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UNIVERSITY OF NIŠ

FACULTY OF ECONOMICS

ECONOMIC THEMES
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Editor's Introduction

The academic journal *Economic Themes* has a long history. The first issues were published under the title *Collected Papers* of the Faculty of Economics in Niš. The publication has been issued continually by the Faculty of Economics over fifty years. The publisher has excelled in the area of higher education, scientific research and secured the position among leading institutions of economic profession. Over the past half century of its existence the journal has presented more than 1600 original and review articles, announcements and book reviews in the area of general economics, accounting and finance, business sciences and management, marketing, tourism, hospitality as well as many other disciplines.

Currently, the journal is published quarterly as a bilingual academic publication characterized by the Ministry of Education, Science and Technological Development as a leading journal of national importance (M51).

The journal is open to all contributions that contain original ideas or innovate research method. The Faculty is currently in the process of establishing a new Editorial Board that will include distinguished scientific workers from across the world. Also, the following issue will be published with new visual identity and technical elements in accordance with high quality standards in publishing.

This is a special issue of the journal that will appear after special call on the occasion of the fiftieth anniversary. These fifteen papers have been selected because of their quality with three times more contributions than before. The selected papers express fully the variety of economic disciplines and authors that regularly chose our journal to promote results of their research.

This issue has been announced and edited by the former Editor-in-Chief, Professor Ljiljana Stanković, who I would like to thank on this occasion.

Editor-in Chief

Srđan Marinković, Phd

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CHALLENGES TO ECONOMIC SCIENCE IN CONDITIONS OF THE GLOBAL ECONOMIC CRISIS

Petar Veselinović*

Abstract: *The global economic crisis, which began in late 2007, after the longest period of economic rise, marked the downfall of the dominant neoliberal concept of economic trends management. An important precondition for substantiated critique of neoliberalism is to establish a clear correlation between the normative recommendations of neoliberal theory and economic changes in market economies during the past decade. Elementary insight into the economic trends indicates that there is a certain correspondence between neoliberal ideas and the trajectories of many, above all, capitalistic economies, but also a clear discrepancy between neoliberal theory and political and economic practices. The consequences of the global economic crisis suggest that the views about the role of market and state interventionism can not offer an adequate interpretation of the causes and consequences of the crisis. Macroeconomic theories that rested upon the idea of a perfect market functioning, a firm, monetary and fiscal policy as the backbone of successful economic policy, were struck by the appearance of such an intense and long lasting crisis. Therefore, the explanation of the causes of crisis, but also the recommendations for the economic policy, were predominantly based on the critique of neoliberal concept and its fundamental principles.*

Keywords: *global economic crisis, neoliberalism, global economy, economic policy, consequences.*

Introduction

The global crisis has severely shaken the world economy, hence the economic science, which has been forced to seriously review its key postulates. When considering possible lessons of the crisis, a special emphasis must be made on the constant vigilance to threat of emerging crisis. The highest risk periods are those of great economic takeoff, which by their nature lead to numerous imbalances that can easily get out of control, and then the crisis is inevitable.

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Globalization, due to densely interwoven flows of interconnections, quickly spreads large imbalances to the whole area. Therefore, the construction of a new "architecture" of mutual financial system is necessary, and perhaps the most delicate task is in the efforts for a new world crisis not to occur in the near future.

Numerous negative consequences of this crisis have already today led to the economic future being considered in the world in a completely different way than it has been considered in the recent past. The leading world economic force emphasizes harsh request "export or die" or "no more jollification" as a key imperative for economic recovery. Apparently, new era requires a new approach to economic growth, which will be based on realistic sources, primarily savings and competitiveness. One who does not save and is not competitive, will not be able to count on success in global economy.

Savings rate in the U.S. after the Great Depression (1929-1933) was over 30%, today does not reach even 10%, while in China it is about 50%. Is it not one of the biggest causes for prosperity of some and collapse of others? Budget deficit data indicate similar. While the shortage of funds in the budget of the U.S. is 10.5% of gross domestic product, it is only 3.2% in China. This incomprehensible gap between desires and possibilities, that is, a practice to constantly consume more than it is produced, which became norm both in the countries where the system was more reliant in the market, and in those who were inclined to state interventionism, simply had to bring the order to collapse.

It is very important for us to perceive the lessons which this crisis provided, and in order to perceive it is necessary to point out its key features, that is, the causes that led to its occurrence. In addition, it is important to point out the reaction of economic science, that is, of its concepts, to the global economic crisis.

1. Manifestations and Consequences of the Global Economic Crisis

Speaking about the crisis that has occurred, it can be said that it is an overall crisis of modern civilization which has overflowed from the U.S. to all parts of the world. Economists often point out that the nucleus of the global economic crisis is the so-called mortgage crisis.

The idea of the American dream has been promoted in the U.S. for years, an idea that, among other, meant that each family owns a house. Purchase of property, like everywhere in the world, was carried out through financial mediators, by taking mortgage loans from banks and other deposit and loan institutions. These transactions took place on the primary mortgage market. The system of purchasing real estates functioned perfectly until the introduction of a new sub primary mortgage market, which, as it would later turn out to be, was the main cause of the crisis in the U.S. housing market. Apparently, both markets operated on the same principle, however, there was a significant difference which had a crucial role in the genesis of the crisis. The difference between these markets

is the degree of regulation and the conditions under which the mortgage loans were placed to citizens. The reason for emerging of sub primary market is constant increase in prices of real estates and the desire to achieve more and more profits. The constant growth in prices or real estates was caused by the overheated demand, which was funded right through the mortgage loans.

Two types of mortgage loans have appeared in the market:

- primary mortgage loans that were approved to creditors who are able to repay a mortgage and
- sub primary mortgage loans that were approved to creditors who did not meet the requirements for obtaining this type of loan but the banks were pretty easy-going when approving these types of loans because the growth of real estate prices in the U.S., from year to year, extended the value of collateral, so after only a few years value of the mortgage loans exceeded the amount taken.

The main cause of the crisis should be sought in a very expansive monetary policy led by the U.S. Federal Reserve (FED). Policy of cheap money, that is, low interest rates of FED, which was conducted over an extended period of time, determined the amount of money in the U.S., and thus the quantity of money in the world, because the dollar has functioned as a reserve currency. Policy of cheap money, which was led by FED, was possible because the U.S. current account deficit could be refinanced through loans, among others, from China which had a surplus on its current account. Therefore, the U.S. was able to keep interest rates low and to have, for a relatively long time, a cheap money offer for their own citizens. Due to high influx of cheap money from abroad, there was a surplus of the fund sources of banks in the U.S. and the banks had to place the free cash to make profit. Due to low interest rates in the U.S. there has been a real estate market boom.

Thanks to the fact that dollar has remained the only reserve currency as well as to the vast inflow of foreign capital on the gross basis, the U.S. have spent in two decades considerably more than the amount of their the gross domestic product, which was manifested through the huge current account deficit in the balance of payments. Spending of future income has become a practice at all levels in this country – from the individuals, families, companies and country as a whole. The increasing difference between the total inflow of foreign capital into the country and its total outflow, allowed the multi-years spending of generated GDP. Therefore, the value of shares and real estates in the USA increased enormously.

Due to the huge inflow of foreign capital into the banks in the U.S. territory, it was created a tremendous credit potential, so banks argued through their aggressive campaigns that the prices of apartments and houses will grow dynamically and that it is rational to take a loan for their purchase or construction.

The consequence of this is a condition in the real estates market. Many more houses and apartments were sold because of the cheap loans, which caused a huge "soap bubble" in the U.S. real estates market. This "bubble" has turned into, no more, no less, than a global economic crisis.

Global economic crisis has aggravated the real situation of economy in all countries and has brought an enormous illiquidity, profound decline in production, a series of bankruptcies, rising unemployment, reduced wealth and other negative effects that were globalized, spread to all countries and their economies. In all the countries during the crisis the resources were accumulated (unemployed workers, unengaged capacities, raw materials and semi-finished products) and were not mobilized and used productively to increase production, employment and incomes. Actors of resources mobilization have been affected by depression and work inactivity, and institutional system has become ineffective in terms of directing the economy and coordination of economic trends. The crisis was largely passed down through international trade and finances, especially due to rapid overthrow of demand and consequently led to decline of production and rising unemployment.

As a result of the global economic crisis, the recession manifested itself in the second half of 2008 when it lower annual rate of global economic growth was achieved (3.4%) compared to the previous year (5.2%). The USA achieved a growth rate of 1.1%, and the EU 1.3%, which is lower in comparison to 2007 (2% and 3.1%, respectively). The growth of world trade of 4.1% was considerably slower in comparison to 2007 (7.2%). Monetary and fiscal stimuli have affected economic outcomes in 2009 on an annual basis. A decline in the global economy was recorded (-0.7%), the USA (-3.5%), the EU (-4.2%), eurozone (-3.9%). The real decline in GDP was recorded in 2009 by Germany (-4.8%), France (-2.3%), Italy (-4.8%), Spain (-3.6%). In 2009, developing countries have achieved real GDP growth of 2.4%, and Central and Eastern European countries have achieved real GDP decline of 3.7%, while Asian countries have reached real GDP growth of 6.6%. Simultaneously, as a result of the global economic crisis, there was an increase in unemployment rate in the eurozone to 9.4%, and in USA to 9.3% compared to 2008 when it was 5.8% and 7.6%, respectively.

The leading economies have entered recession in late 2008 and early 2009. According to Eurostat data, the U.S. economy entered recession in the third and fourth quarter of the year 2008 (-0.1% and -1.6%), while European economies EU 27 entered recession in the second (-0.1%), third (-0.3%) and fourth (-1.5%) quarter of 2008, all measured in relation to the previous quarter. According to data on inter year real annual GDP, the American and European economies have entered recession in the fourth quarter of 2008 (-0.8% and -1.4%, perspectively). The recession of American and European economies in comparison to the previous quarter and the inter year level was deepened in 2009, while in 2010 and 2011, real GDP growth was recorded in the U.S. and the EU, as shown in the following tables:

Table 1 Real GDP in 2008 (percentage)

	Compared to previous quarter				Compared to the same quarter of the previous year			
	2008				2008			
	Ql	Q2	Q3	Q4	Q1	Q2	Q3	Q4
USA	0,2	0,7	-0,1	-1,6	2,5	2,1	0,7	-0,8
EU 17	0,6	-0,2	-0,2	-1,6	2,2	1,5	0,6	-1,4
EU 27	0,5	-0,1	-0,3	-1,5	2,4	1,7	0,7	-1,4
Germany	1,5	-0,5	-0,5	-2,1	2,8	2,0	0,8	-1,6
France	0,4	-0,3	-0,1	-1,1	2,0	1,1	0,6	-0,9
Italy	0,3	-0,6	-0,7	-1,9	0,4	-0,4	-1,3	-2,9
Czech Republic	0,6	0,7	0,3	-0,9	4,9	4,0	2,9	0,7
Hungary	0,5	-0,1	-0,6	-1,2	0,5	-1,9	-5,2	-10,3
Poland	0,9	1,0	0,8	0,3	6,1	5,5	4,9	3,1
Slovakia	-3,4	1,9	1,8	2,1	9,3	7,9	6,6	2,5
Slovenia	1,9	0,6	0,8	-4,1	5,9	5,0	3,7	-0,9
Romania					8,2	9,3	9,2	2,9
Bulgaria					7,0	7,1	6,8	3,5

Source: EUROSTAT, February 2009.

Table 2 Real GDP in 2009 (percentage)

	Compared to previous quarter				Compared to the same quarter of the previous year			
	2009				2009			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
USA	-1,6	-0,2	0,4	1,2	-3,3	-3,2	-2,7	0,2
EU 17	-2,5	-0,1	0,4	0,2	-5,0	-4,9	-4,1	-2,2
EU 27	-2,4	-0,2	0,3	0,2	-4,9	-5,1	-4,3	-2,3
Germany	-3,5	0,4	0,7	0,3	-6,7	-5,8	-1,4	-2,0
France	-1,4	0,2	0,3	0,6	-3,5-	-3,1	-2,7	-0,5
Italy	-2,7	-0,3	0,4	-0,1	-6,0	-6,1	-4,7	-2,8
Czech Republic	-4,4	-0,5	0,5	0,5	-4,2	-4,7	-4,4	-3,2
Hungary	-2,3	-1,4	-0,6	0,0	-5,6	-7,2	-7,2	-5,2
Poland	0,1-	0,6	0,6	1,2	1,5	1,4	1,4	2,8
Slovakia	-8,1	0,8	1,1	1,3	-5,7	-5,1	-5,2	-4,2
Slovenia	-6,2	-0,1	0,1	0,1	-8,8	-8,8	-8,8	-6,1
Romania	-4,6	-1,5	0,1	-1,5	-6,2	-8,0	-7,6	-6,9
Bulgaria				-0,2	-3,5	-4,9	-5,4	-6,7

Source: EUROSTAT, February, 2009.

The world economy would have entered into a deeper recession if most countries had not provided fiscal and monetary stimuli in 2008 and 2009. Lack of incentives would have pushed the economies of certain countries in stagdeflation (recession + deflation).

Stimulating measures undertaken in late 2008 and 2009 have contributed to alleviating the consequences of the global economic crisis, especially stopping a deeper decline in economic activity.

The first signs of a slight recovery of the U.S. economy were registered in the third and fourth quarter of 2009 as a result of government intervention, after the fall of GDP in the previous five quarters. In the third quarter of 2009, a lower inter year decline in real GDP was recorded (-2.7%), compared to the second (-3.2%) and first (-3.3%) quarter of 2009, while in comparison to the previous quarter for the first time, real GDP growth of 0.4% was recorded in the third quarter of 2009. In the fourth quarter of 2009 it was recorded inter year GDP growth of 0.2%, that is, GDP growth of 1.2% compared to the previous quarter of 2009.

For the recovery of the U.S. economy in 2009, 800 billion dollars was set aside from the program of economic incentives. Measures to encourage consumption have yielded results, especially benefits for buying a new car and first time home buyers. Total spending in the U.S. that amounted to 70% of GDP, has increased in the third quarter of 2009 by 3.4%. Exports grew faster than imports, and the budget deficit amounted to about 10% of GDP.

A slight recovery of the economies of EU 17 and EU 27 was recorded in the third quarter of 2009 when real GDP growth of 0.4% and 0.3% was recorded respectively, as in the fourth quarter of 2009 year of 0.2% and 0.2%, respectively, as compared to the previous quarter. Observed inter annual in the fourth quarter of 2009, EU 17 and EU 27 have achieved a small decline in GDP (-2.2% and -2.3%), compared to the interannual decline in GDP in the third (-4.1% and -4.3%), second (- 4.9% and -5.1%) and the first (-5.0% and -4.9%) quarter of 2009. Within the of EU there was recession mitigation of the economy in Germany and France in the second quarter of 2009 when it was recorded a slight increase at rates of 0.4% and 0.2%, compared to the previous quarter, after a negative rate in the second (-0,5%. and -0.3%), third (-0.5% and -0.1%), and fourth (-2.1% and -1.1%) quarter of 2008 and in the first (-3.5 % and -1.4%) quarter of 2009. Germany and France as the leading European economies have registered a real GDP growth in the third quarter (0.7% and 0.3%) and the fourth quarter (0.3% and 0,6%) of 2009. Mild increase in GDP since the second quarter of 2009 in Germany and France has been contributed by the government measures of encouraging consumption, that is, investing in stimulative packages (buying new cars) and tax cuts, reducing imports and increasing exports. In these countries, the fiscal deficit increased as a result of investing in companies to prevent their closure and higher unemployment and helping the unemployed and those with lower incomes. A number of EU members countries remained in recession in the fourth quarter of 2009 and the first quarter of 2010.

