democratic system increases the popularity and support for the transition to a market economic system, but the opposite is not true. (Grosjean, Senik, 2008) Democracy facilitates economic liberalization, because those individuals who support free market economy are at the same time also those who advocate personal freedom and a democratic political system.

After more than two decades since the start of transition, it can be concluded that it is impossible to determine a unique path - a trajectory of the reform that should have been followed and that would be universal for all the countries. The differences between countries in the reforms, including the democratization process, were conditioned by historical differences that existed in the pre-communist period in the areas of: cultural development, political tradition, an economic and social development. Furthermore, an important defining difference emerged, the geopolitical position of the country.

However, the factor of globalization and especially the desire to join the European Union promoted similarities and harmonization of different policies, the construction of similar institutional frameworks in line with EU standards and rules. Thus, some of the factors conditioned that the path of reforms implemented by countries are divergent, and other factors made them similar, convergent,

indicating a universal path of reforms required for a successful implementation of economic transition and building a consolidated democratic system.

The analysis of the indicators of successful realization of economic transition, building a democratic society and the resulting economic development suggests that the countries which have escaped the existence of some form of “institutional vacuum” were more successful. In this, the forms of “institutional vacuum” were different, the same way as their causes, among which are: lack of tradition in developing market institution, and the institutions of a democratic political system, the fusion of economic and political power, and their abuse by powerful individuals or interest groups, political factors of tearing multinational states and the formation of new states (followed by war conflicts). In addition to these - internal factors, of particular importance was also an external factor - which group of countries, determined by the enlargement policy of the European Union, a country belonged to (2004 Kostecky, 38):

- 1) the countries invited to join the EU,
- 2) the countries that are given the chance to apply for accession to the EU in the foreseeable future (after realizing certain reforms and the fulfillment of the conditions)
- 3) the countries whose accession was never considered.

Depending on the classification, some countries had a predefined trajectory of the reforms to be implemented, and the institutions were primarily “imposed” from outside. Although this development, where the desire to join the European Union meant the imposition of institutional solutions from outside, may indicate a limitation of economic policy, and politics in general, including autonomy in the conduct of general policy, still, these countries were much more successful in implementing the reforms and building a democratic system. This is indicated by the data on actual results of the development of a country's democratic system, the realized rate of economic growth, income *per capita* and the like.

Countries that did not “import” institutional arrangements were confronted with many more limitations that included the choice of institutions (the direction of their development) which were predominantly influenced by political factors (political power - *de jure* and *de facto*). Other important choices were made based on this one: the choice of the economic development model and the choice of the economic policy model. Since exogenous factors do not direct these choices to a significant extent, which take place over a longer period of time, during which inevitably there are periods of aggravated economic position of certain segments of the society, as well as possible bad macroeconomic indicators, it is possible to abuse elections for the purposes that do not always contribute to the well-being of the society and economic development. This is why concepts of political macroeconomics that indicate possible abuse of economic policy for political purposes are even more important than in those countries with developed market and democratic institutions.

Table 2: Type of political regime, BDP (nominal) per capita and EU membership (for 2011)

	Country	Type of political regime (democracy index)	GDP (nominal) per capita in USD	EU Membership
Consolidated democracies	Estonia	1.93	16,568	Da
	Slovenia	1.93	24,900	Da
	Latvia	2.14	13,618	
	The Czech Republic	2.18	20,436	Da
	Poland	2.21	13,469	Da
	Lithuania	2.25	13,262	Da
	Slovakia	2.54	17,644	Da
	Hungary	2.61	14,050	Da
Semi-consolidated democracies	Bulgaria	3.07	7,308	Da
	Romania	3.43	8,875	Da
	Croatia	3.64	14,182	Ne
	Serbia	3.64	5,725	Ne
	Macedonia	3.82	5,162	Ne
	Montenegro	3.82	7,317	Ne
	Albania	4.04	4,020	Ne
	Bosnia and Herzegovina	4.32	4,654	Ne
	Ukraine	4.61	3,624	Ne
	Georgia	4.86	3,210	Ne
Transition governments or hybrid regimes	Moldova	4.96	1,969	Ne
	Armenia	5.43	3,076	Ne
	Kyrgyzstan	6.11	1,070	Ne
	Tajikistan	6.14	836	Ne
	Russia	6.14	12,993	Ne
Semi-consolidated authoritarian regimes	Kazakhstan	6.43	11,167	Ne
Consolidated authoritarian regimes	Azerbaijan	6.46	7,106	Ne
	Belarus	6.57	5,845	Ne
	Turkmenistan	6.93	5,078	Ne
	Uzbekistan	6.93	1,559	Ne

Source: Freedom House, MMF

5. Conclusion

Institutions are mechanisms that shape economic behavior and the interactions among economic agents; these are the rules of the game in market economies. Successful market economy system (capitalism) is not the consequence of a spontaneous action of economic agents, but is the product of well-designed and implemented institutional arrangements that allow for its maintenance, reproduction and development. Institutions are therefore particularly important for generating economic growth, economic growth depends on the level of their development. Economic transition, as a major institutional change, among the greatest in the recent economic history, required the development of appropriate credible institutions, which took time, and which depended on the tradition of previous existence of market economy institutions (in the pre-socialist period), and the adopted standards and schemes of social behavior. Countries were more successful in the implementation of transition, achieving higher growth rates, if they avoided being caught in the so-called institutional vacuum between the previous, socialist system and the new market-oriented one, and if they established and implemented the institutions effectively enough. A specially significant feature of this process was the development of a democratic system that was happening in parallel with economic transition, and which was supposed to encourage not only the establishment of relevant institutions, but also to be a form of a reward for the citizens for accepting certain, initial losses which inevitably came with the introduction of a new economic system (the initial fall in income, rising unemployment rate, the growth of inequality and the phenomenon of obvious poverty). The development of institutions in the countries with poor tradition in their development was adversely affected by the strengthening of individuals and interest groups that integrated political and economic powers, abusing the mechanisms of the democratic system in order to appropriate even greater economic and political power. In such circumstances, the elements of acceptance of an authoritarian system, with clear preferences in the field of economic development, improved living standards, reduced poverty and inequality, occurred as socially acceptable and preferred by the public.

The endogenous growth theory can be integrated with the theory of endogenous economic policy, where the key question is the aggregation of preferences of the public - the voters into the economic policy of the government. Political macroeconomics, which considers the effects politically motivated decisions of the policy makers have on macroeconomic trends, can be applied in the analysis of economic growth as well. This analysis is primarily concerned with the impact of political instability on slower economic growth due to increased uncertainty about the stability of institutions, the future economic policy measures, which cause a reduction in investment and foreign capital inflows. Besides the results of political instability, reducing the preference of the majority to a single economic policy can lead to the choice of redistributive policies that reduce the rate of economic growth. These tendencies are impossible to resist if there is significant stratification and poverty in the country.

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INSTITUCIONALNE I POLITIČKE DETERMINANTE PRIVREDNOG RAZVOJA

Apstrakt: U radu se razmatraju važna pitanja uticaja institucija i političke nestabilnosti na privredni razvoj. Među faktorima koji dovode do razlika u nivou dostignute ekonomske razvijenosti između zemalja, su i razlike u nivou razvijenosti institucija. U radu se najpre razmatraju pitanja definisanja institucija, razlike između ekonomskih institucija, političkih institucija i političke moći. Rad razmatra i mogućnost integracije teorija endogenog privrednog rasta sa teorijama endogene ekonomske politike (razvijene u okviru političke makroekonomije), kako bi se formulisana ekonomska politika, koja će imati posledice na privredni rast, analizirala na osnovu sumiranja preferencija glasača u jedinstvenu ekonomsku politiku koja je politički motivisana (prvenstveno oportunističkim motivom). U ovom se kontekstu razmatra kako će postojanje političke nestabilnosti koja proizvodi neizvesnost u vezi sa održivošću institucija, kao i sa budućim ciljevima i merama ekonomske politike, uticati na smanjenje privrednog rasta. U radu se razmatra i primer velike institucionalne promene do koje je došlo u bivšim socijalističkim zemljama koje su se opredelile za ekonomsku tranziciju i izgradnju demokratskog društva. S tim u vezi se razmatraju institucionalni faktori koji su doprinosili uspešnosti procesa tranzicije, kao i faktori koji su opredeljivali razlike u izgradnji institucionalnih okvira u ovim zemljama.

Ključne reči: institucije, politička nestabilnost, politička makroekonomija, ekonomije u tranziciji



STRUCTURING OF OPTIMAL INVESTMENT PORTFOLIO OF VOLUNTARY PENSION FUND BY ANALYTIC NETWORK PROCESS

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Abstract: Traditional portfolio theory, based on some basic rules, sufficiently precise and often subjectively selects appropriate class of securities that should make the optimal investment portfolio. In regard to the nature on multicriteria decision-making in financial management, the paper proposes operation and demonstrates the possibility of methodological support of analytic network process in the selection and structure of optimal investment portfolio in the example of voluntary pension fund, as a hypothetical investor.

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Introduction

We live in a changing world in which global competition has created and facilitated the development of new financial products and services. In a dynamic and unpredictable environment on a daily basis the question is imposed whether the time is right to invest and if so for which form of investments should one decide. In an effort to get the answers, it is necessary to define the objectives that want to be achieved by investing. Investors' preferences (liability or aversion to risk) a priori determine the shape and structure of investments. It is evident that the investor in finding the optimal combination between return and risk is not

interested in investing in a security. High transaction costs increase the possibility of achieving the loss and therefore he is investing in a set of securities of various types and characteristics. If a set of securities is given in which it can make a selection, portfolio theory allows the investor to decide which combination of securities gives the best profitability for a given level of risk.

Concerning that superannuation is one of the most important investments of each individual, in order to prevent poverty in old age and ensure consistent energy at all stages of life cycle, the subject of analysis will be the optimization of the investment portfolio of the voluntary pension fund using analytic network process. The voluntary pension fund as a type of investment fund collects voluntary pension contributions and do their investment to ensure private pensions. These institutions which are introduced as the third pier of the current system of pension and disability insurance has an aim to make the pension system persistent to demographic changes and less dependent on the estate.

2. Literature review

Structuring an effective investment portfolio, in order to maximize the investor's utility, usually involves two phases (Hurson, Zopounidis 1995; 1997): 1) the evaluation of securities so as to choose the portfolio that best satisfies the preferences of investors and 2) specification of the capital amount which will be invested in each of the securities selected in the first phase. Theoretical foundations of the traditional portfolio theory, based on the mean variance was set by Markowitz, (1952; 1959), but many researchers after him, such as Jacquillat (1972), Zeleny (1977; 1982), Colson & Zeleny (1979), Spronk & Halerbah, (1997), etc., focused their attention on the multiple criteria nature of the problem, proving that multicriteria paradigm (Roy 1988) provides an adequate methodological evaluation support of available securities, in purpose of forming an efficient portfolio. Studies of this problem were mostly focused on the modeling and investor presentation of policies and objectives, with the appropriate mathematical model. The model describes all the relevant performances of the securities and provides their overall evaluation, whereas securities with the best score are selected for the second phase of the analysis. The investor, as the decision maker, specifies the objectives and criteria for the portfolio construction, through an iterative and interactive process that identifies a portfolio which best represents its investment policy. It is known that the company *Wilshire* developed the computer programs with which it is possible to specify any combination of portfolio investments. These programs begun from historical data and with the help of subjective adjustments perform an optimal evaluation of future prospects.

3. Methodology

The analytic network process (ANP) (Saaty 2001), is a relatively new theory that extends the concept of the Analytic Hierarchy Process (AHP) (Saaty 1980) on the cases where there is interdependence and feedback information. Although the AHP and ANP conduct the priorities by comparing pairs of elements of decision making, among them there are some differences (Saaty 2005). The first is reflected in the fact that AHP is a special case of ANP, because generalizing the access of the supermatrice, introduced in the AHP concept, ANP allows interactions and feedback in clusters (inner dependence) and between clusters (outer dependence). This feedback includes the most complex relationships, especially when the risks and uncertainties are present. Second, the ANP is non-linear structure, while the AHP is hierarchical and linear structure, with the aim at the top level and the alternatives at the lowest level (Saaty 1999). Basically, the AHP model is a framework for deciding which assumes a one-way hierarchical relationship between the level of decision making, where the elements of a lower level compare in relation to the elements of a higher level, while ANP model does not require strict hierarchical structure, so the comparison of two-way pairs is also consequent. The first part consists of a control hierarchy or network criteria and subcriteria that control the interactions in the system which studies them. The second part is a influence network, among the elements and clusters, whereby an ANP model can have one or greater number of networks. This network ranges from criteria to criteria and for each control criterion the supermatrice of limiting effect is processing. Finally, each supermatrice is weighted with priority of its control criteria and the results are synthesized through adding all the control criteria. In addition, the problem is often studied through the control hierarchy or a system consisting of the benefits, costs, possibilities and risks. Synthesized results of four control systems are combined by calculating the ratio of the product benefits and possibilities and product of costs and risks, in order to determine the best outcome. Occasionally, the other formulas also can be used in order to combine the results (Saaty 1999).

The procedure of applying ANP model of decision making has five steps (Saaty 2001):

- 1) **Decomposition of the problem.** Decision problem is decomposed into its main components.
- 2) **The formation clusters for the evaluation.** After defining the objectives of decision making, it is necessary to generate the clusters for the evaluation as follows the criterion, subcriterion and cluster alternative.
- 3) **Structuring the ANP model.** ANP is applied to different decision problems in the field of marketing, health, politics, military issues, society, predictions, etc. His prediction proved accurate in impressive applications

in the field of economic trends, sports events and other events, whose outcome became known.

- 4) **Paired comparison and prioritization.** In this step it is necessary to compare pairs of elements of decision making, as well as the synthesis of priorities for all the alternatives. When the paired comparison in the ANP model is performed, the questions are formulated in terms of domination or influence. If the registry element is known, which of the two elements being compared in relation to it, has a greater impact (it is more dominant) in comparison to the registry element? Or, which of these two elements is under the higher influence of the registry element?
- 5) **Sensitivity analysis of solutions.** It is possible to finally make decision and sensitivity analysis in terms of the impact which according to the importance of some criteria or subcriteria on a given solution has the final outcome, and by analyzing to determine how big or small these indicators are.

The main advantage of ANP lies in its use of the scale comparisons 1-9 (Saaty 2010, 10), which include all types of the interactions, which creates presumptions not only to make better decisions, but also for the accurate predictions. So far, this concept has been shown successful with the use of expert knowledge, in predicting economic events, sports results, business, social and political events. On the other hand, although many problems of decision making, particularly prediction, are studied through ANP, it does not necessarily imply that the application of the ANP model always gives better results than using the AHP hierarchy. In fact, there are problems that allow the application of both models.

The analytic hierarchy process and analytic network process, can be used to solve the problem of choice under the conditions of uncertainty (Omkarprasad, Kumar 2006) or as an instrument for prediction. The problem of choice usually involves the performance evaluation of alternative courses of the action, while the prediction using the AHP / ANP, focuses on the performance of relative distribution of probable future outcomes.

Dyer & Forman (1991) suggest three primary areas of prediction, where the AHP could be applied. First, the AHP could be used to combine results of several forecasting techniques, in order to obtain a composite prediction. Second use is when the AHP is used in the selection of the optimal method or techniques for predictions. Third, the AHP can be used as expert opinion to predict. Therefore, the AHP application in prediction can be viewed from two aspects: AHP prediction - the evaluation of the alternative future outcomes and the AHP optimization prediction process.

The successful application of the Analytic Hierarchy Process (AHP) and its extensions, the Analytic Network Process (ANP) in economic forecasting was demonstrated by Saaty and Vargas (1991a; 1991b), Saaty (2001), Gholam-Nezhad

(1987; 1995), Saaty & Gholam-Nezhad (1981), Saaty & Mariano (1979), Blair et al. (1987), Blair et al. (2010), Ulengin & Ulengin (1994), Saaty (2005), Niemira & Saaty (2004), Yuksel (2005) Azis (2010), Voulgaridou et al., (2004). In addition, the analytic network process has proved very successful in ranking and selecting projects, which was demonstrated by Meade & Presley, (2002) as well as Lee & Kim, (2000), then in strategic decision making, Sarkis (2003), and production planning Karsak et al. (2002), optimal planning, & Zhu Momoh, (2003) etc. A good review of the AHP applications were given by Vaidya & Kumar (2006).

Table 1 Scale of relative importance that is used in the AHP / ANP models

The importance of the relative intensity	Definition	Explanation
1	Equal importance	Two activities equally contribute to the aim.
3	Moderate importance of one over the other	The experience and the evaluation slightly favor one activity over another.
5	Essential or strong importance	The experience and the evaluation highly favor one activity over another.
7	Demonstrated importance	One activity is strongly favored and its dominance is demonstrated in practice.
9	Extreme importance	The evidence that favors one activity in comparison to the other is of the highest possible order of affirmation.
2, 4, 6, 8	Moderate values between two adjacent evaluation.	When compromise is needed.
Reciprocity of above nonzero numbers.		If one activity has one of the above numbers, (for example 3) in comparison to the other activity, then the second activity has reciprocal value (i.e. 1/3), when is compared with the other.

Source: Saaty, T., and Kearns, K., *Analytical Planning: The Organization of Systems, The Analytic Hierarchy Process Series, Vol. IV, 1985, 27.*

3. The ANP structuring model of the efficient investment portfolio of the voluntary pension fund

3.1 Description problem

The subject of analysis is voluntary pension fund that wants to optimize its investment portfolio. The investment process involves the investment funds

with an aim to satisfy investors expectations. The decision about portfolio structure is made depending on the current situations in the financial market, the tendency in security price movements, the expectations in the near and distant future and also from the investment objectives of the Fund. The main objectives which the Fund manages are long-term stability, protection of weaker domestic currency and the optimal growth in comparison to taken risk. The circumstances in the economic environment are extremely unfavorable. Low priced securities, worsen bank balance and companies and the violated trust present the main starters of the problem of the adverse selection and moral hazard. All that for the result has decline of the investment activity, increasing unemployment, the deficit growth in balance of payments and decline in aggregate demand, in regard to reduce the economic growth rate. The key issue, among to the basic goals, is whether and when during the year can expect the economy out of recession, because it will have a decisive influence on the structure of the investment portfolio.

Accordingly, the decision making process involves the following stages:

- analysis of the macroeconomic environment and market conditions,
- information analysis on possible forms of investment,
- investment analysis form in terms of profitability with the fulfillment of investment principles
- supply analysis of certain financial instruments

The construction of optimal investment portfolio includes that: a) the expected return and risk influence decisions of the investors and b) the investor has aversion towards the risk. A rational investor tries to avoid the risk, accordingly between two alternatives with the same expected yield will choose which one is burdened with a lower risk. He/she is not ready to accept additional risk if it is not compensated by the additional yield, i.e. the risk premium. The future risk yield is measured with the actual statistical dispersion in comparison to expected return. The absolute statistical measure of dispersion is standard deviation and if the standard deviation is higher, the investor uncertainty is even greater. According to the rule the standard deviation is higher for the series with higher yields, and lower for a series with smaller yields and such as that it can only be used when the series with the same arithmetic mean are compared. If you want to compare different series with arithmetic mean using the coefficient of variation, which represents a relative measure of dispersion and shows the risk per unit of expected return.

Principles reserved by the fund during the security selection in the portfolio are:

1. **Security principle** - the securities of companies with high credit rating are selecting, which is determined by a reputable rating agency.
2. **The principle of diversification** - investing in securities of various types and characteristics in order to reduce investment risk. It is best for the security

yield to be in *the negative correlation*, meaning that the eventual reduction of security yield will be compensated by the other security yield. If the correlation is lower the greater impact of diversification is on reducing variability, in other words the investors are less exposed to the risk.

3. **Principle of maintaining liquidity** - it is possible to quickly and easily sell securities at a relatively stable and standardized price. In order for the price to be stable, it is necessary that financial markets have sufficient depth and width.
 - a) Taking into consideration the security principle the fund invests in:
 - Debt securities issued by the government and central bank
 - Securities issued by legal persons with full guarantee of the state
 - Securities of the International Financial Institutions
 - b) In accordance with the principle of diversification, the fund is managed by the following criteria: **series of securities** (Class AAA to BB, that means the securities are at stake which have investments, and not speculative characteristics), **date of delivery** (in the portfolio the securities of different expire date are included, so that the investors continuously accomplish the yields), **licensor** (highly ranked companies in field of the construction industry, processing industry, petrochemical industry, providing services of financial intermediation - banks and the other non-deposit institutions, etc.), **location** (attractive) and invests in:
 - a) Bank deposits of at least two banks
 - b) The actions of successful companies whose financial statements are audited by an authorized auditor and who gave a positive opinion, the shares of the class A with whom at least 90% of working days have been traded/was traded.
 - c) short, medium and long term bond
 - d) quoted shares on major World Stock Markets
 - e) cash deposits of the banks (the criteria for the bank selection are quarterly financial statements, the interest rate which bank pays on the cash deposit)
 - f) investing in property (land, buildings, special parts of the building, etc., and the criteria are that the property is registered in the public records, that the transfer of the ownership is not limited, that the property is insured from all the risks, without mortgage, rights of use, etc.).

Bearing in mind that during the diversification portfolio of securities already in the portfolio from 15 to 20 shares non-systematic risk is reduced to zero, the investor is not interested in the overall portfolio risk but only in systematic one. The measure of systemic risk portfolio is the beta coefficient that shows how the actual portfolio of concrete portfolio is modifying in relation to the yield of some market portfolio. If the beta is lesser than one yield of a specific portfolio it changes more slowly than market portfolio return, so that the investors exposure to risk is lesser.

- c) In accordance with the principle of liquidity the fund invests in transaction money with the banks

3.2 Construction of the ANP model and paired comparison of model elements

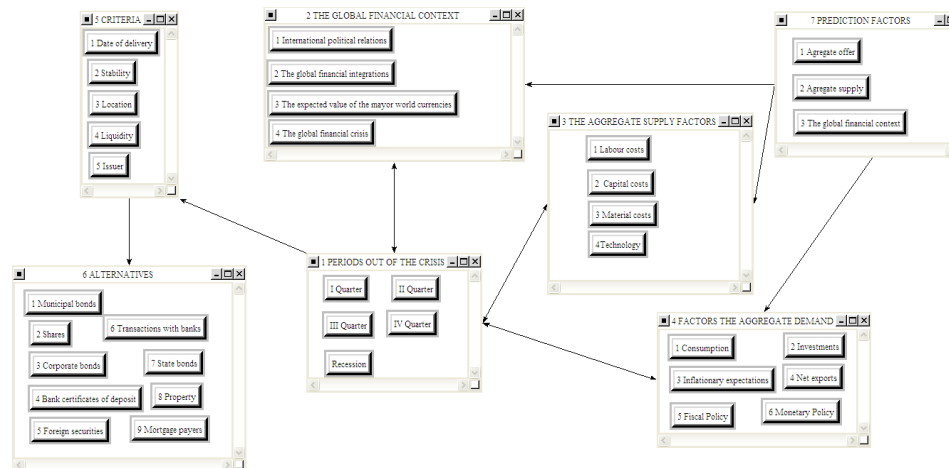
Starting from the given theoretical assumptions, the description of the problem and taking into account the real state of the environment, for selection need of the optimal investment portfolio of a hypothetical voluntary pension fund, the ANP model was set up, whose structure is given in the following way:

- Cluster *Prediction factors*: includes the primary factors which like criteria should be taken into account during the forecasting the economic scenarios.
- Cluster *Periods out of the crisis*: Suppose that the specified time frame is one financial year, so that cluster 1 includes alternative periods out of the economic crisis and recession which coincide with the quarters as well as the possibility for the economy to remain in crisis, i.e. recession.
- Cluster *The global financial context*: includes factors in reference to, subcriteria such as international political relations, the global financial integration, the expected movements of the world currencies and the global financial crises, which may affect the evaluation movement of macroeconomic indicators and predicting the state of the economy.
- Cluster *Aggregate Supply Factors*: includes subcriteria such as labor costs, capital costs, material costs and technology.
- Cluster *Aggregate Demand Factors*: includes subcriteria such as consumption, investments, inflation expectations, net exports, fiscal and monetary policy.
- Cluster *Criteria*: includes criteria in relation to those on which the alternatives are compared, i.e. for the alternative evaluation. These criteria are formulated according to the safety principles, diversification and liquidity maintenance and include: date of delivery, security, location, liquidity and issuer.
- Cluster *Alternative*: includes the investment alternatives such as: state, municipal, corporate and mortgage bonds, stocks, foreign securities, certifications of the bank deposits, property and money transaction with banks.

In Figure 1, we see the ANP model for optimizing the investment portfolio of the voluntary pension fund, whose structure consists of clusters, elements and connection between them. These connections presented by arrows, indicate the direction of influence between the element models. So an arrow from the cluster *prediction factors* is directed towards the cluster of *the aggregate demand factor*, it means that some of the factors in the cluster of *aggregate demand* is under the influence of an element from the cluster of *prediction factors*. Two-way arrow means that there is also feedback information, i.e. mutual influence,

such as the case of feedback between the *periods out of the crisis* clusters and *the cluster of subcriteria of the primary prediction factors*.

Figure 1 The ANP model structuring of the investment portfolio of voluntary pension fund



This complex model of selection in the conditions of uncertainty contains the predictions of economic scenarios, because when some evaluation is considering as: what is more important it date of delivery or stability, the need for forecasting the economic scenario becomes more than obvious, since the answer may depend on the economic environment which would arose as a result of that. The need to involve the scenarios in the ANP evaluation model often becomes apparent. The importance of different tasks and alternatives may depend on the specific future conditions, which is often difficult to predict and can be modeled by the ANP, which enables the consideration of alternative decisions under different circumstances. It is also possible to form the advanced model for performing possible scenarios, which include these factors that could be used to clarify these uncertainties.

For that reason the economic environment scenarios have been defined with cluster 1, as shown in Figure 1. Priorities for the components of a cluster 1 can be based on historical data or expert evaluation by comparing pared elements of decision making with well known current conditions.

The primary factors of the economic forecasting scenarios does not have an equal relative weight, in comparison to prediction goals, as well as the subcriteria which incorporate does not have the equal importance, so it is also necessary to make such comparisons. In our problem, the components of clusters 1, in this case I-IV quarters and the recession, are compared with respect to factors in aggregate demand, supply and global financial context.

However, the question could be formulated in the following way: when the first quarter is observing, will the working expenses or capital costs have greater importance? Or, whether in the case of continuing crisis and recession, international political relations would have greater importance in comparison to global financial integrations? Therefore, between *periods out of crisis* and *aggregate demand* clusters, *supply and global financial context*, there is also feedback information, so it is also necessary to make such paired comparisons.

Paired comparisons are based on AHP/ANP methodology. When comparing factor pairs, the ratio of the relative importance, preference or probability of these factors, depending on need can be determined. This ratio does not have to be based on a standard scale such as meters and kilograms, but only presents the relation of the two factors being compared. In some situations it will be a subjective evaluation, but in the other the comparison is possible. These questions and answers in both directions help to determine the real priorities of decision makers, for all the problem elements.

Sometimes it can happen that between the individual alternatives exists the so-called internal dependence. If it makes sense to ask the question whether on the real estate contract the state and municipal bonds affects more, it must be taken into consideration this dependence and also to make such comparison. Paired comparison of the element models, each clusters or elements within the same cluster, or between different clusters, normally perform, according to scale comparison 1-9 (Table 1)

When the evaluation for each segment model is incorporated, the information are synthesized in order to achieve the general preference of alternative outcomes. This synthesis provides a report that ranks the alternatives (outcomes) in relation to the general purpose. The report includes a detailed ranking that shows how each alternative is evaluated in relation on each criterion.

We will assume that all the necessary comparisons are made in accordance with established theoretical principles and the result is, concerning the optimal hypothetical structure of the investment portfolio, as follows:

Figure 2 Element priorities of the ANP model of structuring an investment portfolio of the voluntary pension fund

Name	Normalized according to the cluster	Limited
I Quarter	0.086095	0.21277
II Quarter	0.081511	0.20144
III Quarter	0.069448	0.17163
IV Quarter	0.074774	0.18479
Recession	0.092806	0.22936
1 Politics and International Relations	0.029531	0.1265
2 Global financial integration	0.040860	0.17514

3 The expected value of the major world currencies	0.086935	0.37263
4 Global financial crisis	0.075972	0.32564
1 Working expenses	0.018404	0.21483
2 Capital costs	0.031676	0.36975
3 Material costs	0.012496	0.14586
4 Tehnology	0.023093	0.26956
1 Consumption	0.013057	0.15241
2 Investments	0.013713	0.16007
3 Inflation expectations	0.008662	0.10111
4 Net exports	0.012877	0.15031
5 Fiscal policy	0.018881	0.22039
6 Monetary policy	0.018479	0.21570
1 Date of delivery	0.015077	0.15809
2 Stability	0.024359	0.25542
3 Location	0.011944	0.12524
4 Liquidity	0.027984	0.29343
5 Issuer	0.016003	0.16780
1 Municipal bonds	0.013100	0.13737
2 Stocks	0.009417	0.09875
3 Corporate bonds	0.011405	0.11959
4 Certificates of deposit	0.011116	0.11656
5 Foreign securities	0.014214	0.14905
6 Banking transactions	0.008533	0.08948
7 Government bonds	0.012904	0.13531
8 Property	0.007249	0.07601
9 Mortgage bonds	0.007428	0.07789
1 Aggregate demand	0.000000	0.00000
2 Aggregate supply	0.000000	0.00000
3 Global financial context	0.000000	0.00000

Table 2 Hypothetical structure of the investment portfolio of voluntary pension fund

<i>Alternatives</i>	<i>Normalized values</i>	<i>Idealized values</i>	<i>Rank alternativs</i>
Municipal bonds	0.1374	0.9222	2
Shares	0.0988	0.6630	6
Corporate bonds	0.1196	0.8027	4
Certificates od deposit	0.1165	0.7821	5
Foreign securities	0.1490	1.0000	1
Banking transactions	0.0895	0.6004	7
Governments bonds	0.1353	0.9077	3
Property	0.0760	0.5102	9
Mortgage bonds	0.0779	0.5226	8

3.3 Results interpretation

Figure 1 shows the obtained priorities of the element model in two ways: as they appear in supermatrice (limited column) and normalized according to the cluster. It is estimated that the greatest impact for the evaluation of the

investment portfolio is to have a scenario, so that the economy remains in recession, whose priority is 0.22936, which could be interpreted as a probability of 22.936% that the economy will remain in recession in the next financial year. Regarding the relative importance of criteria in comparison to which the investment alternatives are evaluating, in the context of the economic scenarios the highest relative importance has the liquidity (0,29343).

Table 1 provides a possible alternative to the rank, and obtained priorities show the structure of investment portfolio, in terms of formulated criteria, bearing in mind that the economic scenarios that we defined as a probable out of the crises and recession by quarter I-IV or the rest of the economy in recession. The column of idealized value shows the results divided by the highest value, so that the highest rank has the priority 1,0. They stayed in the same proportion as in the column of normalized values and can be interpreted as follows in the context value according to the rank: municipal bonds ratings are 92,22% of foreign securities, the government bonds are 90,77% rating etc.

From the viewpoint of the required structure of investment portfolio, the priority of the best alternative ranked-foreign securities, could be interpreted in terms that 14,90% of portfolio should be composed by foreign securities, 13,74% of the portfolio should be composed by municipal bonds, etc. The results of a sensitivity analysis by changing the significant element of a higher level, i.e. registry element, it may more or less significantly influence the order of importance and the observed alternative evaluation, showing what is the alternative performance in terms of each criteria and how these alternatives are sensitive to changes in the importance of criteria.

Table 3 Sensitivity analysis of criteria for structuring the investment portfolio in relation to the growth of relative importance of (probability) recession factors.

Input Value	Matrix: Recession	Date of delivery	Stability	Location	Liquidity	Issuer
0,0	1.00E-04	1.86E-01	2.74E-01	1.38E-01	2.15E-01	1.87E-01
0.2	2.00E-01	1.70E-01	2.63E-01	1.30E-01	2.61E-01	1.76E-01
0.4	4.00E-01	1.53E-01	2.52E-01	1.23E-01	3.07E-01	1.65E-01
0.6	6.00E-01	1.37E-01	2.41E-01	1.16E-01	3.52E-01	1.53E-01
0.8	8.00E-01	1.21E-01	2.30E-01	1.09E-01	3.98E-01	1.42E-01
1,0	1.00E+00	1.05E-01	2.19E-01	1.01E-01	4.44E-01	1.31E-01

From Table 3 shows an increase of relative importance, i.e. estimated probability scenario that the economy will remain in recession, it does not significantly influence the priorities of defined criteria for structuring an investment portfolio: there is a noticeable increase priority in the liquidity from 0.215 to 0.444, at the same time with decrease priority value of other criteria.