A slight recovery of the world economy and national economies since the second half of 2009 was not sufficient to reduce unemployment. Because of the high budget deficit, states did not have the ability to allocate direct investments into public works to create new jobs, hence the private sector is a key lever for creating new jobs. Economic recovery comes from the private sector, including improving the situation in the labor market. In September 2008 the unemployment rate in eurozone was 7.7%, 7.1% in EU, and then during the global economic crisis there was an increase in number of unemployed and the unemployment rate in all countries. In 2009 crisis in the U.S. shut down 8 million jobs, and 4 million jobs in the EU.

The world economy in 2010 and 2011 recorded a recovery from the effects of crisis, but also the risk to financial stability and economic growth. Intensity of the economic recovery is weakest in the eurozone, while it is stronger in the U.S. and in economies of the Asian region. A moderate economic recovery in USA was recorded due to extraordinary stimulating measures of monetary and fiscal policies and measures in the field of financial regulation that have been made in order to prevent the irresponsible behavior of banks and other financial institutions. It is estimated that the growth rate in the U.S. will be significantly higher than in the eurozone. It is expected in the eurozone to occur consolidation of public finances, which will affect the return of the investors trust, reducing risk premiums and contributing to economic growth, despite the expansion of the debt crisis and other turbulences in the eurozone.

Table 3 Real GDP in 2010 (percentage)

	Compared to previous quarter				Compared to the same quarter of the previous year			
	2010.				2010.			
	Qi	Q2	Q3	Q4	Ql	Q2	Q3	Q4
USA	0,9	0,4	0,6	0,6	2,4	3,0	3,2	3,1
EU 17	0,4	1,0	0,3	0,3	0,8	2,0	1,9	1,9
EU 27	0,4	1,0	0,5	0,2	0,6	2,0	2,2	2,1
Germany	0,6	2,2	0,7	0,5	2,1	3,9	3,9	3,8
France	0,3	0,6	0,3	0,3	1,2	1,6	1,7	1,4
Italy	0,4	0,5	0,3	0,1	0,5	1,3	1,2	1,5
Czech Republic	0,7	0,8	0,9	0,5	1,0	2,3	2,8	2,7
Hungary	1,4	0,2	0,6	0,2	-0,6	0,8	2,2	2,5
Poland	0,7	1,2	1,3	0,9	3,1	3,8	4,7	3,9
Slovakia	0,7	0,9	0,9	0,8	4,5	4,2	4,0	3,4
Slovenia	-0,1	1,0	0,3	0,5	-0,2	1,4	1,3	2,2
Romania	-0,3	0,3	-0,7	0,4	-3,2	-1,5	-2,2	0,2
Bulgaria	-0,5	0,7	0,3	0,5	-0,8	-0,3	0,5	3,7

Source: EUROSTAT, november, 2011.

Macroeconomic performances of most countries have improved in 2010. On a global level it is achieved economic growth of 5.1% due to the rapid growth of developing countries (7.3%). EU has achieved economic growth of 1.8%, USA 3%. The Central and Eastern European countries recorded a growth of the economy by 4.5% on average. World trade grew by 12.8%. The unemployment rate in eurozone amounted to a record of 10.1%, 9.6% in the U.S.. Inflation in developed countries increased from 0.1% in 2009 to 1.6% in 2010.

Acceleration of the world economy recovery continued in the first quarter of 2011, and then there was a slowdown in economic recovery at risk for the world economy to re-enter recession, given that slow recovery of the economy was accompanied by high unemployment, poor consumer demand and financial problems, especially in the eurozone.

Table 4 Real GDP in 2011 (percentage)

	Compared to previous quarter				Compared to the same quarter of the previous year			
	2011.				2011.			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
USA	0,1	0,3	0,5	0,7	2,2	1,6	1,5	1,6
EU 17	0,8	0,2	0,1	-0,3	2,4	1,6	1,3	0,7
EU 27	0,7	0,2	0,3	-0,3	2,4	1,7	1,4	0,9
Germany	1,3	0,3	0,6	-0,2	4,6	2,9	2,7	2,0
France	0,9	-0,1	0,3	0,2	2,2	1,6	1,5	1,4
Italy	0,1	0,3	-0,2	-0,7	0,8	0,7	0,2	-0,5
Czech Republic	0,6	0,2	-0,1	-0,3	2,8	2,0	1,2	0,5
Hungary	0,7	0,1	0,4	0,3	2,1	1,7	1,5	1,5
Poland	1,0	1,2	1,0		4,5	4,6	4,2	
Slovakia	0,8	0,9	0,8	0,9	3,4	3,4	3,2	3,3
Slovenia	-0,1	0,0	-0,2		1,9	0,7	-0,1	
Romania	1,2	0,9	1,8	-0,2	1,3	1,9	4,4	2,1
Bulgaria	0,5	0,3	-0,1	-0,2	3,3	2,0	1,6	0,9

Source: EUROSTAT, February, 2012.

Economic recovery of the world economy, after accelerating in the first quarter of 2011, slowed down in the second, and particularly in the third and fourth quarter. According to Eurostat data, real GDP growth in the third quarter amounted to 0.5% in the U.S., 0.1% in the eurozone and 0.3% in EU 27, while in the fourth quarter in the eurozone, GDP decline of 0.3%, -0.3% in EU 27 was achieved.

Slowdown of global economic growth, especially growth in countries that are major foreign trade and investment partners of Serbia, such as Germany and Italy, will adversely affect the recovery of the Serbian economy. Italy has made a low inter year growth rate of GDP of 0.7% in the second quarter of 2011, 0.2% in

the third quarter, while in the fourth quarter it recorded a drop in GDP of 0.5%. Germany, after the acceleration of GDP growth in the first quarter of 2011 of 4.6%, recorded a slowdown in GDP growth in the second (2.9%), third (2.7%) and fourth (2.0%) quarter of 2011. The United States recorded a moderate annual increase in every quarter of 2011 (2.2%, 1.6%, 1.4% and 1.6%).

Economic recovery is being slowed down by high unemployment and poor consumer spending, and also by the debt refinancing problems of countries, especially by the insolvency of individual members of eurozone. IMF assessments indicate high unemployment in developed countries as a result of modest economic growth. The highest unemployment rate in 2011 was registered in Spain (20.7%) and Greece (16.5%). Economies in rising and developing countries on the basis of faster economic growth than in developed countries will resolve the high unemployment and social consequences of unemployment faster.

2. Medium-Term Prospects for Recovery from the Global Economic Crisis

Recovery of the world economy that began in the second half of 2009 and continued in 2010 and 2011 was not sufficient to raise employment and living standard. It is estimated that fragile economic recovery is not sustainable in 2012 and that the European countries, especially members of eurozone will reenter recession, as indicated by the new IMF forecast. Recession is anticipated in the eurozone in 2012 by -0.5% and a slight increase in GDP in Central and Eastern European by 1.1%. It is also predicted that the U.S. economy in 2012 will achieve growth of 1.8%.

It is uncertain what will recovery path of world economy look like. Key macroeconomic indicators can not be stable until the raise of employment level, real wages, consumption and investments. The recovery of the world economy was not fast and complete in 2010, in order to reach pre-crisis level of GDP in the short term, which included the continued GDP growth in the third and fourth quarter of 2009 and faster growth in 2010 based on fiscal stimulans and the gradual revival of consumption and investment demand. To achieve the precrisis level of development growth in GDP in 2011 is not enough, and probably not even in 2012.

Slightly higher growth rates are expected in 2013 and in the following years, while high rates of growth are not possible until the establishment of legal act (rules), that resolves the structural and institutional weaknesses of the system that generated crisis. It is realistic afterward to rely on the long-term sustainable growth, but at lower growth rates compared to those before the global economic crisis. In early 2012, it became a realistic scenario for the leading economies to re-enter recession due to cautiousness of consumers and investors, which will be followed by a long and slow recovery, and only then by a quick and full recovery. The least likely is a quick economic recovery, which compensates for the decline in GDP and lost income during the recession and which brings the economy to the path of long-term sustainable growth.

Table 5 International Surroundings – The Main Economic Indicators

	2009.	2010.	2011.	2012.
Real growth of gross domestic product[1], %				
World total	-0,7	5,1	4,0	4,0
* European Union	-4,2	1,8	1,7	1,4
• USA	-3,5	3,0	1,5	1,8
Developing countries	2,8	7,3	6,4	6,1
• Countries of Central and Eastern Europe	-3,6	4,5	4,3	2,7
World trade growth, %	-	12,8	7,5	5,8
Unemployment rate, %				
Eurozone	9,4	10,1	9,9	9,9
• USA	9,3	9,6	9,1	9,0
Consumer prices, annual changes , %				
Developed countries	0,1	1,6	2,6	1,4
Developing countries	5,2	6,1	7,5	5,9
Growth of oil prices in dollar, annual changes , %	-36,3	27,9	30,6	-3,1

* World GDP valued at purchasing power parity

Source: IMF, World Economic Outlook, September, 2011

After more than three years of global economic crisis, it's continuation is expected in 2012 and also longer recovery of the world economy due to rising unemployment and badly damaged financial system and poor corporate performances, as well as the increase in energy and food prices. By all accounts, the year 2012 will be marked by economic stagnation with the possibility of re-entering recession. IMF projections for 2012 predict slowdown in the world economy growth and trade, keeping unemployment rates at the current high level, slowdown in inflation. In a less favorable international economic environment, Serbia is also predicted to have a slowdown in GDP and related economic indicators, with the risk of recording economic stagnation or recession depending on economic and financial trends in the EU and especially in eurozone that has a considerable investment and commodity exchange with Serbia.

The chances are reduced for achieving a modest economic growth in 2012, accompanied by fiscal consolidation, improving conditions in the financial market, more favorable conditions in the labor market, as well as reducing current account imbalances. It is less and less expected fixing the budget balance, gradual increase in bank lending activity and private domestic demand as the main driver of economic growth. Risks of projections realization are mainly related to the fiscal sustainability and stability of the European currency because of the growing national debt in some countries and high rates of unemployment in many countries. In this regard, IMF warned that global growth slowdown aggravates the efforts of countries in achieving fiscal stabilization, and therefore the sustainability of debt and public finances. Also, there are real risks in the banking sector due to growth of problematic loans and reduced lending activity. Basic levers of global recovery

could be provided through timely fiscal consolidation and accompanying financial support to the banking sector as well as the foreign rebalancing of developed economies towards stimulation of export. Finding an adequate balance between fiscal consolidation and structural reforms, on the one hand, and external financial support, on the other hand, would ensure a sustainable adaptation.

In the projections of macroeconomic indicators, the European Commission has pointed out the stagnation of economic recovery in EU countries with a high risk of entering a new recession. It is projected GDP growth in EU of 0.6% in 2012 and a modest recovery in 2013 (1.5%). Difficult investment trends and the risk of rapid expansion of public debt crisis contributed economic activity growth projections for most countries in 2011 and 2012 to be revised downwards. The gradual economic recovery in the upcoming period will be accompanied by the necessary fiscal and foreign trade consolidation, improving conditions on the financial market, with unaltered conditions on the labor market and the possible growth of structural unemployment, which may jeopardize the potential growth.

Risks of realization of listed projections are mainly related to ensuring fiscal sustainability and preventing contraction of the world trade due to slowed dynamics of economic growth which would have a negative impact on global demand and net exports.

Given the recent macroeconomic trends and the perceived economic outlook, it is estimated that the global recession is threatening again. The slow recovery of economic activity and rising unemployment, with the stagnation of bank lending activity, is threatening the crisis extension until the banks do not strengthen capital and until they provide significant support to the economy. In the opinion of experts, the world has managed to avoid recurrence of great economic depression recorded in the period 1929-1933, due to incentive measures from governments of most developed countries, but the recovery of world economy will be long-lasting and it will require establishment of necessary market regulations. Effects of direct state intervention by recapitalization of some banks or by guaranteeing the debt securities issued by banks that have suffered the greatest losses, are limited, trust is still low, and the long-term financing is impossible without the state guarantees. Depth and duration of the crisis will depend on the response of economic policy and state regulations on the challenges of the global economic crisis, as well as on restoring confidence in the financial system and increasing market liquidity. By regulatory reforms it is necessary to ensure the reduction of risk undertaken by banks, which may lead to the financial crisis. Fiscal measures to combat the crisis has strengthened the banking industry, but regulations are needed to keep out the big banks to take risks again, which led to the global economic crisis.

Governments and central banks of most countries have undertaken measures in the first phase of fight against crisis, in order to restore functioning of the interbank credit market and to stop the collapse of world stock market, and then they stimulated demand and economic activity through monetary and fiscal policy.

However, overcoming the crisis requires change in behavior of consumers and investors through institutional and regulatory reforms, as well as the changes in structure of consumption and production and the improvement of the international financial system. For the return of trust in financial institutions and financial instruments it is necessary to clean the contaminated assets, to change the behavior of financial institutions and to strengthen management in the financial sector. Long-term sustainable economic development in the post-crisis period, after leaving the global economic crisis, requires a fundamental economic and political response of leading countries in a sense that intervention measures cannot eliminate system risks, yet it is possible through institutional and regulatory reforms. It is previously necessary to complete initiated cleaning of the dispute and toxic assets of financial institutions and to make institutional improvements in the financial sector, which would restore the confidence of consumers and investors. When implementing reforms, there is a special importance of creation and implementation of new financial sector regulations coordinated with monetary and fiscal policy, more efficient control in the financial sector, control of system risks, efficient management of business risks, proper rewarding of business contributions in the financial institutions. Therefore, the key is an adequate regulation and control of financial institutions, in which absence the global economic crisis has occurred.

3. Response of Economic Science to the Global Economic Crisis

Is the neoliberal paradigm and economic policy inspired by it most directly responsible for financial and economic crisis of 2008, according to the members of alternative schools (new Keynesian thinking, neoinstitutionalism, evolutionary economics...) or as, after the outbreak of the crisis, some of the stars of neoliberalism self-critically recognize, including the former longtime director of the U.S. Federal Reserve Alan Greenspan? Is it not enough that such a notion has been known by Nobel Prize winning economist, such as Samuelson, Stiglitz, Akerlof, Krugman? Samuelson was, therefore, at the time of crisis complaining that Friedman is not alive to see what deregulation of the economy led up to, which he was fighting for with such a passion.

One would say that neoliberalism has been refuted empirically (by current crisis) and theoretically (by alternative paradigms), also by acknowledgments of some of the ardent supporters of neoliberalism who now realize that they were long in error. It is particularly widely spread belief on detrimental effect of neoliberal doctrine applied to post-socialist economies (economies in transition) through engagement of the IMF on the implementation of universal model of transition in the form of the Washington Consensus. The public cries: neoliberalism is dead, the Washington Consensus is dead! By the end of 2010, he was already replaced by the Seoul consensus who insists on specifics of each of the transition countries.

Considering the previously mentioned, it seems that the fate of neoliberalism is already certain - it goes down in history of doctrines and it is no longer a topic for discussion. And, has it not been said since the 70s of XX century about Keynesian thinking, that was so effectively dethroned by Friedman's "monetarist counter-revolution"? And how come that today, Keynes should be read over again and more carefully, because it is more actual than ever? How did it happen that Marx's Capital was bestseller in 2008, when we buried Marxism as the greatest utopia of our time with the fall of the Berlin Wall in 1989?

All these paradoxes have a profound and not easily intelligible foundation. The fate of ideas in general, as well as economic ideas, is much more difficult and complicated issue, so a special economic discipline deals with it – the history of economic thought. Therefore, we will to try from the standpoint of this discipline to place neoliberal doctrine in the flow of history of economic thought and thereby, at least to some extent, demystify the impression of a "ghost of neoliberalism". It will be shown that the dispute about neoliberalism as any other scientific dispute, includes, as Schumpeter concluded given the confronted sides in "discussion method", a large amount of mutual incomprehension between the participants of debate, also that these are often "conflicts of temperaments and intellectual inclinations", and also that schools of thought are living beings. "They have their own structure, relationships between leaders and followers of their flag, their battle cries, their moods and their common human interests", says Schumpeter (Schumpeter, 1975, 680). If the neoliberal paradigm of today, in a time of deep economic crisis, with a low coefficient of useful effect, can it be assumed that a post-crisis state of the economy will be more responsive to the postulates of neoliberalism? Especially if its members are willing to learn while respecting the elements of criticism that comes from the alternative schools of economic thought.

Thesis on "existing neoliberalism" is contrary to the established view which is characterized by the acceptance of normative vision of the economy structure and society within the framework of neoliberal theory as a faithful description of important political and economical changes over the past three decades. While interpreting neoliberalism as a triumph of free market, that is, unregulated capitalism, Kevin Rudd points out that the global financial crisis has destroyed "ideological legitimacy" of neoliberalism (Rudd, 2009, 29). Often can be heard claims that economical and political response to the problems caused by the financial crisis marked the return of Keynesian policy of "managed capitalism". Simplified view of liberalism as a system of free markets, complemented by withdrawal of the state, is a basis for the claims that the global economic crisis simultaneously marks the end of neoliberalism.

During the period that is marked as neoliberal there have been several crises in different parts of the world, such as the Asian financial crisis, "Dot.com" crisis, savings and loan crisis in the United States 1986-1995, the collapse of LTCM hedge fund in 2000. Response from the countries and supranational entities to these

crisis has contributed further institutionalization of neoliberalism. Neoliberalism is, say Peck, Theodore and Brener (Peck, Theodore & Brenner, 2009, 105), "repeatedly and cumulatively reconstructed through crisis." Ideological embeddedness of liberalism implies that the generations of economic policy makers have been using neoliberalism as a framework for implementing and evaluating policies.

Institutional embeddedness of liberalism causes a high degree of inertia. Social and relational embeddedness of liberalism implies that the strategies for accumulation of capital owners were conditioned by maintaining the neoliberal forms of regulation and that they have significant political power to realize their interests. The fact that neoliberalism became "overdetermined", suggests it is so deeply rooted that it is premature to talk about its collapse, says Cerny (Cerny, 2008, 29).

Although nationalization of financial institutions in the U.S. and the UK seems to represent a radical departure from neoliberal politics and neoliberal institutional forms, there have been no fundamental changes in power relations of labor and capital. Nationalization was carried out in order to support the system of capitalist accumulation, rather than securing cheap loans for workers or funds to finance the policy of full employment. Moreover, public assurances were given that the banks will be returned into private ownership as soon as the conditions are created. A good further example is the reform of health care system in the U.S., initiated by the Obama administration. What began as an ambitious reform of the health sector resulted in the expansion of subsidies to private health institutions, which represents a unique demonstration of power in the private health lobby, which influences the political process. Proposal of banks regulation by the G20 illustrates the influence of financial capital to the policy of regulation, since the financial lobby managed to obtain the implementation of agreed regulatory measures to be postponed to a most favorable time from the perspective of financial sector (Cahill, 2011, 13).

The answer of of European countries to the national debt crisis suggests that neoliberalism is still a conceptual framework for creating economic policy. Both British and German governments announced a reduction in expenditure on social benefits, with ample aid programs for private capital. On the one hand, we are faced with reduction of expenditures that protect the work from the consequences of crisis and market fluctuations, while, on the other hand, capital gains substantial subsidies. Although some restrictions have been imposed on the capital they have been modest, at least until today.

The standard approach of critics is simple: the so-called neoliberalism is scolded for being the root of all evil, without even trying to prove that it exists, or that it rules the world, or that its actions are to blame for a profound crisis, or that the crisis even exists. When looking closely, one can see that the whole time a simple syllogism is in action, and polemical effects are trying to be achieved by its constant repetition.

None of the premises of this syllogism is true: the world is not ruled by the so-called neoliberalism, nor is it in a deep economic crisis, therefore neoliberalism can not be held liable.

Neoliberalism does not exist, and therefore it can not rule. It is a concept, that is, a label, the opponents of liberalism came up with. It is used as a disqualification which is referred by the opponents of liberalism indicating not only to radical liberals, but to all others, and which purpose is to suggest the following: yes, the old liberals were good but the contemporary ones are not.

Not only liberals are on charges of neoliberalism today, but a complete dominant current of political and economic thought in the world. Neoliberalism, in the opinion of critics, includes both the majority of academic economics, and also all the political currents that are in power today in developed countries, including many developing countries, regardless of whether they are on center-right, in the very center or on the left-center.

The anti-globalization movement, which popularized the concept of neoliberalism, is equally directed towards all the ruling elites because of their affection for economic connection of the world and moderate pro-market reforms. Such an attack on all of the dominant political currents clearly indicates the place of most of the so-called critics of neoliberalism: on extreme left of the political spectrum, where up to two decades ago was a communist movement. They are (neo)communists, that changed only the hair (rhetoric), but not the temperament (goals) after the fall of the Berlin Wall. For them, the core target is not market, but capitalism.

The second current is made of radical nationalists, who find neocolonialism in free foreign trade and financial globalization, that is, enslavement of underdeveloped by the developed countries for exploitation. They certainly do not even think about the fact that many developing countries have set upon the path of accelerated development only when they abandoned socialism, protectionism and Prebisch and Singer's ideas and went through integration into the global mainstream.

The third current of critics make the opponents of economic reforms in the country and the world, those who are trying to retain their privileges and monopolies, and, politically wise, join the attack on the pro-market reforms that threaten their position.

It seems that, at least in Serbia, combinations of these currents and views is the most frequent, so the anti-capitalist position usually occurs in conjunction with the anti-imperialist rhetoric.

Critics of the so-called neoliberalism do not have their own serious economic program, much less an economic theory, which could challenge the prevailing theories. They are essentially engaged in a political struggle, not realizing that the application of their demands would increase the poverty.

Therefore, it is not surprising that Serbian critics of the so-called neoliberalism also avoid to present ideas on what kind of system should replace the current one, or what kind of theory should replace the prevailing economic theory, while bearing in mind reality, but they only scold market fundamentalism.

Critics of the neoliberalism have a serious problem when they need to define the object of their attacks. If they say that the neoliberals stand exclusively for the market, and without state – which sounds very effectively – the liberals will easily prove that this is not true. And if they define neoliberalism as a concept that supports the focus on the market, and along with a modest/moderate role of the state – which is more accurate – critics lose their polemic lethality, for who is outside the profession even interested in fine measuring of whether there are 10% more or less of the market.

The Washington Consensus is a favorite weapon of critics of the so-called neoliberalism, especially effective for those who have no idea what it is and for whom is enough to listen to Washington to react. Moreover, the Washington consensus is represented as an official manual of the IMF and the World Bank, written by dictate of the United States, on how economic affairs of all countries in the world should be conducted. Of course, this is nonsense: there is no such manual, only the text of a lesser-known economists written in the late 80's, in which he tried to summarize the experiences of macroeconomic stabilization programs of several countries in Latin America over the past decade and draw useful lessons.

And what's so questionable about it? Is it, perhaps, good to always conduct a deficit budget policy and to get into debt crisis? Or to direct public spending to subventions for bankrupted state enterprises and party friends? Perhaps to pursue a policy of high tax rates, with lots of benefits and exemptions? Or to prescribe the rate of exchange and interest rates, introduce high duties to substitute import and encourage renting of protected domestic producers? To prohibit foreign investment and direct domestic capital abroad? To endlessly maintain inefficient state and social enterprises? To make it difficult for the firms to enter and exit the business and thus liquidate competition? To plunder private property? What of the listed is acceptable to the critics of the so-called neoliberalism?

Of course, our critics of the so-called neoliberalism do not have time for small things such as elemental analysis of the Washington Consensus and proving it is wrong, but they use the mentioned syllogism: the crisis is profound, therefore the neoliberal Washington Consensus is bad.

Global economic crisis has shown that on a global level and national level has not been established a stable and efficient system resistant to external attacks (shocks) and errors of economic policy. In an organized society, economic systematic (institutional) order, can alleviate the economic and political failures and external attacks as macroeconomic regulatory system. An incomplete or institutionally flawed regulatory system generates disorders and causes deterioration

of the economy and impoverishment of the community. It appears that the main causes of the crisis are system mechanisms which are not resistant to external shocks and do not ensure macroeconomic stability and effective functioning of the economy. Therefore, priority should be development of an institutional framework for better management of economic and social processes. This would improve the system environment and institutional order in which economic policy is more efficient, since the components of economic policy and its instruments are determined systemically. Complexity and importance of system and other measures for the recovery of financial and real sector comes from the scale of current global economic crisis, which have not been fully perceived. It is all the more certain that system improvements are necessary, a more adequate role of the state and its economic policy, as well as the role of international economic and financial organizations and institutions, which would strengthen the ability of the system and economic policy for the defense against powerful external shocks.

Conclusion

The latest global financial and economic crisis provided wind in the sails for critics of neoliberalism. It is frequently said in the context of the global financial and economic crisis that legitimacy of the neoliberal project is irreversibly undermined. From the perspective of the most ardent critics, neoliberalism is a political strategy driven by economic interests. Former protagonists of neoliberal ideas, such as Hayek, observed the world as a product of ideas, while considering neoliberalism as “the wall of defense against socialism”. German ordoliberals were even more explicit in this regard, pointing out that the market structure must be derived from the idea of free, competitive economic order. To Chicago economists like Friedman, promotion of interests of corporate America was attributed, regardless of the consequences in terms of freedom.

Critics point out that the idealization of the market, which represents the core of neoliberalism, does not present a true image of reality and that such a world is very different from that in which we live. From their perspective, the economic and political recommendations arising from such models are based on a superficial understanding of economic principles, not on understanding the specific problems and their causes. Neoliberalism is usually seen as a political philosophy that gives priority to individual freedom and private property. However, it is not a simple and homogeneous philosophy, as it may seem at first glance. Although there is considerable common ground between different varieties of neoliberalism, they are sufficiently different to require a highly nuanced critique. Another important prerequisite for substantiated critique of neoliberalism is to establish a clear correlation between the normative recommendations of neoliberal theory and political and economic changes in the market economies over the past few decades. Elementary insight into economic trends over the last few decades of the past century indicates that there is a correspondence between the neoliberal ideas and the trajectory of many capitalist economies during this period, but also a clear discrepancy between neoliberal theory and political and economic practice.

Neoliberalism is often associated with minimal state intervention and regulation. However, without distinction of intervention types, it would be too simplistic and wrong to associate neoliberalism with "minimal" state. Neoliberalism is, as a political project, focused on dismantling those forms of state intervention, which are associated with the so-called welfare state, socialist state or a developmental state. On the other hand, neoliberalism involves state intervention in the field of development of new forms of governance, which represent support to development of the market economy.

The main conclusion is that, if we observe neoliberalism only as socially rooted, we can speak of neoliberalism as an economic and political practice, the process of economic transformation and political-economic doctrine and we can establish a connection between them. Neoliberalism is rooted in existing institutions, which have shown to be quite stable during the period of crisis and social discontent. Although at this moment it is not possible to accurately predict the future of neoliberalism, louder and louder warnings about its near collapse are shown to be premature.

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IZAZOVI EKONOMSKE NAUKE U USLOVIMA GLOBALNE EKONOMSKE KRIZE

Apstrakt: Globalna ekonomska kriza koja je otpočela krajem 2007. godine, nakon najdužeg perioda ekonomskog uspona, označila je krah dominantnog neoliberalnog koncepta upravljanja ekonomskim tokovima. Važan preduslov argumentovane kritike neoliberalizma je utvrđivanje jasne korelacije između normativnih preporuka neoliberalne teorije i ekonomskih promena u tržišnim privredama u protekloj deceniji. Elementarni uvid u ekonomska kretanja pokazuje da postoji određeno podudaranje između neoliberalnih ideja i trajektorije mnogih, pre svega, kapitalističkih privreda, ali i jasne diskrepance između neoliberalne teorije i političke i ekonomske prakse. Posledice globalne ekonomske krize ukazuju na to, da stavovi o ulozi tržišta i državnog intervencionizma, ne mogu da ponude adekvatno tumačenje uzroka i posledica krize. Makroekonomske teorije koje su počivale na ideji o savršenom funkcionisanju tržišta, čvrstoj, monetarnoj i fiskalnoj politici kao okosnicama uspešne ekonomske politike, bile su iznenađene pojavom ovako intenzivne i dugotrajne krize. Zbog toga su se objašnjenja uzroka krize, ali i preporuke ekonomskoj politici, mahom zasnivale na kritici neoliberalnog koncepta i njegovih fundamentalnih principa.

Ključne reči: globalna ekonomska kriza, neoliberalizam, svetska privreda, ekonomska politika, posledice.

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THE WAY INTO INSTITUTIONAL NIHILISM – THE CASE OF SOUTHEAST EUROPE

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Abstract: *During the period of the post-socialism transition, the whole system of inhibiting institutional factors has caused the disfunctional conglomerate system. The effect was synergetic, destructive, and anti-development. Two decades of intense crisis, with all the accompanying events, has not been sufficient warning to holders of (vulgarised neoliberal) economic policy in the post-socialist SEE states that something is wrong and that the anti-development model ultimately needs to be changed. Most of the Balkan countries are characterised by post-socialist transitional economic systems with deep problems, deformations, and disproportions, which have been deepened and complicated even more by global economic crisis. The article analyzes variation of institutional changes from proclaimed direction of reform and its turn to institutional deviations, which destructively affected economy and society. It explores and explains the transformation of institutional vacuum to quasi-institutional monism, which has grown into a phenomenon of institutional nihilism, by consistent application of interest-oriented neoliberal solutions. The article provides evidence that monistic pseudo-market reforms in the period of post-socialist transition have not succeeded in compensating for a vast institutional vacuum, and that they have even led to its spreading and turning into a quasi-institutionalization, meta- institutionalization and institutional nihilism. This article is trying to show the ruinedness of hitherto disinvestment and anti-institutional economic politics of post-socialist Balkan countries and wishfulness for applying anti-crisis economic policy based on real innovative-institutional elements. We start from the hypothesis that the institutional nihilism is the main cause of unsuccessful postsocial transition and anti-development and vulgarized neoliberal economic policy.*

Keywords: *economic institution, institutional monism, neoliberalism, transition economies.*

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1. Introduction

The failure of transition in the post-socialist SEE countries resulted from the application of neoliberal "reform" politics with double standards. Under the rhetorical neoliberal mask of the market, competition, enterprises, private property and freedoms, the politics and strategy of "reformers" were oriented toward non-marketable process, motivated strictly by individual interests, instead of propagated social and economic results. Social and human values were degraded. Everything or nearly everything was out of control. Social and economic results were catastrophic. Focusing on the process and neglecting results is possible only in the conditions of institutional underdevelopment.

This paper makes a distinction between the institutional vacuum that occurred during the initial period of transition and the run-in institutional nihilism that resulted from the long-term change in the "pathology of the neoliberal model" discussed by M. Mesarić (2011, p.12). It has led to the creation of socially irresponsible and immoral mutant economic and social order, the alleged "*version of capitalism*", but "*without a human face"*, which is opposite from the models suggested by S. Young (2003), P. Aburdene (2005) and other authors. A recombined regime was created. It is a system in which the economic policy resembles the marionette of certain political parties and individuals and which serves, as it seems, only the preservation of power and increase of property of the few. Since institutional solutions did not work, the responsibility should lie with those who create the government policy (economic and other).