On the other hand, it is evident that if the economy goes out of recession, regardless of the period (priority scenarios of recession equals 0.0), the most important evaluated criterion becomes stability, which is the highest priority of 0.274, and then 0.215 liquidity, etc.

Tables 4a and 4b, show how the growth of the relative importance of liquidity criteria (in the context of economic scenarios!) affects the structure of investment portfolio. It is notable that in the structure the municipal bonds are dominating whose shares in the structure increases from 10.3% to 39.7%, while the share of other investment alternatives decreases significantly, provided that the smallest decline in the state is, from 14.1% to 10.9 %, and corporate bonds from 12.3% to 10.6%.

Finally, it should be noted that, if the solution is sensitive to factors in the model, for which there are no available data, need to collect the necessary data and return to the element model evaluation through the paired comparison.

Table 4a. Sensitivity analysis of alternative options due to change of relative importance of the liquidity factors.

Input Value	Matrix: Liquidity	Municipal bonds	Shares	Corporate bonds	Certificates of deposits
0,0	1.00E-04	1.03E-01	1.01E-01	1.23E-01	1.22E-01
0.2	2.00E-01	1.62E-01	9.73E-02	1.17E-01	1.12E-01
0.4	4.00E-01	2.21E-01	9.40E-02	1.11E-01	1.03E-01
0.6	6.00E-01	2.79E-01	9.07E-02	1.06E-01	9.30E-02
0.8	8.00E-01	3.38E-01	8.73E-02	9.98E-02	8.33E-02
1,0	1.00E+00	3.97E-01	8.40E-02	9.40E-02	7.36E-02

Table 4b. Sensitivity analysis of alternative options due to change of relative values of the liquidity factors.

Foreign securities	Banking transactions	Government bonds	Property	Mortgage bonds
1.56E-01	9.31E-02	1.41E-01	7.90E-02	8.12E-02
1.44E-01	8.68E-02	1.31E-01	7.39E-02	7.55E-02
1.32E-01	8.06E-02	1.20E-01	6.88E-02	6.99E-02
1.20E-01	7.43E-02	1.09E-01	6.37E-02	6.42E-02
1.07E-01	6.81E-02	9.88E-02	5.86E-02	5.86E-02
9.52E-02	6.18E-02	8.81E-02	5.35E-02	5.29E-02

Conclusion

Bearing in mind the numerous and different criteria and factors that need to be taken into account, structuring of the optimal investment portfolio shows the

complex, multicriteria problem, which requires the methodology of at least identical level of complexity, in order to successfully include all relevant aspects of the problem.

Portfolio must constitute a large number of securities whose yields are moving in different direction. It carries out in different ways: by purchasing programs in various industrial branches, program purchase of different companies of the same branch, investment expansion in different geographical areas, timely classified purchase during different periods, balancing portfolio of the offensive and defensive securities, concerning the securities with the beta coefficient less than one and beta coefficient greater than one. In this way two important goals are achieving: higher portfolio yields from the individual security sum and a lower risk portfolio from the sum of different securities. Designed efficient portfolio is not given once but it should be continuously monitored and modified in order to protect from the cyclical trends in the economy.

The main advantage of the Analytic Network Process, reflects in the fact that enables decision maker to successfully identify and analyze the effect of different, measurable and immeasurable factors in the decision making process and to quickly respond to contextual information and to effectively incorporate them into decision-making process.

Prediction models are closely related to choice modeling. Whenever there are several possibilities, on each of them several factors affect, the predictive model can be used. For the alternative evaluation in such cases it may be useful to first construct separate models for the prediction of one or more alternatives, to assess what is likely to happen if the alternative outcome achieves. In this regard, it is possible and useful to conduct sensitivity analysis of acquired results.

The proposed framework for the support of an efficient investment portfolio construction can easily further extend or modify, in order to adapt better to the specific problem and context.

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STRUKTURIRANJE OPTIMALNOG INVESTICIONOG PORTFOLIJA DOBROVOLJNOG PENZIONOG FONDA PRIMENOM ANALITIČKOG MREŽNOG PROCESA

Apstrakt: Tradicionalna portfolio teorija, polazeći od nekih osnovnih pravila, nedovoljno precizno i često subjektivno vrši selekciju adekvatnih klasa hartija od vrednosti koje treba da čine optimalni investicioni portfolio. S obzirom na višekriterijumsku prirodu donošenja odluka u finansijskom menadžmentu, u radu je predložena i demonstrirana mogućnost metodološke podrške Analitičkog mrežnog procesa u izboru i konstrukciji optimalnog investicionog portfolija na primeru dobrovoljnog penzionog fonda, kao hipotetičkog investitora.

Ključne reči: višekriterijumsko odlučivanje, finansije, investicioni portfolio, dobrovoljni penzioni fond, efikasnost, optimizacija, neizvesnost, tržište, analitički mrežni proces, poređenje parova, verovatnoća.



DYNAMIC INTERACTIONS AMONG INTERNATIONAL EQUITY MARKETS: A SERBIAN PERSPECTIVE

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Abstract: This paper investigates the nature and extent of interactions between the Serbian equity market and selected regional and developed equity markets. Using the most recent data for the appropriate stock market indices spanning the period 2005-2009, market interdependencies are gauged by running cross-correlation tests. The results show statistically significant correlations between the Serbian and German equity markets as well as the Slovenian and Croatian equity markets. Most notably, the highest correlation coefficient is calculated between equity returns in Serbia and Germany. Evidence of bidirectional causality is found among Serbian, Croatian and Slovenian markets. Also paper found unidirectional causality from Hungarian and German markets to Serbian market.

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1. Introduction

Serbia is slowly becoming a part of the global financial system after a period of economic isolation. One of the main steps on this road was the establishment of the Belgrade stock exchange as a representation of the Serbian institutional equity market. After changes of the model of privatisation from 2001, the Belgrade stock exchange began trade with papers. That was the beginning of new era in the business of the Belgrade stock exchange. Serbia now has interactions with all regional equity markets (Samitas, Kenourgios and Paltalidis, 2006). For the last few years, the development of the financial market in Serbia has opened a new era of the mobility of financial resources, whereby the flow of private capital has assumed an increasing role as a source of finance for this market. This paper indicates how strong this impact is using correlations and Granger causality test between indices of regional (Croatia, Slovenia and

Hungary) and equity market indices of developed countries (Germany and the USA) and Serbian equity market index.

The equity market has traditionally been viewed as an indicator or "predictor" of the economy (Comincioli and Wesleyan, 1996). The equity market as an indicator of economic activity, however, does not go without controversy. Sceptics point to the strong economic growth that followed the 1987 equity market crash as a reason to doubt the equity market's predictive ability. Given the controversy that surrounds the equity market as an indicator of future economic activity, it seems relevant to research this topic further.

In his study Kasa found (1992) that benefits from international diversification indicated by low correlations may be overstated for investors with long-term investment horizons if equity markets are moving together. Studies have employed co-integration techniques to explore whether there are linkages and long-term co-movements between both emerging and developed markets (Hasan et al., 2008; Wong et al., 2004). Recent studies detected the relationships among developed and CEE emerging equity markets. Gilmore and McManus (2002) "find that the Czech, Hungary and Poland are not co-integrated with the US equity market during the period spanning from 1995 to 2001". Also, the correlations among returns of these markets seem to be very low. The main conclusion is that US investors can benefit from investing in these emerging markets both in the short and long time horizon. In their recent empirical work, Gupta and Donleavy (2009) "argue that the increasing integration among financial markets gradually reduces benefits derived from international diversification".

Li and Majerowska (2008) examined the linkages between the developed German equity market and the emerging markets in Poland and Czech Republic, using daily stock returns from January 1998 to December 2005, they found evidence that the two emerging markets are weakly linked to the German equity market. But Syriopoulos (2007) "shows that a long run relationship among German and several CEE equity markets exists both in the period before the accession of these CEE countries into European Union than in the post accession period".

Radović, Marinković and Stanković (2011) in their research paper investigated the „behavior“ of the stock market in Serbia for the period before and during the financial crisis using VaR (Value at Risk) methodology. Their study involved the daily stock market returns for the period June 2005-December 2010. The results which obtained indicates that the stock index returns of BELEX 15 are highly volatile especially during the financial crisis period. These results also confirmed a number of other studies that have shown that the financial crisis (at its peak) had a significant effect on the increase in volatility, and therefore the risk to invest in most of the equity markets worldwide, especially in the emerging equity markets.

The rest of the paper is organised as follows: In the next Section, the methodology is reviewed. The data are briefly presented in Section 3, Section 4 discusses findings, and the final Section 5 concludes the paper.

2. Methodology

Simple linear correlation coefficient or the Pearson coefficient (the Pearson product moment correlation coefficient) is the covariance expressed in units of standard deviation of both variables. It is calculated as the ratio between the covariance and the product of standard deviations of both variables, and the equation is:

$$r = \frac{\sum (X - \bar{X})(Y - \bar{Y})}{(n-1)s_x s_y} \quad (1)$$

Or otherwise using the current values of variables X and Y by the following equation:

$$r = \frac{n(\sum XY) - (\sum X)(\sum Y)}{\sqrt{[n(\sum X^2) - (\sum X)^2][n(\sum Y^2) - (\sum Y)^2]}} \quad (2)$$

where is: n-number of observations

$\sum X$ -total value of the variable X

$\sum Y$ -total value of the variable Y

$(\sum X^2)$ -total value of the variables X

$(\sum X)^2$ -square of the total value of the variable X

$(\sum Y^2)$ -total value of the squares of the variables Y

$(\sum Y)^2$ -square of the total value of the variable Y

$\sum XY$ - total value of the variables X and Y

Simple linear correlation coefficient indicates the degree of dependence between variables, and it determines the size dispersion (distribution) data around the regression line. If variables are not associated, dispersion around the regression line is great. With increasing linear relationship, the dispersion is reduced and the graph becomes flatter. If the two variables absolutely agree, all the data lie on the regression line.

The correlation coefficient has a value ranging from -1 to +1. If variables are not related, r is zero. When higher values of independent variables x, and correspond to higher values depending on the variable y and conversely, decreasing the value of independent x, and decreasing values of the dependent y - it is a positive correlation (r>0). Conversely, when higher values of

independent variable x , corresponding to lower values of dependent variable y , and decrease the value of x independent growth dependent y values - it is a negative correlation ($r < 0$).

“Granger causality” is a term for a specific notion of causality in time-series analysis. The idea of Granger causality is a very simple one:

“A variable X Granger-causes Y if Y can be better predicted using the histories of both X and Y than using the history of Y alone.”

$$X_t = \beta_0 + \sum_{j=1}^J \beta_j X_{t-j} + \sum_{k=1}^K \gamma_k Y_{t-k} + \mu_t \quad (3)$$

$$Y_t = \beta_0 + \sum_{j=1}^J \beta_j Y_{t-j} + \sum_{k=1}^K \gamma_k X_{t-k} + \mu_t \quad (4)$$

Summary, if the variable X can help to predict another variable Y , then we say that X Granger causes Y or vice versa, if the variable Y can predict variable X , then we say that Y Granger causes X . If this situation occurs, then we say that between the variables X and Y exists a bidirectional or “full causality”. If variable X causes variable Y , and Y does not cause variable X , and vice versa, and when the variable Y causes X and X does not cause variable Y , then we say that between these two variables in both cases exists unidirectional causality. Finally, if the variable X does not cause Y variable, and if variable Y does not cause X , then we say that these two variables are statistically independent and between them there is no causality.

The null hypothesis that the variable X (e.g. BELEX 15) does not cause (in the Granger sense) variable Y (e.g. SBI TOP) is rejected if the coefficient α_k in equation (3) is significantly different from zero obtained using a standard F test (5). Similarly, we can say that the null hypothesis that the variable Y (SBI TOP) does not cause variable X (BELEX 15) is rejected if the coefficient γ_k from equation (4) is significantly different from zero. Bidirectional causality exists if both coefficients α_k and γ_k along different from zero.

$$F = \frac{[(RSS_r - RSS_{ur})/k]}{RSS_{ur}/[n - 2k - 1]} \quad (5)$$

3. Data analysis

To provide updated results, this study uses daily closing data of six selected equity markets, namely, Serbia, Croatia, Slovenia, Hungary, Germany and the US, covering the period from October 4, 2005 to August 18, 2009 (Figure 1-6).

In this study, the conventional stock returns for these markets are calculated from the following indices:

- BELEX 15 blue chip index for Serbia,
- CROBEX for Croatia,
- SBITOP for Slovenia,
- CETOP for Hungary,
- DAX for Germany, and
- S&P 500 for the USA.

These four years are very interesting because regional indices reached their highest historical values in 2008 and in 2009, because of the impact of the world economic crisis, dropped substantially. Before proving the potential causality and their effects, we will show correlations between BELEX 15 and other indices. Because of the differences in working days between the Belgrade equity market and other equity markets in the region, the numbers of observations are also different. The numbers of observations are in the range of 900 to 957. The estimations with these observations include percentile changes in ROI values.

These ROI values represent two variables used in estimations. Before we use the test for direct Granger causality, we will test correlations between ROI¹ values of BELEX 15 as a represent of the Serbian equity market and other indices from US, German, Hungarian, Croatian and Slovenian equity markets. Table 1 shows summary data for the estimated markets. There are several methods for testing the flow of information and co-movement of prices in stock markets across the countries.

In this paper, the emphasis is given to test the interdependencies among the equity market in Serbia with equity markets of regional countries (Croatia, Slovenia and Hungary) and equity markets in the developed world (Germany and USA) through the following:

- (i) Descriptive statistics, (ii) Correlations and (iii) Granger causality

Descriptive statistics for the stock indices' returns are given in Table 2. These include the distribution of the mean, the standard deviation, the skewness and the kurtosis. A careful examination reveals that the Slovenian equity market offers the highest return at a reasonable risk level. Approximately, at the same level of risk, the Serbian market is offering negative returns. The stock markets of the US, Croatia and Hungary are exhibiting average negative returns for the period under study. The Slovenian market appears to be less risky, whereas the standard deviations of the other markets, except that of the US, are not significantly different. Only the Serbian and German equity markets are positively skewed. The negativity of the skewness is seen as a sign of

¹ Return on investments-calculated like log different between 2 values of stock market index.

nonlinearity in the dynamics of stock markets. All of the displayed skewness statistics have asymmetric distributions. Serbian and German are skewed to the right, as shown by the positive statistics and all others are skewed to the left (negative skewness).

Table 1: Data summary

Country	Index name	Currency	Domestic market capitalization (in USD millions)*
1. Serbia	BELEX 15	Dinar	11 490.5
2. Croatia	CROBEX	Kuna	26 619.0
3. Slovenia	SBITOP	Euro	12 140.9
4. Hungary	CETOP	Hungarian forint	30 036.6
5. Germany	DAX	Euro	1 292 355.3
6. USA	S&P 500	Dollar	11 837 793.3

* Data are for 2009

Source: World Federation of Exchanges

Table 2: Descriptive statistics of daily returns

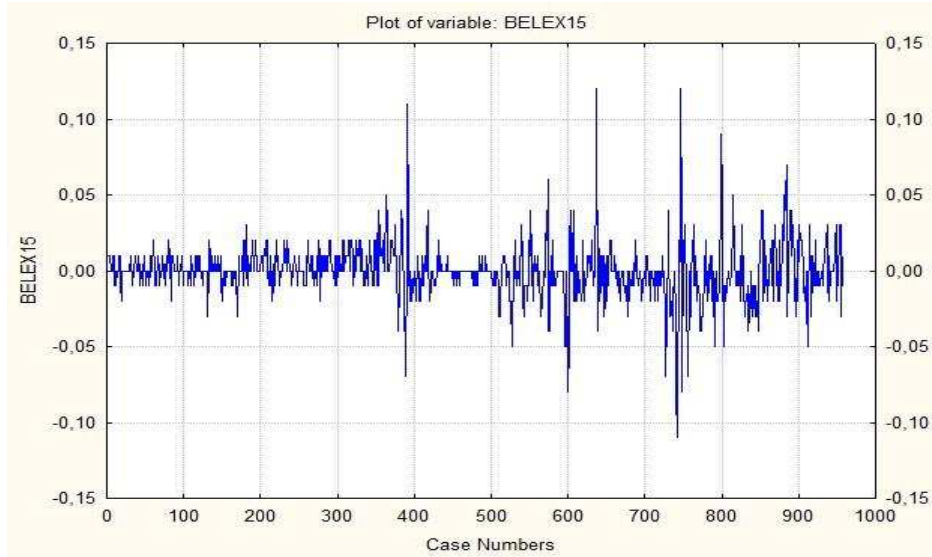
Index	N. obs	Mean	Std. Dev.	Skewness	Kurtosis	C.V
BELEX 15	957	-0.00047254	0.018441	0.19990	9.0158	39.025
CETOP	941	-0.00026888	0.022135	-0.75381	7.8903	82.321
CROBEX	910	-0.00010675	0.018449	-0.21067	8.8507	172.83
SBITOP	896	0.00019236	0.015468	-0.52237	7.2370	80.411
DAX	957	0.00002268	0.016467	0.21088	7.6612	726.17
S&P 500	942	-0.00022801	0.078846	-0.46473	425.75	345.80

Source: Author's calculations

Kurtosis provides a measure of the “thickness” of the tails of a distribution relative to the normal distribution. For normal distribution, kurtosis is usually equal to three. All daily stock returns have excess kurtosis, which means that they have a thicker tail and a higher peak than a normal distribution. The coefficient of variation (C.V.) measures the degree of volatility of relative daily market returns. For the developed markets (the US and Germany), the coefficients of variation are higher on average than those for all other countries, except Croatia. Overall, based on the coefficient of variation, the figures seem

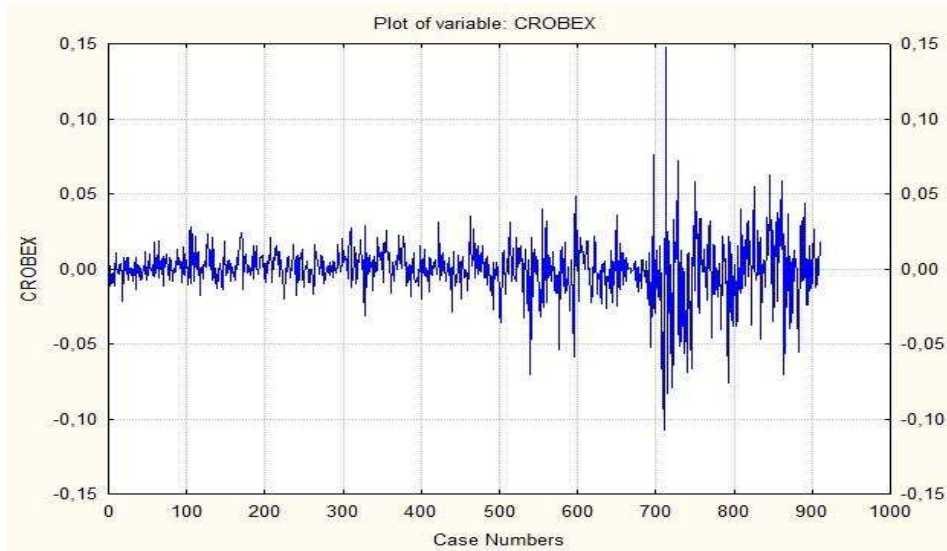
to indicate that the Serbian stock market has the least level of volatility relative to the all other countries.

Figure 1: Stock index returns for BELEX 15 during from October 2005 to August 2009

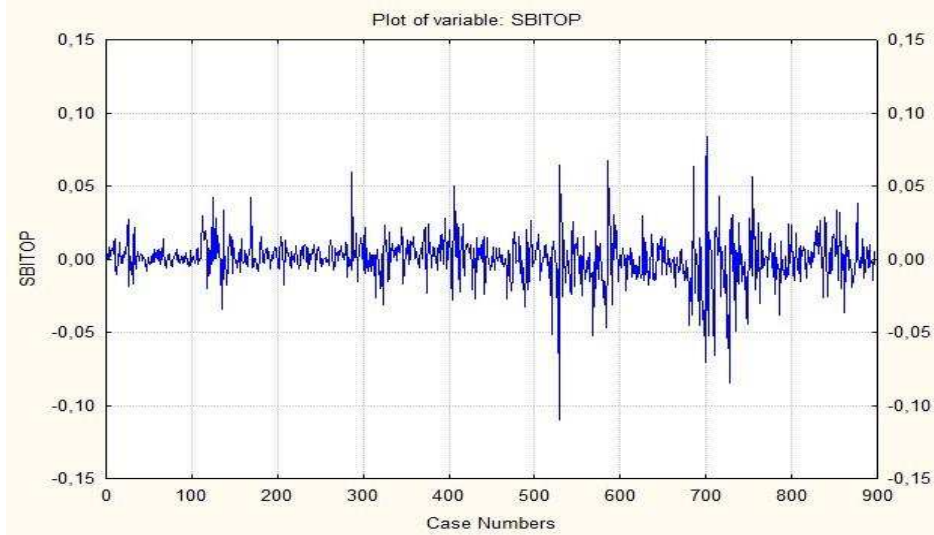


Source: Author's calculations

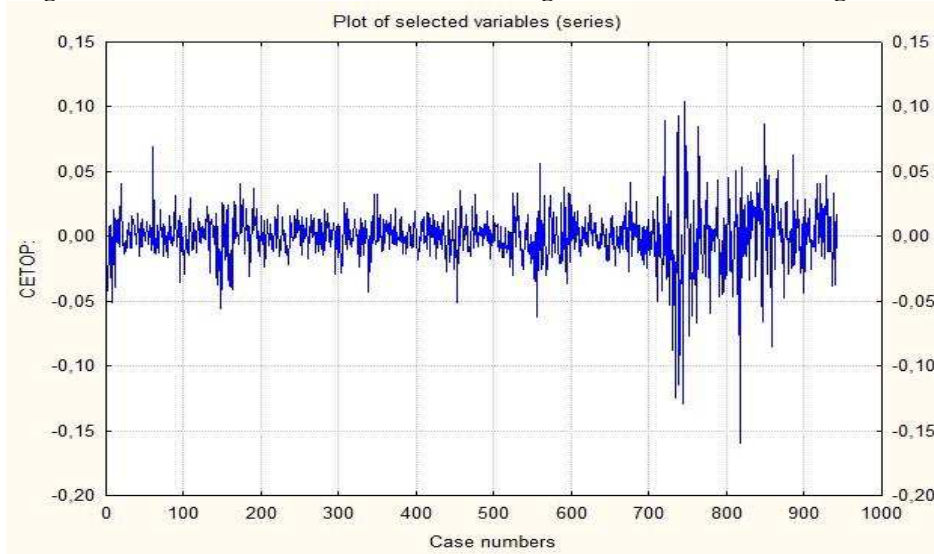
Figure 2: Stock index returns for CROBEX during from October 2005 to August 2009



Source: Author's calculations

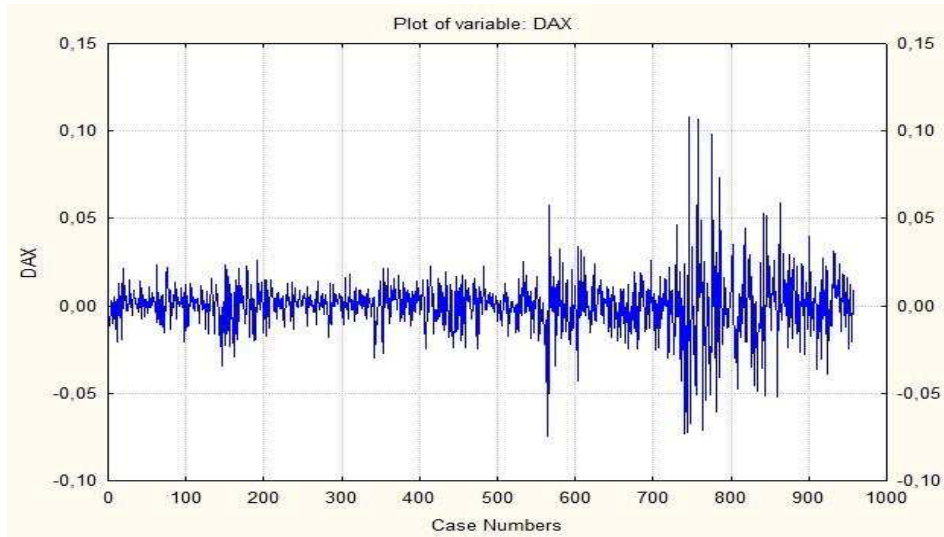
Figure 3: Stock index returns for SBI TOP during from October 2005 to August 2009

Source: Author's calculations

Figure 4: Stock index returns for CETOP during from October 2005 to August 2009

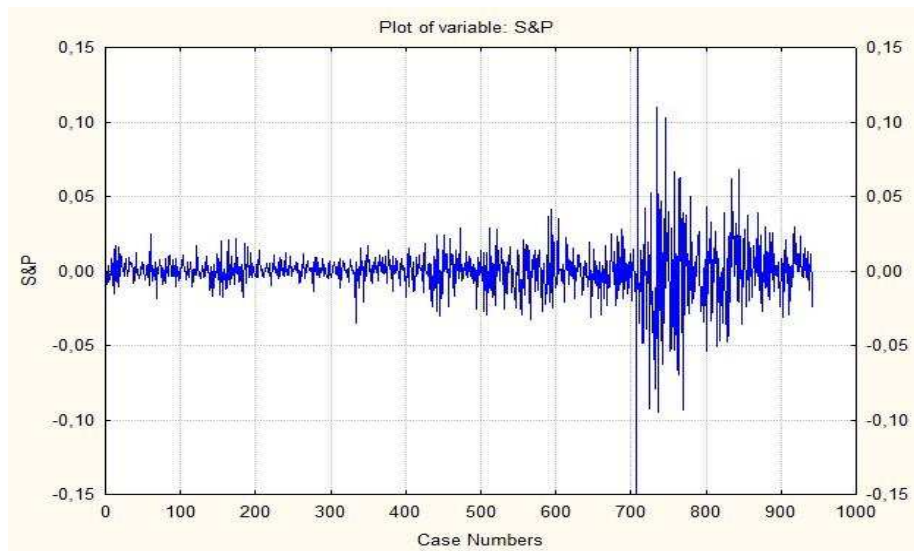
Source: Author's calculations

Figure 5: Stock index returns for DAX during from October 2005 to August 2009



Source: Author's calculations

Figure 6: Stock index returns for S&P 500 during from October 2005 to August 2009



Source: Author's calculations

4. Results

The values of correlation suggest the extent of linkage between the indices. The correlation of coefficient is used to measure the extent of association between the stock markets. It shows how changes in one index affect the other, where a higher correlation leads to a higher co-movement between the indices.

Table 3: The values of the correlation coefficient r and t-test of significance for the given indices pairs

Variable pairs	Pearson correlation coefficient r	<i>t-test</i> ² of correlation coefficient r significance	Marginal values for t-test ³
1. BELEX 15 and CROBEX	0.269441	8.43084	od -1.960 do +1.960
2. BELEX 15 and CETOP	0.212676	6.67047	od -1.960 + do 1.960
3. BELEX 15 and SBITOP	0.302916	9.50381	od -1.960 + do 1.960
4. BELEX 15 and DAX	0.152455	4.76959	od -1.960 + do 1.960
5. BELEX 15 and S&P 500	0.023419	0.71858	od -1.960 + do 1.960

Notes: italic correlations are significant at $p < 0.05$

Source: Author's calculations

As shown in Table (3) BELEX 15 have positive values of the coefficient of correlation with other indices. Except in the case of the U.S. financial market, t test which measure the significance of the correlation coefficient in all other cases reject the H_0 hypothesis. That means that all markets with the exception of the U.S. market, show a statistically significant positive correlation with equity market in Serbia. That means that the growth of these equity market indices lead to correlatively increase of stock exchange index BELEX 15. It can be concluded that equity market in Serbia has a correlative relationship with regional markets, as well as with the largest economy in Europe - Germany, which was expected. The highest value of the correlation coefficient BELEX 15 has with Slovenian SBI TOP index. This result is expected for many reasons, and one of the most important is the relationship between two economies as a result of large number of investments which just come from Slovenia. Slovenia, in the last 10 years, is the second most important investor with about 1.6 billion investment in the Serbian economy. In Serbia, also operate more than 500 Slovenian companies. Positive correlations with equity markets in Croatia and

² With 0.05 level of significance

³This value depends on the number of observations or df in the Student's t distribution, which in our case for all index pairs greater than 450, so that the Student's t distribution corresponding to the infinity df values.

Hungary, although not overly large (21 and 26%), more precisely by Cohen (1988) small, are not expected.

Onay's (2006) study confirmed results of correlations from this paper that regional equity markets do not have strong relationships between each other⁴. His results indicate a low degree of correlation between the regional equity markets. Low rate of correlation with European largest economy and most important export partner of Serbia, the German equity market is also not expected. That means that the strong connection between the two economies does not have a great impact on the interconnections between their equity markets, which the value of the correlation coefficient confirms. There is no statistically significant correlation with the U.S. equity market in the final analysis, which is not surprising. Serbia's economic orientation to Europe and Russia is in favor of the insignificant correlation, which indicates that in this period the U.S. equity market does not have too much impact on the price movements of the Belgrade Stock Exchange.

The low correlation among transition countries equity markets may be due to factors such as the lack of free trade and the inadequate information of foreign securities. We must know that the Serbian equity market index BELEX 15 was established later than other regional and transition indices, especially the indices of developed countries. The low correlations in some way could be the result of this fact. Additionally, low correlations between all countries from this study with the US and Germany as representatives of developed markets are also confirmed by the working paper from Ěgert and Kočenda (2007).

The existing correlation between the markets under study implies their interdependence, but it does not reveal the direction of the influence, apropos the causality between the markets. Therefore, the next step which is qualitatively more significant and determines the direction of causality between variables, is determining causality between them. As mentioned in the methodology, the study will use method of direct Granger causality test using appropriate equations. First, it is necessary to define a hypothesis which will be tested. According to the null hypothesis X does not cause Y. In other words, all coefficients are jointly equal to zero, and the alternative hypothesis is that at least one coefficient is different from zero. Standard F-test and p-values are used to test the null hypothesis. The model used in these estimations is the method of least squares. All calculations used a 0.05 significance level.

As Table 4 shows, empirical results find the evidence of unidirectional causality from Hungarian to Serbian and from equity market in Germany to equity market in Serbia. This indicates that CETOP Granger causes BELEX 15. We can also say that the past values of CETOP predict present or future values

⁴ The study investigates a co-integration between the Croatian, Bulgarian, Romanian and Turkish equity markets and reveals very low correlations among the markets.

of BELEX 15. The results of this causality show strong interdependence between the two equity markets. Also, the past values of DAX predict present or future values of BELEX 15.

Table 4: Results of Granger-Causality Tests

Null Hypothesis	Obs.	F-statistic	Probability	Decision
BELEX_15 does not Granger Cause CROBEX	908	3.5083	0.0304	Reject
CROBEX does not Granger Cause BELEX 15	908	16.1431	1.E-07	Reject
BELEX_15 does not Granger Cause CETOP	932	1.3266	0.2185	Accept
CETOP does not Granger Cause BELEX 15	932	4.1489	2.9326e-05	Reject
BELEX_15 does not Granger Cause SBI TOP	892	2.6914	0.0300	Reject
SBI TOP does not Granger Cause BELEX_15	892	5.4712	0.0002	Reject
BELEX_15 does not Granger Cause DAX	948	1.6205	0.1048	Accept
DAX does not Granger Cause BELEX_15	948	5.6057	1.E-07	Reject
BELEX_15 does not Granger Cause S&P 500	941	0.0831	0.7732	Accept
S&P 500 does not Granger Cause BELEX_15	941	1.5866	0.2081	Accept

Notes: The results that we can see in this table are received from software specialised in work with time series estimations: E-view 7 software.

Source: Author's calculations

These evidence of two unidirectional causality also means that CETOP and DAX are first move and BELEX 15 follows it, but with a certain delay. The paper found two bidirectional or "full" causality between the Serbian and Croatian and Slovenian markets. This means that changes in the prices of the Serbian equity market predict changes in the prices of the Slovenian and Croatian equity markets and vice versa. The causality in this two cases is expected if we know that the majority of foreign investors in the Serbian economy are from Croatia and Slovenia (Serbian Chamber of Commerce, 2008) and causality results only confirm that. Paper doesn't find evidence of causality only for the Serbian and US equity markets. Explanations could lie in the fact that the Serbian equity market is still not integrated with the developed world

financial markets. A possible explanation of this difference in results could be the specifics of the analysed data, as the Granger causality test is sensitive to time-series properties (e.g., lag length).