There is no matter how versatile modern theoretical approaches are, and how frequent considering of the institutional problems of the economic growth and development are, the questions of the concrete contents, of the dynamics and improvements of the economic institutions, and especially of their functional applications in the traditional economics do not have deep and complex basis, nor satisfying analytical and practical answers, up to now. All is reduced to the descriptive scientific approach. This, in certain way, resulted in the starting hypothesis from which the subject and aim of this paper's research have been formulated. They consist in an attempt of identifying real and concrete reasons of reproducing the institutional vacuum in the transitional SEE economics.

This paper attempts to explain the following:

a) the essence of neglecting the real institutionalization in the post socialism SEE countries, through the identification of the quasi-institutionalization and meta-institutionalization models, and the short analysis of their reasons, and
b) the paradox of the established phenomenon that the institutions as the rules and constrains became the barrier for their unlimited avoiding.

Those who are responsible for economic development have not contributed much to it. Nomenclatures of authorities have increased the degree of dominance

of politics over economy, followed by democratic rhetoric. In this way, the lobbyists created the so-called "concealer's economy", with new economic elites controlled by political elites through log-rolling and other methods. These quasi-elites, supported by the apologetic, quasi-intellectual elites, represent the main obstacle to institutional and other changes.

Instead of pursuing real institutionalization, violence against it was carried out, under the banner of spreading individual freedoms. The fact that when freedom lacks moral, legal, environmental and other social restrictions, greed becomes the boot drive for the enrichment of individuals at any cost was forgotten. Economic behaviour is controlled by subjective regulators. Distorted and reduced individualism is being imposed as a social norm. (V. Drašković, M. Drašković 2009a, pp. 22-25).

The interests of the quasi-elite dominated over rational economic and social choices. Paradoxically, the reduction of economic theory and practice has become a basic methodological tool for the suppression of institutionalization, particularly in terms of institutional competition. What has resulted is the excessive impoverishment of the people and an enormous enrichment of the minority, the destruction of the middle layer, the concentration of political and economic power, and the continuation of the authoritarian tradition. The existence of interest-based bonds between political leadership and the newly established "businessmen" is beyond any doubt.

The consequences are incalculable. The system of social values was disrupted. Party affiliation, authority, eligibility, and belief instead of professionalism were favoured over creativity, knowledge and science. The criminalization of the economy, widespread corruption and a range of socio-pathological phenomena have flourished. The rhetoric of change has substituted for real change – civilization change, institutional change and other kinds of fundamental changes. We are sinking into apathy, a lower standard of living and growing uncertainty. A vicious obstructive circle has been created.

A consistent development strategy and a successful economic policy cannot be created or implemented in these conditions. All conceptual elaborations are being blocked and modified through political decisions and choices that are motivated by the interests of "reformers". Coping with economic and ideological myths and stereotypes continues to fail. The real need for institutionalization and institutional complementarities are being ignored along with the development of science, education, public interest, an effective owner as a mass phenomenon, and an efficient economy. Sustainable development is being delayed as is the creation of competitive skills and competences etc.

Apophasis (Greek Apofazis - „negative") transitional economies in literature are mainly associated with „inefficient institutes", „irrational individual behaviours", „abnormal banking system",„insufficient market discipline" and

similar. The causes are mainly searched for in some general academic statements and characteristics, lacking the phenomenological examination of the problem roots, although they are visible to bare eye and pretty much unveiled by media. By their silence and inactivity (with some rare honourable exceptions) the academic sphere acts as their spiritual accomplice in all the negativities in question. On the other hand, being loud apologists, they would provide dogmatic interpretations for anything.

2. Experiment of Socialist Institutional Monism

Institutional monism experiment in socialist countries began in socialism, somewhere before (1917, Russia) and somewhere later (1945, Yugoslavia). It is characterized by:

- open repression of the government system, dominance of bureaucratic etatism and management (command economy) along with planning naturalization of commodity-money relations and undeveloped and unorganized market,
- economic inefficiency caused by the system destimulation, paternalism, employees' lack of interests, fictitious employment etc.,
- ideological and political subjectivism and dogmatism, which caused dissatisfaction among people as well as numerous socio-pathological phenomena,
- ideological blurring of the essence of economic reality, which was dominated by monopolistic structures,
- false collectivism of organized economic and political coercion, and equality at a low level of satisfying needs,
- vicious and controversial circle of fundamental system elements (public ownership, monopoly of the state sector, total planning determination - the road to communism) and
- many negative consequences, such as price disparities, trade deficits, trade imbalances, speculative market, the dual exchange services of *rubalj*, low living standards, extensive economic growth, economic stagnation and crisis, totalitarianism reproduction in all areas of life and work, etc.

The implementation of general social and economic reform ("perestroika") began in 1985 in the USSR, with a demand for "more socialism". The results were devastating. They showed that something is much easier to proclaim than to achieve. It was not easy to bring down the house which had been built for decades based on directives, slogans and false promises, on the one hand, and enthusiasm, persecution and sacrifice, on the other.

In the early 90s, post-socialist transition began in Russia, in all former USSR states and other countries of Eastern and Southeastern Europe (V. Draskovic, 1995). It implied radical economic and social reforms, transition from

authoritarianism to democracy, pluralism to monism, from socialism to a mixed progress society, from formational to civilizational development.

"*Woe account of socialism*" (S. S. Shatalin) was replaced by a new mutant order, which did not lead to the desired prosperity. Nations still pay other people's accounts for the failure of "reforms" that were focused on the narrow interests of new "elites", the crisis intensified and reproduced, the enormous polarization between the impoverished nation and the enriched rare privileged individuals, while dissatisfaction is huge. The cause must be sought in the concealment, vulgarization and abuse of institutional changes.

Table 1 Growth in real GDP, 1989 to 2009e (for selected transition countries)

State	*Index 2009 (1989=100)*	*Average per Year*
Poland	180	3,0
Czech Rebublic	137	1,6
Estonia	128	1,2
Hungary	127	1,2
Slovenia	144	1,8
Central Europe and the Baltic states	*150*	*2,0*
Bosnia and Herzegovina	81	-0,1
Bulgaria	109	0,4
FYR Macedonia	100	0
Montenegro	88	-1,1
Romania	118	0,8
Serbia	69	-2,9
South-Eastern Europe	*107*	*0,3*
Armenia	131	1,4
Belarus	156	2,2
Georgia	58	-3,7
Ukraine	60	-2,5
Russia	99	0
Eastern Europe and the Caucasus	*91*	*-0,5*
All transition countries	131	1,4

Source: adapted from Domazet, 2010, p. 15

The transition to a mixed institutional economics in China of the 80s and 90s is the evidence that the gradation transition is much easier and more efficient than the "shock therapy". The Chinese have proved in practice their wise saying that "*it does not matter what color is the cat, while it catches mice."* In addition, they relativized assertions of many Western economists regarding incompatibility of the market and socialism ("*Spontaneous evolution and cognitive control*" - F. Hayek).

Neither the failure of the market, nor all the strains of the market, or even many economic crises that build upon each other, or even fatal consequences of the transition are sufficient to understand the illusion and deception of vulgarised institutional market monism. Consistent application of even that part of the state regulation referring to the rules of conduct (probably equal for all?) would be sufficient to eliminate all irregularities, negativity, and deformation that marked the "rule of law" and "entrepreneurship policy" of neo-liberal "reformers".

A complete distrust in the institute of state regulation is neither logical nor productive and is not appropriate for increasing IT, production, innovative, financial and civilizational integrations. Even if we ignore government economic functions (in the part of macroeconomic policy), we must wonder: why has its legal and control function failed, without even being questioned by anyone? It is clear that the political decisions influence the economic decisions that were focused on maximizing personal advantage of privileged individuals.

3. Post-Socialist Quasi-Institutionalization, Meta-Institutionalization and Institutional Vacuum

Post-socialist transition was conducted as a Velvet Revolution and as a response to the socialistic tyranny (the party, goals, slogans, promises). However, the recombination of old and new forms of tyranny that was being enforced created new and larger problems, contradictions, crises, poverty, disintegration and uncertainty. Socialist vices were newly and dangerously packaged. The common denominator of socialist and post-socialist economic and social problems is the institutional vacuum dominated by disrupted market institutional monism. Proclaimed competition is replaced with various forms of monopoly. Economic development of post-socialist countries is based on permanent discrepancy between rhetoric on pluralistic institutional changes and monistic implementation of neoliberal recipes of macroeconomic politics. The latter one has been extremely motivated by interests of insatiable appetites of state nomenclatures, which represented the main obstacle for institutional changes, apart from noticeable socio-pathologic milieu. All of this resulted in the long-term destabilisation of economic systems through disinvestments and spilling over of positive effects in spending instead of production. There has been a huge lap between formally established economic institutes from foreign economic policies and economic behaviour in practice, which was far from standard norms. Vulgarized individualism was imposed by certain „*skilful and capable entrepreneurs*" („*efficient owners*") as a social and civilizational norm. Such reduced individualism (of the privileged) became very fast a foundation of formal institutional monism as theoretic and ideological basis for neoliberal economic politics.

In the post-socialist period, an alternative institutes system has been created. It comprises various sociopathological creations, a grey economy, and the continued application of wrong monistic recipes of neoliberal "shock therapy."

Moreover, it compensates for the strictness of formal rules through non-performance, corruption, attenuation of property rights, the formation of various behaviour stereotypes, and the actuation of informal behaviours (spreading institutional conflicts), etc. The effects of the alternative institutes system have been especially visible in the grabbing privatization, which still hasn't been completed in most post-socialist countries. And being conducted hastily and unevenly, it has resulted in the enrichment of a minority at the expense of the vast majority of common people. In addition, it is quite clear that the newly enriched privatized only what common people lost, since the wealth neither comes from nowhere nor without reason (work, knowledge, innovation, heritage etc.), nor from abroad.

Institutional changes in post-socialist countries were transitory, structurally, qualitatively, quantitatively and functionally falling behind other transitional changes, rather than being their support, stimulant, and insurer. There was a huge gap between formally established "alternative" economic institutes and economic behaviour in practice, which was far away from the norm (V. Drašković, 2010, pp. 9-10). Many market institutes were not formed, including even some of its main segments. Also, market infrastructure and culture were not significantly improved. Integral market is still a figurative noun. Many market substitutes routed mutant and pseudo-market structures of alternative type. They just imitate market infrastructure. Flea market, black, grey and quasy-market (which are in the function of surviving for most of the population), and monopolies (which are in function of beneficiating minorities). Competition is reduced to the above mentioned primitive market structures. All of the market relation analyses in most of the post-socialist countries show that monopolies fully used all the chances they had. Economic institutes have been replaced by pseudo-forms (imitation and improvisation), such as meta-institutionalization (the creation of over-institutes and institutes of total control), institutional monism ("messianic" uncontrolled market without parallel formation of complementary institutes), and quasi-institutionalization (paternalism, monopoly, lobbying, social pathology, grey economy, annuity-oriented behaviour, naturalization, street currency conversion, dominance of politics over economy, predacious privatization – "pocketisation", privileged "newly established entrepreneurs" as alleged "efficient owners" etc.). The effect of these obstructive factors in the period of post-socialist transition was synergistic and destructive.

4. Transitional Institutional Nihilism

Dialectics of economic development has verified the necessity for resource-allocational, organisational, innovative, motivational, institutional and information combinations as well as pluralistic functioning of all economic, political and other institutes. It is not the problem when economists are making mistakes, but when (if) they make mistakes on purpose because of different interests, especially if their interest ambitions can actively influence the actual

economic politics, with accompanying "*opportunistic ignorance*" (Myrdal). This leads to promotion and realization of own choices, with which one is to maximise personal gain at the expense of somebody else's (and with which somebody else's choices are reduced - V. Drašković 2008a, s. 5). Non-alternative *interest one-sidedness* is seen in performances of many economic politics in the Balkan region and is characterised by paradoxical domination of socio-pathological brake system of anti-developmental, privileged and monopolistic interests, in which the notion of origin of property has been *persona non grata*.

Institutional nihilism is defined as:

- the crisis situation created after the long-term anti-institutional action,
- long-term intentional blockade of realistic institutional changes,
- promotion of quasi-institutional and meta-institutional changes,
- long-term effects of vulgarized neo-liberal institutional monism, and
- long-term reproduction of institutional vacuum.

Table 1 : From Socialist Institutional Monism, through Post-Socialist Institutional Vacuum to Institutional Nihilism

command economy, planning naturalization of commodity-money relations, undeveloped and unorganized market, ideological and political subjectivism and dogmatism, directives, slogans and false promises	←	***Socialist experiment of institutional monism***	→	paternalism, employees' lack of interests, fictitious employment, false collectivism of organized economic and political coercion, totalitarianism reproduction in all areas of life and work, enthusiasm, persecution and sacrifice
		↓		
focused on the narrow interests of new "elites", illusion and deception of institutional market monism, a complete distrust in the institute of state regulation, privatisation of gains and nationalisation of losses,	←	***Post-socialist transition***	→	the crisis intensified and reproduced, the enormous polarization between the impoverished nation and the enriched rare privileged individuals, eroding the socialist institutes and creating an institutional vacuum
		↓		
continuation of the authoritarian tradition, dominated by disrupted market institutional monism, making of illegitimate profit, the institutionalization of	←	***Mutant order***	→	the economic policy resembles the marionette of certain political parties and individuals, "alternative institutes" system (various sociopathological creations, a grey economy, and the continued application

privileges, the re-combination of old and new forms of tyranny (the party, goals, slogans, promises), grabbing privatization, the theological replacement of goals of economic growth end development with the means of liberalization, privatization, democratization, institutionalization, and stabilization				of wrong monistic recipes of neoliberal "shock therapy, compensates for the strictness of formal rules through non-performance, corruption, attenuation of property rights, the formation of various behaviour stereotypes, and the actuation of informal behaviours)
		↓		
Quasi-institutionalization: flea market, black, grey and quasy-market, paternalism, nepotism, log rolling, lobbying, rent-oriented behaviour, naturalization	←	***Institutional vakuum***	→	Meta-institutionalisation: over-institutes and institutes of total control
		↓		
deformations, disproportion, destabilization, demotivation, differentiations	←	***Specific brake transitional model „23 d"***	→	deficits, disinvestment, deregulation, dogmatism, dictates
		↓		
long-term anti-institutional action, blockade of realistic institutional changes, reduced individualism (of the privileged),	←	***Institutional nihilism***	→	long-term effects of vulgarized neo-liberal institutional monism, long-term reproduction of institutional vacuum, the rhetoric of change has substituted for real change
↓				
socio-pathologic milieu, long-term destabilisation of economic systems, vulgarized individualism was imposed as a social and civilizational norm, "rapacious country" is substituted the „country of development", paradoxical need for the public economic policy to serve private interests, the system of social values was disrupted				

Source: Authors

4. Questions by the Neoliberal "Reformers"

The most consistent positions regarding market self-sufficiency and spontaneous "messiahship" have been held by the neoclassicists and quasi-

neoliberals for decades. They have been writing that all economic problems shall be resolved by price, competition, private property, efficient owners, and entrepreneurship.

What prices? The monopolistic ones? Non-market purchase of factories, land, businesses, facilities and other entities at extremely low prices dominated. Later, these same entities were sold at much higher prices.

What competition? The monopolistic ones? How can a robbed and impoverished nation compete with rich tycoons? What private property? The one privatized by robbing?

Who are the efficient owners? The priviledged ones, enriched by robbing the state property? A huge amount of capital has been converted into "dead" assets, which are not being transformed into investments, new factories, businesses and new possibilities for employment.

What entrepreneurship? Privileged? Where is the welfare and justice that must to be provided by the state, according to the institutionalists? In particular, where is the efficiency of the market? Where is the state as a guarantor of economic freedom and equal implementation of formal rules of economic game? Let us remember what the Nobel laureate D. North (1981, p 32) wrote three decades ago: "*The dominant goal of the capitalist state is the construction of such institutional structures, especially the structure of ownership rights, by using which it achieves maximization of income (social welfare-prim. Author) and a high degree of freedom*" (through minimization of costs for specification and protection of property rights - prim. Author). Where are those economic freedoms?