5. Concluding remarks

The empirical evidence presented in this paper suggests that there are significant relationships between some of the equity markets with equity market in Serbia. First, paper tested a possible correlation coefficient between BELEX 15 and all other equity markets index pairs. The results show that the Serbian market showed statistically significant positive correlation coefficients with the Croatian, Slovenian, Hungarian and German equity markets. All of them are positive, so if one of them increases, this means that values of the Serbian equity market index increase as well. The results from the correlations testing show that the Serbian equity market and, indirectly, the whole economy have the strongest interaction with the Slovenian equity market.

Second, paper tested causality possibilities between index pairs. Results show that in some index pairs, we had one kind of causality between them. We conclude that BELEX 15 predicted CROBEX and SBI TOP. Also, we conclude that CROBEX and SBI TOP predicted changes in BELEX 15. Therefore, this paper found evidence of bidirectional Granger causality between the equity returns in Serbia and equity returns in Croatia and Slovenia.

The results from correlations and causality estimations suggest that regional and developed equity markets and the Serbian equity market had different size of relationships. The results support the view that the globalisation of the world economy has enhanced their interrelations.

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DINAMIČKE INTERAKCIJE MEĐUNARODNIH TRŽIŠTA KAPITALA: PERSPEKTIVA SRBIJE

Apstrakt: Ovaj rad istražuje prirodu i obim interakcija između srpskog tržišta kapitala i izabраниh regionalnih i razvijenih tržišta kapitala. Koristeći najnovije podatke sa odgovarajućih indeksa berzi koji obuhvata period 2005-2009. godina, tržišne međuzavisnosti će se meriti pokretanjem kros-korelacionih testova. Rezultati pokazuju statistički značajne korelacije između srpskog i nemačkog tržišta kapitala, kao i slovenačkog i hrvatskog tržišta kapitala. Pre svih, najveći koeficijent korelacije je dobijen između povraćaja na akcije u Srbiji i Nemačkoj. Pronađeni su dokazi o postojanju dvosmerne kauzalnosti između srpskog, hrvatskog i slovenačkog tržišta. Takođe, rad je pronašao postojanje jednosmerne kauzalnosti usmerene od mađarskog i nemačkog tržišta ka srpskom tržištu kapitala.

Ključne reči: analiza vremenskih serija, korelacija, pravičnost indeks, međuzavisnost



APPLICATION OF THE CAPM FOR PRICING THE SECURITIES IN CAPITAL MARKET OF BOSNIA AND HERCEGOVINA

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Abstract: CAPM model is the ratio of expected return and systematic risk (individual) investment, which in turn means taking into account the general view that investor behave in the market with risk aversion, to a higher level of systematic risk and provides a higher level of expected yield and vice versa. This paper will be focused more on the possibility of applying CAPM model in the evaluation of the most liquid shares of successful companies listed on the Sarajevo Stock Exchange but being a part of SASX – 30 index, and those listed on the Banja Luka Stock Exchange entering BIRS index.

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1. Introduction

Sharpe (1963, 1964) and Linter (1965) developed a model for the evaluation of a capital asset pricing model. The CAPM is a linear equilibrium model of return on investment explaining returns over risk free rate of return using the covariance of the individual investments only through their covariance with the overall market. The inclusion of the risk free investment model implies that a rational investor chooses a linear combination of the market portfolio and risk free investment, depending on his preferences towards risk (Aljinović, Marasović, Šego 2011, 153). The research subject of this paper is monitoring price movements of most liquid shares in the index SASX – 30 and BIRS, as well as market indexes themselves. The research covers the period from January 2009 to December 2011 and it is linked to the start date of the observed stock index. The paper is structured in three parts. The first part describes the particular model and the assumption on which it is based. The second part analyzes the possibility of application and presents the result of the research. The final part lists the conclusions as a result of the study.

2. CAPM model and assumptions

The CAPM model is more of a theoretical model and it is widely used by analysts, investors and corporations. This raises the obvious question: Is it correct what the CAPM assumes that securities with a higher beta coefficient guarantee a higher yield? The model is based on the following assumptions (Popovic 2000, 181-182):

- Capital markets are efficient only if investors are well informed.
- Transaction costs are ignored.
- Taxation is ignored.
- There are not investors big enough that could affect the price of financial instruments.
- There are risk-free financial instruments that every investor can include in their portfolio.
- Equal expectations for future return of all investors.
- Existence of a single period in which the yield is expected.
- All financial assets are marketable.
- It is possible to borrow an unlimited amount with a risk-free interest rate.

The CAPM model is based on the assumption that a required risk premium of individual financial assets depends on the contribution of risk assets and an investor's total portfolio. The risk premium of assets is equal to the beta coefficient, because it is known that the contribution of an individual security risk of a well-diversified portfolio depends only on systematic risk as measured by beta coefficients. If we compare the relationship between the risk premium and systematic risk of the market portfolio, we come to the following expression (Bodie, Kane, Marcus 2009, 208 -209):

$$\frac{E(r_M) - r_f}{1} = \frac{E(r_D) - r_f}{\beta_D} \quad (1)$$

where $E(r_M)$ is yield market, $E(r_D)$ – yield certain share, r_f - risk free interest rate, β_D – beta coefficient certain share. A rearrangement of the equation (1) reveals CAPM relations between the expected return and beta:

$$E(r_n) = r_f + \beta_n [E(r_M) - r_f] \quad (2)$$

The equation (2) clearly shows that the rate of return of any financial instrument exceeds the risk free rate for the risk premium, which is obtained when the measure of an instrument of systematic risk (beta) is multiplied by the risk premium (benchmark) of the market portfolio. Investors with a risk aversion measure the risk of the optimal risky portfolio with standard deviation.

Therefore, the risk premium of an individual security depends on how much security increases the risk of the total portfolio. The CAPM model confirms the assumption that the risk premium of a security is directly proportional to the beta and the risk premium of the market portfolio, i.e. risk premium is equal to $\beta[E(r_M) - r_f]$.

The relationship between the expected return and beta is the security market line – SML. Therefore, the SML shows the risk premium of an individual instrument as a function of its risk. The appropriate measure risk of every security is not their standard deviation, but the contribution of a portfolio standard deviation, which is determined based on the observed beta instrument.¹ A securities market line is the benchmark for evaluating investment performance. For an investment risk, measured by beta, SML shows the required rate of return that will compensate investors for the risk and investment, as well as the time value of money. According to the CAPM model, all securities in market equilibrium must be at SML. Underestimated shares are above the SML line of securities. The expected return of these shares is higher than predicted by the CAPM. Overvaluing shares are below the SML line of securities.²

2.1. Coefficient beta

The coefficient beta measures the intensity of changes in share return to changes in the total yield of share market. In other words, it explains how the observed rate of return will change if the rate of the return market portfolio changes by 1. This means that individual securities contribute to the overall risk of a diversified portfolio, depending on the value of the coefficient beta.

As the market portfolio is $\beta = 1$, if the share has $\beta > 1$, it will increase the risk portfolio, and if there is $\beta < 1$, it will reduce the portfolio risk. Generally, the coefficient beta is calculated as the ration of covariance of return on j-th share and the variance of return on overall market, which can be mathematically expressed by the following equation (Alihodžić 2011, 238):

$$\beta_j = \frac{COV(r_j/M)}{\sigma_M^2} \quad (3)$$

The same coefficient can be expressed using the coefficient of correlation on yield the j-th share and yield of the overall market. In this case, the correlation coefficient should be multiplied by the ratio of a standard deviation of return of the share and return on the market:

¹ SML can be applied to a portfolio and individual securities.

² The difference between the expected and actual rate of return of a share is called alpha.

$$\beta_j = \frac{\sigma_j}{\sigma_M} \rho_{r_j, r_M} \quad (4)$$

The coefficient beta is often calculated in order to predict the rate of return of certain financial assets. When the beta calculated by regression equations, historical data are used, and as such the beta cannot detect changes in a future beta. Empirical evidence proves that a valid statistical phenomenon called regression toward the middle is valid for coefficients beta. This means that securities have a high beta, i.e. at one time in the future they will generally have a lower beta. Conversely, securities with a lower beta i.e. $\beta < 1$ will have a higher beta in the future. In this study, beta will be adjusted so that the score of sample is multiplied by 2/3 and the value of 1 by 1/3, whereby the adjusted beta will be: ($\beta_{adjusted} = 2/3 * \beta_{historical}$) (Bodie, Kane, Marcus 2009, 218).

3. Capital market in B&H and application of the CAPM model

The capital market in Bosnia and Herzegovina was created in 1999, by the adoption of a regulatory framework and establishment of institutions – the Securities Commission and the Registry of Securities in the Federation of Bosnia and Herzegovina, the Commission for Securities and Central Registry of Securities in the Republic of Srpska. Subsequently, during 2000 and 2001, investment funds management companies became operational and in 2002 trading began on the Sarajevo Stock Exchange and Banja Luka Stock Exchange, established by professional intermediaries – brokerage houses.

The capital market in Bosnia and Herzegovina is at an early stage of development, so it is still not a serious form of financial intermediation or source of financing for companies. The establishment and operation of the capital market in B&H has been carried out in a relatively short period of less than ten years and with the lack of tradition and an underdeveloped economic base. The practice of operation and development of capital markets and the experience of institutions and participants in this market, made it necessary to change the rules governing the market and the adoption of the new Law on Securities Market and Law on Funds, which entered into force in early 2008.

In addition to these general conditions, the status and characteristics of the capital market in B&H are illustrated by the following indicators. During 2011, the capital market in B&H registered a substantial increase in turnover on the Sarajevo Stock Exchange and Banja Luka Stock Exchange, but the given increase was not accompanied by an increase in market capitalization.³ The market capitalization on the Sarajevo Stock Exchange recorded a decline in value of almost 60.6%, while the market capitalization on the Banja Luka Stock

³ The total market capitalization of the Sarajevo Stock Exchange and Banja Luka Stock Exchange in 2011 amounted to 31.2% of GDP.

Exchange recorded a slight growth of 2.8% over the previous year. The total turnover on the Sarajevo Stock Exchange in 2011 amounted to EUR 125.157.663, representing an increase by EUR 69.64 million, or 125.5%. A turnover increase is the consequence of the issuance of debt securities, i.e. treasury bills and bonds. In 2011, at the Banja Luka Stock Exchange, a turnover of EUR 217.532.701 was made, representing an increase by 141.41% compared to 2010.

A number of securities traded on the SASE was 56.7 thousand and it decreased by 25.7%, while on the BLSE it was 215.8 thousand, which represents an increase by 33.5%. On the capital market in B&H, ten indexes track the movement of share prices, out of which three are monitored and published by SASE, six are monitored and published by BLSE, and one is monitored and published by the Vienna Stock Exchange with a different time-period. Primarily, this paper will analyse the share indexes SASX- 30 and BIRS, as well as the index BATX.

Small transitional markets, including the market in B&H, have several common characteristics affecting the application of specific models for the evaluation of financial assets. General restrictions are related to (1) dominance of particular securities in the market, (2) low number of securities listed on stock exchanges and (3) low liquidity of securities.

Due to the low liquidity of the majority of shares in the B&H stock exchange, the theoretical model CAPM, i.e. the assumption of the model, is slightly simplified. The selected shares are shares of companies within the stock market index SASX- 30 and BIRS with a market capitalization higher than the median market capitalization, as well as a listing on the stock exchange of B&H for more than 12 months. The shares of companies are: „BH Telecom“ Ltd. Sarajevo (BHTR), „JP Elektroprivreda“ HZHB Mostar (JPEMR), „Fabrika duhana“ Ltd. Sarajevo (FDSSR), „JP Elektroprivreda BiH“ Ltd. Sarajevo (JPESR), „PBS“ Ltd. Sarajevo (PBHBR), „Tvornica cementa Kakanj“ Ltd. Kakanj (TCMKR), „IK banka“ Ltd. Zenica (IKBZRK2), „Solana“ Ltd. Tuzla (SOLTRK3), „Telekom Srpske“ Ltd. Banja Luka (TLKM-R-A) and „Banjalučka pivara“ Ltd. Banja Luka (BLPV-R-A).

3.1. Data

The research in applying the CAPM model covers the period from January 2009 to December 2011, for a total of 1095 days, i.e. 768 working days. Analyzed initial data are related to monthly price movements of selected shares. For the analysis of market trends yield, analysis was used based on the movement of stock index SASX – 30 and BIRS, as well as the index BATX.

The stock index SASX – 30 is a price index, i.e. a dividend index is not taken into account when calculating the index. The SASX – 30 index aims to provide investors and analysts with a general assessment of developments in the

most liquid part of the Sarajevo Stock Exchange. The index composition may include only symbols of issuers that are primarily listed on the free market.⁴ The initial value of SASX- 30, i.e. the base value, is 1.000 index points, while the starting date of the index is 31 March 2009. The composition of SASX-30 on 29 January 2012 consists of 30 companies with the following structure:

Table 1: Composition of SASX - 30

No.	Symbol	Issuer	Initial Price
1.	BBR9R	Bimal Brčko	9.50
2.	FRESR	Feroelektro d.d. Sarajevo	1.20
3.	ISPSRK2	Interšped d.d. Sarajevo	27.0
4.	JPUMR	JP Uborak d.d. Mostar	99.94
5.	LSLBRK3	Lječilište Slana banja d.d.	4.00
6.	MZTJR	Mlinpek – Žitar d.d. Jajce	1.10
7.	PAKCRK3	Pak Centar d.d. Sarajevo	8.50
8.	PBSBR	PBS d.d. Sarajevo	95.00
9.	PRDGRK3	Pobjeda rudet d.d. Goražde	2.90
10.	STVKRK4	Saniteks d.d. Velika Kladuša	5.00
11.	UMISRK2	Unis d.d. Sarajevo	5.60
12.	FAMSR	Famos d.d. Sarajevo	3.00
13.	RZRVR	Rudnik Željezne rude d.d. Vareš	0.25
14.	SOSOR	Sarajevo osiguranje d.d. Sarajevo	6.10
15.	BORBRK3	Bor banka d.d. Sarajevo	11.11
16.	METZRK2	Metalno d.d. Zenica	8.00
17.	HTKMR	JP HT d.d. Mostar	11.50
18.	RMUKR	RMU Kamengrad d.d. Sanski Most	70.00
19.	TCMKR	Tvornica cementa Kakanj d.d. Kakanj	1.00
20.	BHTSR	BH Telekom d.d. Sarajevo	20.00
21.	ENISR	Energoinvest d.d. Sarajevo	5.60
22.	FDSSR	Fabrika duhana Sarajevo d.d. Sarajevo	66.76
23.	HDGSR	Hidrogradnja d.d. Sarajevo	3.50
24.	IKBZRK2	IK Banka d.d. Zenica	127.30
25.	JPEMR	JP Elektroprivreda HZHB Mostar	32.00
26.	JPESR	JP Elektroprivreda BiH d.d. Sarajevo	25.94
27.	PBHBR	Postbank BH d.d. Sarajevo	49.79
28.	RMUBR	RMU Banovići d.d. Banovići	26.00
29.	SOLTRK3	Solana d.d. Tuzla	12.92
30.	SPKMR	Šipad komerc d.d. Sarajevo	7.11

Source: Sarajevo Stock Exchange (www.sase.ba)

The primary index of the free market (SASX – 30) in 2011 recorded a rise by 2.66% compared to the 2010. Likewise, the value of SASX – 10⁵ index dropped by 16.18% compared to the year before.

⁴ Primary free market is a sub-segment of the free market Sarajevo Stock Exchange.

⁵ SASX – 10 is the benchmark index of the Sarajevo Stock Exchange/Securities exchange, which tracks the movement of prices of the top ten companies in the market (excluding investment funds), as

The stock exchange index in the capital market of the Republic Srpska includes the best shares of companies and banks. It was established on 1 May 2004. The number of shares that constitute the BIRS index may vary from 5 to 15, depending on the criteria they meet for the inclusion of shares in the index of BIRS. The number of issuers whose shares are included in BIRS depends on the number of issuers in the official stock exchange market and the number of issuers that meet the requirements for the composition of BIRS. The composition of BIRS may include the shares of issuers that meet general requirements and criteria for the inclusion of shares in the BIRS, except for shares of investment funds. The composition of the BIRS index on 18 May 2012 included 20 companies with the following structure:

Table 2: Composition of BIRS index

No.	Symbol	Issuer	Price of Shares on 18/05/2012
1.	BIRA-R-A	Birač a.d. Zvornik	0.013
2.	BLPV-R-A	Banjalučka pivara a.d. Banja Luka	0.499
3.	BOKS-R-A	Boksit a.d. Milići	0.899
4.	BRVU-R-A	ZTC Banja Vrućica a.d. Teslić	0.551
5.	CIST –R-A	Čistoća a.d. Banja Luka	1.03
6.	DEST –R-A	Hemijska industrija destilacije a.d. Teslić	0.407
7.	EKBL-R-A	Elektrokrajina a.d. Banja Luka	0.301
8.	ELBJ-R-A	Elektro – Bijeljina a.d. Bijeljina	0.303
9.	ELDO –R-A	Elektro – Doboj a.d. Doboj	0.628
10.	HEDR-R-A	Hidroelektrane na Drini a.d. Višegrad	0.48
11.	HELV-R-A	Hidroelektrane na Vrbasu a.d. Mrkonjić Grad	0.558
12.	HETR-R-A	Hidroelektrane na Trebišnjici a.d. Trebinje	0.475
13.	KDVO-R-A	Dunav osiguranje a.d. Banja Luka	73.02
14.	KRJN-R-A	Krajina GP a.d. Banja Luka	2.95
15.	NOVB-R-E	Nova banka a.d. Banja Luka	0.734
16.	RFUM-R-A	Rafinerija ulja a.d. Modriča	0.18
17.	RiTE – R-A	RiTE Gacko a.d. Gacko	0.2
18.	RNAF-R-A	Rafinerija nafte a.d. Brod	0.08
19.	RTEU-R-A	RiTE Ugljevik a.d. Ugljevik	0.25
20.	TLKM-R-A	Telekom Srpske a.d. Banja Luka	1.43

Source: Banja Luka Stock Exchange (www.blberza.com)

During 2011, the BIRS stock fell in value by 8.34%, whereby on 31 December 2011 the value of the BIRS index was at 876,36 points. The highest value was reached on 8 April 2011 of 1.220,96 points, while the lowest value was of 821,15 points on 23 December.

measured by market capitalization and trading frequency. This index is not restricted to one market segment. Other issuers with a quotation and from free market can be included in its composition.

The BATX is capitalised on weighted price index⁶ composed of liquid and highest capitalised shares traded on the Sarajevo and Banja Luka Stock Exchange. The index is calculated in real time with values expressed in EUR, USD and BAM. As it was already mentioned, the BATX is a price index weighted by market capitalization in index participants. The structure of the index at the last part of the amended sections is composed of the following companies: BH Telecom (25.22%), Bosnalijek (19.06%), Fabrika duhana Sarajevo (9.64%), JP Elektroprivreda BiH (13.78%), Nova banka a.d. Banja Luka (6.83%) and Telekom Srpske (25.47%). The starting date for the listing on the Vienna Stock Exchange was 1 December 2009.

If we compare the value of the BATX index on 30 September 2011 with the value on 30 September 2010, a minimal decline in the relative amount of 3.4% may be recorded. The following table follows the tendency of stock market indices in the region (SRX, EUR, CROX EUR) with the BATX index.

Table 3: Comparison of index trends in the region for 12 months of 2009, 12 months of 2010 and 12 months 2011

No.	Months and Year	SRX EUR	CROX EUR	BATX EUR
1.	12/2009.	287.73	1.241,95	944.18
2.	12/2010.	264.78	1.337,04	827.37
3.	12/2011.	162.50	971.79	684.48
Performance 2011(3-2/2):		-38.63%	-27.32	-17.27%

Source: <http://en.indices.cc/indices/statistics/> (13.07.2012)

Comparing the index value in the region for the 12th month of 2011 with the 12th month of 2010, it is observable that the BATX had the smallest drop in the value index (-17.27%), followed by the Croatian regional index – CROX of 27.32% and the index of Serbia –SRX with the drop of 38.63%.

3.2. Calculation of price movement of shares and market indices

Based on the data on movement of share prices on stock market, average monthly returns on stocks for the period from 2009 to 2011 have been calculated for all ten shares of stock indices within the SASX – 30 and BIRS.

⁶ The index in which the price is determined by the price of individual shares, weighted by the total market value. If the share price is an index component, its effect on the index as a whole is proportional to the share price multiplied by the number of shares of a company. This means that changes in price affect the index more if the company has a higher value.

Because of incomplete data and because it is a very young capital market, dividends paid are not taken into account.

According to Damodaran, risk premium in emerging markets with political risk, countries of Eastern Europe and South America is estimated at 8.5% (Damodaran 2002, 49). Since in B&H there is no official statistics tracking and calculating a risk free rate of return, a weighted interest rate on treasury bills of the Federation B&H of 2.20% and interest rate for treasury bills in the capital market of the Republic of Srpska of 3.2020% is taken in this paper.⁷

Monthly price movements of the observed shares, which are the subject of the analysis, show that in principle the trends of share price in the market were followed with slight fluctuations. Basic elements of the analysis of the movement in share prices of the selected companies are shown in the following table:

Table 4: Market parameters of price movement of company shares of SASX – 30 and BIRS for period 1 January 2009 - 31 December 2011

ELEMENTS	BHTSR	JPEMR	FDSSR	JPESR	PBSBR	TCMKR	IKBZRK2	SOLTRK3	TLKM-R-A	BLPV-R-A
Average Yield	-0,0459	0,0436	0,0571	-0,0677	0,1820	0,0032	-0,0800	0,6346	0,0717	0,2759
Geometric Average	-0,0604	-0,0193	-0,0010	-0,0941	0,0911	-0,0324	-0,1029	-0,0014	0,0006	0,0012
Standard Deviation	1,709	3,567	2,957	2,309	4,759	2,647	2,132	17,321	1,483	7,418
Variance	2,951	58,199	374,411	24,075	211,608	6,190	528,045	16,249	0,035	0,016
Min	8,13 EUR	2,53 EUR	23,31 EUR	9,21 EUR	25,56 EUR	9,84 EUR	30,67 EUR	5,01 EUR	0,48 EUR	0,08 EUR
Max	13,97 EUR	87,07 EUR	55,21 EUR	8,95 EUR	51,13 EUR	8,41 EUR	73,11 EUR	2,01 EUR	0,91 EUR	0,28 EUR
Range Max and Min	171,83%	295,85%	279,75%	205,75%	200,04%	187,09%	238,38%	239,72%	189,58%	350%

Source: Calculation by Author (data on price trends on the Sarajevo Stock Exchange, software package: MATLAB 7.0)

For investors, a very important analysis is the analysis of the change in share returns and market portfolio, which is the subject of this paper. Average yields of company shares were calculated based on movements in share prices for the period of 768 working days, according to data on prices.

From the table above, it is observable that the highest average yield was recorded with shares of the company of Solana Ltd. Tuzla (SOLTRK) of 0.635% and the rate of the risk measured by a standard deviation of 17.32%. The second place by the highest rate of return and risk belongs to the company shares of Banjalučka pivara Ltd. (BLPV-R-A), which recorded an average yield of 0.276% and a standard deviation of 7.42% for the given period. If we look

⁷ A temporary symbol of treasury bills of the Federation B&H is FBHTZ204 and the due date is 24 October 2012. A symbol for treasury bills in the capital market of the Republic of Srpska is RS 12 – T03, maturity 18 January 2013.

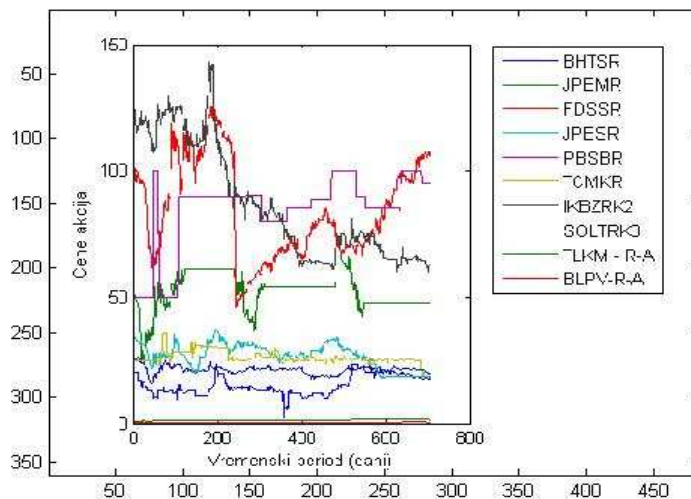
the price range, the data show that the highest range of prices was realized in the shares of Banjalučka pivara Ltd. (350%), followed by the shares of JP Elektroprivreda HZHB Mostar (295.85%), shares of the Fabrika duhana, Ltd. Sarajevo (279.75%). Basic parameters of the movement of share index of the Sarajevo Stock Exchange (SASX-30, BATX, and Banja Luka Stock Exchange – BIRS) are shown in the table below:

Table 5: Parameters of index value share movement for the period 1 January 2009 - 31 December 2011.

<i>ELEMENTS</i>	<i>SASX-30</i>	<i>BIRS</i>	<i>BATX</i>
Average Yield	-0,027	-0,017	-0,056
Standard Deviation	0,437	0,723	0,846
Min	878,09 KM	801,27 KM	333,13 KM
Max	1.098,38 KM	1.220,96 KM	492,13 KM
Range Max and Min	125,08%	152,38%	147,73%
Variance	3.381	8.994	4.835

Source: Calculation by Author (Data on Price Trends on the Sarajevo Stock Exchange, and Banja Luka Stock Exchange Software Package: MATLAB 7.0)

Figure 1: Monthly movement of share prices in composition of SASX-30 and BIRS for 1 January 2009 - 31 December 2011 period.



Source: Calculation by Author (Data on Price Trends on the Sarajevo Stock Exchange, and Banja Luka Stock Exchange Software Package: MATLAB 7.0)

By looking at the table above, it may be noted that all three indices recorded a negative value of average daily returns in this period. Circumstances of this development were primarily affected by a macroeconomic environment of business, as well as the global financial crisis. The highest range between the minimum and maximum values was recorded at the BIRS stock index, as well as the value of variance, which directly points to a higher investment risk in a given index in relation to the previous two. Volatility of the SASX – 30 index was lower, because the variance was lower and thus the risk. The tendency of the observed share price movements of companies is shown by the following chart.

From the data obtained, the correlation coefficient matrix of shares within the index SASX – 30 and BIRS was calculated for the period 1 January 2009 - 31 December 2011.

Table 6: Matrix of correlation coefficients for shares within SASX – 30 and BIRS indices for 1 January 2009 – 31 December 2011 period

	<i>BHTSR</i>	<i>JPEMR</i>	<i>FDSSR</i>	<i>JPESR</i>	<i>PBSBR</i>	<i>TCMKR</i>	<i>IKBZRK2</i>	<i>SOLTRK3</i>	<i>TLKM-R-A</i>	<i>BLPV-R-A</i>
<i>BHTSR</i>	1.000	0.083	0.051	0.059	0.074	0.036	0.036	0.013	0.025	0.024
<i>JPEMR</i>	0.083	1.000	0.101	0.115	-0.071	0.039	0.012	0.007	-0.027	0.074
<i>FDSSR</i>	0.051	0.101	1.000	0.075	-0.001	-0.051	0.027	-0.017	-0.023	-0.023
<i>JPESR</i>	0.059	0.115	0.075	1.000	0.054	-0.029	0.037	-0.004	0.109	-0.001
<i>PBSBR</i>	0.074	-0.071	-0.001	0.054	1.000	-0.002	0.037	0.001	0.207	-0.001
<i>TCMKR</i>	0.036	0.039	-0.051	-0.029	-0.002	1.000	0.052	-0.005	0.018	0.016
<i>IKBZRK2</i>	0.036	0.012	0.027	0.037	0.037	0.052	1.000	-0.082	0.025	0.002
<i>SOLTRK3</i>	0.013	0.007	-0.017	-0.004	0.001	-0.005	-0.082	1.000	-0.025	-0.002
<i>TLKM-R-A</i>	0.025	-0.027	-0.023	0.109	0.207	0.018	0.025	-0.025	1.000	-0.083
<i>BLPV-R-A</i>	0.024	0.074	-0.023	-0.001	-0.001	0.017	0.002	-0.002	-0.083	1.000

Source: Calculation by Author

By looking at the correlation coefficient matrix, it may be observed that the majority of shares positively correlated with each other slightly and a number of shares have a negative correlation, which provides a good opportunity for a diversification. In the reporting period, the strongest positive correlation is evident between the shares of PBS Ltd. Sarajevo and Telekom Srpske (0.207), while the strongest negative relationship is visible between the shares of Telekom Srpske and Banjalucka pivara Ltd. (-0.083), which is illogical because they belong to the same market segment.

3.3. SML model and beta coefficients

Market shares of a company's lines can be displayed via the SML model of individual shares, i.e. via $r_i = \beta_i r_M + \alpha_i$ where β_i is the slope of the right and α_i – intercept on

the right y- axis. The slope and intercept of market shares of a company's line is displayed in the Table 7

Table 7: Slopes and intercepts of company share market lines



	BHTSR	JPEMR	FDSSR	JPESR	PBSBR	TCMKR	IKBZRK2	SOLTRK3	TLKM-R-A	BLPV-R-A
a	0,1214	0,1587	0,0908	0,1276	-0,3626	0,5193	0,6807	1,4186	0,0239	1,5084
b	-0,0004	0,0005	0,0006	-0,0007	0,0018	0,0001	-0,0008	0,0009	0,0007	0,0030

Source: Calculation by Author

The Table above shows estimates of a regression slope and intercept of company shares. The maximum slope of line direction of the market is in shares: SOLTRK3 and BLPV-R-A, and the lowest is the in shares: PBSBR, TLKM-R-A and FDSSR. The slope coefficient is measured by risk aversion and a higher slope makes aversion to risk higher, while the intercept b shows the size of yield when the market return equals zero.

In this paper, the calculation of the beta coefficient was obtained using a regression analysis of the data on rates of return for every share separately and for the corresponding stock market index. Likewise, adjusted beta coefficients were calculated for shares of companies. Table 8 illustrates the calculation of adjusted beta coefficients and beta coefficients.


Table 8: Beta coefficients and adjusted beta coefficients for company shares

	BHTSR	JPEMR	FDSSR	JPESR	PBSBR	TCMKR	IKBZRK2	SOLTRK3	TLKM-R-A	BLPV-R-A
	0,12144	0,15868	0,09078	0,12764	-0,36257	0,51930	0,68072	1,41862	0,02393	1,50845
	0,414293	0,439119	0,393853	0,418426	-0,57504	0,67953	0,787143	1,279076	0,34933	1,33866

Source: Calculation by Author

Based on the calculation, it may be noted that only two shares, SOLTRK3 and BLPV-R-A, have a value higher than 1, while other shares show tendency to slower changes in relation to market changes as they have a beta less than 1. The shares of other companies have a beta value below 1. The data on risk premiums adjusted to beta coefficients are presented in the Table below:

Table 9: Risk premium and adjusted beta coefficient of company shares

	BHTSR	JPEMR	FDSSR	JPESR	PBSBR	TCMKR	IKBZRK2	SOLTRK3	TLKM-R-A	BLPV-R-A
Premija rizika	1,80%	1,89%	1,74%	1,82%	0,73%	2,68%	3,04%	4,67%	2,61%	7,39%
	0,41	0,44	0,39	0,42	-0,58	0,68	0,79	1,28	0,35	1,34

Source: Calculation by Author

As it is observable from the Table above, shares whose beta coefficient is the highest have the highest risk premium, i.e. symbols of the following shares: BLPV-R-A and SOLTRK3. The shares whose values are similar to the market value, i.e. whose value of beta is equal to 1, have similar market yields, except the risk premium for shares with beta values lower than 1.

The CAPM implies that the risk premium of any security or portfolio equals the product of the market portfolio risk premium and beta coefficients of given securities. A securities market line shows the return that investors demand as a function of the beta coefficient of their investment. The yield of the CAPM is the security risk premium proportional to the beta coefficient. Thus, the CAPM is the required rate of return for individual shares on the SML line. In this paper, the CAPM gives the following required rates of return for the observed shares obtained by a regression analysis.