The neoliberals that constantly refer to F. Hayek are forgetting that he has clearly written about the necessity of acting according to the rules, because without them market coordination presents a hardly attainable process. Among other things, it proves neoliberal arbitrariness, bluff, fiction and neo-bolshevism (in terms of: saying one thing, thinking something quite different while doing the third), which are one-way directed towards the achievement of personal material interests. All economic theories, in this way or another, refer to adherence to certain rules, linking economic coordination with them. Post-socialist neoliberals are referring only to phrases. And to the establishment of the total control rules by the privileged non-marketably enriched "elite". Unfortunately, this "order" has been functioning for two decades. Within this order the individualism of the privileged substituted mass individualism (of all) - in all important segments of society and economy: the economic freedom, entrepreneurship, private property, etc. In this way, the choice of all has been reduced to individual choices. Can the concept of the freedom of choice be reduced to the freedom of choice of the few, whoever they are? This is only possible in the chaos of disrupted and destroyed value criteria. A Comparison with developed economies and societies is the best indicator of transitional institutional nihilism, which is formed under the dominant influence of vulgarized neoliberal (nihilistic) ideology.

5. Conclusion

There is one mutual element that each post-socialist economy will, sooner or later, have to change. It is the universal mechanism of pluralistic institutional coordination. Many authors rightfully emphasize the significance of coordination as the process of mutual harmonization of certain economic institutes of market regulations and state regulations. These authors directly advocate for equality, inter-conditionality and mutual effects of economic institutions as constituents of the mutual economic mechanism of coordination and regulation. In other words, they correctly recognize the imperative need for action of institutional pluralism instead of rhetoric (rather than practice) on institutional monism, especially the action of vulgarized institutional monism.

The findings of economic science and the reality of economic crisis have shown that it is inevitable to have regulation and control over market mechanisms (i.e. the institutionalization of the market as economic institute) if you want to avoid serious economic problems, crisis, unemployment, impoverishment and uncertainty (i.e. reduce the consequences of uncontrolled market actions). With an organizational, institutional and normative vacuum in the post-socialist countries, it has not been possible to set up efficient economic institutes. The government structures chose to recombine institutes, which enabled the establishment of various forms of quasi-institutional relationships. Focusing on institutional monism, the narrowly privileged, and the entrepreneurial initiative of rare individuals has led to immeasurable and long-term crisis consequences.

Crisis challenges may, in principle, have only one efficient response, which is the same at the global, regional or local level. It anticipates focusing and coordination of five development ***i***-factors (V. Drašković, 2010, p. 20): ***i***nstitutions, ***i***nfrastructure, ***i***nnovations, ***i***nvestment, and ***i***nformation (conditionally: knowledge).

This action has proved the starting hypothesis that institutional nihilism is major cause of unsuccessful post-socialist transition and anti-development vulgarized neoliberal economic policies. It showed the way and manner in which institutional nihilism is formed, from inherited socialist institutional monism, through its recombination with post-socialist neo-liberal vulgarization of market institutional monism (fundamentalism) and various forms of quasi-institutionalization and meta-institutionalization, to creating many decades of retrieving institutional vacuum, which eventually turned into a rigorously controlled institutional nihilism.

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PUT U INSTITUCIONALNI NIHILIZAM – SLUČAJ DRŽAVA JUGOISTOČNE EVROPE

Rezime: U periodu postsocijalističke tranzicije djelovao je čitav sistem kočionih institucionalnih faktora, koji su uslovili stvaranje konglomeratne nesistemnosti. Navedeno dejstvo je bilo sinergističko, destruktivno i antirazvojno. Dvije decenije trajanja, dubina i intenzitet krize, sa svim propratnim događajima, nijesu bile dovoljno upozorenje nosiocima (vulgarizovane neoliberalne) ekonomske politike u postsocijalističkim državama Jugoistočne Evrope da nešto nije u redu i da antirazvojni model konačno treba mijenjati. Većinu balkanskih država karakterišu postsocijalistički tranzicijski privredni sistemi s dubokim problemima, deformacijama i disproporcijama, koje je generisanje globalne krize još više produbilo i usložnilo.U članku se analiziraju odstupanja institucionalnih promjena od proklamovanog smjera reformi i posebno institucionalne devijacije, koje su destruktivno uticale na privredu i društvo. U njemu se istražuje i objašnjava preobražaj institucionalnog vakuuma u kvaziinstitucionalni monizam, koji je izrastao u fenomen institucionalnog nihilizma, zahvaljujući dosljednoj primjeni interesno orijentisanih neoliberalnih rješenja. U radu se dokazuje da monističke pseudotržišne reforme u periodu postsocijalističke tranzicije nijesu uspjele da supstituišu ogroman institucionalni vakuum, i da su čak dovele do njegovog širenja i pretvaranja u kvaziinstitucionalizaciju, metainstitucionalizaciju i institucionalni nihilizam. U radu se pokušava dokazati pogubnost dosadašnje dezinvesticione i antiinstitucionalne ekonomske politike postsocijalističkih balkanskih država i poželjnost primjene antikrizne ekonomske politike zasnovane na realnim inovaciono-institucionalnim elementima. Polazi se od hipoteze da je institucionalni nihilizam glavni uzrok neuspješne postsocijalističke tranzicije i antirazvojne vulgarizovane neoliberalne ekonomske politike.

Ključne reči: ekonomske institucije, institucionalni monizam, neoliberalizam, tranzicijske privrede.

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A CONTEMPORARY ANALYSIS OF MONETARY POLICY BY THE APPLICATION OF THE IS-PC-MR MODEL

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Abstract: *The most valuable elements of macro-economic theory, resulting from decades-long development process, are encompassed by the so-called new concensus in macro-economics. What has been defined by it, among other things, are guidelines which central bank should follow when engaged in contemporary monetary policy. Inflation targeting, as a form of monetary policy, is considered to be most compatible with the guidelines. For this reason, IS-PC-MR model which includes the main aspects of this form of monetary policy, is applied in this paper.The purpose of the paper is to show the potentials that this model may have in analysing the manner by which a central bank responds to economic trends and disruptions, as well as to list its advantages to other models, above all to IS-LM model.*

Keywords: *new consensus, monetary policy, inflation targeting, IS-PC-MR model, IS-LM model, supply and demand shocks*

Introduction

There has been published quite a number of economics-related articles in which authors mention New Consensus Macroeconomics, the term corresponding to another term recently found under the name of New Neoclassical Synthesis. Both these terms incorporate the most important elements that an economy requires for functioning well, as well as the elements associated with the role of financial sector, the importance of money, the role and efficiency of various economic policy measures, and so on. One of the implications of this consensus in terms of practical and political consequences is related to the manner by which monetary policy comes into effect in our time.

It has been noted that the so-called nominal anchor, as a prevention measure against inflation increase, paved the way to various targeting regimes as monetary policy strategies (exchange rate targeting, money supply, price levels,

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inflation). Targeting inflation is what observes the attitudes defined within the New Consensus to the largest extent, which results in monetary policy's playing a major role in establishing macroeconomic stability. The model approach to monetary policy envisages the use of various models in describing the way by which a central bank reacts to economic trends and disruptions. In this paper, we discuss the IS-PC-MR model focusing on its potentials for analysing monetary policy.

In the first part of the paper, we present the developmental way starting from monetary policy strategies to inflation targeting. In the second part of the paper we diferentiate between two essential paradigms within the model approach to monetary policy. In the fourth part we discuss the structure of the IS-PC-MR model. And finally, in the fourth part, we analyze the response of a central bank to various shocks.

1. Monetary Policy Strategies in Contemporary Conditions

The attitudes related to the role, importance, and possibilities of monetary policy, which have been the subject of mutual agreement, result from a decades-long process of theoretical harmonization and empirical evaluation. This process coincided with development of macroeconomic theory in the second half of the 20th century. Monetary policy systems comprising one or more strategies which were in force were determined by periods in which certain theoretical movements dominated.

Since early 1960s, there have been three systems of monetary policy which have been applied (Heron, 2003, 13-14): Keynesian (until 1973-74), Monetarist (until late 1980s), and the system of the so-called New Consensus (since 1990s). Monetary policy in Keynesian system focused on measures such as nominal interest rate, central bank loans, and the like. What lay beyond this system was an idea of trade-off between inflation and unemployment, in line with the well-known Phillips curve. This meant in practice that an expansive monetary policy may bring about agregate demand, leading to output growth and reduction of unemployment, accompanied by relatively modest inflation rate.

Higher and higher inflation rates that emerged in 1970s caused the Keynesian views to be a subject of many doubts. Monetary system of monetary policy was what entered the field. Milton Friedman and Edmund Phelps advocated a vew of the so-called Natural Rate of Unemployment which is consistent with stable inflation, so that any attempt to reduce unemployment under that rate may result in accelerated inflation (Friedman, 1968, Phelps, 1967). Phillips curve has the shape of a vertical long-run at the level of natural rate of unemployment, rather than the shape of negative slope, as was thought by Keynesians. Monetarists, who did not deny that monetary policy of the 1950s contributed to price stability, also claimed that a policy incorporating fewer fluctuations would accomplish the same thing (Nelson, 2007, 154). For this reason, Friedman and Monetarists held the view

that a monetary policy should be based on constant money growth rule with a focus on inflation control. Such policy, they thought, would contribute to more transparency and it would prevent inflation volatility and increase.

These views accompanied by intensive considerations of negative inflation effects helped in recognizing the importance of the so-called nominal anchor's role, by which expectations of low and stabile inflation are promoted, in a monetary policy's success. Money supply played the role of a nominal anchor in monitarist system of monetary policy, within monetary targeting regime. However, the success of this regime greatly depended on stability of the relationship between targeted variable (monetary agregate) and the so-called target variable (inflation or nominal income). Determining monetary target growth rate is calculated by quantity equation and is dependent on numeric inflation target, estimated potential output growth and expected velocity trends (Mishkin, 2006, 9). One of the main reasons for discontinuation of medium-term money supply targeting done by many countries may be found in the fact that innovations in financial market caused instability in the relation between money quantity and inflation, mainly due to unpredictable speed of money circulation. Besides, money supply was no longer considered to be a reliable indicator of short-term monetary trends (Pétursson, 2000, 39).

New Concensus Macroeconomics, which has been frequently discussed in recent years, determined principles upon which optimal monetary policy in contemporary circumstances should be based (Goodfriend, King 1997, Clarida, Gali, Gertler 1999). Mishkin finds that there are 9 such principles (Mishkin, 2011, 2-3): 1) inflation is everywhere and always a monetary phenomenon, 2) price stability provides benefits, 3) there is no long-term trade-off between unemployment and inflation, 4) expectations play a major role in determining inflation and transmission mechanism character of a monetary policy, 5) monetary policy should be based on the Taylor Principle, which calls for increase in real interest rates in the case of inflation increase, 6) monetary policy often "suffers from" time inconsistency problem, 7) central bank independency enhances monetary policy efficiency, 8) establishment of powerful nominal anchor is essential for realization of positive outcomes of monetary policy, 9) financial disruptions play a significant role in business cycle formations.

It is considered that, among various types of targeting, inflation targeting as a monetary policy strategy observes the above-mentioned principles of optimal monetary policy to the largest extent. This regime was first applied in 1990 by the Central Bank of New Zealand. Inflation targeting can be achieved through setting inflation rate as an implicit target (e.g. as in the USA) or as an explicit target (a central bank announces inflation rate which it targets, with a certain deviation from the rate). Setting a target inflation rate as an implicit target provides for greater flexibility on behalf of a central bank in the circumstances of various crises, thanks to the fact that inflation rate may be found within a wider inflation, without the general public expressing doubts as to the way in which monetary policy is exercised.

Regardless of the inflation targeting variety applied, a great importance is given to transparency of monetary policy and communication with general public. In this vein, there are four standards of transparency that a central bank should be aware of (Blinder, 2002, 4-5): 1) clarity of information communicated to the public; 2) communicating relevant information; 3) openness of a central bank to public control, and 4) enabled insight in all activities of a central bank by the public. Observing these standards is important for building trust with the public, and in particular, for forming correct expectations of economic subjects which is a key requirement for successful economic policy. For example, if a central bank increases interest rates at a given period of time, changes in agregate demand will depend on whether this increase has been expected, whether it conditioned forming expectations as to the direction in which interest rates will change in the period to come, and it will depend on the future expected inflation rate (Bain, Howels 2009, 128). In this process, expectations related to inflation rate, expressed as a difference between nominal interest rate (as determined by a central bank and used as a monetary policy instrument) and a real interest rate (on the basis of which households and firms make decisions related to consumption) are of particular interest. The relation among these measures is expressed by Fisher equation: $i \approx r + \pi^E$, where i – stands for nominal interest rate, r – for real interest rate, and π^E – stands for the expected inflation rate. Accordingly, if the expected inflation rate is given, an increase in interest rate will cause the increase of real interest rate. However, if increase in nominal rate affects decrease in expected inflation rate, real interest rate will increase resulting in reduced aggregate demand.

Inflation targeting is thought to possess a number of advantages when compared to monetary targeting. Since it is based on the relationship between money and inflation, changes in the speed of circulation do not affect the outcome of monetary policy. Apart from that, the public is better able to grasp the concept of inflation target than monetary target, given that price changes are a part of immediate experience of an individual. This provides better opportunities for monitoring the success of monetary policy (Miskin, 2006, 15).

There have been a number of debates among economists as to whether price level targeting may provide better results than inflation targeting. Although the Gold standard may be interpreted as a type of implicit price level targeting, this regime was enforced only in Sweden in the period of 1931-1933 (Svensson, 1996, 1). Price level targeting represents a type of monetary policy where a central bank „aims at“ previously announced level of prices, which is usually formulated on the basis of Consumer Price Index (CPI). The realization of targeted price level is achieved through adjustment of interest rates, as is the case with inflation targeting. However, price level targeting is based on monitoring price levels in the previous period, with an intention to keep them at the same level in the period which is yet to come. On the other hand, when it comes to targeting inflation, the goal is set in advance (e.g. inflation rate of 2% in the coming year). It is also important to note that another difference between them refers to the intensity in monetary policy

measures required in order to achieve the goal. For example, if general price levels increase by 3% since last year, the central bank must take monetary policy measures to reduce price levels this year in order to bring prices to the targeted level. It is clear that this process requires stricter changes of interest rate as a monetary policy instrument, as when targeting a certain (positive) inflation rate. There is a consensus that when it comes to applying price level targeting, short-term fluctuations in inflation rate are more significant than in the case of inflation targeting.

It is important to consider the question of optimal inflation rate as related to operationalization of monetary policy within the regime of inflation targeting. It is often pointed out that a central bank should not target inflation rate of 0%, because positive and low inflation rate (about 2%) may have more positive effect (Sinclair, 2003, 345). Namely, positive inflation rate may facilitate establishing equilibrium in the market, particularly in the case of agregate supply increase. Decrease in nominal interest rate, which is under control of a central bank, may exercise a more significant influence on real interest rate decrease at a higher inflation rate, given the fact that nominal interest rate cannot be negative. This argument gained importance following the crisis of 2008, when voices were heard saying that inflation target should be increased to 4% in order to expand manouver space for decreasing real interest rate as a necessary response to recession (Blanchard, Dell Ariccia 2010, 10-11).