Table 10: Average annual and monthly return of company shares by CAPM

Stope po CAPM	BHTSR	JPEMR	FDSSR	JPESR	PBSBR	TCMKR	IKBZRK2	SOLTRK3	TLKM-R-A	BLPV-R-A
mjesečno	2,47%	2,56%	2,41%	2,49%	1,40%	3,35%	3,71%	5,34%	3,28%	8,06%
godišnje	29,64%	30,72%	28,92%	29,88%	16,80%	40,20%	44,52%	64,08%	39,36%	96,72%

Source: Calculation by Author

According to the CAPM model, an average monthly/annual rate of return is the highest with the following share symbols: BLPV-R-A, SOLTRK3, IKBZRK2 and TLKM-R-A. The required rates of return range from the lowest yield (1.40%) to the highest yield (8.06%). The required rates of return per year are at a high level owing to a high volatility of share prices in the capital market of Bosnia and Herzegovina. A deviation of an average share return of companies in relation to the required return (CAPM) is illustrated by the following table:

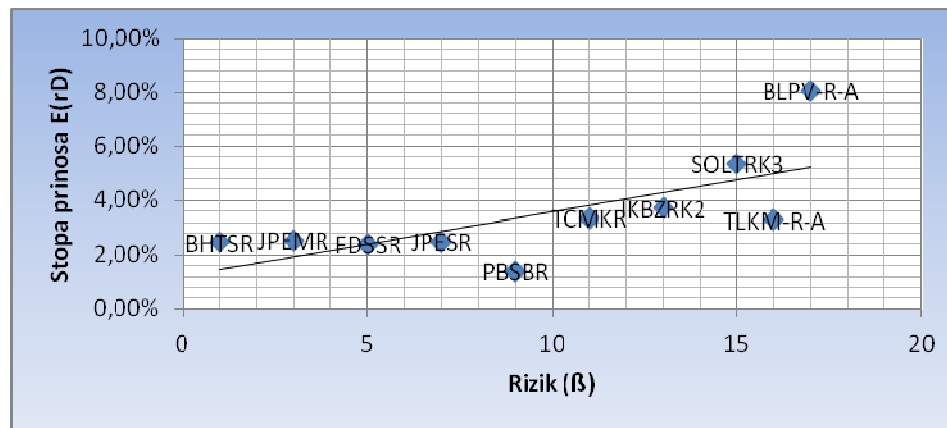
Table 11: Deviation of return of company shares from CAPM

	BHTSR	JPEMR	FDSSR	JPESR	PBSBR	TCMKR	IKBZRK2	SOLTRK3	TLKM-R-A	BLPV-R-A
☒	2,53%	2,58%	2,41%	2,58%	1,31%	3,38%	3,81%	5,34%	3,27%	8,05%

Source: Calculation by Author

The following symbols of shares have the highest positive deviation from the CAPM: BLPV-R-A, SOLTRK3, IKBZRK2 and TCMKR. The following chart shows the average deviation of return of company shares in relation to the SML line.

Chart 1: SML direction



Source: Calculation by Author (Data on Price Trends on the Sarajevo Stock Exchange, and Banja Luka Stock Exchange Software Package: MATLAB 7.0)

4. Research results

The elaborated analysis in this paper indicates the following characteristics of the selected company's shares, as well as the stock market in Bosnia and Herzegovina:

- The highest risk in terms of share price movements for companies are with the following symbols: SOLTRK3 (17.32%), BLPV-R-A (7.42%), PBSBR (4.76%) and JPEMR (3.57%), while the following symbols have the highest risk in terms of movements of share market indexes: BATX (0.85%) and BIRS (0.72%).
- The following share symbols had the highest average yield in this period: SOLTRK3 (0.63%), BLPV-R-A (0.27%) and PBSBR (0.18%).
- The following shares had the lowest average yields: IKBZRK (-0.08), JPESR (-0.07%) and BHTSR (-0.04%). A very dynamic movement of share prices in the capital market on Bosnia and Herzegovina began in the early 2005 and lasted until 2007, when the trend was replaced by a downward trend in the late 2008. The impact of the global economic crises and the overall macroeconomic environment in which to place the trade of securities are taken as main factors for the fall of share prices, which resulted in the withdrawal of foreign and domestic investors, and finally a fall in share prices.
- The average monthly returns of selected shares and market indices are at a very low level, i.e. their values are different, ranging from negative to positive values.

- The SML model shows shares that have an aversion to risk, depending on the size of a true coefficient α . In this research, out of 10 selected shares, seven have a positive intercept on the γ – axis and a positive meaning to give a return when the market return is zero.
- An adjusted beta (β^*) with the share symbols SOLTRK3 and BLPV-R-A is higher than 1, which is a more pronounced movement of a share return given in relation to the movement of the market yield.
- Using the CAPM model, the required rates of return for all ten shares of selected companies are obtained and they are at a rather high monthly level. The calculated deviation from the CAPM points to the fact that all the shares of companies are overvalued.

5. Conclusion

Despite all limitations, the CAPM model provides a good tool for making decisions on investment in securities. Almost all investment funds and significant investors use a modern portfolio theory or models, which are its direct extensions. The financial market in B&H is a young market, 10 years in existence, characterized by a small number of securities, small capitalization relative to GDP and the lack transparency and liquidity of certain shares. This research takes into account the fact that there are two stock exchanges in the B&H market (Sarajevo Stock Exchange and Banja Luka Stock Exchange), within a small market in transition, such as B&H capital market.

The research shows a high volatility, i.e. volatility of share prices during the observed period. Likewise, the research has confirmed the basic settings for a connection between the size of yield and risk: the higher return is associated with higher risk and vice versa. Given the volatility of price movements, the CAPM model requires a high rate of return of individual shares due to slower reaction to changes in the market.

Looking at risk shares as measured by a standard deviation and beta coefficients, it may be noticed that there is a certain correspondence between the average rate of return of shares with the size of market share return.

The CAPM model is used extensively in developed financial markets and it is expected that the development of domestic capital market, as well as continuing the process of ownership transformation, will increase the usefulness of this model. Having in mind that investors often use the CAPM model to determine the purchase price, it is useful to know the real achievements of this model, as the same cannot be uncritically applied, or rejected a priori. Therefore, it is necessary to clarify this versatile model, understand its limitation and differences in the share price obtained for the model and the value of shares obtained by other models to determine the cost of capital.

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PRIMJENA CAPM MODELA U VREDNOVANJU FINANSIJSKE IMOVINE NA TRŽIŠTU KAPITALA BIH

Apstrakt: CAPM model predstavlja odnos očekivanog prinosa i sistematskog rizika (pojedinačne) investicije, što dalje znači, uzimajući u obzir generalni stav da se investitori na tržištu ponašaju sa averzijom prema riziku (engl. risk averse), da viši nivo sistematskog rizika obezbjeđuje i viši nivo očekivanog prinosa i obrnuto. U ovom radu se istražuje mogućnost aplikativne primjene CAPM modela u vrednovanju najlikvidnijih dionica kompanija u sastavu indeksa SASX-30 i BIRS-a.

Ključne reči: očekivani prinos, beta koeficijent, sistematski rizik, nesistematski rizik.



EMPLOYEES' CHARACTERISTICS AS A FACTOR OF BUSINESS QUALITY IMPROVEMENT

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Abstract: The word quality is usually associated with the quality of products, processes or business operations. However, quality can be seen at the level of employees as individuals. This kind of quality is known as personal quality. The main assumption of this paper is that the quality of employees, as individuals determines the quality of business, as a whole. The aim of this paper is to show that the self-evaluation and self-control of employees represent the basic condition and the first step towards personal quality improvement. This paper briefly presents a model of modern quality management, which emphasizes the importance of personal quality. Before demystifying personal quality, the paper points out employees' contribution to business improvement. Finally, the last part of the paper refers to the research results concerning presence of certain elements of quality management model in Serbian enterprises, as well as the contribution of personal quality to implementation of the mentioned model.

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Introduction

In the last two decades, organizations have faced significant changes in the environment. Consumers are becoming more demanding, competition is intense and the pace of technological change is faster. In the portfolio of available resources and capabilities each organization tends to identify those that will facilitate the struggle for the market, whether it is about firms, banks, universities, insurance companies, etc. In accordance with the technical and technological developments of modern society, it is necessary to continuously promote research and development processes in order to increase the quality of business (and as a result - quality of products and services). Employees should be committed and fully involved in the process of quality management, which means that: they have power, they are motivated and they have relevant information at their disposal.

The basis of competition usually includes quality, reliability, price and delivery time, although the quality mostly stands out as a source of sustainable competitive advantage. The reason for this view comes from the fact that the reputation of poor quality lasts long and it is hard to be changed. In this sense, modern approach to management is focused on quality improvement, as a factor of business excellence.

Contemporary models of quality management are numerous. However, they have some common characteristics: they promote quality as a dimension of competitiveness, emphasize the importance of continuous quality improvement, and observe quality in terms of meeting consumer demands and the like. The fact is, however, that the quality viewed in isolation is not sufficient to ensure competitive advantage in modern conditions. In this regard, modern conditions assume usage of the quality management model which includes the effects of quality improvement, but also the determinants of quality improvement with emphasis on personal attributes or characteristics of employees. One model that is based on continuous quality improvement approach and employees attributes, as quality improvement determinant, is the "4P +3 C" model, developed by Auckland (Oakland, 2004, 35).

Models and awards for quality management

The organization is excellent, if all of its stakeholders are satisfied and, thereby, their satisfaction is provided in an efficient way. Business Excellence has become synonymous for a competitive advantage of organizations and Total Quality Management – TQM a way for achieving excellent results in the future or a way for providing sustainable competitiveness. Over time the term "business excellence" has replaced the terms "quality" and "TQM".

In that sense, there are models of business excellence, which lead organizations to improve their performance and to achieve the performances at the level called “world class”. Managers of companies in Serbia must understand that the quality improvement and efficient use of resources (with the emphasis on process management and the responsibility of all employees), even without major financial investment, can achieve greater business results (Kljajić, 2009). To provide this, enterprises have to ensure an appropriate level of business culture since it facilitates the acceptance of the new concept of quality, new management strategies and philosophies, as well as creating and implementing their own model of business excellence.

Quality Award, established by the Union of Japanese Scientists and Engineers – JUSE in 1951, is based on a TQM approach. This award is named after E. Deming, an American statistician, professor and consultant who, although known for his work in the United States has become particularly well known in Japan, where since 1950 he has been teaching top management how to improve design, product quality and sales, through statistical methods (Phelps et al, 2010). In gratitude to the Deming’s friendship and contribution to the development of Japan, Deming’s Prize was established in 1951. The criteria under which the applicants have been evaluated are based on Deming’s 14 points (Reid et al, 2000).

The American response to the Japanese quality revolution was: (1) blocking of imports from Japan - which has not caused consumers and public sympathy, nor has contributed to increasing the competitiveness of U.S. companies, (2) joint ventures - in which the Japanese partner has usually the dominant role in the production, and American in marketing (which gave a better result from the prohibition of imports from Japan), (3) improving the quality by copying the Japanese experience - where the results generally were unsatisfactory, and (4) introduction of Malcolm Baldrige Quality Award (Malcolm Baldrige National Quality Award) – in the 1980s, when the quality became a fashion hit in America. In August 1987, the U.S. Congress introduced the well-known State law 100-107, which was launched through the project called “Baldrige National Quality Program”, within which was established the aforementioned Quality Award, which is still awarded to U.S. companies for outstanding performance (www.baldrige.nist.gov).

The European Foundation for Quality Management - EFQM was founded in 1988, by 14 European multinational companies, with the aim to create a modern management model for improving the performances of European companies to increase their competitiveness in world markets primarily compared to the U.S. and Japanese companies. In 1991, European Foundation for Quality Management introduced the European Foundation for Quality Management model and established the Quality award the first time it was awarded in 1992. This model assumes that excellence can be provided through quality of leadership and

strategy of the company, which can be realized only with adequate resources, processes and employees. If these five elements (factors) indicate the success, then the results, which are reflected in satisfaction of customers, employees, shareholders, society and the company as a whole, will be closer to ones that those stakeholders were expected (Andjelkovic Pesic et al, 2005).

The Fund for Quality Culture and Excellence - FQCE is a national non-profit organization, which manages the national award for business excellence in Serbia – “Oscar for Quality” and creates a model for implementation quality management principles and tools in practice. The Fund for Quality Culture and Excellence is a member of the European Foundation for Quality Management since 2003 and, since the very beginning, it further advances its own model of excellence (which is based on the European Foundation for Quality Management model). In this sense, the Oscar for Quality, as a national award for business excellence, designed according to the criteria of European Quality Award, is awarded to the profit and nonprofit organizations, as an independent and neutral award for outstanding results achieved in the field of development and improvement of quality and business excellence in Serbia.

“4P+5C” quality improvement model

Mentioned models for quality management, are primarily focused on implementation of principles and philosophy of quality management. Therefore, they may be used or supported with other models for quality management. One of them is the “4P+3C” model for quality management. While the models upon which the awards are established show where the problems concerning quality and business excellence arise, “4P+3C” model shows how they can be resolved, and emphasizes the elements that are a base for the solution of every problem.

This model assumes that quality of the processes is the determinant of the quality of products and services for internal or external customers (users), and consequently the determinant of the satisfaction of other constituents (stakeholders). In this sense, the quality of the process affects the performances of the company as a whole. On the other hand, the quality of the process is conditioned by the quality of planning, and the quality of people (employees), or their knowledge, skills, abilities (Oakland, 2003, 26:8). Thus, it may be said that the planning, people and processes are the key elements for ensuring quality of products and services, and the condition for improving performances at the enterprise level. These four elements are the basic postulates of the model, which may be called “4P” model, considering the first letters of the elements.

Planning in function of quality management implies that the importance of improving quality has to be stated in the mission and vision of the company, and consequently, that the strategy for quality improvement has to be

formulated and organizational structure transformed in order to support continuous quality improvement. Planning also involves the construction of process and product quality in terms of their design.

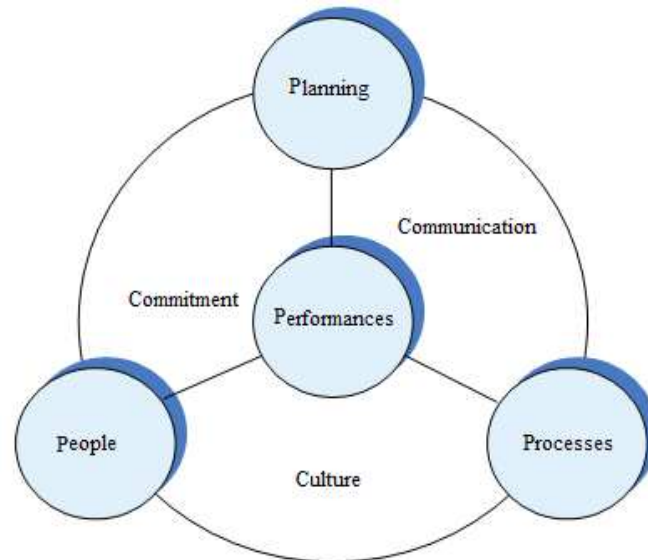
Processes are the link between organizational units of the enterprise, as well as between the enterprise and its external constituents (primarily customers and suppliers). They combine the skills and resources in a certain way to ensure value creation for customers. In order to increase value for customers it is necessary to establish a system for continuous process improvement, in terms of decreasing time, reducing costs and increasing quality.

When it is about employees the emphasis is on teamwork, innovation and continuous learning and training. Continuous learning and development of employees are the conditions for their involvement into the process of improvement.

The last element of the model refers to measuring the key performances and taking actions for their improvement. When it comes to performance as a postulate of the model the main idea is establishment of performance measurement system, such as the Balance Scorecard, while, when it is about processes, the main idea is establishment of a system for their continuous improvement. Starting from the fact that the results of each employee directly or indirectly affect the satisfaction of customers, employees have to be introduced with the importance of measuring and improving performance at the individual level.

These four postulates are “hardware” of the model. Bearing in mind that the hardware is useless without software, the above postulates have to be upgraded with the “software” that includes culture, commitment and communication, or “3C” (see Figure 1). These three elements make this model different from the quality management models that are the basis for the awards for quality management. This model suggests that employees with appropriate knowledge, skills and commitment are the basis for providing the results within other elements that constitute the “hardware” of the model.

Culture is an element of support for continuous improvement of operations and is referred to as a business or organizational culture. Value system and the way that employees’ behave as elements of business culture must be in function of quality improvement. In that case, business culture may be called quality culture. Quality culture means that employees perform the activities as they are their owners, and in doing so, employees who perform the following activities as viewed as internal customers, whose satisfaction should be provided.

Figure 1: "4P+3C" quality management model

Source: Oakland, Oakland, 2001

Employee commitment is a condition for providing continuous improvement of operations. However, employees' commitment is conditioned by their motivation and involvement into the improvement process. Employees' commitment to a large extent depends on the relationship with their superior (manager) and, therefore, it is desirable that the managers act as leaders or role models for employees. Managers have to guide and direct, and not only to give instructions to the employees and monitor their performance (Summers, 2009, 54).

Communication between employees must be free, regardless of their position or the hierarchical levels. Employees need to talk to each other about strategy of the company, operations they perform, problems that they are encountered, because it is easier to solve problems and provide improvement when employees talk about them.

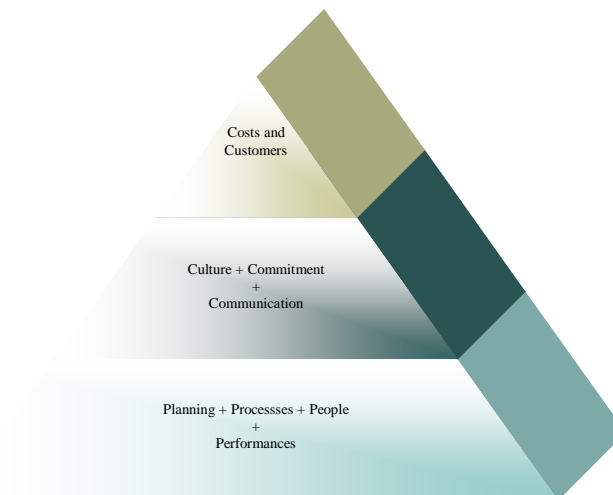
The company has to establish cooperation relationships with customers, because it is the only way to identify their wishes and requirements. The demands of consumers must be the basis for structuring (designing) of products and processes. Managers have to foster cooperation with customers and provide a continuous adjustment of value proposition according to changed or new customer demands.

Considering that the activities connected to quality improvement are directed towards the customers' satisfaction, they are an essential and critical element of the model. Although customers' satisfaction can be classified as

performance, due to the importance of their satisfaction for the sustainability of competitive advantage, it is desirable to observe customers as a separate element of the model. Thus, the model becomes “4P+4C” model.

This model can be improved by adding another “C” that refers to costs, in the sense that in the process of selection of suppliers, price is not the only element that should be taken into account, but the total costs incurred in connection with the procurement and usage of materials. Total costs, in addition to the purchase price of materials, include the costs of quality control and the costs of inadequate material quality. Costs of material quality control refer to quality assurance, while the costs of inadequate material quality occur in the case of returning the material due to the poor quality. With quality, reliability and delivery time, costs are a significant determinant of customers’ choice (see Figure 2).

Figure 2: “4P+3C+2C” quality management model



The elements identified as “3C” represent the connective tissue of the quality management model, since they ensure that design (planned) and realized (processed) quality corresponds to the quality features that customers expect and to cost efficiency that the company wants to achieve. The original model shown in Figure 1, in the spotlight places the performances while, according to the improved model, performances are the basis for ensuring customers’ satisfaction keeping in mind that these are the performances at the process level. In this sense, the original model becomes “4P+3C+2C” or “4P+5C” model. Presented “software” of the model (culture, communication, commitment) is actually a manifestation of the characteristics of employees, as part of the “hardware”. Proceeding from this, “software” can be obtained through improving the personal and individual qualities of the employees.

The role of employees in quality improvement process

The role of technology, and in this regard of employees' education for usage of the same, in the companies that are focused on quality, becomes more pronounced. The research and development function has to be in function of quality improvement through continuous improvement of business processes, products and services. In this way the opportunities for improving the market position may be created, because experience shows that a large number of defects (75%) that occur on a given product (and therefore the highest cost), mostly are rooted in research and development process, or during product defining, planning, developing (Stojiljkovic, 1996, 23). In later stages, the percentage of error emergence is lower, or mistakes that occur during production, mostly occur as a result of previously made mistakes. That is why the greatest opportunities for product quality improvement and costs reduction are in the research and development process, at the least when the product is already at the market. Thus, education for research and development increasingly takes on the dimension of the education for quality, because the quality is still the leading factor of competitive advantage in the global market. It must be based on the basic principles of management and marketing, quality management and information technologies, because only in this way businesses and the economy as a whole, can occupy a stable position in the market.

ISO 9000 standards, namely ISO 9004, contain very few provisions that explicitly refer to employees or to human resources. This standard regulates only certain segments of the human resources that contribute to quality improvement.

However, the key to success is not in obtaining certificates confirming the implementation of the appropriate standards, but rather in promoting the learning process by managers, through its initiation, supporting and facilitating. According to Juran (Juran, 1989), the most important element of change in the development of modern Japanese business concept, was a massive training program. Japan's experience in implementing quality circle, in which all employees are included, may be transferred, without any investment, into the practice of any business. In this concept classical quality control disappears, but the employees involved in the implementation of certain activities control the perpetrator of the previous activity, which prevents further operation on already defective unit, and enables the correction of identified non-conformities, if that is technically possible.

Speaking to a group of directors from the United States, in 1988, Konosuke Matsushita said: "We will win, and you will lose ... Your companies are based on Taylor principles ... You firmly believe that good management means executives on the one side and workers, on the other side: on the one side man who thinks, and on the other man who might just work. For you, the

management is the art of transferring the ideas into the hands of the workers ... For us, management is putting the intellect of the entire labor force in the service of the company” (Brown, 1996, 197). This ferocious attack of Matsushita offered the greatest challenge to the traditional approach to production: the transformation of the syndrome “us and them” to a holistic management approach. Under this approach the success of quality improvement depends primarily on the degree of authority employees. This means that the quality has to be a concern of all employees, and they, depending on the degree of authority, must master certain tools and techniques related to quality improvement.

In addition, the employee would be able to take initiatives to improve quality, especially quality of the activities they perform, if they are aware of their skills and abilities, and faults and mistakes. If quality is not incorporated at the individual level, it will never become a part of the company culture. Therefore, quality must begin with individuals, or at the personal level. In this sense, it can be said that employees who embrace quality as a personal value and commitment will have greater chances to achieve or exceed goals and to fulfill the expectations that others have towards them. In doing so, it is important to note that the personal quality has to be promoted by managers, who have to highlight the importance of quality management through personal example.

Personal quality improvement

Personal quality is based on personal characteristics of individuals. Those characteristics define the personality of the employees as individuals and essentially a way of their behavior. For example, reliability and patience are the employees’ characteristics that make them desirable members of the teams. Apart from these, desirable characteristics include: honesty, perseverance, flexibility, kindness, intelligence, leadership, enthusiasm and good humor.

Personal quality involves the use of quality concept and quality management in everyday life and work of individuals. The importance of personal quality comes from the fact that the quality of the business as a whole is determined by the quality of individuals - employees who are involved in it. Personal quality is based on the philosophy of modern quality management concepts, or on the view that everything that should be done, should be done without a mistake. This philosophy means that each employee may perform better the activities that are entrusted to him/her, in order to ensure the satisfaction of those who interact with him/her (or use the results of his work), but also to ensure their own satisfaction. Improving the work of individuals provides the significant savings of “personal resources of employees (primarily time), but also of company’s resources. In this sense, improving personal quality is tightly connected to the attitude of employees that continuous search for a better way for realization of activities is necessary.

Identification of better ways for realization of activities includes previous identification of the mistakes and defects that occur as results of the mistakes. However, the fact is that the word “defect” has negative connotation for the employees in the sense that they would rather keep track of what has been done properly, but what was done wrong or unnecessary. Yet, the most of employees commonly perform activities in the right, and not in the wrong way and, therefore, it is easier to practice counting of the mistakes or errors. Counting errors may be uncomfortable for employees, but it is the only way to note their existence and to become aware of them. Counting errors is also precondition for their avoidance or reduction in the future. Through avoiding mistakes employees provide personal satisfaction and because it is a pleasant feeling when the operations are implemented without errors or without their repetition or solving problems that occur as a result of the errors.

Acceptance of the concept of a personal quality provides the context where quality is a part of business culture. In this sense, personal quality represents a springboard for providing quality culture. The concept of personal quality is very important for self-evaluation. The results of self-evaluation can have a much stronger effect on behavior change and the way employees work, compared to traditionally used sanctions that come from the superiors.

Personal quality checklists enable employees to create a habit to follow and improve the activities which will enable them to increase the level of personal quality, and quality of work of employees with whom they interact, and consequently the quality of the enterprise as a whole. Personal quality checklists are suggested by Roberts (Harry Roberts) and Sergesketer (Bernard Sergesketter), professors of statistics and quality management at the University of Chicago. According to them, each employee who forms his own personal quality checklist must share their work habits into two groups (Roberts et al, 1993): habits that contribute to reducing the number of defects and habits that enable the reduction of activity. Habits from the first group should be rejected, because in this way an employee avoids or reduces tension, stress and frustration: rejection of these habits, also contributes to time savings. These habits are most often associated with activities that are not performed correctly the first time (and therefore should be corrected or repeated), or performing activities that are not necessary (activities that do not add value). Habits that can be classified into the second group are those that should be adopted, because they, although involve additional time and effort, finally contribute to easier and faster performing of the activities. These habits are usually related to information concerning methods for performing activities, continuous learning, accepting advices and suggestions and the like.

The role of employees in improving quality of Serbian enterprises

The need for demystification of the presented model for quality improvement, and highlighting the role of employees in process of quality improvement occurs as a result of necessity of Serbian enterprises' inclusion into the world economic flows, increased and intensified competition and the need to establish long term cooperation with domestic and foreign with partners (for example, in form strategic partnerships). In order to provide a place at the global market, either alone or in collaboration with foreign partners, enterprises in Serbia have to be familiar with models and concepts on which successful businesses are based worldwide. In order to analyze the presence of certain elements of the "4P+3C" model in the companies in Serbia empirical research was conducted. The research comprises 60 companies, chosen randomly. This sample may not be entirely representative, but in any case it is informative because based on it one can estimate if the managers of companies in Serbia are aware of the importance of continuous quality improvement and, in particular, of contribution of employees or of the need for improvement of employees' personal quality.

Table 1 shows the results of descriptive statistics regarding the representation of the elements of the mentioned model for quality improvement. It seems that the process orientation is present in the companies in Serbia, because the highest average mark (scale from 1 to 5) is recorded for the claims related to processes, such as: "business processes are identified" (4.15) and "methodology for process performances measurement is defined" (4.05). For these claims standard deviation is the lowest, which means that answer of managers are pretty consistent (less deviate) compared to the answers concerning the other claims.

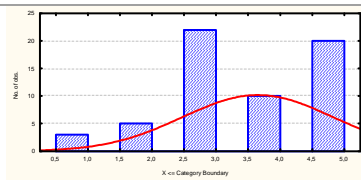
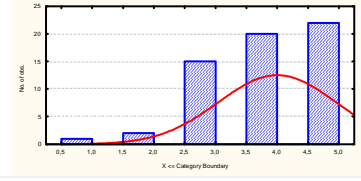
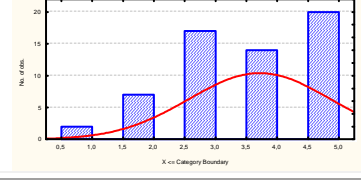
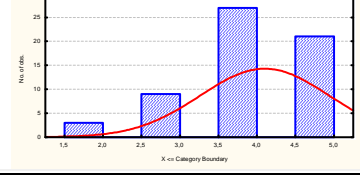
Such statistics could lead to the conclusion that process orientation is present in the Serbian economy. However, this conclusion cannot be accepted without reservation, because it is suspected that the managers have given higher marks for the claims related to the processes and performances (as elements of the model) in order to highlight their presence in relation to allegations concerning the other elements of the model, which presence is at the extremely low level.

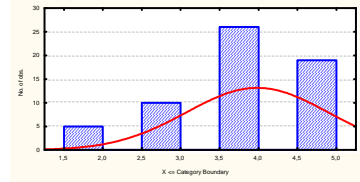
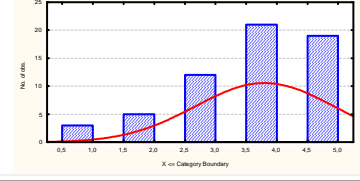
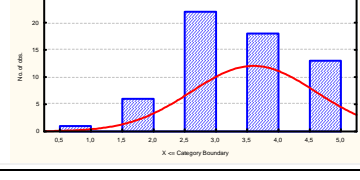
Claims related to employees and communication (as elements of the model) had the lowest average rating (3.12 both), which is a big handicap for the companies in Serbia, because continuous training of employees and exchange of knowledge and experience through free communication are prerequisite for creating intangible resources as the basis for competitive advantage in modern conditions. Bearing in mind that all "C" model elements represent attributes of employees (communication, culture and commitment), and that they got very low average marks in the empirical analysis, promoting the personal quality

concept, at all hierarchical levels, is very significant. In addition, the implementation of the personal quality concept must start from the highest hierarchical levels, and managers have to give a personal example in order to show that one should start the introduction of changes by changing himself/herself first (“first sweep in front of one’s house”).

The approach of command and control is still very much present in Serbian enterprises, and, therefore, the communication that means “friendship at a distance” for now seems unrealizable. Also, the empowerment of employees and funds for their training and education are not the thing that the companies in Serbia could boast of. If one takes into account the fact that knowledge is the only in exhaustible resource or the resource that can be constantly upgraded and enlarged, and complemented with experience and skills, it is not difficult to understand why it is important to invest in training and development of employees. In this regard, funds for training and development of employees should be viewed as an investment rather than as expenses.

Table 1: Assessment of the claims concerning presence of “4P+3C” model elements

Claims	Aver.	Me	Mo	Freq.	Std. dev.	Histogram
Improving the quality is a part of the strategy	3,56	3,50	3,00	25	1,18	
Business processes have been identified	4,15	4,00	5,00	25	0,96	
Employees continuously improve their knowledge and skills	3,12	4,00	3,00	19	1,15	
There is a methodology for measuring process performance	4,05	4,00	4,00	34	0,84	

Claims	Aver.	Me	Mo	Freq.	Std. dev.	Histogram
Value system is transparent and respected by employees	3,98	4,00	4,00	29	0,91	
The system of compensation is a motivating and leads to employees commitment	3,64	4,00	4,00	25	1,13	
Communication between employees is free at the horizontal and vertical level	3,12	4,00	3,00	31	0,99	

Since the development of employees and employees' characteristics that refer to communication are the elements of the model with the lowest average marks, according to managers in, managers were asked to rate their personal characteristics, trying to be as objective as possible. The results obtained by descriptive statistics are presented in Table 2:

Table 2: Evaluation of presence of employees' desirable characteristics (personal quality)

Claims	Prosek	Me	Mo	Frek.	Std. dev.
Affability	4,45	5,00	5,00	35	0,77
Availability	4,38	5,00	5,00	34	0,95
Persistence	4,35	5,00	5,00	34	0,95
Flexibility	4,29	4,00	5,00	29	0,79
Enthusiasm	4,27	4,50	5,00	30	0,92
Sense of humor	4,19	4,50	5,00	30	0,90
Confidentiality	3,93	4,00	5,00	23	1,02
Sincerity	3,87	4,00	5,00	26	0,98
Kindness	3,75	4,00	5,00	23	0,97
Self-control	3,61	4,00	5,00	17	1,10
Respect other people's opinions	3,56	4,00	3,00	19	0,99

Based on data presented in Table 2, it can be concluded that managers believe that their personal values are: affability (4.45), availability (4.38) and persistence (4.35). In the middle of the table are: flexibility (4.29), enthusiasm (4.27) and a sense of humor (4.19), while the lowest rated are the following characteristics: honesty (3.87), courtesy (3.75), self-control (3.61) and respecting other people's opinions (3.56). As ratings show, it is quite obvious that there is need for the improvement of personal quality. It is expected that the improvement of personal characteristics of managers, but then of the other employees, may contribute to the improvement of communication as one of the "C" elements of the model, but also to the improvement of knowledge and skills of employees as one of "P" elements of the model, whose presence in the Serbian economy is evaluated with the lowest marks.

Bearing in mind that the desirable characteristics of employees are the elements of their personal quality, it is assumed that the improvement of personal characteristics will have a positive impact on the "software" of the model, or on "C" elements of the model, as they relate to the employees as individuals and enterprise members. In this sense, the analysis concerning descriptive statistics is complemented by using χ^2 test. The following two hypotheses are defined for the application of this test:

- Ho: there is no correlation between average mark of elements that make the "software" of the model and the average marks of employees' personal characteristics, and
- H1: there is a correlation between average mark of elements that make the "software" of the model and the average marks of employees' personal characteristics.