There is a number of research projects whose results show that not only does it bring about average inflation rate decrease, but inflation targeting provides positive macroeconomic results as well. Generally speaking, monetary policy regime based on inflation targeting affects labor market in such a way that it ensures lower unemployment rate than in the case of exchange rate targeting. However, this relationship is very much dependant on the level of openess of a certain economy (Larsson, Zetterberg 2003, 34). It has also been shown by various studies that there is a positive influence on economic growth exercised by inflation targeting, as well as output loss reduction in the case of deinflation process. Based on a sample comprising 22 industrially developed and 33 developing countries in the period of 1984-2004, a group of authors (Mollick, Torres, Carniero 2008,) showed that the application of inflation targeting regime caused the increase of *per capita* income, emphasizing that this influence is more evident in the short run than in the long run. At the same time, inflation targeting effects were observed as isolated from basic determinants of economic growth and from the globalization process influence. On the other hand, it is underlined that inflation was reduced to a larger extent in countries which adopted this regime because they originally experienced high level of inflation, while there was a global trend of inflation decrease, and not only as a result of inflation targeting (Ball, Sheridan, 2003). Nevertheless, it can be concluded that inflation targeting displays highest potentials in limiting high inflation and reducing short-term output fluctuations.

2. Application of the Model in Monetary Policy Analysis

One of key aspects of the model approach to analyzing monetary policy refers to whether money supply displays exogenous or endogenous character. On this basis, it is possible to distinguish between two types of monetary policy, and two models in which various variables play the role of a monetary policy instrument.

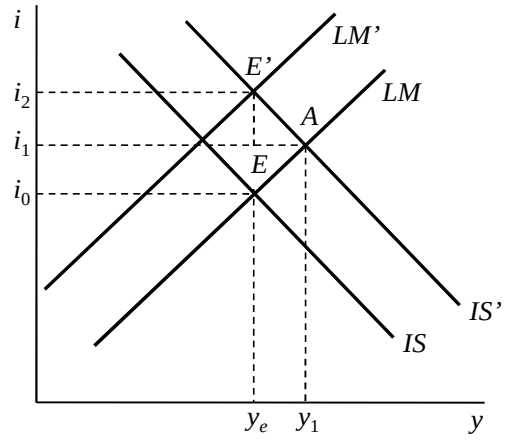
The first one is the so-called LM paradigm, based on which a model of money supply was built. In this model, money supply is seen as a definite determinant of price levels and inflation rate. Consequently, money supply is a monetary policy instrument. The mechanism by which an economy responds to shocks and adjusts itself to new equilibrium followed by constant inflation is what is built into the well-known IS-LM model (Carlin, Soskice 2006, 138). What lies beneath this model is expectations augmented Phillips curve.

In accordance with understaning a monetary policy, such as this one, base money quantity (money supply in narrow sense) is exogenous variable determined by a central bank. Money supply in broader sense (broad money) depends on the quantity of base money quantity and the value of multiplier. This can be shown in the following way (Bain, Howels 2009, 101):

$$B \rightarrow M \rightarrow i \rightarrow L$$

where B – stands for base money quantity, M – stands for broad money, i – stands for interest rate, and L – stands for loan volume. An expansive monetary policy, through an increase of base money quantity brings about interest rate decrease (downward movement of LM curve), increase of loan volume, and output growth.

Figure 1 Positive Shock of Agregate Demand in IS-LM Model



Source: Authors, based on Blanchard, Giavazzi, Amighini 2010, 91

Adjusting economy to a positive agregate demand shock in the LM paradigm is shown through the IS-LM model in Figure 1. It is assumed that what an economy enters first is equilibrium level of umemployment, accompanied by constant inflation which is equal to the rate of money supply growth as determined by a central bank (point E), at an interest rate i_0 and the output y_e. Positive demand shock influences the movement of the IS curve to the right. At the same time, the influence of agregate demand growth on the output in the short run is mitigated by the fact that income growth influences money demand. This causes interest rate to rise to the level i_1 and output to the level y_1, while equilibrium point moves upwards to the right, along the LM curve, to the point A. A change in output and employment is generated by rising inflation, which affects the movement of the LM curve to the left, to the LM position, at a fixed money supply growth rate. This further causes initial stimulus to weaken, and economy returns to the output level y_e, at the interest rate i_2 (point E'). Monetary policy within this paradigm is a passive policy (it takes the form of fixed money supply growth rate). Output deviates from the equilibrium level due to inflation generation lags, or due to LM curve movement lags. Interest rate growth is explained using the so-called Keynes Effect: rising inflation as compared to the fixed growth of money supply affects the decrease of real money supply and ensures bonds portfolio adjustment, by selling the bonds. This activity performed by bond holders affects decrease of bond prices and increase of interest rate. A higher nominal, and at the same time a higher real interest rate limitates the original consumption level.

There are a couple of objections to this kind of approach. Since it is assumed that money supply has an exogenous character, it can be said that it is possible to analyze monetary targeting within the LM paradigm, but it is not possible to perform inflation targeting. A passive monetary policy is not in line with characteristics of modern economies. Besides, there are numerous downsides to the IS-LM model which is used to analyze a monetary policy. Namely, it is assumed that price levels are fixed, that only short-term analysis is possible, and that a nominal but not real interest rate is included in the analysis, and that expectations of economic subjects are not taken into account, etc. (Nelson, 2003, 4).

Within the other, the so-called MR paradigm, a central bank's policy is what is taken for a definite determinant of price and inflation levels. A short-term interest rate, controlled by a central bank, represents the main instrument of monetary policy. Hence, consideration of effects resulting from the application of different rules of interest rate is what is in the spotlight of contemporary monetary policy analysis, while there is no necessity to translate these rules into equivalent rules linked to the money supply (Woodford, 2003, 48.). Given that a central bank directly determines the „official" (referential) interest rate, it becomes an exogenous variable,as can be seen in the following:

$$i \rightarrow L \rightarrow M \rightarrow B$$

A change of the official interest rate affects the change of market interest rate *i* (usually in the same direction, but with some delay). Market interest rate determines loan demand volume, and by this it affects money supply in broader sense, whereas a central bank performs changes in base money quantity once it is deemed necessary.

Several, to some extent similar, models are used as instruments for analysis in the MR paradigm. Their names in the literature are as follows: the IS-MP-IA model (Romer, 2000, Allsopp, Vines 2000, Walsh, 2002, Giesse, Wagner 2006), the BMW model (Bofinger, Mayer, Wollmershäuser, 2006) and the IS-PC-MR model (Carlin, Soskice, 2005). In this paper, we will use the IS-PC-MR model, because we feel that it encompasses the most important aspects of policy within inflation targeting regime.

According to the MR paradigm, in the case of a positive agregate demand shock, a central bank reacts to inflation increase by increasing interest rates. The output falls below the equilibrium level and causes inflation to decrease, while at the same time the central bank adjusts interest rate so as to lead the economy along the MR curve to the point where targeted inflation rate is achieved, at a balanced output. Therefore, it is assumed that within the MR paradigm, the central bank should not allow adjustment mechanism to react automatically by the Keynes Effect, as is the case within the LM paradigm. In the case of fixed rate of money supply increase, the adjustment to new equilibrium is accompanied by extended disruptions in economic activities. The reason for this can be found in the interaction between inertial inflation and portfolio adjustment process, while at the same time changes in real money supply affect interest rates (the LM curve moves upwards when inflation rises in relation to money supply growth rate, i.e. real money supply decreases).

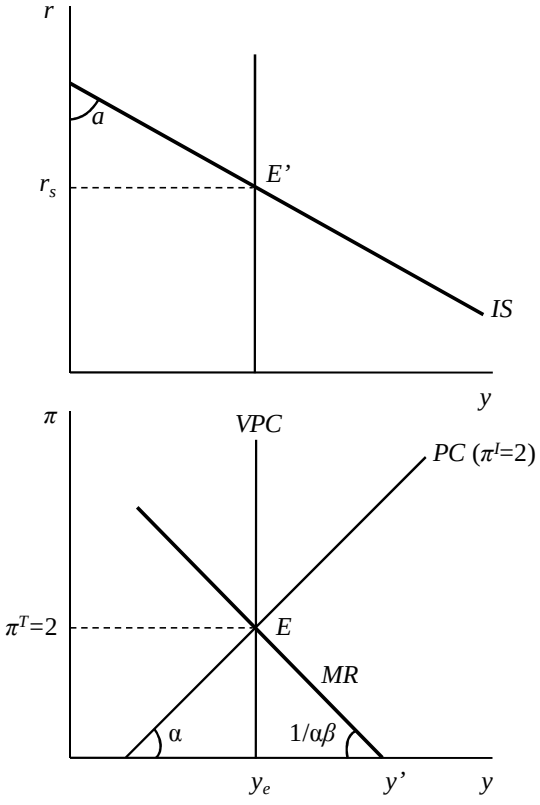
In the IS-PC-MR model, a central bank's reaction function is based on the use of the interest rate as an instrument of the activist policy, which enables directing economy towards equilibrium (natural) unemployment rate. The very application of monetary policy rules ensures nominal anchor and in this way determines price levels or inflation rate. Given that it is often necessary to adjust interest rates in order to accomplish the central bank's goals, the rules applied are activist rules to a large extent.

3. The IS-PC-MR Model

The IS-PC-MR model, as suggested by Carlin and Soskice (Carlin, Soskice 2005) represents one of the most comprehensive models aimed at short-term and mid-term monetary policy analysis within the inflation targeting regime. According to this model, the monetary policy of the central bank is based on six variables, which are listed below (Carlin, Soskice 2005, 149):

1. inflation rate targeted by the central bank, π^T: it determines the position of the MR curve;
2. parameter representing the central bank's preferences, β: it determines the shape of loss ellipses – circles and affects the slope of the MR curve;
3. Philips curve slope, α: it also affects the slope of the MR curve;
4. the interest sensitivity of aggregate demand, a: it determines the slope of the IS curve;
5. equilibrium output level, y_e: it determines the position of the vertical (long-term) Philips curve (VPC) and affects the position of the MR curve;
6. stabilizing interest rate, r_s: the central bank adjusts interest rate in relation to the stabilizing interest rate, monitoring whether it has been changed or not as a result of IS curve movement or due to the equilibrium output level, y_e.

Figure 2 The IS-PC-MR Model



Source: authors based on Carlin, Soskice 2005

The IS-PC-MR model is illustrated by Figure 2. The IS curve is shown in the upper graph, and it represents the inverted relation between short-term interest rate (r) and the output (y). The starting point of this model is the assumption that a

short-term interest rate is under direct control of a central bank, which means that if a short-term inflation rate is known, the central bank may exercise an indirect influence on the real interest rate. The IS relation is represented as follows:

$$\textbf{\textit{IS:}} \quad y_1 = A - ar_0$$

It can be concluded that real income (output) is in a positive relation to autonomous consumption (*A*), while at the same time it stands in a negative relation to real interest rate (r). It can, also, be seen that the output in the current period (y_1) is under the influence of the interest rate from the previous period (r_0). The reason for this can be found in the fact that it takes a certain period of time for the change in real interest rate to cause changes in decisions related to economic subjects' consumption, and consequently the output. The parameter a determines the slope of the IS curve, or more precisely, it determines the angle this curve creates with the vertical axis. The steeper the curve is (the a is lower), the lower sensitivity of income to a certain interest rate change is, and vice versa. The cross-section point of the long-term Philips curve (VPC) and the IS curve is achieved at a stabilizing interest rate, r_s, and at the equilibrium output, y_e.

The second relation in the IS-PC-MR model refers to the Philips curve (PC), which is in the bottom graph of Figure 2 represented as a straight line so as we could provide a simpler analysis. Given that Philips curve in this model represents a relation between inflation rate and output level, and not with unemployment rate, its slope is positive. The PC relation takes the following form:

$$\textbf{\textit{PC:}} \quad \pi_1 = \pi_0 + \alpha(y_1 - y_e)$$

Inflation rate in the current period (π_1) is influenced by inflation rate from the previous period π_0 (the so-called inertial inflation, π^I), as well as by output level deviation in the current period (y_1) from equilibrium output (y_e). Inertial inflation rate determines the cross-section point between short-term and long-term Philips curve (point E), which, in Figure 2, represents optimal equilibrium at targeted inflation rate of 2% and equilibrium output. The value of parameter α determines the slope of the PC curve. If the inflation rate is higher than targeted, the PC relation shows that it is possible to bring it down only when y_1 is lower than y_e. The steeper slope of the PC curve means that it takes a lower output decrease for a given inflation rate decrease to take place, and vice versa. Within this variety of Philips curve, one can regonize the backward-looking behavior of economic subjects. Alternatively, one can talk about rational behavor (forward-looking), which under the circumstances of incomplete information and existence of various institutional arrangements may result in continuous inflation, and in real costs of deinflational process (increased unemployment rate).

To formulate the third relation, which is related to Monetary Rule (MR) in the IS-PC-MR model, it is necessary to derive a central bank loss function.

Namely, when applying its monetary policy, a central bank must take into account not only inflation rate, but the output level as well. This reflects the well-know trade-off that exists between inflation and unemplyment in the short run. On the one hand, the central bank's aim is to minimize deviation of inflation rate from the targeted inflation rate (π^T), that is, to minimize loss function which takes the following form:

$$(\pi - \pi^T)^2$$

It can be noted that the central bank endeavors to reduce deviation of real inflation rate from the targeted rate in any direction, upwards or downwards. For example, if the targeted inflation rate is 3%, loss function will have the value of 4, regardless of the fact whether real inflation rate is 1% or 5%.

On the other hand, it can be noted that a central bank strives at minimizing a gap between targeted output level (we shall assume that this is equilibrium output level y_e, as well as that this level is known) and the real level, or:

$$(y - y_e)^2$$

As is the case with inflation rate, a central bank aims at minimizing a deviation of real output from targeted output in any direction. The reason for this may be found in the assumption that inflation rate is constant only when the real output is equal to equilibrium output. Equilibrium output refers to the situation when labor market is balanced, i.e. when unemploment equals the natural rate.

The loss function which a central bank should minimize, and which takes into account both inflation rate and output volume, takes the following form:

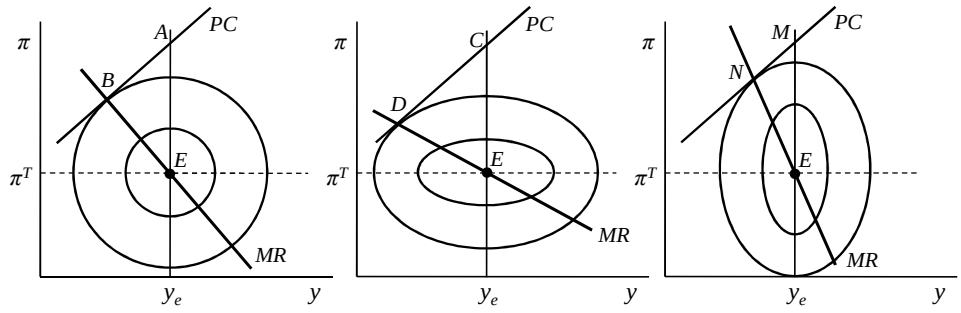
$$L = (y_1 - y_e)^2 + \beta(\pi_1 - \pi^T)^2 \quad \ldots (1)$$

Where β stands for the parameter reflecting a relative importance that the central bank attributes to inflation in relation to the output and unemployment. The higher the value of this parameter, the higher the aversion of the central bank to inflation (the case of a conservative central bank guvernor. In the case of inflation, this means that the central bank will be ready to accept higher reduction of the output and higher unemployment rate in order to bring inflation back to the targeted level. The opposite situation would occur in the case of a central bank whose value of parameter β , in the loss function, is less than 1.