Values of the characteristics (average marks of the elements that make the "software" of the model and the average marks of the employees' characteristics) have been polarized. In Table 3, the feature "elements" zero indicates an average marks less than 3 and one an average mark 3 or more. The same is done for the feature of the "characteristics" (zero indicates an average marks less than 3 and one an average marks 3 or more). The basis for grouping companies into two categories (those with the average mark less than 3 and those with an average mark 3 or more) was the fact that companies in which the average marks for elements and characteristics are higher than 3 already have been taking actions to improve business quality, and that the observed elements and characteristics of employees are already on a relatively satisfactory level.

The results of χ^2 test show that, for the significance level 0.01, it is necessary to reject the null hypothesis. This is because the realized value is less than 0.01 ($0.001 < 0.01$), which means that between the observed features, in this example, the average marks of elements that make the "software" of the

model and the average mark of employees' characteristics, there is dependance (Table 3).

Table 3: Establishing the relations between average marks of the elements that make the “software” of the model and the average marks of employees' personal characteristics

		elements		total
		0	1	
Employees' characteristics	0	8	15	33
	1	22	5	27
total		30	30	60
χ^2 test statistics: 11.2856				
Number of degrees of freedom (v): 1				
Tabulation value (significance level): 6.635				
P-value: 0,001				
Conclusion: Ho is rejected at the risk of 0.,01				
Contingency coefficient: 0.429				

As the maximum relationship strength is 0.707, it means that the contingency coefficient, which is equal to 0.429, indicates a strong relationship between the observed features. This result represents the foundation of the claim that the improvement of personal characteristics of employees can provide a positive impact on the elements that make the “software” of the model (communication, culture and commitment) and, consequently, on the other elements of the model (if the idea that three elements are the connective tissue of all resources and the base for providing the results of the elements that constitute the “hardware” of the model - planning, processes, performance, employee, is accepted).

The results of χ^2 test will be checked through future research, which is planned on the same sample, after 6 months, bearing in mind that each of the surveyed managers has a task to record the marks of personal quality on the weekly basis, in order to identify the trends, and the impact on the elements of the “4P +3 C” the model. Certainly, one of the obstacles of this research is subjectivity of the respondents, but given the anonymity of the survey, it is expected that this subjectivity is minimal, and, in terms of statistical analysis, negligible.

Conclusion

Today, when at the economic scene remain only fast and flexible companies, it is important to strive for changes continually, with the task of producing quality and cheap products, by increasing the efficiency of business

processes and procedures with final aim to ensure sustainable growth and development. The company must be **committed** to long-term quality management, including quality **planning** and quality improvement. Long-term commitment to continuous quality improvement involves a change of business **culture** so that it promotes the philosophy of “zero defects” or proper conduct of activities for the first time (quality at the source). Such a culture involves teamwork and establishing a free **communication** between employees and between company and its consumers and suppliers. Free communication is also a condition for successful implementation of **process** orientation and process-based management. Investing in **employee** development and empowerment is a condition of their inclusion into the process of continuous improvement. Continuous improvement is in function of increasing **customer** satisfaction, and company **performances** in general.

Improvement of the business cannot be achieved without promoting teamwork at all levels of the company, and ensuring the continual participation of employees at all levels, too. This is in compliance with the expectations that the company has towards employees – to take a responsibility for the activities they perform, to be team players and to increase the level of personal quality.

Bearing in mind that managers should act as leaders, whose behavior consciously or unconsciously employees imitate, it is desirable that the initiative for the improvement of personal quality and the formation of personal quality checklists starts right from them. Managers must realize that the personal quality is the basis for providing quality of the activities at each workplace, and consequently, the requirement for providing business quality. In this sense, promotion of the quality concept should not be regarded as an activity for influencing the employees, but as something that should be done and provided together with the employees.

The importance of personal quality indirectly is confirmed through models accepted as the basis of quality awards, since human resources are very “valuable” criteria. EFQM model especially emphasizes the importance of employees and their attributes in terms of knowledge, skills, communication, experience, because it incorporates the dual structure of the points. Specifically, employees are included in the model as a factor or a driver of the expected results, and as a result in the sense of their satisfaction and commitment. When the managers of enterprises in Serbia realize the effects of appreciation and development of all seven elements of the “4P +3 C” model, it is more likely that they will launch the initiative for the implementation of modern concepts of quality management, in order to achieve business excellence.

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KARAKTERISTIKE ZAPOSLENIH KAO FAKTOR UNAPREĐENJA KVALITETA POSLOVANJA

Apstrakt: Kada se govori o kvalitetu, obično se ima u vidu kvalitet proizvoda, procesa ili poslovanja preduzeća. Kvalitet se, međutim, može posmatrati i na nivou zaposlenih kao pojedinaca. U tom slučaju govori se o ličnom ili personalnom kvalitetu. U radu se polazi od pretpostavke da je kvalitet zaposlenih, kao pojedinaca, determinanta kvaliteta poslovanja preduzeća kao celine. Cilj rada je da pokaže da je samoevaluacija i samokontrola zaposlenih uslov i prvi korak ka unapređenju ličnog kvaliteta. U radu je ukratko prezentovan jedan od savremenih modela upravljanja kvalitetom koji upravo ističe značaj ličnog kvaliteta. Pre demistifikovanja ideje ličnog kvaliteta, u radu se ukazuje na doprinos zaposlenih (kao pojedinaca) unapređenju kvaliteta poslovanja. Konačno, poslednji deo rada prikazuje rezultate istraživanja zastupljenosti pojedinih elemenata modela upravljanja kvalitetom u preduzećima u Srbiji, kao i doprinosa ličnog kvaliteta implementaciji navedenog modela

Ključne reči: upravljanje, kvalitet, zaposleni, lični kvalitet, ček lista.



SOME ASPECTS OF MARKETING ORGANIC FOOD PRODUCTS

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Abstract: This paper addresses and examines some aspects of marketing organic food products. Our aim was to analyze production and trade flows and create a marketing model for organic food products. More than 1.8 million producers in 160 countries all over the world are involved in organic production. In 2009, there were 37.2 million hectares of land under organic production, with a growing trend at the rate of 12%. In 2010, the world turnover in organic products amounted to USD 58.9 billion, showing a rising trend at the rate of 10.9%. The turnover in vegetables, worth USD 19.5 billion, participates with a 33% share in the total market value. Leading market segments in the world market for organic products are fruits and vegetables, bread and grains, beverages, milk and meat. Organic agricultural products are of high quality, safe, and of higher nutritive value. Organic products contain more minerals, particularly potassium, calcium, iron, magnesium, phosphorus and vitamin C, and less nitrates than conventional products. Costs of organic production are higher and differences are stimulated by premiums. The share of traditional channels with retail chains for the distribution of organic food is increasing, while the share of specialised and other distribution channels is decreasing. The potentials lie in stimulating the development of high quality, certified, safe, and strictly controlled organic food, as well as its production and processing. It is extremely important to focus on the legislation related to marketing, development of recognizable brands, broader product assortments, as well as attractive designs for domestic, regional and global markets

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Keywords: production, trade, marketing, marketing legislation, certified organic products, nutritive value, retail chains

Introduction

The demand for organic products led to the development of organic production, thus adding the ecological aspects to the already present economic and ethical dimensions of production. Organic products marketing implies the placement of certified organic food products in the market, in order to meet consumer needs, generate profit and preserve the environment.

Sustainable organic agriculture is a way of production which improves the quality of our living environment in the long run, as well as the resources on which the whole production is based. Furthermore, it satisfies the human need for food and fibres is economically viable and improves the quality of life of farmers, their families and society as a whole (Lazić, B., 2008). Organic agriculture implies a method of sustainable, integrated, ecological production which brings high quality, safe, strictly controlled and certified food, “from field to market”, in order to meet consumer needs, generate profit and preserve the environment (Babović 2008). Organic production is based on the principles of health, ecology, fairness, nurturing and welfare.

According to Kotler, “marketing is the delivery of customer satisfaction at a profit” (Kotler, 2000). Demand is the essential element of the organic food market. The rising demand for organic food products should be analyzed from the perspective of advantages of high quality, safe and certified food to conventional food products. Organic production requires that producers observe ecological and ethical principles in production and provide consumers with high quality, safe and certified products in order to generate profit and preserve the environment.

When determining cost-efficiency of organic production, in comparison with conventional one, the factor of additional quality of organic products should also be taken into account. However, the domestic demand for organic food products is satisfied by import, due to still low levels of organic production in Serbia. The good quality of soil, water and air, small agricultural holdings, regional distribution of organic production, as well as appropriate organisation, supply management and financial incentives- all represent important prerequisites for the development of organic food products.

Research indicates that the consumption of organic food is influenced by a number of factors, such as: consumer income, product price, personal motivation of consumers, the degree to which consumers are informed about products, product safety, quality, taste of products, product range, availability, distribution channels and consumer habits. It is necessary to educate consumers and intensify promotional activities related to organic products and their characteristics and advantages. Some authors emphasize that there is a growing demand for products in approved packages and with certificates and logos for organic products (Babović, 2008, Vlahović, 2010, Leifert, 2010).

Research aim and method

The aim of this research is to observe and analyze production and trade with organic products, to create a marketing model “from field to market” and discuss certain aspects of marketing mix of organic products.

The research method applied in this paper was quantitative and qualitative. Statistical publications, scientific studies, research papers and all available literature related to the topic were used in the course of our research. When trying to determine the economic efficiency of organic production, in comparison with conventional production, the factor of additional quality of organic products should also be taken into account.

Marketing model for organic food products

The production of safe organic food has been stipulated by law and implies controlled and certified production “from field to market”. The proposed marketing model has both theoretical and practical importance, particularly when put in the context of strict control and certification of production process—all the way from the purchase of production inputs, through the very process of organic production, buying and selling, processing, product commercialization, organic products’ distribution channels and, finally, to the consumers or buyers. Na razvoj proizvodnje organskih proizvoda utiču mikroekonomski i makroekonomski faktori. U mikroekonomske faktore spadaju reonizacija organske proizvodnje, dobavljači inputa za organsku proizvodnju i preradu, kanali distribucije, finansiranje, ekonomika i dopunski efekti organske u odnosu na konvencionalnu proizvodnju i preradu. U makroekonomske faktore spadaju zakonodavna regulativa, subvencije, stručne službe, inspekcija, sertifikacija proizvoda i informisanost potrošača o prednosti potrošnje organskih prehrambenih proizvoda (Sudarević, 2010, Babović, 2008, 2011).

Table 1. Marketing model for organic products

PURCHASE MARKET -DOMESTIC AND INTERNATIONAL-	MARKETING RESEARCH, INPUTS, TRANSPORT, STORAGE, QUALITY CONTROL
ORGANIC AGRICULTURE	Resources, agro-technology, products, transport, storage, own consumption, direct sales, quality control, and certification.
BUYING AND SELLING PRODUCTS	Products, sales, transport, storage, quality control.
PROCESSING ORGANIC PRODUCTS	Resources, food technology, products, transport, storage, quality control, certification.
COMMERCIALIZING PRODUCTS	Transport, storage, commercial technology, preparing products for sale, quality control.

DISTRIBUTION CHANNELS AND MARKETING OF ORGANIC PRODUCTS	<p><i>Direct channels:</i> farm sales, standing order, greenmarket sales, fair sales, organic product stores and shops at farm holdings.</p> <p><i>Indirect channels:</i> wholesale and retail sales.</p> <p><i>Wholesale:</i> product purchase, transport, storage, wholesale, tourism and catering, large consumers, retail sales, quality control.</p> <p><i>Retail:</i> organic product sales in supermarkets and hypermarkets, organic food shops, organic food discount stores, specialised shops, health food shops, shops selling organic teas, spices and herbs, eco-stores selling dairy products, meat and eco-bakeries, quality control.</p> <p><i>Special channels:</i> supplying hotels, restaurants, cafes, canteens and cafeterias, schools, kindergartens, hospitals, the military, eco-tourism, quality control.</p> <p><i>Import and export:</i> products, transport, storage, trade, buyers, quality control.</p>
SALES MARKET -BUYERS (CONSUMERS)-	<i>Delivery of satisfaction to consumers</i>

Both micro and macroeconomic factors influence the development of organic production. Microeconomic factors include *regional focusing of organic production*, suppliers of inputs for organic production and processing, distribution channels, economic and additional benefits of organic production as opposed to conventional production and processing. Macroeconomic factors involve legislation, subsidies, expert services, inspection services, certification of products and awareness of consumers about the advantages of consuming organic food products (Sudarević, 2010, Babović, 2008, 2011).

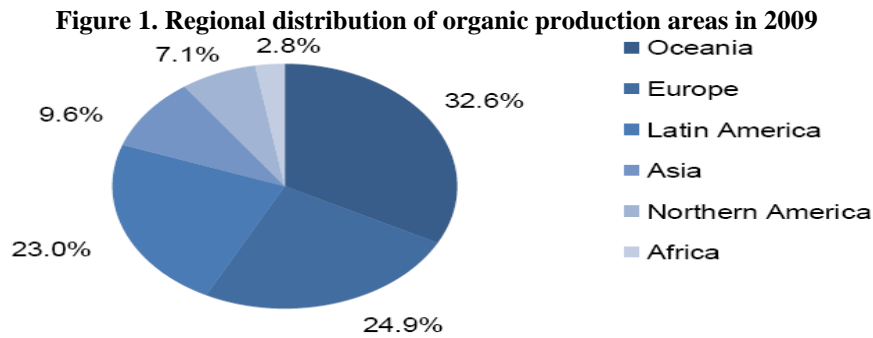
World trends and flows in organic production and trade

In 2009, organic production was organised in 160 countries all over the world, covering the area of 37.2 million hectares (including the soil under conversion) with a growing trend at the rate of 12% (Figure 1)

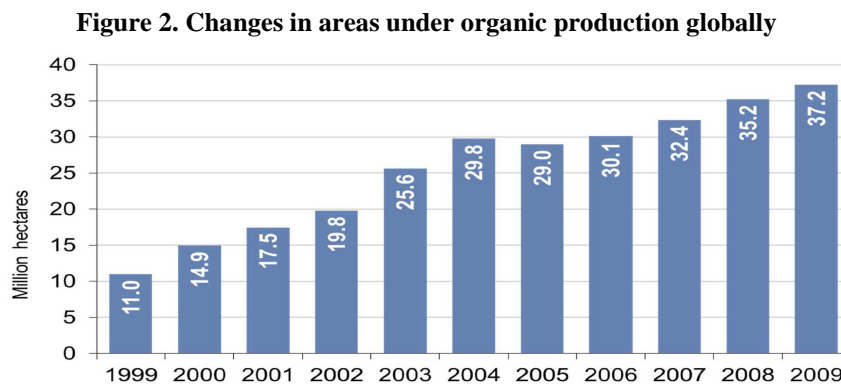
The largest share of areas under organic production in total agricultural areas was in the European Union – 4.7% (Europe 1.9%), For Oceania this share was 2.8%, Latin America 1.4%, and other regions had shares ranging from 0.1 – 0.9%.

Over a ten-year period, areas under organic production increased 3.4 times (Figure 2). In the last three years, areas under organic production dynamically increased in South America by 34.3%, in Asia by 24.1%, in North America by 22.7%, in Europe by 22.4%, in Africa by 11.1% and in Oceania by 0.8%. Oceania has the largest area of land under organic production, amounting to 12.2 million hectares, while Europe and South America have 9.3 million and

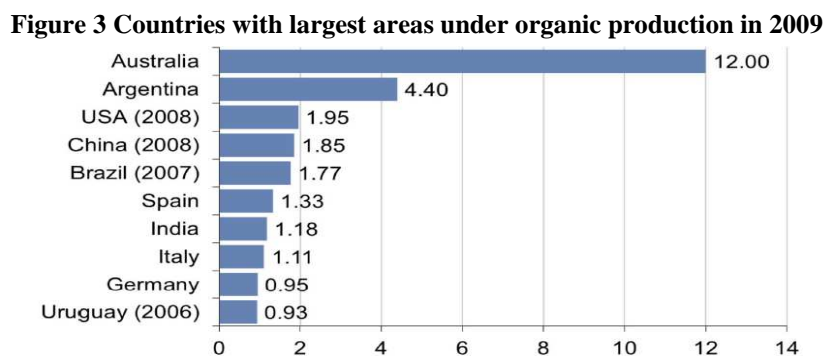
8.6 million hectares, respectively. Such rise in area under organic production resulted from a growing demand for organic products and the intention of producers to produce high quality, safe, certified food and attain larger profits and protect the environment



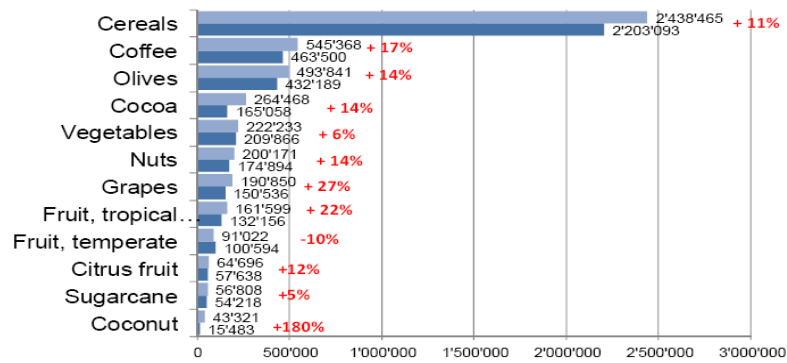
Source: FiBL & IFOAM Survey 2011



Source: FiBL IFOAM and SOEL 2000 – 2011.

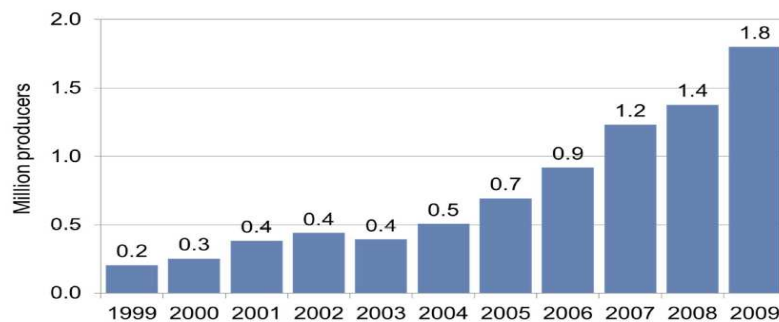


Source: FiBL IFOAM Survey 2011. (000 000 ha)

Figure 4 Predominant crops in organic production in the period 2008-2009

Source: FiBL/IFOAM Survey 2011, based on data from governments, the private organic sector and certifiers

The number of organic food producers grew over the last two years by 0.4 million (Figure 5). More than three fourths of producers are in Asia, Africa and Latin America. In India the number of producers doubled. As for European countries, Italy and Spain have the largest number of organic food producers. Experts estimate that the number of certified producers is over 1.8 million. Regional distribution of producers indicates that 40% of them are in Asia, 28% in Africa, 16% in Latin America, 14% in Europe, 1% in North America and 1% in Oceania.

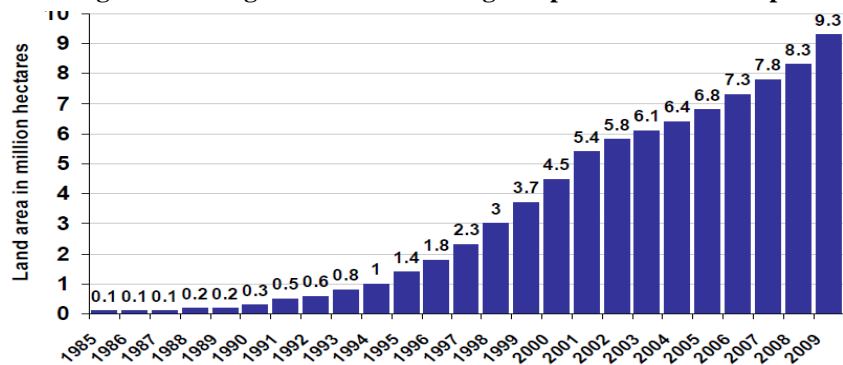
Figure 5 Changes in the number of producers of organic food globally

Source: FiBL, IFOAM & SOEL 1999 – 2011.

Based on the previous analysis of changes in the number of areas under organic products, organic production may be said to record a dynamic growth in the world. Total agricultural areas in most countries have also seen a dynamic increase. The trend shows that in most countries, where there are conditions for production, organic production has been organised. The number of producers has grown dynamically, and more than two thirds of them are from developing countries (Willer, H., 2011).

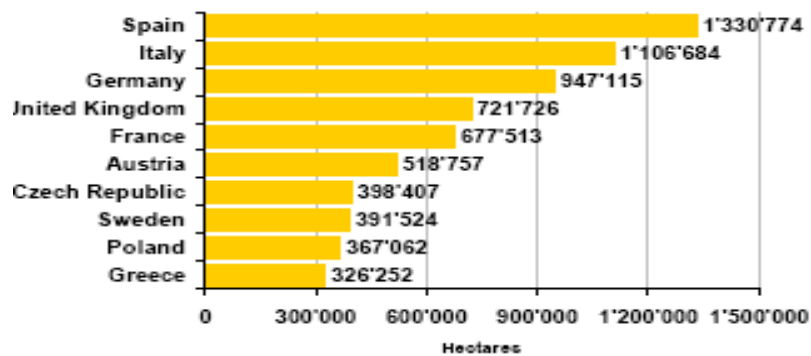
In the European Union, organic food production covers the area of 8.4 million hectares (9.3 in Europe), which makes 4.7% of total agricultural areas. In 2009, the market value of production was EUR 18.4 billion, with a growing rate of 5%.

Figure 6. Changes in areas under organic production in Europe



Source: FiBL, Aberystwyth University

Figure 7. Countries with largest areas under organic production in Europe



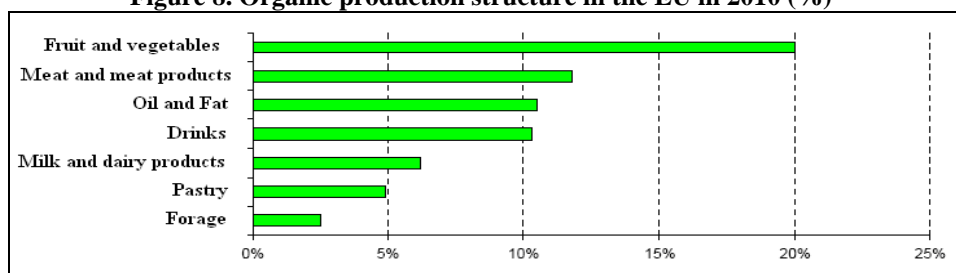
Source: FiBL, IFOAM

Areas under organic production in Europe have seen a dramatic growth. Over the last ten years, the areas increased more than 2.5 times (Figure 6). The largest annual increase in such areas was recorded in Spain and Italy (Figure 7). Dynamic growth in trade in organic products was evident particularly in France and Sweden, at the rates of 19% and 16% respectively. The largest per capita consumption, of over EUR 130 annually, was recorded in Denmark and Switzerland. The largest market shares of organic production were in Denmark, Austria and Switzerland.

In 2010, organic food producers in the world had a turnover of USD 58.9 billion in the global market. The turnover had obviously grown in comparison

with 2006 at the rate of 10.9%. With revenues of USD 19.5 billion, vegetables had a share of 33% of the total value of the market. Projections for 2015 say that the expected turnover in organic food will be worth USD 88.6 billion, with the annual growth rate of 8.5%. Leading market segments globally are fruits and vegetables, bread and grains, milk and meat (Datamonitor, 2006, 2011). The achieved growth in trade indicates that there is a great demand for organic products which are of higher quality and safer for consumption, compared to products from conventional production.

Figure 8. Organic production structure in the EU in 2010 (%)



Source: Eurostat, 2010.

European producers recorded market sales of organic products worth USD 24.7 billion, with a growing trend at the rate of 8.9% in comparison with 2006. The largest turnover in organic food was recorded in the German market, EUR 5.8 million, while in France and England it was EUR 3 million and EUR 2 million respectively. In Denmark, Austria, Switzerland, the share of organic food in the food market is larger than 5%. Organic vegetables market is worth USD 6.6 billion and has a share of 26.6% in trade of organic products. Estimates say that by 2015 the trade in organic food will grow at the rate of 8.3% and reach USD 36.8 billion. Organic product market involves fruits and vegetables, bread and grains, milk and dairy products, meat and processed meat, and other organic products (Figure 8).

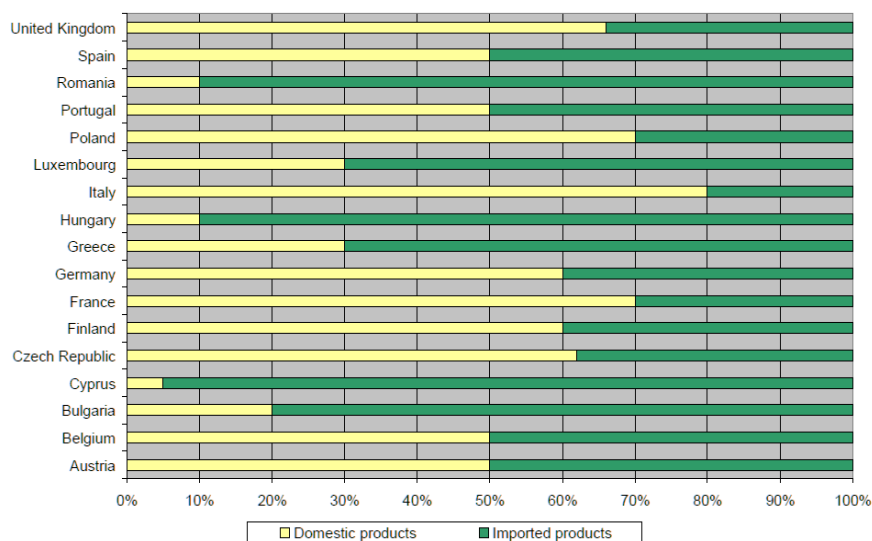
The European Union has an active policy of developing organic agriculture, stimulating increase in production and introduction of standards, indications and labels, and supplying financial support for farmers who produce organic products, and also for research, education and marketing. Organic agriculture provides social and ecological benefits in addition to protecting the environment.

In terms of market segmentation of the European organic food market, Germany has the largest segment of 29.4% of the total organic food market, followed by Great Britain (19.9%) and France (14.1%), while other countries account for 36.7% of trade in the European organic food market.

The European Union organic food market is heterogeneous. Countries differ in terms of income, culture, development and market growth. Thus, Great

Britain imports organic products, Italy is an exporter, and in Austria they satisfy their own needs. The largest turnover in organic food is present in Germany, but their per capita consumption is small. Denmark has the highest consumption of organic food per inhabitant. Germany imports 50-60% of the total consumption of organic products. Strong growth in consumption of organic products is seen in France, Great Britain and Italy. The organic food market share is identical in Germany and the Netherlands and amounts to 1.5% of the overall food market (Wier, Calverley, 2002).

Figure 9. Share of domestic production and imports in organic food consumption (%)



Source: ORA, ECOZEPT, BioVista (2008), FR: Agence Bio (2009). In this graph, imports account for intra-EU trade and extra-EU trade. These are estimates based on expert views and provide orders of magnitude only.

A generally shared opinion is that the demand for organic products is on the increase. Market share of organic products is insufficient, and organic food consumption makes just a small part of the total consumption of food.

In 2010, organic food producers in the USA achieved a turnover of USD 28.7 billion. In the period from 2006 to 2010, trade grew dynamically, at the rate of 11.6%. Turnover in vegetables was worth USD 10.2 billion, which equals 38% of the total market value. Estimates say that organic products will increase at the rate of 14% by 2015. Packaged organic food is one of the fastest growing segments of food industry. The USA favours the development of free market through national standards and funds to support research, education and marketing for organic products (Dimitri and Oberholtzer, 2006, 2009). The US organic product market is supplied by larger farms, larger producers, with quality distribution of organic products. Large multinational companies pay special attention to organic products

and create new ones, acquire companies and create partnerships with companies that have organic brands (Sheel, 2004, Richter, 2009).

In Asia, the organic food turnover was USD 3.5 billion in 2010, which presented an increase of 16.2% compared to 2006. Trade in vegetables resulted in revenues of USD 1.3 billion, which is equivalent to 35.8% of the total market value. The largest producers of organic food are China and India. The expected turnover by 2015 is USD 5.3 billion and the expected rise of the market is 8.9%. Organic production in Africa takes up 1 million hectares and involves a large number of producers. The biggest producers are Uganda, Tunisia and Ethiopia, which are also exporters of organic food. Australia predominantly produces organic fruits and vegetables, grains and livestock. In South America organic agriculture occupies 8.6 million hectares. The leading producers are Argentina, Brazil and Uruguay. Organic products in these countries include organic tropical fruits, grains, coffee, cocoa, sugar and meat.

Nutritive value, price, promotion and distribution of organic products

Organic agricultural products are high quality, safe and have a higher nutritive value. A research study conducted in the USA showed that organic products contain 63% more potassium, 73% more iron, 125% more calcium and 60% more zinc than products from conventional production (Mirecki, N. 2008).

Table 2 Difference in nutritive contents of organic and conventional products, in ppm

Product	K	Ca	P	Mg	Fe	Na	Vit. C mg
String beans	+ 58	+ 63	+ 6	+ 0.2	+ 63	+ 25	
Cabbages	+ 11	+ 36	+ 4	+ 0.2	+ 48	+ 43	+ 43
Lettuce	+168	+ 31	+ 17	+ 0.2	+ 57	+ 55	+ 17
Tomatoes	+ 67	+ 33	+ 8	+ 0.2	+ 53	+ 19	
Spinach	+116	+ 76	+ 16	+ 0.2	+ 32	+ 49	+ 52
Total	+420	+239	+ 51	+ 1.0	+253	+191	+ 112

Source: Fruhwald, F., Bioholmi, Ekime, Budapest, 2008. i National Quality of Organic Versus Conventional Fruts Vegetables and Grains, Virginia Worthington, M.S., Se.D., C.N.S. Calculated by authors.

Organic products in the above table contain 1155 ppm more minerals and 112 mg more vitamin C than conventional products. Mineral content in organic products is seven times higher compared to conventional products.

Aesthetics of organic products leads to a growing demand. Selling style becomes a new selling trend when a product becomes widely accepted by the

consumers. Design is an important factor for sales. Trademark and brand are protected signs of the producer, organic product, region and country. They influence the buyers' trust and confidence in the product. Packaging is an important factor for the recognizability of products. Well designed packaging attracts the attention of the buyer on an emotional level, as well as in terms of technology and marketing.

Price is an important component of sales and export of organic products, and must be acceptable for producers and consumers alike. However, consumers must be ready to pay for a high quality and safe product a price which is higher than the one for a conventional product.

Table 3. Comparative analysis of prices for organic and conventional products (\$/kg)

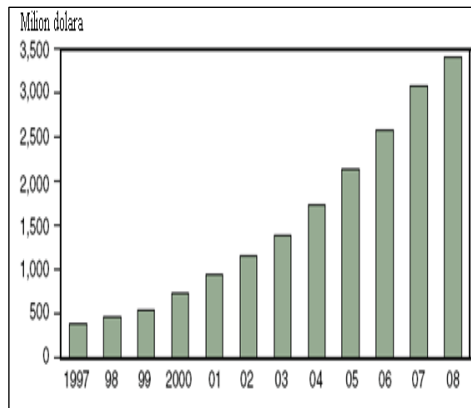
	2004	2005	2006	2007	Average	Index
Milk Org.	3,22	4,18	4,26	4,42	4,02	196
Con.	1,72	2,05	2,16	2,28	2,05	100
Eggs Org.	4,21	4,06	4,00	-	4,09	296
Con.	1,52	1,26	1,36	-	1,38	100
Carrots Org.	2,09	2,08	2,20	-	2,12	136
Con.	1,53	1,58	1,59	-	1,56	100

Source: ERS Calculations using Nielsen Homescan data.

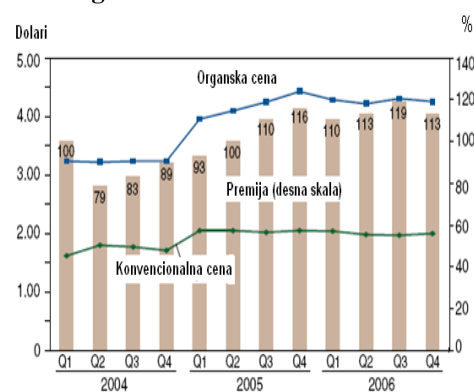
Costs in organic production are higher, and they are compensated for by a premium of USD 6. Due to a growing demand for milk and milk products, the sales are increasing dynamically due to factors such as: product quality, education, income, health and the environment and regardless of product price (USDA, Economic Research Service calculations of Nielsen data).

Promotion is an important medium of communication between the producer and the consumer which should lead to the creation of a favourable perception of the product and make sales more dynamic. Promotion and advertising should serve the function of the quality of organic products, as well as protect consumer health and the environment. They create the image of a product and its producer and thus contribute to their popularity, while at the same time informing the buyer about product characteristics. A logo serves to distinguish one organic product from others and is a sign of unchanged quality of products from organic production.

Distribution involves all activities from the producer to the buyer, for the purposes of marketing and channelling of goods and satisfying consumers' desires. Distribution should be carried out through specialised sales channels to special places on the shelves in wholesale and retail shops, and also in the form of doorstep delivery. Organic food products are available to consumers in health food stores, hypermarkets, through direct sales, online shops and catering facilities.

Figure 10. Dynamics of organic dairy products sold in retail

Source: Nutrition Business Journal, 2009.

Figure 11. Retail prices and premium organic and conventional milk

Source: USDA, Economic Research Service calculations of Nielsen data.

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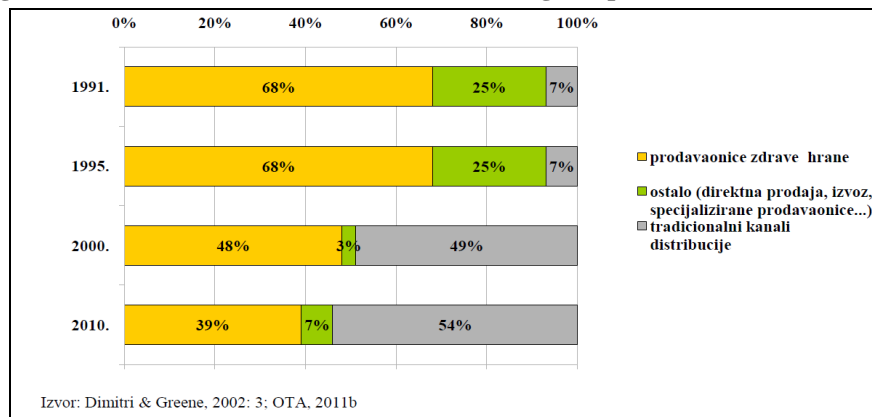
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In 2010, organic food distribution in the USA was carried out via traditional channels (54%), health food stores (39%) and direct sales, exports and also through specialised stores (7%) (Figure 12). The share of traditional distribution

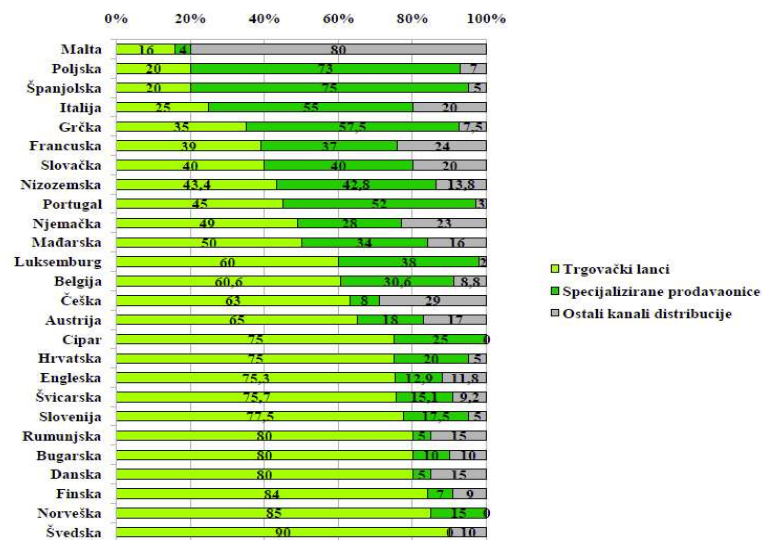
channels increased, whereas the share of organic food sales in health food stores and through direct sales decreased (Dimitri, 2006, 2009.,OTA, 2011b).

Figure 12 Distribution channels for the sales of organic products in the US market



According to Vaclavik (Vaclavik, 2009), in the European Union the share of traditional channels with retail chains for distribution of organic food has a tendency of dynamic growth, while the share of specialised and other channels of distribution is decreasing. In 11 countries retail chains have a share of 30%, the share of specialised stores is 52% and all other channels account for 18%. In 15 countries retail chains have a share of 75%, specialized stores 15%, and 10% are all other distribution channels.

Figure 13 Share of distribution channels in the sales of organic products in the EU.



Organic food products in the EU are sold via traditional channels, namely in supermarket chains, specialised stores and other distribution channels. Sales through traditional channels appeared simultaneously with the increase in organic production or with households converting from conventional to organic production (Stipčević, 2010, Figure 13).

Share of traditional channels with retail chains for distribution of organic food shows a growing tendency, while the share of specialised and other distribution channels is decreasing.

Marketing and legislation of organic production in Serbia

Production of safe food is regulated within the system of organic production of food and involves controlled production “from field to fork”, i.e. “from field to market”.

As for recognising organic products, since in our country there are still no specialised points of sale intended exclusively for this kind of products, the advice is that, regardless of where you go shopping, in large supermarkets or health food stores, you should look for the indication “organic product” and the mark or a logo of a certifying body responsible for monitoring the entire production process. In Serbia the Ministry of Agriculture guarantees that every product bearing this indication was produced in line with the principles of organic production.

Products that have not yet received the status of organic product because their production is undergoing conversion may bear the indication for such products on the market. They are not completely organic but are moving in that direction, and the indication for them reads: “Product under conversion to organic farming”.

The establishment of inspection and certification system by a large number of individual and independent organisations enabled the creation of brands and trademarks that inform consumers that the given product has been produced in line with the organic agriculture standards determined by a specific certification body. The emergence of a large number of standards caused confusion with consumers and decreased their trust.

In the EU, the first legislation to be adopted was the Regulation from June 2007 (Council Regulation (EC) No 834/2007) that contains general rules for organic production related to its use and indications, general rules of organic agriculture for plant production (conversion, soil tilling, sowing, planting, fertilisers, protection agents...), then labelling, processing, packaging, transport, distribution, marketing, list of allowed agents, inspection system, trade, organisation of inspection and certification services, rules for imports from third countries and data on certification applications. This Regulation that contains

rules for production, marking and inspection of the most important animal species is the document with guidelines for each EU member state for establishing their own certification scheme, inspection system and accreditation system for accrediting each certification body. At the EU level the decision was made that all inspection and certification bodies or organisations must be ISO 65 and ISO 39 accredited. The EU Regulation for organic production defines the support scheme for farmers in organic agriculture as well as programs for promoting organic agriculture. In more precise terms, it defines amounts allocated out of the total budget for organic food agriculture, for educating farmers, for scientific research of organic production and for transfer of know-how to the farmers, as end-users of research.

Serbian Law on organic production and organic products from 2010 lays down the rules for production, processing, storage, transport, trade, labelling of organic products and other related issues, and the national mark for labelling certified products was selected. Rulebooks were drawn up based on the Law, dealing with methods for organic plant and livestock production and processing, appearance of the indication and national mark, trade requirements and methods, method of record keeping, packaging, storage and transport, obligations of legal persons, certification, inspector IDs and regulation on incentives. The national association for developing organic production, called "Serbia Organica", was established.

Considering natural resources that Serbia has, organic production is undoubtedly a comparative advantage of Serbia and represents a significant factor associated with economic, social and environmental issues in agriculture. Serbia has great potentials to promote its production of all kinds of vegetables, plums, raspberries, sour cherries, pears, apples, processed vegetables and fruits, meat and meat products, cheese, honey, medicinal herbs and spices, and other final products of organic agriculture and processing. It is necessary to increase the supply of diverse and high quality range of products made by processing vegetables and fruits, grapes, milk and meat, grains, medicinal herbs and other industries.

As for sales, according to the available data, organic food is predominantly sold in the so-called health food stores, hypermarkets, greenmarkets, large stores and through home sales. Eco-products are exported in small quantities, despite the fact that Serbia has the necessary conditions for a significant increase in export of organic products.

Production economics and government incentives are important factors for a faster development of organic production and for the expansion in the range of organic processed products. It is necessary that producers and processors get organised into business organisations, business associations and clusters. Stable and permanent business relations should be established between the organic food producers, processors and buyers or consumers.

Conclusion

The demand for organic food products is obvious and shows a constant growing trend in the world. Marketing of organic products should be analyzed in terms of advantages of organic products and their quality in comparison with conventional food products. Organic products' marketing model implies strict control of all activities, from field to market and consumers. Organic products are of high quality, but production costs are higher and it is necessary to provide subsidies per hectare and per head of livestock in order to promote agro-eco-business in organic production.

Analyses show that there are 1.8 million producers in organic agriculture in about 160 countries all over the world. Organic production in the world is organised on the area of 37 million hectares. When compared to the previous year, it is evident that total area under organic production increased by 12%. The turnover in organic food in 2010 was worth about USD 58.9 billion, with the growth rate of 10.9% compared to 2006.

It is necessary to organise organic production, processing and distribution in Serbia, and develop assorted high quality, safe, certified range of organic products, to provide financial incentives for production, and to shape organic products in line with consumer requirements and wishes, all of which is intended to generate profit and protect the environment.

Organic products must be certified, labelled, packaged in appropriate packaging, distributed by appropriate mode of transport with the accompanying documents (product tags and labels, certificates, quality control certification), appropriately stored and placed into trade channels.

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NEKI ASPEKTI MARKETINGA ORGANSKIH PREHRAMBENIH PROIZVODA

Apstrakt: Predmet rada je razmatranje nekih aspekata marketinga organskih prehrambenih proizvoda. Cilj rada je izučavanje kretanja proizvodnje i prometa i kreiranje modela marketinga organskih prehrambenih proizvoda. Organskom proizvodnjom bavi se preko 1,8 miliona proizvođača u 160 zemalja sveta. Površine pod organskom proizvodnjom u 2009. godini iznose 37,2 mil. ha i imaju trend povećanja po stopi od 12%. Svetski promet organskih proizvoda u 2010. godini iznosi 58,9 mlrd. dolara sa trendom povećanja po stopi od 10,9%. Promet povrća u vrednosti od 19,5 mlrd \$ učestvuje sa 33% u ukupnoj vrednosti tržišta. Vodeći tržišni segmenti organskih proizvoda u svetu su voće i povrće, hleb i žitarice, pića, mleko i meso. Proizvodi iz organske poljoprivrede su kvalitetni, bezbedni i više nutritivne vrednosti. Organski proizvodi sadrže više minerala, posebno kalijuma, kalcijuma, gvožđa, magnezijuma, fosfora i vitamina C, a manje nitrata. Troškovi organskih proizvoda su veći i razlike se stimulisu premijama. Udeo tradicionalnih kanala sa trgovačkim lancima distribucije organskih proizvoda imaju tendenciju povećanja, a smanjuje se udeo specijalizovanih i ostalih kanala distribucije. Perspektiva je u stimulanju razvoja kvalitetnih sertifikovanih zdravstveno bezbednih i strogo kontrolisanih proizvoda iz organske proizvodnje i prerade, marketing legislativa, prepoznatljive marke, šire lepeze proizvoda, željenog dizajna za potrošače na domaćem, regionalnom i globalnom tržištu

Ključne reči: proizvodnja, promet, marketing, marketing legislativa, sertifikovani organski proizvod, nutritivna vrednost, trgovački lanci



CHALLENGES TO ORGANIC AGRICULTURE IN BULGARIA

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Abstract: Organic agriculture has become considerably popular in Bulgaria since the country joined the EU. Following the global trends, characterized by increasing production and cultivated lands due to increased demand of organic produce on the world and European markets, organic agriculture is continuously expanding. The development of organic agriculture is one of the priorities of the Ministry of Agriculture and Food which works towards developing the trend of increasing the number of organic farmers and organically cultivated lands as well as improving the diversity of the organically bred livestock and cultivated plants. Under the conditions of an economic crisis, organic agriculture is one of the few sectors which are developing fast and are reporting an improvement. In 2010, the organically cultivated lands increased two times compared to 2009 and the number of farmers in this sector went up by 75%. The favourable market conditions also helped preserving the determined trend of increasing the cultivated lands in 2011 (26 622 ha). Currently, at the Bulgarian market 80 % of the local production is exported as raw materials.

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Introduction

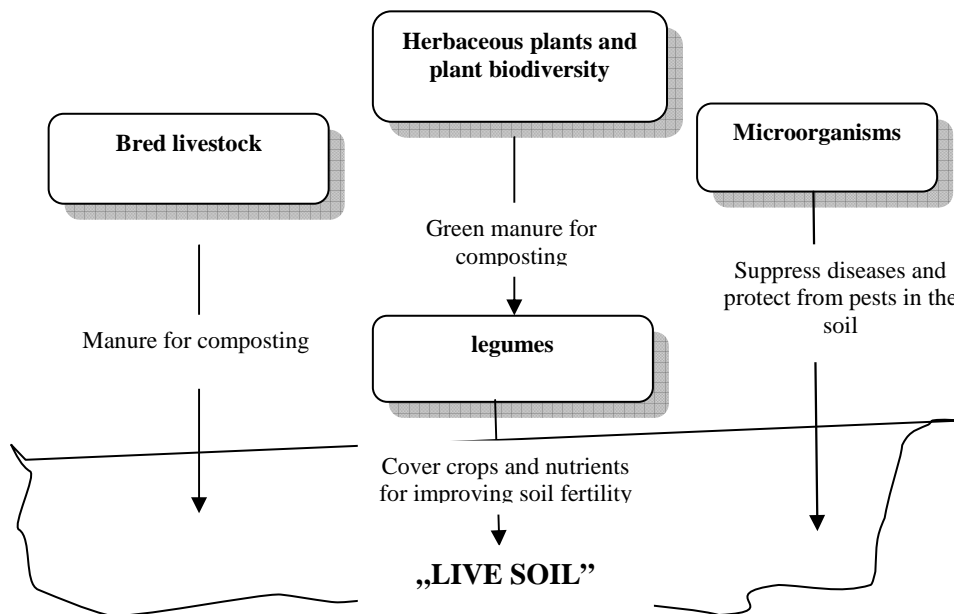
When managed efficiently, agriculture could give considerably good results rather than when it is considered entirely as a production process. Agriculture is capable of securing not only clear water and protection of biodiversity, for example, but has to be managed in a way that also secures the sustainable management of soil resources. With reference to this, to achieve these goals, organic agriculture depends on biologically justified integrated systems, i.e. soil – plants – animals.

Agroecology involves the efficient organization and management of agrosystems. It aims at effective use of natural resources and obtaining yields through minimum anthropogenic energy and maximum protection of natural resources, namely soil fertility (Stancheva, 2000). The main objective of agricultural ecology is to find the formula for matching the characteristics of cultivated plants to the respective growing conditions so as to obtain high, quality and economical yields.

Organic agriculture is a sustainable method for managing the complex dynamics among plants, animals, waters, soils, insects and the remaining microfauna in a manner that secures the sustainable development of crops and bred animals. Mulching, compost use, green manure crops, planting legumes as catch crops, biological protection from harmful organism and diseases are the main methods for sustaining soil fertility and crops with minimal dependence on external energy. This type of regenerating agriculture increases the economic return not only of land, labour and capital but also of other production factors such as water and energy. It meets the needs of local communities and supplies markets with necessary products.

A key factor of this regenerating approach is the diversity of the agricultural systems which involves both agricultural crops and bred animals.

Figure 1 Organically Integrated Soil – Plant - Animal Cropping System



A good example of ecological plant-growing is organic agriculture (the notion of *biological agriculture* is presented in the article by the following terminology – biological production, bioproduction, biological farming, organic agriculture, biological production of agricultural products, agroecological activities) whose objective is long-term sustainability of healthy soil. Organic farmers use techniques such as crop rotation, green manuring, composting and biological control of harmful organisms. Compulsory certification excludes or strictly limits the use of mineral fertilizers and pesticides, plant stimulators, livestock antibiotics, food additives or genetically modified organisms.

From the international review of recent developments in the agricultural science and technology it could be concluded that many agroecological practices have already improved and provide promising results. Even wheat yields and production costs are comparable to those associated with traditional and conventional production systems where yields are lower than the average ones. These agroecological practices could be competitive to the industrial, intensive systems for the majority of years and also provide better yields in years with low rainfalls (National Academy of Sciences, Washington DC, 2010; IAASTD, Washington DC, 2008). For example, in order to secure food resources in Africa there are approximately 530 000 organic farmers (this is approximately half of the organic farmers worldwide) who cultivate 900 000 hectares of certified organic agricultural land (3% of world cultivated land).

The agricultural business and food industry worldwide have started to pay greater attention to the benefits of agroecological practices. The quick increase of market demand for organic and ecologically certified products attracts the attention of an increasing number of business investors. The number of public – private partnerships which connect the initiatives for sustainable food supplies with the management of water resources and biodiversity also rises.

The production and consumption of organic food has increased considerably on a worldwide scale for the last 40 years. A growing number of people realize the benefits of organic agriculture for their health, the protection of the environment and the human treatment of animals.

Today, biological agriculture is practiced by almost 1 million and 400 thousand farmers who cultivate organically approximately 35 million hectares agricultural land in 154 countries around the world. An increasing number of customers look for the organic food label when shopping or eating. As a quality brand, organic farming is unique with the fact that the same production processes are applied by a great number of agricultural producers in many countries and what is controlled is not the finished product but the production process.

1. Organic Production – A Good Practice for the Sustainable Development of Bulgarian Agriculture

Bulgaria is one of the countries with the richest biological diversity in Europe. In addition to the positive effect on its biodiversity and the protection of the environment, the transition to organic production offers great opportunities for supporting the economic and social development of rural areas (Gerganov, Nikolova et al, 2009).

The territory of Bulgaria can be provisionally divided into 14 agroecological regions based on geographical location, climate, productivity and conditions for growing different crops according to the quality and productivity of land. With reference to the average agricultural scale, there are three categories of agricultural land. The relative percentage of good quality lands is 0.57. It is 0.36 for average quality lands and only 0.07 for poor quality lands (see Table 1). Table 1 shows that for more than half of the agroecological regions the values of the land quality assessment vary from 62 to 82. Only one of the regions belongs to the poor quality lands category where the suitability of the ecological conditions for growing sugar beet, sunflower, corn, apples, vineyards (24-40 points), lucerne (18-23 points) and oriental tobacco (16-38 points) is the lowest.

Table 1. Agroecological regions in Bulgaria

Agroecological region	Soil Bonitation Group		
	Good quality lands	Average quality lands	Poor quality lands
Lom – Svishtov region	69	-	-
Ruse – Silistra region	78	-	-
Pleven – Pavlikeni region	82	-	-
Lovech region	62	-	-
Mezdra- Sliven region	-	59	-
Veliko Tarnovo – Preslav region	69	-	-
Elena – Smyadovo region	-	43	-
Botevgrad – Gabrovo region	-	-	39
Middle Balkan region	-	47	-
Karlovo – Kazanlak region	-	49	-
Sliven – Straldga region	66	-	-
High – mountain region	-	48	-
Isperih region	69	-	-
Novi Pazar region	70	-	-
Relative percentage	0.57	0.36	0.07

Dividing the country's territory into agroecological regions reveals the excellent opportunities for developing organic production as a result of the favourable climate and soil diversity which, in turn, determines the wide range of products that could be cultivated organically.

Sustainable agriculture is the most modern and perfect form of ecological (bio or organic) agriculture. The concept of "sustainable" development has become a starting point for the development of balanced economic and social policy with reference to the environment not only globally but also at a regional and sector level.

In Bulgaria, there are prerequisites for the development of sustainable agriculture which is effective, competitive, useful, socially important, regenerating, protecting the resource and environmentally-friendly.

Bio-agriculture and the other integrated agroecological activities are particular practices whose objective is the sustainable development of the rural areas in Bulgaria and the country as a whole. They could lead to stabilization of the ecological systems, protection and development of the natural and soil resources and rural economy recovery.

Bio-production is a priority for the Bulgarian government. Prerequisites for this are favourable soil and climate conditions in the country for growing agricultural products including organic ones. According to data from the Ministry of Environment and Water (MEW) over 80% of agricultural lands are suitable for organic production.

Organic production meets the requirements not only of the consumers but also creates opportunities for a more environmentally- friendly and healthy lifestyle. In addition to this, organic agriculture is a possibility for developing an alternative and profitable business for a great number of innovative entrepreneurs.

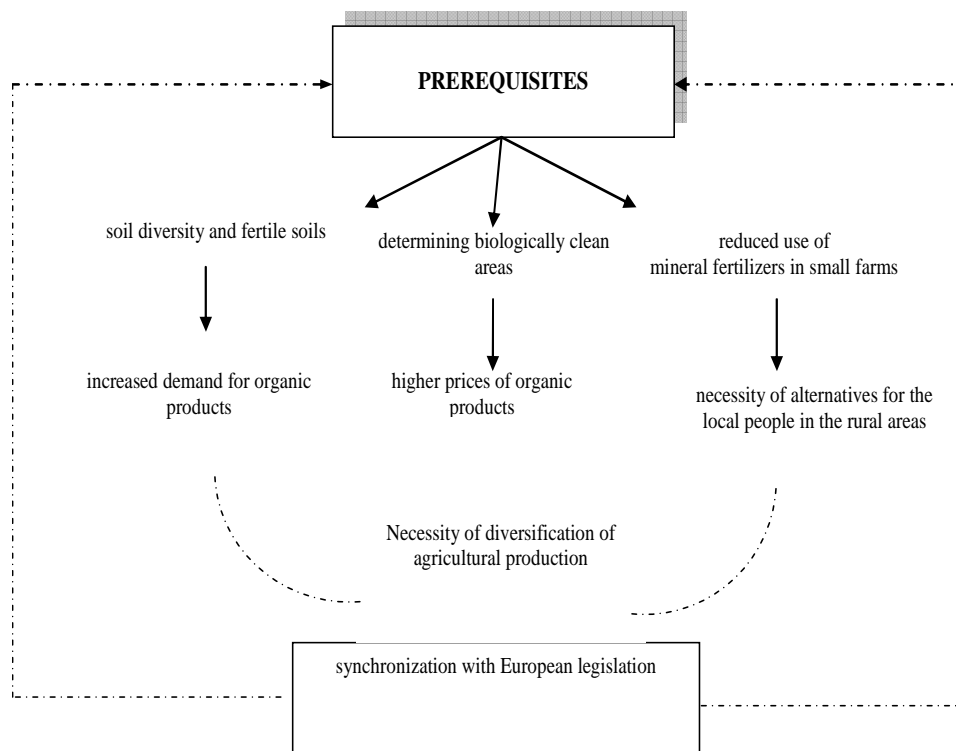
2. Present State and Development of Organic Agriculture in Bulgaria

In Bulgaria there are favourable conditions for the introduction and expansion of this modern production method (Fig. 2). The complete synchronization of the Bulgarian legislation in the sphere of agroecology with the EU laws opens the European markets for the Bulgarian organic products.

As an instrument of sustainable local development, organic agriculture in Bulgaria has started to develop more intensely after the country's accession to the European Union in 2007. This is due mainly to the complete synchronization with the European legislation in the sphere of ecologically – friendly agriculture and the possibilities of the measures under the Rural Area

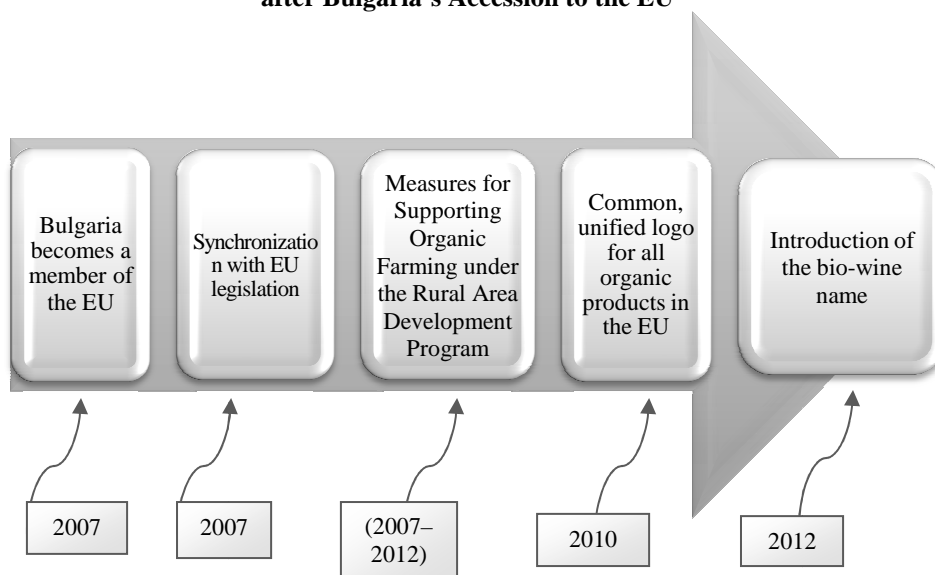
Development Program (2007 – 2-13) which offer financial support. Over the last years, the more significant initiatives for increasing the motivation for developing organic farms are the introduction of a unique, recognizable sign – a logo (July 2010) which is compulsory for all goods produced in the EU, and the introduction of the bio-wine product which gives the country possibilities for development in this sector together with the remaining Southern European countries (see Fig. 3).

Figure 2 Prerequisites for the Development of Organic Agriculture in Bulgaria



Organic farming is a specific method of agriculture which supports the ecological balance and the products are cultivated by maximum preservation of balance in the soil – plant – animal system and the natural cycles of development (Yancheva, Manolov 2003). Organic farming is also very important for the sustainable development of rural areas and the protection of the environment.

Figure 3 Prerequisites for Increasing the Motivation to Develop Organic Farming after Bulgaria's Accession to the EU



Organic agriculture is also a benchmark for quality. Unlike traditional farming, it is characterized by strict control. What is controlled, though, is not the final product but the process of organic production itself. The production of organically clean food from plant origin requires farmers to adhere to clearly defined standards. The channel from the farm to the end consumer is controlled and certified by an independent control body which is certified by the Ministry of Agriculture and Food (MAF). The certifying organizations in the country are involved in independent control and certification of organic production according to the requirements of:

- Ordinance 22/2001 concerning organic production of plants, plant products and food of plant origin and the methods of indicating it on them;
- Ordinance 35/2001 concerning organic breeding of animals and the organic production of animal products and food and its indication on them;
- Law enforcement of the Common Market Organizations (CMO) of Agricultural Products in the EU;
- Regulation 2092/91 of the European Commission EC, replaced by Regulation (EO) № 834/2007 from January 2009, which is constantly detailed and supplemented with further regulations which determine thorough rules for applying Regulation 834.

The beginning of organic production in the Bulgarian agricultural sector was set up in 1987 by the establishment of the Agro-ecological Centre at the Agricultural University in Plovdiv where a demonstration organic farm was

opened. The “Bioselena” Foundation of Organic Agriculture was also established and the first market stall for organically produced vegetables appeared in the Plovdiv market. The “Hir” baby food became the first organic product in Bulgaria sold in the mass market. During the period 2000-2003 the national organic products label was introduced and in 2001 the Feast of Organic Agriculture was celebrated for the first time. In 2002 the Measure for supporting organic agriculture was developed under the SAPARD Program by the EU.

Later in 2009 the first advertisement of organic food was broadcast on Bulgarian TV. The same year the Bulgarian Organic Products Association (BOPA)¹ was established and was followed by the Association of the Organic Products Traders (AOPT)² which was set up in 2010. According to data from the control organizations, the certified producers of organic products for 2010 were 820. In the registers of the Ministry of Agriculture and Food for 2011 their number increased to 1054 operators (including producers, food processing companies and traders) who produce, process or import plant and animal products in an organic manner (see Table 2).

Table 2. Distribution of Certifying Bodies and Certified Operators

Years	2003	2004	2005	2006	2007	2008	2009	2010	2011
Approved Control Bodies (number)	1	1	2	2	6	10	10	10	10
Certified Operators (number)	29	51	111	214	339	311	476	820	1054

*Data from the Ministry Of Agriculture And Food – Annual Agricultural Reports 2004–2011

The data includes 10 Bulgarian and international certifying organizations which have the right to control the organic production in Bulgaria. Three of the certifying organizations are juridical persons while seven of them are representatives of international certifying organizations which are based in EU member countries (Nikolova, 2011).

¹ The Bulgarian Organic Products Association (BOPA) is a branch organization which unites organic farmers. The association was established at the end of 2009 and it has over 80 members, including certified farmers, institutes and companies, <http://www.bgbio.org/>

² The association (AOPT) was established in 2010 as a branch organization and represents trade companies which work for the development of organic products market in Bulgaria, <http://abt-bulgaria.org/>

3. Trends and Challenges to Organic Agriculture in Bulgaria

The activities of the organic farmers in Bulgaria have increased significantly since 2007. This is facilitated by the fact that *nature parks* already have the possibility to certify part of their territories for *wild plants* (forest fruit, mushrooms, herbs, etc. which are harvested from ecologically clean areas, certified by the controlling organizations). In this way the nature parks can benefit from the protection and management of these areas. According to representatives of the Bulgarian “Organic Products” Association, the establishment of a *European network for food independence* could unite the efforts not only of small farmers but also of big companies for organic products. The objectives of this network are to attract members from Bulgaria and the other Balkan countries.

The Bulgarian producers’ interest in organic production rises constantly. This is due to the increased demand for organic products on a worldwide scale. Most of the production is exported and Bulgarian farmers are very well accepted both in the European and world market.

It could be seen from Table 3 that the total number of organic farmers, food processing businessmen and tradesmen registered in the Ministry of Agriculture and Food at the end of 2011 is 1,054 which is nearly 30% more compared to 2010. The agricultural areas dedicated to organic farming which are under control (in transition or after the transition) more than doubled in 2010. These areas reached 26 622 ha in 2011 and are still growing. They have increased more than five times for the last six years being a meager 5 952 ha in 2006.

Within *the plant-growing sector in organic farming* in Bulgaria *grain crops, perennial-plant stands and industrial crops* prevail. The most important industrial crops are oil plants, aromatic, medicinal plants and fodder and tuberous biocrops. There is a growing interest in growing nut crops because there is demand for such crops in the world market. For example 56% of the hazelnuts were grown according to organic farming methods in 2010 and the rest were grown according conventional methods. Table 3 shows the areas dedicated to biocrops in transition or after the transition for a period of three years (2009 – 2011)³.

³ The information is based on data from the annual reports of controlling persons who certify organic farming Balkan Biocert Ltd; CGC Bulgaria Ltd; Q Certification JSC; Seres Ltd; Lacon Ltd; BCS Oeco- Garanti Ltd; Control Union Certifications JSC; Institute of Control of organic farming produce JSC; ACEPT European Certification Organization JSC).

Table 3. Areas dedicated to organic farming (in transition or after the transition)

Type of crop	Area in transition (ha) 2010	Area after the transition (ha) 2010	Total area (ha)		
			2009	2010	2011
Grain crops including rice	3 909	1 429	2 758	5 339	6 521
Fresh vegetables, melons, strawberries and cultivated mushrooms (total)	208	220	243	428	670
Industrial crops including oil-bearing rose (<i>Rosa damascene</i>)	2 715	2 198	2 102	4 913	5 845
Fodder crops from arable lands (green plants) including alfalfa	357	3 428	343	3 786	996
Perennial plants	3 348	2 447	2 688	5 795	6 443
Permanent meadows and pastures	1 061	2 550	2 317	3 611	4 491
Fallow land	1 341	375	1 762	1 716	1 513
Total	12 956	12 691	12 322	25 648	26 622
Wild plants*	0	546 195	401 426	546 195	543 655

Source: Ministry of Agriculture and Food based on data from the annual reports of the controlling persons of organic farming

In 2011, areas dedicated to perennial plants grown according to organic farming methods, increased by 11% compared to 2010. These areas amounted to 6 443 ha in 2011. The trend toward nut crop growing continues. There is an increase in interest in nuts, hazelnuts, almonds and chestnuts. There is also an increase in the areas dedicated to apple trees, plum trees and apricot trees which are registered in the system of control in 2011. At the same time the system of control registers a decrease in the areas dedicated to cherry trees.

Areas dedicated to *vegetables* that are grown according to organic farming methods amount to 670 ha in 2011 – they increased by 240 ha compared to 2010. The increase is due to the fact that 292 ha of artichoke were included in the system of control for the first time. Areas dedicated to tomatoes and cucumbers remain unchanged while areas with water melons and melons decrease in 2011 (www.mzh.government.bg).

It is interesting to point out that a new crop which is not traditionally associated with Bulgaria, i.e. olive trees was included in the system of control

for the first time in 2011. This shows that organic farmers make efforts to diversify the crops grown in their farms

The possibility to certify certain areas as *nature reserves and parks* in Bulgaria, where *wild fruit, mushrooms and herbs* could be gathered, resulted in an increase of the **certified ecologically clean areas**. For the last two years such areas have increased to more than 540, 000 ha.