In Figure 3, we show the influence that the value of parameter β exerts on the shape of loss function and on the slope of the MR curve. Loss function is represented by indifference curve of the central bank, which takes the shape of a circle for β = 1 (the so-called loss circles), or the shape of an ellipse when $\beta \neq 1$ (the so-called loss ellipse). Every point on a given indifference curve represents the same value of loss function. This function takes zero value at the point E, at every of three parts of the graph, given that in this point $\pi = \pi^T, y = y_e$. The longer the

radius of the loss circle (ellipse), the higher the loss for the central bank (higher value of the loss function). What is also given at every of the three parts of the graph is Philips curve. Given that the MR curve crosses point E, its slope is determined by the point at which a central bank's loss function with the shortest radius (meaning that the loss function has the lowest value) touches the PC curve (which poses a limitation to the central bank). On the basis of the shape of loss function in part a) of the graph, one can see that the central bank attributes the same importance to inflation and unemployment, and is, therefore, ready to sacrifice unemployment (output decrease) by, say, 3 per cent, in order to decrease inflation by the same value (movement from point A, over point B, to the point E). In part b) of the graph, we illustrate a central bank which displays aversion towards inflation, and is therefore ready to accept higher unemployment rate in order to reduce inflation (movement from point C, over D, to E). The shape of the loss function of this bank determines the slope of the MR curve, which takes a flatter shape in this case. Finally, in part c) we show a central bank which displays aversion towards unemployment. Judging by its shape, one can see that this bank is not ready to accept high unemployment increase in order to bring the inflation rate back to its targeted value (movement from M, over N, to point E). In the case of such a central bank, the curve will take a relatively steeper shape.

Figure 3 Central Bank Loss Functions and the Slope of the MR Curve



a) Equal importance of inflation and unemployment: β = 1

b) Inflation averse: β > 1

c) Unemployment averse: β < 1

Source: authors based on Carlin, Soskice 2005

The MR relation can be derived from the central bank's loss function (1) and the relation representing the Philips curve (2):

$$L = (y_1 - y_e)^2 + \beta(\pi_1 - \pi^T)^2 \quad \text{... (1)}$$

$$\pi_1 = \pi_0 + \alpha(y_1 - y_e) \quad \text{... (2)}$$

When we exchange (2) for (1) and differentiate with respect to y_1, we get the following:

$$\frac{\delta L}{\delta y_1} = (y_1 - y_e) + \alpha\beta(\pi_0 + \alpha(y_1 - y_e) - \pi^T) = 0 \quad \text{... (3)}$$

When we exchange (2) for (3), we get the MR relation:

$$\textbf{\textit{MR:}} \quad (\pi_1 - \pi^T) = -\frac{1}{\alpha\beta}(y_1 - y_e)$$

Judging by the MR relation, it can be seen that the slope of the MR curve depends on the following value:

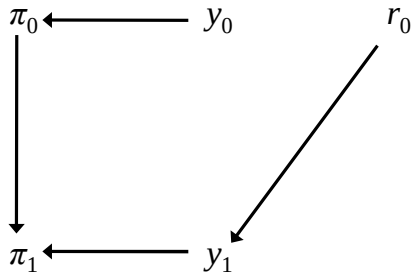
$\frac{1}{\alpha\beta}$.

It has already been said that paremeter β shows the importance that a central bank attributes to inflation with respect to unemployment, which affects the slope of the MR curve. On the other hand, the slope of the MR curve also depends on the value of parameter α, which, at the same time, determines the slope of the Philips curve. It can be noted that when parameter α takes a higher value, it makes the PC curve steeper, while it makes the MR curve flatter. In other words, the steeper the Philips curve in an economy, the flatter is the MR curve, and vice versa.

4. Monetary Policy within the IS-PC-MR Model

The IS-PC-MR model encompasses two important characteristics of a monetary policy applied in contemporary conditions. The former refers to a central bank's behavior based on reaction function, which means that the central bank reacts to any changes in inflation rate by adjusting real interest rates with the aim of achieving minimum output fluctuations at a short-term. At the same time, it monitors any deviations from the targeted inflation.

Figure 4 Lag Structure in the IS-PC-MR Model



Source: Carlin, Soskice 2009, 15

The latter refers to the existence of time lags in the application of monetary policies. Although the central bank's behavior, envisaged by the MR relation, includes a forward-looking attitude and using all the pieces of information that are

available, the behavior of economic subjects includes looking-backward attitude and it is incorporated in the IS and PC relations. Therefore, it is possible to distinguish between two types of lags within the IS-PC-MR model: the one which is incorporated in the IS relation, which is linked to the application of a policy (time needed for a changed interest rate to take effects on the output level), and the lag in the Philips curve relation (time needed for a changed output level to change the inflation rate). The relation of the relevant measures in the IS-PC-MR model, within two successive periods (0 and 1), is shown in Figure 4.

It can be noted that the output level affects the inflation rate in the same period of time (y_0 affects π_0, whereas y_1 affects π_1). It can also be seen that inflation rate in period 1 (π_1) is affected by inflation rate from the previous period (inertial inflation, π_0). These lags are contained within the PC relation. On the other hand, real interest rate in period 0 (r_0) affects the output in the following period (y_1), which is contained within the IS relation. As one can see, structure lags like these determine the central bank's behavior and emphasize the quality of its projections related to the movement of relevant variables, which is of particular importance in the case of sudden economic disruptions (shocks).

Economic shocks refer to unexpected changes in agregate supply or demand relations, which may consequently make sudden changes of inflation rate as well as the changes in output and employment. In the same vein, it can be said that these shocks are also monetary policy shocks in terms of variations in the central bank's policy ensuing from other sources rather than from its systematic reaction to economic changes.

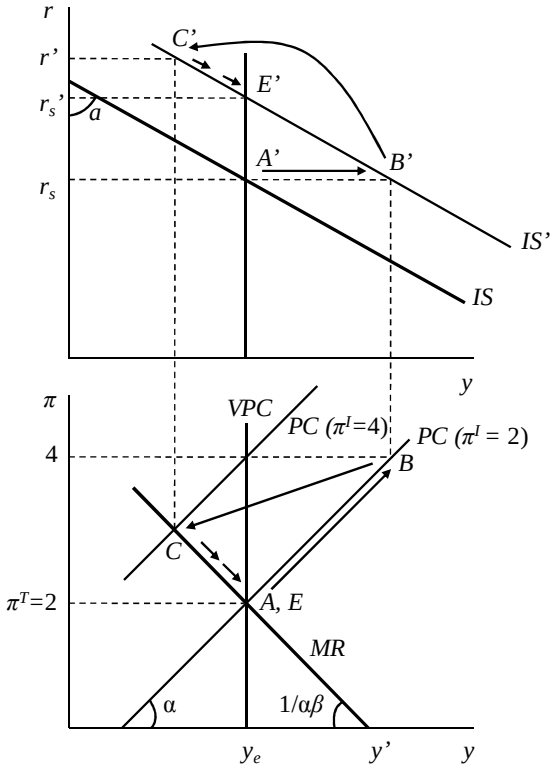
In Figure 5, we illustrate a central bank's reaction to permanent positive aggregate demand shock in the IS-PC-MR model. We shall assume that equilibrium is initially placed at point A in the bottom of the graph, at an inflation rate which equals the targeted one ($\pi^T = 2\%$), and at an output which equals the equilibrium output, at the section of the PC and MC curves ($\pi^I = 2$). The corresponding equilibrium in the upper part of the diagram is placed at point A', at stabilizing real interest rate r_s, which is in line with the equlibrium output.

An unexpected increase in aggregate demand causes the IS curve to move to the right, reaching the position IS'. In the current period of time, the output rises over the equilibrium level, and we shall assume that this is the level y' ($y' > y_e$). As a consequence, in the current period of time, as well, inflation rate rises above the targeted level (at 4%), and a temporary equilibrium is found at the point B. In the period to follow, this inflation rate becomes inertial inflation rate, based on which the central bank predicts the position of a new Philips curve PC ($\pi^I = 4$), which creates a section with the VPC curve at an inflation rate of 4%. The central bank must increase the real interest rate and reduce the output below the equilibrium level in order to decrease the inflation rate below the targeted level, choosing a certain point on the PC curve ($\pi^I = 4$), to the left of the full-employment line. Point

C in the section of the new Philips curve and the curve representing a Monetary rule determines a special output decrease. At the same time, a central bank must make an estimate on whether this is a temporary or a permanent demand shock. We shall assume that the bank has made a valid conclusion that this is a permanent shock, and that the curve IS reached the position IS'. This implies having a new, higher stabilizing interest rate r_s'. The central bank must increase the real interest rate above the new stabilizing interest rate in order to place the output below the equilibrium level. This interest rate ensues when a vertical line is drawn from point C in the bottom of the graph to the point C' on the IS' curve, resulting in the rate *r'*.

As long as the output remains below the equilibrium level, the PC curve moves downwards, which will be accompanied by decreasing interest rate on behalf of the central bank. The equilibrium will move along the MR curve to the point E in the upper part of the graph (point E'), where the final equilibrium is established, at an inflation rate which equals the targeted one, at the equilibrium output level and stabilizing real interest rate r_s'. It can be seen that a central bank's ability to control economy is limited by the existence of inertial inflation and time lags in the influence of interest rate on aggregate demand and output.

Figure 5 A Central Bank's Reaction to Positive Aggregate Demand Shock



Source: Carlin, Soskice 2006, 150

Apart from the analysis of the central bank's reaction to demand shocks, the IS-PC-MR model enables us to observe the influences that shocks exert on aggregate supply, as well as to observe the measures taken by a central bank. It is characteristic of aggregate supply shocks to cause changes in equilibrium output, and by this they also cause vertical Philips curve to move. Shocks like this can ensue when the following changes, affecting economic subjects' behavior in terms of determining prices and wages, occur: structural changes in arrangements related to negotiating wages, changes in taxation and/or remuneration packages to the employees, as well as the changes in the level of competition at goods market which affect the mark-up (Carlin, Soskice 2009, 21).

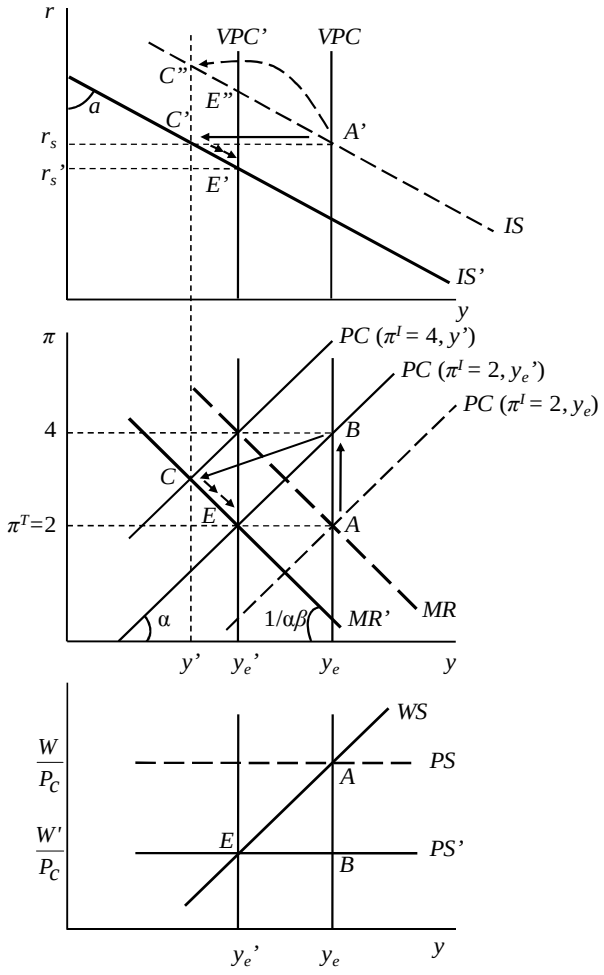
Instead of observing the effects of a shock on supply in isolation, Figure 6 pictures a more realistic scenario which may take place in case of combined influence of credit crunch and oil shock on aggregate supply and aggregate demand. Credit crunch refers to a negative aggregate demand shock, given the fact that loans' availability is severely limited and that requirements for their approval become much stricter. This situation can be illustrated by real events that accompanied the global economic crisis of 2008. On the other hand, oil shock affects both supply and demand. A country termed as a net-importer of oil is bound to experience a decrease in aggregate demand. When it comes to supply, oil shocks will affect the decrease of equilibrium output level (negative supply shock) when economic subjects on the labour market decline real wages and profitable mark-up reduction. In the opposite, oil shock will be manifested only in the form of a temporary inflation shock, with no influence on the equilibrium output. When it comes to negative supply shock a central bank experiences more inconveniences, because the inflation target can be achieved only at a higher equilibrium unemployment, i.e. at a lower output.

Because of its important role in explaining changes at the level of equilibrium output, Figure 6 illustrates a graph showing labor market (below), where real wage is shown on the vertical axis (nominal rate divided by consumer price index). The relation of wages specification is represented by the WS curve, which has a positive slope, because trade unions demand higher real wages at a higher output level. The PS curve represents the relation of price specification performed by companies. Assuming that labor productivity and mark-up are constant, this curve is horizontal.

A sudden increase of oil prices affects the increase in a company's operation costs, so that the increase of prices is the only way to keep the mark-up at the same level. The increase in prices decreases real wages, which is illustrated by the PS curve's shift downwards, to the position PS'. It is assumed that the subjects involved in specifying wages and prices do not accept decrease of the real available income per employee because of the increased oil prices. Limitations in price and wages adjustment cause a decrease in output level from y_e to the level y_e' (movement of the VPC to the left), and the equilibrium moves to the point E. In other words, it is necessary to increase unemployment rate so that employees accept decrease in real

wages. Point B stands for the equilibrium, which would have been established if there were no limitations on the labor market, at an unchanged output.

Figure 6 A Central Bank's Reaction to Credit Crunch and Oil Shock



Source: authors based on Carlin, Soskice, 2009, 24

As a result of the negative supply shock, a short-term PC curve moves upwards, to the position (π^I = 2, y_e'). The first consequence of the shock is reflected in inflation growth above the targeted level (at 4%) as an economy moves from point A to point B (medium panel in Figure 6). The central bank must predict the position of PC and IS curves in the future in order to set necessary measures for its monetary policy. A central bank assumes that a short-term Philips curve takes a new position, marked as (π^I = 2, y') and selects the output level which will cause inflation to decrease. This output is lower than the new equilibrium output y_e' and is marked as point C. The central bank forecasts a new position of the IS curve in

order to determine the necessary changes in interest rates. Given the fact that credit crunch and increased oil and commodity prices affect decline in aggregate demand, the IS curve is moved to the left, to the position IS'. At the top panel of Figure 6, one can se that the output will fall below the equilibrium level (point C') with no changes in the current interest rate r_s, if demand declines by the same value. At the same time, this interest rate is above the new stabilizing interest rate r_s'. As long as the output is below the new equilibrium level, the PC curve will move downwards, and the central bank will decrease the interest rate to the level r_s' (point E'). After the adjustment process, the central bank achieves the inflation target at the point E, but at a lower equilibrium output.

In Figure 6, one can observe a central bank's reaction in the case of negative demand shock with no influence on aggregate supply. In this case, the IS curve would remain in the same position, whereas the central bank finds itself in a situation where it has to increase interest rates in order to decrease the output to the level y'. More precisely, this interest rate would reach the position C'', and it would be above the new stabilizing rate which would then reach the position E''. It can be concluded that a central bank would reach its mid-term inflation target at a lower output and higher stabilizing interest rate only in a shock situation which affects supply.

Conclusion

Monetary policy, as an important instrument for regulating economic activities and reactions to economic disruptions, has more often followed the guidelines set within New Concensus Macroeconomics in the contemporary era. The regime of inflation targeting is based on these guidelines, and its application in a growing number of countries demonstrates the potential for the realization of stabile and low inflation rate, low unemployment rate, and constant economic growth. Evidence that inflation targeting is superior to other forms of monetary policy can be found once the following elements get involved: expectation, central bank's monetary policy credibility, long-run neutrality of money, the application of interest rate rule as a reaction to economic shocks.