Organic livestock breeding develops at a slower rate compared to plant-growing but nevertheless it could be stated that the demand for organic livestock breeding products is growing especially products connected to sheep and goats. In general, a positive trend in livestock breeding can be identified that is particularly strong in some categories of animals such as bees, cattle and goats (Table 4).

Table 4. Number and type of organically bred livestock (in transition or after the transition) in 2009, 2010 and 2011

Type	Total Number		
	2009	2010	2011
Cattle	272	364	976
Pigs	104	117	-
Sheep	5 831	6 698	6 648
Goats	2 732	2 773	3 397
Bees (number of bee colonies)	41 089	46 429	58 855

In 2011, the number of *cattle* bred according to organic farming methods increased two and a half times compared to the previous year and reached 976. It should be mentioned here that an organic farm with 200 buffalos was registered for the first time in Bulgaria.

The number of *bee colonies* grew from around 46 000 to almost 59 000. In other words the number of bee colonies increased by 27% compared to 2010 according to the data from the system of control. The increase is due to the demand for organic honey in the European market.

In 2011, more than 10,000 *sheep and goats* are bred according to organic farming methods in Bulgaria. The number of organically bred goats grew by more than 20% compared to the previous year. Some farmers have also shown interest in *organic poultry-raising*. A list of slowly growing species of poultry can be seen on the Internet site of the Ministry of Agriculture and Food. Those species are meant to be raised according to organic farming methods.

The analysis in Table 4 shows that the greatest increase is in the number of *cattle and bees* grown according to organic farming methods. As a result of the

significant increase in the number of organically bred cattle it could be expected that a similar increase in the production of organic cheese and yoghurt will be seen in Bulgaria.

The growth in the number of the bee colonies by 14% resulted in an increase in the production of *organic honey* in 2011. This is a logical consequence of the development of organic bee-keeping. It should be borne in mind that Bulgaria has a long tradition in organic bee-keeping and different varieties of certified organic honey have been produced over the years. Bulgarian organic honey is of very high quality and it has been exported to the world market. The boom we are witnessing is due to the demand for high quality organic produce worldwide and to the incentives of the European Union Programme for the Development of Rural Areas.

The analysis of organic farming in Bulgaria shows that the production of *bee honey* is the most widely spread. Next is the production of *essential oils, herbs and forest fruit as well as nuts – walnuts, hazelnuts and almonds*. There are some market-gardeners who grow vegetables but their number is not great compared the overall picture.

Unfortunately, at this stage of the implementation of the tasks that are included in the National Plan for the Development of Organic Farming 2007 - 2013 (NPDOF) little progress has been made. The objective to achieve 3% of organic farming production by the end of 2013 is unlikely to be attained since at the end of 2011 organic farming production is less than 1%.

As regards the legislation, the Ministry of Agriculture and Food provides the legal framework for the development of organic farming in Bulgaria. Basic international standards for organic farming were introduced in 1980 and their implementation throughout the world is still going on. They contain the minimal requirements that should be met in the production and trade in organic products. These international standards serve as a basis for the national standards according to the regulations of the European Union that were accepted in 1991. The implementation of the EU regulations led to a significant growth in organic farming and trade in organic produce in the member states. These regulations have undergone numerous changes and amendments, one of the most significant being the introduction of the regulations in organic stockbreeding in 1999. At the moment, the efforts are focused on the regulations on organic wine.

Several directions could be outlined in **the challenges that organic farming in Bulgaria faces:**

- improvement of the rules and regulations;
- participation in international fairs and exhibitions to promote Bulgarian organic products (with the assistance and cooperation of the Ministry of

Agriculture and Food, Bulgarian Organic Products Association (BOPA), Association of the Organic Products Traders (AOPT), etc.);

- increasing the total number of organic farmers;
- opening of farmers' markets in large towns;
- specialized organizational structures;
- organizing cooperative farms consisting of several producers aiming at producing finished products and keeping the added value to Bulgaria.

As a whole the organic farming sector has seen a rapid development and a considerable growth. There has been an increase of 100% of the number of the producers and the amount of the production for the last two years. The rise in the number of the farmers who choose organic farming methods is mainly due to the increase in the demand for organic farming products on the market and the ongoing campaign with the slogan "Food Quality Matters".

At present 80% of the domestic agricultural products on the *Bulgarian market* are exported as raw materials and 80% of the finished products that are sold in the specialized shops are imported from outside the country. This negative point could be eliminated only if the intermediate unit of *food processing* is developed. For the time being the existing food processing companies are not ready to start organic production because they should undergo heavy certification procedures which entail extra funding and additional equipment. It would be easier for the organic farmers themselves to combine their efforts and create *specialized organizational structures*.

Funding of organic farming in Bulgaria from 2007 to 2013 is carried out according to Measure 214 Subsidies for Organic Farming, Sub-measure Organic Farming, directions: Organic Plant-growing and Organic Beekeeping all of which form Priority Axis 2 of the National Plan for the Development of Rural Areas. Under this measure the majority of the Bulgarian organic farmers who are in transition or have completed their period of transition apply for subsidies. The implementation of this measure is regulated by Ordinance № 11 of 2009 stipulating the terms and conditions for the implementation of Measure 214. Applicants are obliged to observe certain requirements towards organic farming in the course of five years. Their costs for consulting services are met so that the transition between conventional and organic farming is facilitated. Subsidies for organic plant-growing are paid on the basis of the number of hectares of land and subsidies for beekeeping are paid on the basis of the number of bee colonies.

The sixth amendment to the National Plan for the Development of Rural Areas provides higher levels of compensation payments for organic farmers which is an additional incentive for the growth in the sector of the organic

farming production. The annual amount of the subsidies for organic farming according to the last amendment to Ordinance 11 is shown in Table 5:

Table 5: Subsidies for Organic Farming

Crops	In transition (Euro/ha)	organic (Euro/ha)
1. field crops including fodder	250	197
2. meadows and pastures	120	120
3. vegetables including cultivated mushrooms and potatoes	547	446
4. perennial plants, vineyards and oil-bearing rose	729	613
5. aromatic and medicinal plants	448	327
6. beekeeping / bee colonies	18,4	18,4

Other measures of the National Plan for the Development of Rural Areas that could help organic farming in Bulgaria are:

- Measure 121 for modernization of farms and facilitation of the transition between conventional farming and organic farming;
- Measure 142 for providing support to organic farmers to set up their own organization;
- Measure 111 for vocational training in the sector of organic farming .

The new regulations of the European Union include the so-called “green subsidies” These will be given for preserving the environment and as additional incentives for organic farming alongside the ordinary subsidies. Out of 2,378 million BGN public funds the largest sum - 40% will be given for organic plant-growing under Measure 214. Next in line come the funds for preserving local breeds that are under the threat of extinction - 23% and third comes the funding for the preservation of agricultural lands that have a high natural value - 20% of the total funding (Agricultural report 2011).

The main reasons for the difficulties in applying Measure 214, which are also outlined in the interim reports about the implementation of the Rural Areas Development Program are as follows:

- still a small number of applicants;
- slow processing of application forms;
- great number of rejected applications;
- high level of sanctions.

Some drawbacks in the Farm Animals Register were removed in 2010 in order to overcome these difficulties. A list of slow-growing breeds of poultry, suitable for organic breeding, was approved in Bulgaria. It includes certain breeds of hens, ducks, turkeys and geese.

Measure have also been undertaken to increase the applicants under measure 214 and the faster processing of submitted applications. As a result, in 2010, 1 781 applications were filed. This 23% more compared to 2009 and is due to the active information campaigns done throughout the country (Agricultural report 2011).

Adhering to the Law enforcement of the Common Market Organizations (CMO) of Agricultural Products in the EU, the Ministry of Agriculture and Food keeps a register of the certifying people in the sector of organic production. They are granted this right by the Minister of Agriculture and Food and their names can be found on the website of the Ministry. A novelty in certification is the fact that certain restaurants and hotels are allowed to offer organic food. The first hotel in Bulgaria which has received such a certificate is the Sheraton, Sofia.

The steps organic farmers have to complete in order to be certified are as follows:

- Farmers file a request to the certifying organization stating their willingness for voluntary certification;
- The certifying organization sends back a packet of documents;
- Farmers study the necessary documents, fill in the application forms and send them back to the certifying organization;
- The certifying organization studies the application for, evaluates the request and checks the enclosed documents;
- Farmers receive a proposal for signing a contract with a price offer;
- Farmers accept the contract, sign and transfer the sum for the first inspection;
- The certifying organization chooses an authorized person to do the first inspection and sets a date for the initial check up;
- A contract is signed if after the initial inspection the particular farm meets the requirements for organic production. The farm enters the system for control and certification of the organic production;
- Farmers pay the entire sum according to the price list of the certifying organization.

Conclusion

It can be said that the development of organic farming in Bulgaria is one of the priorities of the Ministry of Agriculture and Food and it works toward maintaining the trend, characterized by increasing the number of organic farmers, the land they cultivate and the range of organic products they offer. The benefits of organic products for the human body as well as the benefits of this method of production for the protection of the environment and preserving the natural resources are popularized more and more.

Organic production in Bulgaria has increased dramatically after the country's accession to the EU. Following the global trends of expanding production and cultivated lands due to rising demand of organic products on the world and European markets, organic farming in the country is also expanding.

The rising interest in organic production in Bulgaria is based on the global increase of demand for such products as well as on the favourable market conditions. A considerable part of the production is exported and is very well accepted on both the world and European market.

In a situation of an economic crisis, organic agriculture is one of the few sectors that are developing fast and are reporting significant growth. In comparison to 2009, the cultivated lands almost doubled – from 12 322 hectares they increased to 25 648 hectares in 2010. At the same time, the number of organic farmers and companies operating in this sector increased by over 75%.

Because of the favourable development of markets, the outlined tendency continued in 2011, too. The cultivated lands reached 26 622 hectares. This is also a result of the fact that the issues of developing healthy eating habits and sustainable use of natural resources have become a priority of an increasing number of people and communities both in Bulgaria and the EU.

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IZAZOVI ORGANSKOJ POLJOPRIVREDI U BUGARSKOJ

Apstrakt: Organska poljoprivreda je postala značajno popularna od kada se zemlja pridružila Evropskoj uniji. Prateći globalne trendove, koje karakteriše povećana proizvodnja i obradiva zemlja zbog povećane tražnje organskih proizvoda u svetu i evropskim tržištima, organska poljoprivreda se konstantno širi. Razvoj organske poljoprivrede je jedan od prioriteta Ministarstva za poljoprivredu i hranu koje radi na razvijanju trenda povećanog broja poljoprivrednika koji uzgajaju organsku hranu i obrađuju organski obradivo zemljište, kao i na poboljšanju raznovrsnosti organski uzgajane stoke i kultivisanih biljaka. Pod uslovima ekonomske krize, organska poljoprivreda je jedan od malog broja sektora koji se brzo razvijaju i pokazuju poboljšanje. U 2010, organski obradivo zemljište se povećalo dva puta u poređenju sa 2009. godinom i broj poljoprivrednika u ovom sektoru je

dostigao 75%. Povoljni tržišni uslovi su takođe pomogli očuvanju određenog trenda povećanja obradivog zemljišta u 2011. godini (26.622 ha). Trenutno na bugarskom tržištu, 80% lokalne proizvodnje se izvozi kao sirov materijal.

Ključne reči: organska poljoprivreda, organska proizvodnja, trendovi, izazovi, subvencije za razvijanje organske proizvodnje



ESTIMATION OF MONEY LAUNDERING PREVENTION AND TERRORISM FINANCING IN THE BANKS

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Abstract: Expressive instability in modern world from economical, political and social aspects brought new challenges. One of them is, certainly the greatest, money laundering and terrorism financing. Money laundering is profitable crime, because it enables the criminals to distribute their money obtained from criminal actions legally. That money can also be used for funding terroristic activities. The subject of this paper is the estimation of the degree of harmonization the system in Serbia with 40+9 FATF's Recommendation (Methodology FATF 40+9) and the Directive 2005/60/EC of the European Parliament and of the Council of 26 October 2005 on the prevention of the use of the financial system for the purpose of money laundering and terrorist financing, i.e. with the Third Directive, first of all when bank sector is concerned.

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1. Introduction

The initiative for coordination in the international combating money laundering appeared in 1980s, as a part of the struggling against illegal drug trading and with recognition that phenomenon as a very dangerous one for stability of some economies. From then, international community accepted a lot of conventions, recommendations and directives, and the Republic of Serbia is obliged to be in accordance with them. Among the most important are the recommendations from the Financial Action Force on Money Laundering-FATF¹ and the Directive 2005/60/EZ of the European Parliament and the Council from 26th October, 2005 on preventing to use the financial system in the purpose of money laundering and terrorism financing (III Directive).

¹ Also known as a Groupe d'Action Financiere sur le Blanchiment de Capitaux (GAFI) <http://fatf-gafi.org>

2. Standards of Money Laundering and Terrorism Financing Prevention: The FATF Recommendations and the Third Directive from the European Union

The Financial Action Task Force was established in Paris, in July 1989, on the proposal of the Group G-7, i.e. economically most developed countries in the world, with purpose to analyze money laundering problems and give recommendations to prevent them. The Group consists of 31 countries and two international organizations², over 20 observers, out of which five are regional agencies for money laundering prevention, and more than 15 other international organizations and agencies.

The Group accepted in 1990 (and amended in 1996 and 2003) the document, called “The Forty Recommendations for Struggling against Money Laundering”, with which the general strategy in struggling against money laundering was fortified. The FATF’s Recommendations are based on the background of the UN Convention against illegal drug and psychotropic substances trade, accepted in 1988, and on the list of directions for the bank supervision which the Basel Committee published on December 12th, 1988. The members of the Task Group were obliged to apply these recommendations, and they were recommended to the other countries, too. Soon after the event of September 11th, 2001, at the extra the FATF’s meeting, held in Washington on 29th and 30th October, 2011, the Special Recommendations were brought, presenting global efforts in discovering, preventing and stopping routes of terrorism financing. The FATF Recommendations include system of the criminal legislation, the field of prosecution organs, financial system and its regulations, as well as the international cooperation. The most significant recommendation for all countries is that their criminal legislation has to be changed, so that money laundering becomes a crime to be punished, along with the bank’s obligation to identify the account’s user and increase mutual cooperation both in national frame and on the international plan³.

² Members of the FATF are the following countries and international organizations: Argentina, Australia, Austria, Belgium, Canada, Denmark, European Commission, Finland, France, Germany, Greece, Italy, and Council for the Bay Cooperation, Honchoing, China, Island, Ireland, Japan, Luxemburg, Mexico, Holland, New Zealand, Norway, Portugal, Russian Federation, Singapore, South Africa, Spain, Sweden, Switzerland, Turkey, Great Britain and USA. The list of all members and observers can be found on the FATF website: http://www.fatf-gafi.org/Members_en-htm

³ At the FATF plenary meeting in Paris on February 16th, 2012, new recommendations were created under the title: the International Standards on Combating Money Laundering and the Financing of Terrorism&Proliferation of the weapons for mass destruction.. With the new recommendations the former 40 recommendations were integrated with 9 special recommendations for the combating terrorism financing, and introduced the recommendation for estimation of the risk on the national level. The problem of the distribution of the weapons for mass destruction is treated, too.

Most of the FATF member countries apply the standards against money laundering and terrorism financing. The FATF separately follows the countries which do not accept cooperation, because there are the most money laundering activities in them, and there is a danger of spreading it to the other countries. The FATF collaborates with the United Nations-UN, International Monetary Fund-IMF, World Bank Group and other international organizations in order to induce all countries into applying these standards.

The member countries of the FATF supervise applying of the recommendations by double approaches: a) annual self estimation and b) detail process of mutual estimation, in accordance with each country which becomes a subject of the control in its region. Besides this, the FATF examines the measures in all countries, which are taken for the recommendations implementation, to consolidate general strategy in combating money laundering, and it issues reviews of the undertaken measures among several countries. For the promotion in conducting, as well as in estimation of the standards in money laundering and terrorism financing prevention, very important role have the regional organizations of the FATF (FSRBs) which are organized on continents. MoneyVal Board Committee of Experts on the Evaluation of Anti-money Laundering Measures and the Financing of Terrorism is in charge of 28 countries, including all states of former SFRY⁴. By entering the Council of Europe, the Republic of Serbia is subordinated to the procedure of multilateral estimation of the applying the laws from the field of money laundering and terrorism prevention, which are put in effect in the frame of the MoneyVal⁵.

According to the MoneyVal's Report, the Republic of Serbia attained a good level of harmonization with the FATF recommendations. Concerning the implementation of the FATF (the nucleus of the recommendations are R1, R5, R10, R13, SPII and SPIV) it is evaluated in the following way:

- The aspect of crime action of the money laundering (R1) – it is generally in accordance;
- Criminalization of the terrorism financing (SPII) – it is partly in accordance;
- Due diligence and keeping the evidence (R5) – it is partly in accordance;

⁴ The MoneyVal-a members are: Albany, Andora, Jermaine, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, the Czech Republic, Estonia, France, Gruzia, Hungary, Lichtenstein, Litva, Malta, Moldavia, Monako, Holland, Poland, Rumania, Russia, San Marino, Serbia, Slovakia, Slovenia, Macedonia and Ukraine.

⁵ The MoneyVal's evaluators team visited Serbia from May 11th til 16th, 2009 during the third circle of the evaluation. On the 31st MoneyVal's meeting the report on evaluation was adopted, and on 34th regular session in 2010, was defended and adopted the report on improvement of the combating money laundering and terrorism financing for the Republic of Serbia. More about MoneyVal see on the website of the National Bank of Serbia www.nbs.rs.

- Reporting the suspicious transactions (R13) – it is generally in accordance;
- Reporting the suspicious transactions connected to the terrorism (SPIV) – it is generally in accordance⁶.

It is estimated that the banking system clearly understands its obligations from the Law on Money Laundering and Terrorism Financing Prevention. About 97-99% of all reports on the suspicious transactions to the organ in charge of money laundering prevention come from banks.

In the field of money laundering prevention, the European Community is active member of the FATF's process. The members of the European Union regulated the actions of money laundering and terrorism financing in the directives 91/308/EEC⁷, 2001/97/EC⁸, 2005/60/EC⁹ (I, II i III) and by orders¹⁰. The Directives, although done within the European Community, have wider geographical influence, and some of the regulations even the global dimension. Regarding that these directives have a special significance for the new candidates joining the EU, the Republic of Serbia implemented into its Law on Money Laundering and Terrorism Financing Directives from the III Directive EU in 2009, and in the former laws from the same field, the directives from I

⁶ The Estimation of fulfilment of the FATF criteria, as well as the Report on the progress, see on the website of the Ministry of Finances – Administration for money laundering prevention www.apml.org.rs.

⁷ Council Directive of June 10th, 1991 on prevention of the use of the financial system for the purpose of money laundering (91/308/EEC), (Official Journal L166 of 28.06.1991.) www.unicri.it/.../Money/Council%20Directive%2091_308_Use%20of%20Financial%20System%20for%20Money%20Laundi.

⁸ Directive 2001/97/EC of the European Parliament and of the Council of 4 December 2001 amending Council Directive 91/308/EEC on prevention of the use of the financial system for the purpose of money laundering (Official Journal L157/38 of 26.06.2003.), www.hm-treasury.gov.uk/d/Transnotemlr03_16.pdf.

⁹ Directive 2005/60/EC of the European Parliament and of the Council of 26 October 2005 on the prevention of the use of the financial system for the purpose of money laundering and terrorist financing, 2005. (Official Journal L309/15 of 25.11.2005.), <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2005>.

¹⁰ -Regulation No 1781/2006 on information on the payer accompanying transfers of funds from the 15th November 2006, eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006).

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and II Directives were incorporated. The principle of the EU member countries is the full implementation of the directives, and also the FATF recommendations, the European Council Convention and other appropriate directives and orders.

3. Criminal Act of Money Laundering and Terrorism Financing in the Republic of Serbia

Criminal action of money laundering in the Federal Republic of Yugoslavia was defined for the first time in the Criminal Law on Money Laundering Prevention in 2001. The Law on Money Laundering Prevention from 2005 (Act. 2 and 4), comparing with the Criminal Code (Act 231), was not in accordance, because it envisaged a special part which was concerned to the money laundering during ownership transformation. By the Law from 2009, definition of the money laundering is in accordance with the Criminal Code of the Republic of Serbia. Money laundering, according to the Law from 2009, Act 2 (1) understands:

- 1) Conversion and transfer of the property acquired by a criminal act;
- 2) Hiding or inaccurate presenting the real nature, origin, place of staying, movements, possession, disposition, ownership or rights in connection with the property which had been obtained by a criminal act.
- 3) Acquiring, keeping or using the property obtained by a criminal act.

The Criminal Code and the Law on Changes and Amendments of the Criminal Code regulated:

- 1) Prison from six months up to five years and the monetary fine for somebody who makes conversion or transfer of his/her property, knowing that it originated from a criminal action, in order to hide or falsely present illegal origin of the property or falsely present the facts about the property, knowing that the property originated from a criminal act;
- 2) Prison from one to ten years and the monetary fine, if the amount or the property from the previous paragraph exceeds a million and five hundreds dinars;
- 3) The person who commits an action from the paragraphs 1 and 2 of this Act, will be punished according to the regulations from the paragraphs 1 and 2 for the property which he had provided by himself doing money laundering;
- 4) The person who commits actions given ad 1 and 2 in the group, will be punished from two to twelve years in prison, and with the monetary fine;
- 5) Up to three years in prison, if somebody commits a criminal act from the first two paragraphs, and he could and was obliged to know that money of the property presented the profit from a criminal action;
- 6) The responsible person in a legal entity, who does a criminal action from 1, 2 and 5 of this Act, will be punished with the fine regulated for that action,

if he had known, i.e. could know and was obliged to know that the money or property were profit acquired by a criminal action.

Regardless of the form of the criminal action, the court is obliged to punish (with prison or the monetary fine) and to declare the security measure of confiscating money and the profit which had been the subject of money laundering¹¹.

A criminal action of money laundering is explicitly established in all crime approaches, i.e. that the previous criminal action for money laundering can be any criminal act from which the profit originates, and it generally follows material elements given in Act 3 of the Wien Convention and Act 6 of the Palermo Convention. The previous criminal action of money laundering includes "every criminal action" from the Criminal Code, and certain number of actions from the Penal Statute, which were previous criminal actions for the money laundering covers all necessary categories of the actions (except two out of twenty definite categories of criminal actions, which are included in the Law of the Capital Marker from 2011, in Act 281 and 282)¹². The criminal action does not encompass explicitly self-laundering, although it is explained, first of all by court practice, as well as the obligatory instruction by the Republic Prosecutor's Office from 2008. Responding forms of participating in performing ancillary offences are envisaged, too.

Terrorism financing is treated as a separate criminal action in Act 393 of the Criminal Code from 2005 which came into power on January 1st, 2006. However, Act 393 does not treat terrorism financing by an organization or by a terrorist by themselves. According to Act 391 of the Criminal Code from 2009, the international terrorism is treated as it also could be done and punished as follows:

- 1) Everybody who has intention to make harm to a foreign country or to an international organization, to kidnap somebody or to do some other violence, to provoke an explosion or fire, or to undertake any other generally dangerous actions or to threaten by using chemical, bacterial or other similar means, will be imprisoned from three to fifteen years.

¹¹ It is estimated that the value of confiscated money on the macro level is low. Fabre, 2003, (according to Beare, E., M., Schneider, S., 2006) estimated „that less than one percent of 100 billiards narco-dollars, which are laundered per year, was caught by special organizations, being almost powerless in facing with the criminal groups prepared to sacrifice 40% of their income in order to realize profit in legal economies“ Yet, the property confiscation showed as the most successful in combating money laundering and organized crime. Money which is confiscated in Luxemburg and in the procedures of money laundering prevention, is deposited in Anti-drug fund to fight drugs&psychotropic substances. The aim of that Fund is to help in combating all forms of crimes connected to psychotropic substances. Practice of the Great Britain, Belgium and other European countries showed that there was a need for the regulation in a special Law

¹² These are to forbid market manipulation and insider trading

- 2) Also, if due to the action from the previous paragraph, one person or more people died, or if it was done by the organized criminal group, the actor will be imprisoned from five to fifteen years.
- 3) If the actor from the paragraph 1 of this Act is a person with a premeditation murder or if he/she is the organizer of a criminal group, he/she will be imprisoned for minimum ten years or with the sentence of thirty to forty years in prison.
- 4) That one, who prepares a criminal action from the paragraphs 1 to 3 of this Act, will be imprisoned from one to five years.
- 5) Under the preparation, it is understood providing or preparing the means for performing a criminal act, planning or organizing with the others, in order to perform the criminal act or some other actions with which the conditions for a criminal action are provided.

By Act 392 of the Criminal Code, taking hostages is regulated, and by the Act 393 the terrorism financing and the sanctions for performing these criminal actions. The means will be confiscated, as it is mentioned in Act 393, paragraph 3 of the Criminal Code, in the case that somebody did the criminal action or terrorism financing, international terrorism and taking hostages, and it is predicted the punishment of ten years in prison for that criminal.

4. Law on Money Laundering and Terrorism Financing Prevention

In order to make accordance with the changes of the international standards in this field, and as to the FATF 40 Recommendations combating money laundering and 9 special recommendations combating terrorism financing (Methodology FATF 40 + 9), Directive 2005/60/ES of the European Parliament and the Council on preventing of using financial system for money laundering and terrorism financing, i.e. Third Directive, Warsaw's Convention CoE ETS 198, Directive 2006/70/EZ which regulates the measures for conducting the Directive 2005/60/EZ of the Commission from the 1st of August, 2006, Regulation No. 1889/2005 on the controls of cash import and export from the Community, and the UN Convention on the Suppression of the Financing of Terrorism), the Law on Money Laundering and Terrorism Financing Prevention was accepted in 2009. The Law regulates as follows:

- Including demand for the terrorism preventing and discovering in the financial system of the Republic of Serbia;
- Making unique list of the responsible persons;
- Measures of knowing and following the customer and the preventive approach, based on the degree of risk;
- Obligation to conduct the measures in the foreign countries;

- Obligation to appoint an authorized person with regular education of employees and internal control;
- Entrusting definite actions to the third persons;
- Limitation of the cash business;
- Competence and tasks of the Board which is responsible for the money laundering and terrorism prevention;
- Return reporting to the responsible person;
- Transfer physically transferable means of payments over the state border;
- Protection of the reported information in a good trust;
- Obligation for keeping evidence and statistics;
- Define supervising board for some sectors;
- Regulating effective, proportional and preventive fines.

In accordance with the FATF's Recommendation 5, the Law defines its approach to money laundering and terrorism financing, based on the risk. During the MoneyVal's official visiting the financial institutions, they were not all prepared for the preventive approach to combating money laundering, on the basis of the risk estimation. By the Law, regarding the demands from the FATF's Recommendation 6, the obligation for the financial institutions is thus regulated to determine whether the client is a politically exposed person-PEP, and in accordance with that, to apply intensive measures. The corresponding banking system, before passing the Law on Money Laundering and Terrorism prevention, the FATF's Recommendations 7 were not regulated, i.e. the banks were not obliged to consider the system against money laundering and terrorism financing at their correspondents; there were expressive obligation that all financial institutions had to understand completely the nature of the corresponding business, i.e. to find out the institution reputation and quality of its supervising, including also whether it was the subject of investigation for money laundering and terrorism financing, i.e. the measures of supervising board. Only the Law from 2009 included the obligation which financial institutions had to report during their establishment, i.e. when they intended to lead the loro corresponding relationship.

After the survey, the corresponding relationship also includes keeping „payable through accounts”, in a way that “the responsible person cannot establish loro correspondence relationship with a foreign bank or similar institution, on the basis that the foreign institution can use the account of the person for direct business with his/her clients.” In accordance with the FATF's Recommendation 9, the responsible persons can rely on agents or the third parties to take identification data of the client and procedure of checking, applying the due diligence (CDD) in the business with the customer, under the condition that the basic responsibility for the identification of the client and checking are in the charge of responsible person who has the obligation for the

client, and relies on the third party. It is regulated that the authorised person must not entrust the measures of knowing and following the customer to the third person if the customer is off-shore legal entity or anonymous association. The third person also must not be from a country which is on the list of those not applying the standards in the field of money laundering, off-shore legal entity or quasi bank. In that case, the third person is obligated to hand over all information and copies of the documents in connection with the client's final party immediately, on the request of the responsible person. A prohibition of making the business relationship is envisaged in some cases when the responsible person cannot make the business relationship via the third person (for example if the third person was checked and found out the identity of the customer without his/her presence; if the responsible person did not get earlier all documents about the identification of the customer, etc.).

Within the Law's frame from 2009 and further, before the official visiting, there were not regulated, in accordance with the FATF's Recommendations 5, the obligations of collecting detailed information about the person who gives directive, in the case of domestic money transferring, checking the identity of the person who gives the directive; at least when it is an electronic transfer of amount of 1,000.00 Euros and more, what was not in accordance with the Special recommendation VII. There is the sanction for firms which deal with money transfer in the case that they do not fulfill obligations from the Special recommendation VII. After the MoneyVal's official visiting, the changes and amendments to the Law from 2009 were regulated, with a special attention to the risk of money laundering which came out from the new technological accomplishments making possible anonymity of the customer (for example the electronic and telephone banking, the bankomat usage and others) as well as unusual transactions, in sense of the FATF Recommendation 11, when it is about complex and unusual high amounts, characterized by unusual way of doing, value or connection).

5. Harmonization with the Third Directive of the European Union

The Law from 2009 is in accordance with the regulations in Act 3 of the Directive on the definition of the real customer's owner¹³. The obligation of verification of the real customer's owner is regulated, i.e. physical persons who are the owners of more than 25% of the property, what means that the present owner's part is increased from 10% in accordance with the Third Directive of the European Union. The responsible person is also obliged to verify the other legal entity's owners, if the other legal entity has 25% of the ownership of the

¹³ Regulations on identification and verification of the real owner are in acts 3 and 36, and the Chapter II which is related to the principle of due diligence of the client party, as well as in the introduction ad points 9-13, 23 and 39..

customer who is the legal entity. Further verification of the real owners is not necessary if the owner of the customer is a stock company. It is regulated by the Law that it does not need to send the notarized documentations, but only review the website of the Agency for business registers, and the total collected documentation will be decreased with that.

Responsible persons ought to have the established policies and procedures based on the risk for the clients and/or transactions. This policy understands separated approach to the clients from the risk of money laundering and the risk of the terrorism financing. Classification will have to follow CDD measures, current supervising and revision which are divided by categories of the clients and transactions, so that the responsible person can decide to terminate the business relationship or not. There are four groups of money laundering and terrorism financing risk: the risk of the responsible person with the client, country, product and the risk based on the previous experience and knowledge of the responsible person about the client. Simpler and strengthened measures are regulated for the due diligence. The legal frame of the Republic of Serbia satisfies the definition of politically exposed persons from the Third Directive¹⁴. It is regulated in the Law of the legal entity for criminal actions, limited payment of goods and services in the amount of 15,000 Euros or more (in several connected transactions¹⁵).

6. Estimation of the Applying Money Laundering and Terrorism Financing Prevention in the Banking Sector of the Republic of Serbia

In each country with the effective banking system, banks must make thorough financial reviews in order to prevent the use of their institutions for money laundering and terrorism financing. Optimal condition for money laundering is weak AML laws, technology which is developing and inconsistent international bank standards. Applying the AML/CFT regulations, which are applied to the financial systems, vary a lot among the countries in the same

¹⁴ Act 2 of the 1st Directive 2006/70/EZ explicitly said that under the term of the politically exposed persons is considered physical persons who are on exposed public functions and their closest family members for which is known that they are collaborators of these persons. Measure of more due diligence for the persons who stopped doing exposed public function, some of above mentioned, in a period of at least a year, authorised subject is not obliged to apply and to take this person as a politically exposed one

¹⁵More about the III Direktive see ad Fijat, Lj., Radović, M. (2010), on the harmonization of the III Directive with Law from 2009 in the document „Progress report and written analysis by the Secretariat of Core Recommendations 1“, at the website of the Ministry of Financy – Administration for Money Laundering Prevention www.apml.org.rs

region. Therefore, with entering of the biggest bank groups into the Republic of Serbia, first of all from Austria, France, Italy and Greece, it was expected that the integrity of these standards will improve, as well as that the supervising mechanism regarding conducting money laundering and terrorism financing prevention will be emphasized. According to the international standards, it is expected of the domestic banks with the foreign capital to conduct the procedure Know your Client-KYC in the same way as it is in the original association, and that there would be some differences in the responses of the banks to the questionnaire Anti Money Laundering-AML depending on applying recommended the FATF's measures in the original country, in comparison with the local regulations.

The analysis was done in 2008, during applying the Law on Money Laundering Prevention from 2005 and 2010 and after passing the Law on Money Laundering and Terrorism Financing from 2009.

The sample was appropriate, made of 14 banks out of 35 in Serbia in 2009, what was 40% of the total number of the banks. Total number of the employees in all banks was 30,954 and the banks which answered had 16,952 employees, i.e. they presented 54.77%. On September 30th, 2010 there were 33 active banks in the Republic of Serbia. The questionnaire was repeated and there were 11 banks (One Serbian state bank and two foreign banks with the Austrian capital did not participate) what was 33.33% of the total number of the banks which had business in Serbia. These banks had 12,410 employees, and the total number of the employees in the banks was 30,876 (at the end of the second quarter in 2010), so that participating banks, which answered, were presented with 40.19%. According to the above mentioned, estimation of fulfilment of the FATF's Recommendations in the banks, regarding to the result of the research in 2010, related to 2008, was for 11 banks.

The responsible and authorized persons for AML from domestic and domestic banks with the foreign capital participated in the questionnaire. These banks were, as follows: The European Union (Austria, France, Holland, Italy, Greece and Hungary), USA and the banks in whose property partially entered the European bank for renewal and development¹⁶.

The questionnaire "Anti Money Laundering" included the estimation of the applying the following FATF's Recommendations, regarding the financial institutions:

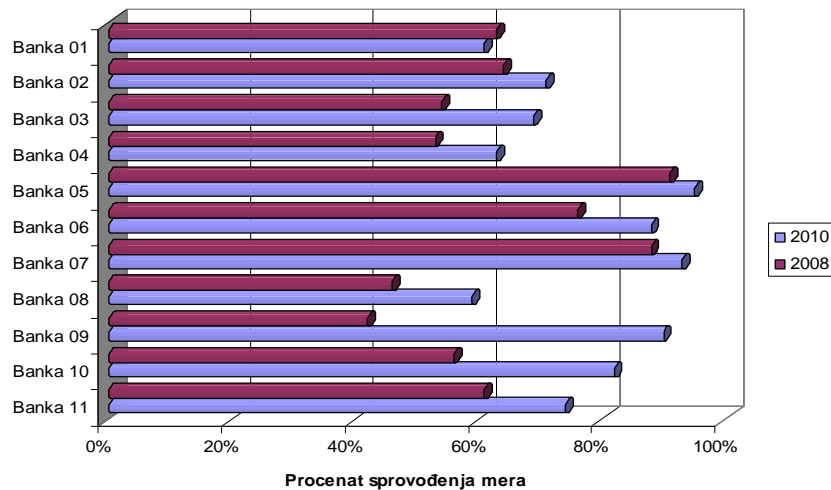
¹⁶ By the Law, responsible persons need to name the authorized person and his deputy, conditions which authorised person has to fulfill (act 39-41). It is also forbidden to give any data about these persons to unauthorised persons, which could be a problem during sending questionnaire. These regulations were implemented, according to the international standards, in their internal files for the domestic banks with the foreign capital before the Law from 2009.

1. Recommendations 5 to 8 (obligatory verification of the client, including fortified reduced measures);
2. Recommendation 6 (politically exposed persons);
3. Recommendation 7 (establishing relation with the banks' business);
4. Recommendation 8 (prevention of miss usage of the technology development for the schemes of money laundering and terrorism financing);
5. Recommendation 9 (relying on agents or third parties);
6. Recommendation 4 (confidential and trusting dealing of the financial institutions);
7. Recommendation 10 and Special recommendations VII (keeping evidence and rules of the electronic transfers' data);
8. Recommendation 11 and 21 (unusual, suspicious and other transactions);
9. Recommendation 13 and Special recommendation IV (suspicious transactions and other kinds of reports).

According to the above mentioned there were 48 questions with the possibility to answer with "Yes" or "No" or offered answers.

The following Figures show the degree of fulfilment of the procedures via the AML questionnaire in the research of 2010, in relation to the research from 2008.¹⁷

Figure 1.1 Percent Relation of Fulfilling the Procedures Envisaged by the FATF's Recommendations from AML Questionnaire among the Tested Banks



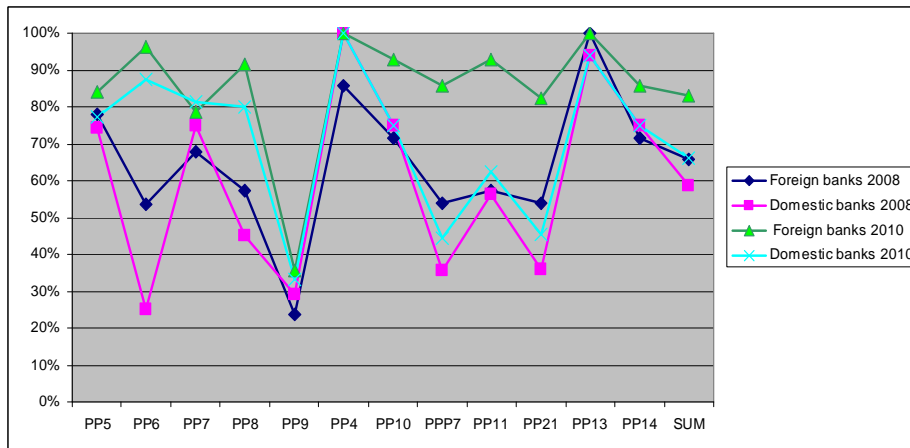
As it can be seen from Figure 1.1, the percent of applying the procedures recommended by the FATF, included in the AML questionnaire, the research from 2008 varies between 42% and 91%, although most of the tested banks

¹⁷ Detalje u vezi ankete videti u doktorskoj disertaciji Fijat, Lj., 2010., str. 163-183.

applied between 50% and 60% checked procedures. All 11 tested banks in 2010 fulfilled more than 50% of the AML procedures, and even 5 banks more than 80% of the tested procedures.

It could be concluded that the general situation in the Republic of Serbia, during the testing period, was not satisfactory, regarding the existing international AML/CFT frame at the time of conducting the anquette, because it was not in accordance with the international standards. Implementation of mentioned standards is regulated by the Law on Money Laundering and Terrorism Financing Prevention from 2009, whose passing and applying have to improve system of combating money laundering and terrorism financing.

Figure 1.2 Differences between Foreign and Domestic Banks in Relation to the Procent of Fulfilment of the FATF's Recommendations

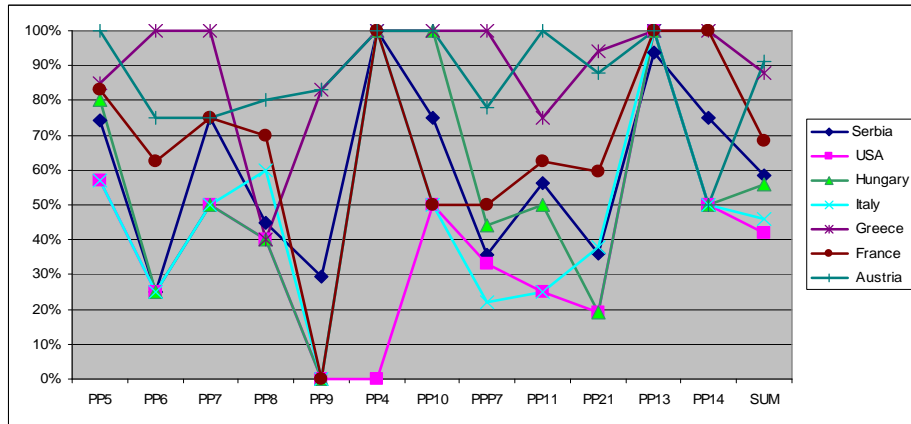


As it is seen from the Figure 1.2, the percent of fulfilment of the procedures recommended by the FATF, which are related to the prevention of money laundering and terrorism financing, increased in the period between two testings at both domestic and foreign banks. One can notice the decrease in the risk of money laundering and terrorism financing at foreign banks according to the Recommendations 10, 11 and 21 and Special Recommendation VII by the FATF.

As it can be seen from Figure 1.3 most of the banks tested in 2008 envisaged more than 25% of the procedures recommended by the FATF and tested via the AML questionnaire.

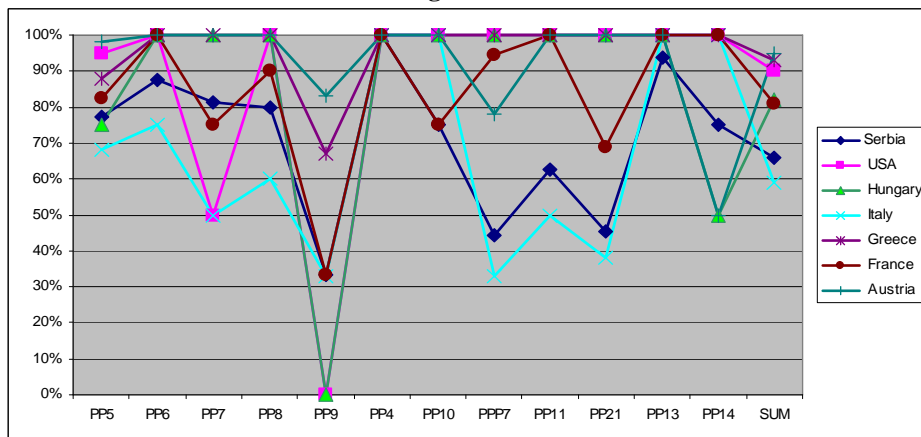
Nevertheless, it is noticed that the banks with Austrian and Greek capital envisaged higher number of the AML measures, especially connected to the Recommendations 10, 11, 21 and the Special Recommendation VII, than the other tested banks.

Figure 1.3 Differences among Tested Banks in the Relation to the Countries of their Origin in the Research from 2009.



	PP5	PP6	PP7	PP8	PP9	PP4	PP10	PPP7	PP11	PP21	PP13	PP14	SUM
Serbia	74%	25%	75%	45%	29%	100%	75%	36%	56%	36%	94%	75%	59%
USA	57%	25%	50%	40%	0%	0%	50%	33%	25%	19%	100%	50%	42%
Hungary	80%	25%	50%	40%	0%	100%	100%	44%	50%	19%	100%	50%	56%
Italy	57%	25%	50%	60%	0%	100%	50%	22%	25%	38%	100%	50%	46%
Greece	85%	100%	100%	40%	83%	100%	100%	100%	75%	94%	100%	100%	88%
France	83%	63%	75%	70%	0%	100%	50%	50%	63%	60%	100%	100%	69%
Austria	100%	75%	75%	80%	83%	100%	100%	78%	100%	88%	100%	50%	91%

Figure 1.4 Differences among the Tested Banks in Relation to the Countries of their Origin in the Research from 2010



As it can be seen on the Figure 1.4, the degree of applying the AML/CFT measures, recommended by the FATF, was much more improved in the period between two testing, so that in the test from 2010 the most tested banks envisaged more than 50% of the measures directed to money laundering and terrorism financing prevention, tested with the AML questionnaire.

On the example of the countries from which the foreign capital was imported into the banking sector of Serbia, there exists accordance with some of the crucial recommendations. Regarding the recommendation 5 (knowing your client) the least are in accordance the banks with the Italian capital (68%), and the most of the banks with the Austrian capital (98%). It is also noticeable that the banks with Hungarian and American capital still did not envisage any measures connected to the business with the third persons (only by explanation, because they do not have business with them), although all the other banks did that in the certain level.

	PP5	PP6	PP7	PP8	PP9	PP4	PP10	PPP7	PP11	PP21	PP13	PP14	SUM
Serbia	77%	88%	81%	80%	33%	100%	75%	45%	63%	46%	94%	75%	66%
USA	95%	100%	50%	100%	0%	100%	100%	100%	100%	100%	100%	100%	90%
Hungary	75%	100%	100%	100%	0%	100%	100%	100%	100%	100%	100%	50%	82%
Italy	68%	75%	50%	60%	33%	100%	100%	33%	50%	38%	100%	100%	59%
Greece	88%	100%	100%	100%	67%	100%	100%	100%	100%	100%	100%	100%	93%
France	83%	100%	75%	90%	34%	100%	75%	95%	100%	69%	100%	100%	81%
Austria	98%	100%	100%	100%	83%	100%	100%	78%	100%	100%	100%	50%	95%

7. Conclusion

The Republic of Serbia is in the process of joining the European Union. During 2009 and 2010 a few laws were passed and also the orders of responsible organs, which have an influence on prevention and stopping of the organized criminal, money laundering and terrorism financing. In order to harmonize with the demands of the MoneyVal's Committee within the European Council, according to the Report about the third circle of evaluation of the Republic of Serbia (detailed estimation for the FATF's criteria, as well as the measures which are necessary to be undertaken), and in order to improve the legal frame, Law on Money Laundering and Terrorism Financing is passed, and also made some changes in the Criminal Code.

The lawful frame of the Republic of Serbia consists of criminalization money laundering which will fulfill international standards. The principle of criminalization is based on the approach that the previous criminal act for money laundering may be every criminal act from which came the profit (all crime approach) and mandate for freezing, taking and confiscation of the illegally

acquired income. Some orders about punishments for money laundering were changed, too. It is necessary to avoid failures in applying the orders regarding especially to the incriminalization the terrorism financing actions, the freezing mechanism and permanent confiscation of the property. It is also important to create the measures for fulfilment of the Resolution SB 1267 (199) and further Resolution SB 1373 (2001) and those after them.

According to conducted anquette and our information, concerning the group of banks with least expressed, medium and expressed money laundering risk, domestic banks and domestic banks with the foreign capital were tested. Yet, until the passed directive from 2009, the most harmonized with the demands and the EU's standards were the domestic banks with the foreign capital. Estimation of harmonization with the international standards also shows that a great number of countries, from which the foreign banks had come, are not completely in accordance with the key recommendations of the FATF. Since the Republic of Serbia is not a member of the EU, all these policies could not be implemented directly but in accordance with the local laws. Some positive effects of the corporation value, created in the foreign banks on money laundering and terrorism financing, as well as institutional frame in the Republic of Serbia, formally in accordance with the international regulations, are not sufficient for the money laundering and terrorism financing control. Under the conditions of economical and political reciprocal dependence in the world, pressures and encouragements for acceptance of the AML and the CFT processes are not sufficient, but cooperation and partnership of all subjects are necessary, especially among the financial institutions which were identified like the main places for money laundering and terrorism financing prevention, independent whether they are domestic or domestic banks with the foreign capital. Trust in the bank sector depends a great deal on trust of the economy and the citizens in their banks, i.e. that they do their functions in the frame of directives, respecting high ethical and professional standards with which the monetary stability is provided and create business ambient for the financial market development, attracting the foreign capital and faster economical development.

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OCENA SPREČAVANJA PRANJA NOVCA I FINANSIRANJA TERORIZMA U BANKAMA

Apstrakt: zražena nestabilnost savremenog sveta u ekonomskom, političkom i društvenom pogledu donela je nove izazove. Jedan od izazova, svakako najvećih, su pranje novca i finansiranje terorizma. Pranje novca čini isplativim kriminal, zbog toga što omogućava prekršiocima da plasiraju dobit iz svojih kriminalnih dela. Takođe, može biti upotrebljeno i za fondove terorističkih aktivnosti. Predmet i cilj rada je utvrđivanje stepena usaglašenosti sistema u Srbiji sa 40+9 preporuka FATF-a (Methodology FATF 40+9) i Direktivom 2005/60/EZ Evropskog parlamenta i Saveta od 26. oktobra 2005. godine o sprečavanju upotrebe finansijskog sistema u svrhe pranja novca i finansiranja terorizma, tj. Trećom direktivom (Third Directive), pre svega kada je bankarski sektor u pitanju.

Ključne reči: krivično delo, pranje novca i finansiranje terorizma, FATF preporuke, III Direktiva EU, banke



BOOK PREVIEW

"THE SERBIAN LANGUAGE IN TRANSITION: ON ANGLICISMS IN ECONOMIC REGISTER" AUTHOR DR NADEŽDA SILAŠKI

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A new book by the author Nadežda Silaški has been published by the Centre for Publishing at the Faculty of Economics, University of Belgrade. Scientific monograph entitled "The Serbian language in Transition" is a scholarly work on the use of English words in the Serbian language needed for the economic science, which clearly indicates the subtitle of this monograph. This is a study in development economics which necessitates the adoption of foreign terms, especially from the English-speaking areas in the modern Serbian language. The author who is a professor of English at the University of Belgrade is a connoisseur of economic terminology.

The processes of globalization of the world economy have major consequences for the development of the national economy, have a significant impact on the harmonization of business conditions in these national economies, the tastes and habits of consumers in different countries, but these processes also lead to harmonization of economic concepts and terms used in different languages. Economic science in Serbia, and in the smaller economies of the world in general, is under the strong influence of foreign scientific circles, most important being those in the Anglo-American-speaking territory. This is especially true in my closest scientific field - international economy.

Researchers, often faced with the problems of the emergence of new scientific concepts, cannot find the right term to describe this concept well, so following the line of least resistance, tend to accept the terms of speaking areas whose references are used, and that is usually Anglophone speaking area. Sometimes researchers are not familiar enough with the term so they cannot recognize its meaning, and sometimes even feel that the text looks "more professional" if it is full of words of foreign origin and incomprehensible to most of the public. This is of course wrong, but it is necessary to know economic science and the Serbian language well in order that a term denoting a concept in English is correctly translated into Serbian.

The central part of the book is divided into seven main parts, except for the introductory discussion and the concluding remarks. In the first part of the book colleague Silaški gives the most important reasons for the use of anglicisms in the economy. The second segment is devoted to types of anglicisms used in economic terminology. Synonymy in the economy in Serbian and English is the third part of the book, and the fourth part is devoted to terminological synonymy in the Serbian language. In the fifth part of the book, Dr. Nadežda Silaški compared the anglicisms in economic terminology in Serbian and Croatian language, which is very interesting knowing that our western neighbors care about the purity of language and minimal use of foreign words. The sixth part of the book is entitled Strategy for Translation of Metaphorical terms from English to Serbian. The last part of the seventh segment by Silaški considers the standardization of terminology of marketing and management.

As we have already pointed out, in order to be successful in the English translation of economic texts, one must not only possess the linguistic knowledge, but must be familiar with economic concepts and categories and understand them well, because the meaning of a term is translated, not the term. Professor Nadežda Silaški is proficient in the English language, but also someone who mastered economic terms, someone from whom I learned economic business language, as well as economic terms. Indeed, this is revealed in the monograph, which indicates how the terms of the English language, in order to improve economics, migrated to the Serbian language. This manuscript is important tutorial for those who want find the right way to master translation and standardization of terms in the field of economics. This is becoming a huge need, and since I was involved in many international projects, I saw that there is a limited number of people who can translate technical economic texts. What I find particularly significant is that all of her claims are exemplified in the language.

Based on all the above, we have one important work that promotes linguistic science in Serbia in the area of its application in the field of economics. Scientific work of Dr. Silaški will be a significant contribution to the consideration of anglicisms and their difficulty fitting into the Serbian language. This impressive (I believe this is anglicizam) monograph will serve to all students, researchers, and professional translators facing the English economic issues.



BOOK PREVIEW:

“THE ROLE OF CONTEMPORARY MANAGEMENT AND MARKETING METHODS IN IMPROVEMENT OF COMPETITIVENESS OF THE COMPANIES IN THE SERBIA WITHIN THE PROCESS OF ITS INTEGRATION TO THE EUROPEAN UNION”

Editor Nebojša Janićijević

University of Belgrade, Faculty of Economics, 2012.

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The editorial book titled “The Role of Contemporary Management and Marketing Methods in Improvement of Competitiveness of the Companies in the Serbia within the Process of Its Integration to the European Union” consists of 20 scientific papers written by 31 authors from 3 countries and 4 universities. The book has 494 pages and it is structured in five parts that broadly address contemporary business challenges. The chapters cover a variety of topics within the fields of management, marketing, commercial management, tourism and international business. A special focus has been put on the Serbian economic environment, where several field-based papers examine the practice of Serbian companies. The book was reviewed by three prominent professors from Serbia and Croatia: Momčilo Milisavljević, PhD, Nikša Alfirević, PhD, and Tomislav Hernaus, PhD.

The first book chapter, entitled Management, consists of six papers dealing with the following subjects: organizational culture, international human resource management, organizational learning, risk management, leadership and quality management. Based on the fact that the organizational culture is a very popular concept in the field of organizational behavior, Janićijević analyzes the content and features of the organizational culture, and the strategies and methods for changing the organizational culture. This is especially important if one considers that the organizational culture is an effective tool for controlling and directing the behavior of employees. The author has explained in detail the tools that have great utility value in terms of changing the culture in practice in different companies. Bogićević-Milikić deals with staffing in terms of the internationalization of the business through expansion of cooperation between

companies from different countries. International joint ventures (IJV) as a way of entering the international market have many advantages, but it also creates a number of challenges for human resource management. One of the biggest challenges is staffing activity because research has shown that it has a significant impact on the success and sustainability of IJV. In this context, it is concluded that the staffing policy and practice should be an integral part of the process of planning, negotiation and the creation of international joint ventures, whilst avoiding the many problems associated with other human resource management activities. Organizational learning and knowledge transfer between organizations are an important factor in establishing and maintaining a competitive advantage in strategic alliances. Aleksić-Mirić and Burton are using the case study to analyze the impact of organizational design on this process by presenting several propositions regarding the relationship between organizational structure and organizational learning in alliances. From the aspect of management practice, the conceptual framework developed by the authors can be a useful tool to manage the process of organizational learning in accordance with the relation between the partners in the alliance and characteristics of organizational structure. Stojanović-Aleksić and Babić analyzed the key characteristics of a successful leader because previous studies have shown strong links between the leadership skills of managers in the organization and organizational performance. The authors researched the personal features of the general type, cognitive and mental characteristics, and psychological characteristics, as well as the source of leadership capabilities. Despite the view that it is difficult to define universal characteristics and attributes of successful leaders, the fact that leaders from various organizations have many common features. In this part of the book two important areas with strong practical implications are analyzed. The first issue relates to the accounting-based measures of risk, and Ivanišević and Todorović were researching possibilities of accounting-based measures of risk in function of substitute for market-based beta metric. The authors suggest that accounting standard setters need to require from companies more explicit accounting of disclosures variables that indicate risk. The implementation of quality systems is an important proposition for maintaining competitiveness in the domestic and international markets, especially in sophisticated markets such as the European Union. Babić has researched the effects of the application of integrated management systems, such as quality management, environmental management, food safety, etc. It is revealed that the implementation of various standards and integrated management system enables continuous improvement of organizational performances. This conclusion has clear practical implications and suggests the profitability of investments in the implementation, development and maintenance of quality systems.

The second part includes papers in marketing field related to key account management, advertising, internet and media and communications. Gligorijević

and Mitić examine key account management as a new marketing approach and a response to increasing global competitive pressures. The authors create KAM development model, which is the basis for the study of KAM development. Using survey technique they identify the presence and quality of the basic elements of KAM process and nature of relationship between business buyer and seller. Bošković and Popović deal with the application of nonparametric methods in the analysis of treatment effect and the effect of the advertisements order in making marketing decision in banks. The authors analyze bank competition in Serbia, importance of bank marketing, customer expectation and treatment effect in sequence and propaganda. They concluded that economic propaganda is very efficiency model for communications with clients, largely due to the development of technology and information technology, the fields with the biggest innovation booms today and identical future growth tendencies. The purpose of Filipović's study is to develop research design for the investigation of the effects of the Internet communications aimed at the millennial generation. The Internet communications are gaining in their relevance continuously and shaping the new landscape of marketing communications between companies and consumers. In spite of the fact that this interactive medium plays a significant role in the lives of modern people in general, the author notes that its importance is even more apparent in the case of younger generations. In order to apprehend the comprehensive picture of factors that determine the efficiency of Internet advertising, the following issues were analyzed in the paper: characteristics of the Internet, web advertising and its outcomes, uses and gratifications theory, marketing appeals and millennial generation. Building on these findings, research model and the corresponding experiment are proposed and discussed.

A part titled Commercial Management contains three papers with the following research topics: trade management development, marketing, key account management, and supply chain management. Lovreta and Stojković explain retail transformation, new approaches in marketing theory, changes in the marketing mix of retail trade, challenges in developing new marketing strategies in micro retailing, challenges in developing strategy of category management, and CRM and social component in retail marketing. The authors concluded that the classic marketing concepts should be overcome and that they should be replaced by new approaches that allow better access to customers. Bogetić and Petković address the issue of developing key accounts in the commercial portfolio management. They argue that key account management is necessity for the current business momentum, including the complexity and dynamism of the strategy and tactics. The changing business environment requires active management portfolio of key accounts. The aim is to have up to date customer list and adequate adaptation of the business process requirements of the selected customers. Development of key account portfolio in times of crisis includes combination of experiences and best practices. In addition, it also

respects local peculiarities and business issues. They conclude that in the situation of high liquidity crisis, both in private and public sector, the financial aspects of the analysis of business partners, in the short and long term, are especially important in the selection and treatment of key accounts. Supply chain management covers many important segments of company functioning. In accordance with this fact, Aćimović and Mijušković explained the key components of the supply chain, role of distribution in supply chains, factors that influence distribution network design, main types of distribution network design, and problems in practice.

Tourism part covers three papers with the following topics: activity based tourism, market segmentation, and promotion in tourism. In the past few years, Serbian tourism has shown significant growth through the promotion of tourism and the promotion of domestic destinations. Because of this, papers in this section offer a range of useful and practical guidelines for the improvement of Serbian tourist offer. After analyzing stakeholders, Zečević deals with mapping activity-based tourism stakeholders in Western Serbia using focus groups method. Djordjević and Petrović examine efficiency of different media usage in promotion activities of travel agencies. A sale in tourism is one of key activities in modern conditions of operation. Travel agencies use various media in sales of travel packages in order to increase sales – websites, printed media, electronic media and personal sales. Assessment of efficiency of different media and personal sales is significant to improve efficiency of promotional activities, optimize marketing expenses and define adequate marketing strategy. In travel agencies expenses for promotion of travel packages present one of the most significant items in total operational costs. Based on a case study of a travel agency, the paper analyzes efficiency of different media. Djordjević and Veljković analyzed influence of brand to customer decision making, significance of brands in travel decision making, and significance of tourist market segmentation. Based on empirical research it was statistically proven that segmentation of tourists based on significance of different brands of participants is more precise than traditional variables (demographic and geographic primarily). By applying adequate statistical methodology, segments of tourist service customers were defined, with limitations making regarding application of obtained results.

International Business part contains five papers focused on the following topics: business internationalization, international trade, export competitiveness, exchange rates, and financial crisis. Rakita and Marković analyzed China's automotive industry in order to explain better the evolutionary approach to internationalization and "step by step" method. Bjelić and Popović-Petrović explained the changed role and overall importance of developing countries in international trade at the beginning of the new century. The authors concluded that developing countries after 2008 have become the new engine of growth of

the world economy. Mladenović investigates the presence and type of non-linear properties in the euro based real exchange rate in the following countries from Central and Southeastern Europe: Hungary, the Czech Republic, Poland, Romania and Serbia. Results show that strong nonlinearity exists in three cases (Poland, Hungary and Serbia). Smooth changes over randomly determined regimes represent the appropriate form of capturing the identified non-linear behavior in real exchange rate. Estimated specifications strongly outperform standard linear specification when in-sample forecasting was done. The contemporary world economy is characterized by the mutual intertwining of investment and trade flows that has led to the emergence of new export forms. Stojadinović-Jovanović point out new trade flows and the possible ways and direction in conducting analysis of export competitiveness. Jaćimović has analyzed the impact of the financial crisis on competitiveness of the Western Balkans. She concluded that developing model based only on external financial sources, such as FDI and loans, it is not sustainable long term.

By the analysis of the literature in each section, it can be concluded that the relevant sources were used, which enabled excellent understanding of basic concepts with their reaffirmation in the recent literature sources. In this way, the required consistency and quality of the works are reached, with the simultaneous analysis of certain specific issues and problems related to the observed concepts.

The benefit of this book is that all researchers involved in the fields that are contained in the book, but managers who are concerned with everyday practical problems. In this sense, the book provides a good guideline for solving problems related to human resource management, sales promotion, internationalization of business and tourism development. This is especially important if one considers that the book integrates the efforts of many authors in order to improve the competitiveness of Serbian companies in order that they readily welcome the process of integration of Serbia into the European Union.

The book is written in English language. All works are characterized by an objective and rigorous scientific approach. Reading public is indebted to Professor Nebojša Janićijević that has done the great work in the role of editor of this edition, especially if one takes into account the heterogeneity of the issue. Despite the reported diversity of content and research, the works are skillfully integrated into one book with clear and useful theoretical and practical implications.

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Book authored, with an edition number:

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Modern edition of an older book:

Pattern: Surname, initials. (original publishing year) year of reprint, *title of book*, place of publication: publisher.

Example: Keynes, J. M. (1936) 1973, *The general theory of employment, interest and money*, London: The Royal Economic Society.

Book chapter in edited book or other collective works:

Pattern: Surname, initials. (year) "title of chapter", editor(s) surname and initials (ed.), *title of book*, place of publication: publisher, pages.

Example: McKinnon, R. (2000) "Limiting moral hazard and reducing risk in international capital flows: The choice of an exchange rate regime", in Bisignano J. and W. Hunter (eds.), *Global financial crises: Lessons from recent events*, Boston: Kluwer Academic Publishers, pp. 159–176.

Note: If there are two or more editors instead of (ed.) use (eds.).

Book authored by an institution:

Pattern: Institution (year) "title", place of publication: publisher.

Example: OECD (2013) "OECD Economic Surveys: China 2013", Paris: OECD Publishing.

Single-author journal article:

Pattern: Surname, initials. (year) "title of article", *journal name*, volume (number): pages.

Example: Haggard, S. (1985) „The politics of adjustment: Lessons from the IMF's Extended Fund Facility“, *International Organization*, 39 (3): 505–534.

Two-author journal article:

Pattern: First author surname, initials. and second author initials. surname (year) "title of article", *journal name*, volume (number): pages.

Example: Frenkel, A. J. and R. M. Levich (1975) "Covered interest arbitrage: Unexploited profits?", *Journal of Political Economy*, 83 (2): 325–338.

More-than-two-author journal article and multiple works by same author(s):

Example:

Josifidis, K., J. Allegret, and E. Beker Pucar (2009) "Monetary and exchange rate regimes changes: The cases of Poland, Czech Republic, Slovakia and Republic of Serbia", *Panoeconomicus*, 56 (2): 199–226.

_____ (2011) "Inflation targeting and exchange rate regime in Serbia and selected transition economies", *Eastern European Economics*, 49 (4): 88–105.

Forthcoming article:

Pattern: Surname, initials. (forthcoming) "title of article", *journal name*.

Example: Marinković, S. and O. Radović (forthcoming) "Bank net interest margin related to risk, ownership and size: An exploratory study of the Serbian banking industry", *Economic Research*.

Journal with DOI:

Pattern: Surname, initials. (year) "title of article", *journal name*, doi: address

Example: Fungáčová, Z. and T. Poghosyan (2011) "Determinants of bank interest margins in Russia: Does bank ownership matter?" *Economic Systems*, doi: 10.1016/j.ecosys.2010.10.007

Working/Discussion Paper:

Pattern: Surname, initials. (year) "title of article", *working paper name*, number, publisher, place of publication, month of publication.

Example: Gordon, J. R. (2012) "Is U.S. economic growth over? Faltering innovation confronts the six headwinds", *NBER Working Paper*, No. 18315, National Bureau of Economic Research, Cambridge, MA, August.

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An article with an author from a newspaper:

Example: Krugman, P. (2011) "Killing the Euro", *The New York Times*, 1 December.

An anonymous article form a newspaper:

Example: Financial Times (2012) "Siemens to pay €170m to Græce over alleged bribery of officials", 9 March.

Unpublished work:

Example: Arsić, M., Z. Mladenović, A. Nojković, and P. Petrović (2005) "Makroekonometrijsko modeliranje privrede Srbije: Teorijske osnove i rezultati", CES MECON, *mimeo*.

Online document and database, private homepage and website:

Example: Jelašić, R. (2010) Ključne determinante kretanja cena u Srbiji: Empirijski pregled devet godina tranzicije, http://www.nbs.rs/internet/latinica/15/konferencije_guvernera/prilozi/20100309_kopaonik.pdf. Accessed 15 August 2012.

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Example 2: Капелюшников, Р. (2013) „Сколько стоит человеческий капитал России?“ (Russia's human capital: What is it worth?) *Вопросы Экономики*, 2, 24–46.

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Example: Israel, G. and B. Ingrau (1990) *The invisible hand*, Cambridge: MIT Press. (quoted in Minsky, P. Hyman (1995) "Financial factors in the economics of capitalism", *Journal of Financial Services Research*, 9, 197–208).

Titles and subtitles:

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