The IS-PC-MR model represents a convenient instrument for monetary policy analysis within the regime of inflation targeting. Given that it is based on the MR paradigm, it is convenient for analyzing the relationship between an interest rate, as a monetary policy instrument, and inflation rate as a target. The IS-LM model, which is based on the idea of unchanged prices, and which represents the relation between interest rate and the LM paradigm-based output, lacks this ability. The IS-LM model is thus incapable of providing analysis of inflation and monetary policy based on inflation targeting. To a limited extent, this model enables us to perform an analysis of a monetary policy based on monetary supply.

The key advantage of the IS-PC-MR model refers to its explicit ability to encompass essential variables in inflation targeting regime. The real inflation rate and its deviation from targeted rate is simple to show. It is also possible to monitor in the same manner deviations of real from potential output, or real unemployment rate from natural unemployment rate. Short-term and long-term Philips curve in this model allows for monitoring of short-term and long-term effects of monetary policy (based on real interest rate changes) on the output, unemployment, and inflation. The IS and PC relations also enable us to perform the analysis of economic subjects' expectations in terms of monetary policy outcomes. A central bank's behavior is based mainly on rational expectations, whereas the economic subjects' (the sector of economy and households) expectations are mainly adaptive by their nature.

Various slopes of the curves found in the IS-PC-MR model also contribute to complexity of approach to monetary policy analysis. The slope of the IS curve reflects flexibility of aggregate demand to a certain change of an interest rate, including time lags. The PC curve shows the character of a trade-off between inflation and the output (unemployment), in terms of production decline (unemployment increase) which is necessary for decreasing the inflation rate with respect to the targeted rate (sacrifice ratio). The MR curve also reflects the central bank's preference with respect to a relative importance attributed to inflation in relation to unemployment.

The aspects of monetary policy analysis pertaining to the IS-PC-MR model qualify this model as an efficient instrument for analyzing contemporaray trends in the field of macroeconomic policy. However, apart from numerous advantages this model has over the IS-LM model, there are some disadvantages which provide room for its improvement. First of all, the PC relation characteristic of adaptive expectations of economic subjects may be enhanced by introduction of forward-looking expectations, i.e. rational expectations. In the type of the IS-PC-MR model we illustrate above it was only the behavior of the central bank that was based on rational expectations, mainly associated to predicting a new position for the IS and PC curves in the circumstances of a certain economic disruption.

It must be noted, however, that even when economic subjects display rational expectations, monetary policy measures may have different effects on the output and inflation, not only in terms of intensity, but also in terms of the period of time when this influence is manifested. The introduction of the so-called double time lag may contribute to the model's closeness to real conditions in economy. Instead of this relation among variables $r_0 \rightarrow y_1 \rightarrow \pi_1$, which is demonstrated in this paper, a new one could be introduced: $r_0 \rightarrow y_1 \rightarrow \pi_2$. In other words, double time lag refers to the lag in the output's reaction to the change of real interest rate, as well as to the lag related to reaction of inflation rate to the changes in the output level.

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SAVREMENA ANALIZA MONETARNE POLITIKE PRIMENOM IS-PC-MR MODELA

Rezime: U okviru tzv. novog konsenzusa u makroekonomiji obuhvaćeni su najvredniji elementi makroekonomske teorije, koji predstavljaju rezultat višedecenijskog razvojnog procesa. Između ostalog, definisane su i smernice koje na praktičnom planu treba da sledi centralna banka u vođenju monetarne politike u savremenim uslovima. Targetiranje inflacije, kao režim monetarne politike, smatra se najkompatibilnijim sa pomenutim smernicama. Stoga, u radu se koristi tzv. IS-PC-MR model, koji obuhvata ključne aspekte ovog režima monetarne politike. Cilj je ukazivanje na mogućnosti modela u analiziranju načina na koji centralna banka reaguje na privredna kretanja i poremećaje, kao i na ostale prednosti u odnosu na druge modele, prevashodno u odnosu na IS-LM model.

Ključne reči: novi konsenzus, monetarna politika, targetiranje inflacije, IS-PC-MR model, IS-LM model, šokovi tražnje i ponude

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THE CONTRIBUTION OF KEYNES AND HAYEK TO THE DEVELOPMENT OF THE THEORETICAL METHODOLOGICAL PLURALISM IN THE ECONOMIC SCIENCE

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Abstract: *With the appearance of Keynes and Hayek, the economic science started to change the principles of its development from monism toward pluralism. Their ideas became the source of the new conceptions, which was a good basis for the appearance of numerous theoretical methodological variations and interpretations. The progress toward the methodological heterodoxy was followed by the important differences among these authors, but also by numerous similarities. Therefore, the aim of this work is to shed light on the relations and understand the differences and possible connections of the scientific research programmes of Keynes and Hayek. In relation to it, this will be an attempt to determine the theoretical basis and the conceptual content that can help analyse to what extent was the work of these authors the alternative to the neoclassical economic theory, as well as the inspiration to the further development of the economic theory and methodology.*

Keywords: *methodological pluralism, economic equilibrium, uncertainty, bounded rationality, formalisation of the economic science*

Introduction

The aim of the modern economic science is among other things to develop the relevant attitude toward different economic theoretic approaches. It is especially important to make a detailed analysis of the work of economic theoreticians who indebted the economic science. Keynes and Hayek should certainly be mentioned, having in mind that they have shaken the absoluteness of the neoclassical mainstreamism with their original and revolutionary thinking. Starting from the methodological variety of meaning and pluralism, Hayek and Keynes became the example and inspiration to many followers of the economic and sociological science. For example, Keynes's theory enabled the appearance of numerous scientific approaches: Keynesian, neo-Keynesian, post-Keynesian. According to the impulses for further research he can be compared to Smith and

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other great figures of the economic thought. The historians of the economic science are inclined to say that Keynes, Smith and Sey can be an example that sometimes vague even to some extent confusing ideas can be more fruitful for the development of the economic thought than those refined, precise and clear attitudes offered by some other authors (Жид, Рист 1995, 102).

The first half of the twentieth century was a period of serious discussions and conflict of opinion. In the basis of the Cambridge debate were two figures – Friedrich Hayek and John Maynard Keynes. Their intellectual opposing became at that time an important event in the economic theory although they were analysing different aspects of the economic science not entering the debates on the same issues. The two episodes are an exception: the discussion from 1931-1932 and the analyses of the Hayek's work 'The trip to slavery' where Keynes pointed out to Hayek the necessity of conducting the analysis of the state governing in the short term. On the other hand, Hayek warned Keynes that he didn't take into account the long-term consequences of the 'dangerous state influence', pointing out that it is possible to take suitable measures in order to avoid that (Sm.: Collected Writings of John Maynard Keynes, Vol. XXVII, 1971-1989).

The Diversity of the Philosophical Attitudes

In the striving to precisely value the theoretical contribution of Hayek and Keynes, the authors have different claims concerning the character of the scientific work of the mentioned authors. Some of them think, as opposed to Keynes, that Hayek's teaching doesn't have the revolutionary character. The argument that is given to confirm such a statement is that he continued the tradition of the Austrian school of the economic thought (Manger, Mises, Bohm, Bawerk), while Keynes strived to 'destroy' the classical economic theory. On the other hand, there isn't a unique opinion how much Keynes succeeded in that. There are some people that think his ideas are not as revolutionary as he and his followers thought. In Keynes work there are a lot of things that are based on the Marshall's conceptions, especially when we talk about the analysis of the short and long-term as well as understanding of the market balance. Hayek had a rich knowledge of the history of the economic thought, while Keynes wasn't inspired by the events from the 19th century and for that reason he didn't strive to analyse the economy and the economic history of the time. Hayek observed the economic theory through the prism of the Austrian school, while Keynes had more freedom in creating and defending his standpoints. That was one of the reasons why some may think that Keynes approached the economic research in a more competent way, although according to Hayek's opinion in this case he only completed the theories that were created long time ago (Скидельски 2006, 48).

The difference between Keynes and Hayek can be observed in the context of their relation toward the legitimacy of the scientific knowledge and the appearance of mistakes in science. Sharing the opinion of Manger, Hayek thinks

that for the 'victory' of a scientific idea it is necessary to allow the free development of other theories and ideas. In this way the theoretical mistakes will disappear spontaneously, which is the only way for the humanity to become wiser. Contrary to this, Keynes thought that the scientific mistakes should simply be 'liquidated'. In this argument we should remind ourselves of Popper's opinion that the characteristic of human knowledge is to make mistakes and that the idea of mistake implies searching the objective truth in comparison to which the mistake has been made and to which we come closer by learning from our mistakes. The key question according to him is not the rejection of the mistake, but the question 'on what basis we can hope to find and correct the mistake' (Poper 2002, 67).

From the standpoint of the economic science it is interesting to be reminded of the various understandings of the long term. While Keynes points out the fact that we are all dead in the long term observation, Hayek claims that with the passing of time people become wiser. Being influenced by the acceptance of the bitter truth of the finality of the human life, the individuals are inclined to reject the personal obligation of respecting the common rules of behaviour, generally accepted moral norms and the traditional rules of behaviour (Sm.: Collected Writings of John Maynard Keynes, Vol. X. 1971-1989, 446). It is obvious that Keynes propagates the variant of the 'radical utilitarianism' connected to the individualistic, anthropomorphic world view, while Hayek propagates the 'soft' (cautious) utilitarianism, with the metaphysical belief in the accumulation of the wisdom and tradition (Barry 1979). The above mentioned utilitarian attitudes can serve as the basis for the analysing of the market norms of behaviour. In this way Олејник (Олейник 1999, 135) makes a difference between the standard (complex) utilitarianism that starts from the intention of the individuals to maximise their utility, but exclusively in accordance with the work result, or the contribution to production. The economic significance of this norm is great, because it excludes the possibility of discord between the individual participation in the spending and the individual working productivity. On the other hand, according to the norm of the 'simple utilitarianism' there is a striving of the individuals to enlarge their benefit, but it is not grounded on the intensified engagement in work and the real manufacturing efficiency.

Later Keynes gave up his rigid understanding of utilitarianism and the difference between Hayek's institutionalised understanding of utilitarianism became smaller. His attitudes changed under the influence of the changes in the cultural, economic and political environment and consequently he understood the necessity of the existence of the system of rules.

The Attitude toward the State and Liberalism

The issue of the role of the state in the economy is often perceived as the essential question of the economic theory and economic policy. That is why the

economists consider the orientation for and against the state interventionism, or liberalism, very important. It is considered that the positions of Keynes and Hayek in this sense are sufficiently determined, so that Keynes was considered the follower of the state institutionalism, while Hayek was considered to be one of the strict followers of the liberal doctrine.[1]

The dominant Hayek's standpoints are brought in connection to his rigid attitude against the state interference in the sphere of economy. Explanation starts from the fact that the market is a more superior coordinative mechanism than the unreliable state planning. The logic of such an approach is that the individuals are aware of their preferences, expenses and relative prices, while the state planners have to know much more if they want to substitute the state mechanism. In the system of prices each individual has to understand only his own situation, while a planner has to take into account everybody's interest. The social life, and especially its economic sphere is rather complex, from which can be concluded that the planners base their theories on the limited, insufficient and fragmented knowledge and information. That is why the planned decisions are as a rule followed by the unwanted consequences, while the activities of the governments with the 'good intentions' can result in the decrease of the state welfare.

The thing that makes Hayek different from the liberals of the 19th century and from their understanding of the economic liberalism is that according to him the economic liberalism doesn't presuppose the absence of rules. The state itself, but also the individuals have their impact limited by the rules. Although institutions are not the primary subject of the Hayek's interest, in his striving to recognize and organise the efficient socio-economic system they become the factor of the significant economic relevancy (Kitanović, Petrović 2007, 5). By rejecting the standard neoclassical conception of complete rationality, Hayek in fact introduces the recognisable content of the institutionalised approach. That is primarily seen in the acceptance of the realistic facts about the existence of the incomplete information, which according to Hayek's opinion complicates and aggravates the coordination of the impact of the economic agents. That further brings into light the question of the necessity of the institutions, which is only a confirmation that the functions of the institutions, like in the institutional theory, are brought into relation with the forced need for relaxing of the interrelations of the market subjects.

Hayek completely defends an attitude that an individual has to fully respect certain rules of behaviour while reaching his goal (Hayek 1978, 8). The function of the aim of the economic participants is conditioned by the institutional frames and limitations and on the other hand by the economic values about which the economic subjects can decide independently. Consequently, Hayek puts the rules and the utility in the same rank, although the general impression is that in his analyses he most often uses the terms such as utility and expenses. According to

[1] Although there are essential differences about the issue of the state interference in economy Hayek and Keynes had a critical attitude toward the Soviet system of the centralistic planning.

his opinion, Keynes was aware of that, but nevertheless he strived to define and develop different theories and instruments of the economic policy that would have its application in various situations. Hayek didn't like the fact that Keynes often changed opinion, thinking that it was a scientific inconsistency and that he didn't have principles. The consequent governing of the state without principles, without a precisely defined course, could, according to Hayek, lead to the so-called totalitarian system. Contrary to this, Keynes claims that the lack of cautiousness and blind following of the principles could be a way to a catastrophe (Скидельски 2006, 48).

The thirties of the twentieth century were the period of questioning of the liberalistic doctrine. The Great Depression caused the Keynesianism to become the official credo of the west bourgeoisies. The state was asked to help save the market economy, which is why the liberal view of the state as the 'intruder' in the economy, lost its popularity. The relatively long term survival of the socialism also slowed down the complete acceptance of the Hayek's attitudes related to the inefficiency of the socialistic economies.

Although Keynes agreed with the majority of the epistemological attitudes of Hayek, he primarily believed in the macroeconomic policy that was connected with the system of the national accounts, econometric models and the state governing of the aggregate values. Although the state can control all the expenses only in a rather rough form it is nevertheless a better option in comparison to laissez-faire. Keynes's followers went even one step further. They thought that the problem of the limitation of the human knowledge was not so prominent as some people claimed, that it only appeared from time to time, and that with the help of the modern statistic methods of analyses it is possible to enlarge the capacities of subjective control.

The difference in the theoretical understanding, was among else, a consequence of the practical impact and the way of life of the two authors. It is well-known that Keynes followed the tradition of the activism, practising the political activity and performing the important state duties. Contrary to him, Hayek was a political emigrant, with the scientific passion without the chance for the practical application of his theoretical ideas. From this aspect we can observe Hayek's remarks that Keynes was not a highly educated economist. His main interest was the influence on the current policy, while the economic theory was only an instrument for the reaching these aims (Шапиро 2008, 122).

The Theory of the Economic Cycles

It is interesting to compare the standpoints of Hayek and Keynes about the phenomenon of the economic cycles, which was closely related to their understanding about the balance and interference of the factors of production. According to Hayek, the trait of the free market system is the full exploitation of the resources. Such a state is not characteristic for each moment, but it is possible to create it in the dynamics of time. At the basis of this attitude is certainly the neoclassical theory of the values, in

which instead of the thesis about the static balanced state the attitude that was promoted was about the long-term balance. In this system the mechanism of the prices was coordinating the solutions about the saving and investments in accordance with the presumptions and expectations of the individuals, while the high level of saving was one of the key factors of the economic development.

However, the objective happenings during the nineteen thirties didn't confirm the Hayek's theory – one of the characteristics of that time was the incomplete exploitation of resources. The question that arises is: Why the market mechanism didn't enable the efficient allocation of resources? The thing that was making discord in the coordinative function of the market was, according to Hayek, the interference of the state through the monetary policy. He thought that the so-called loan-financial economy could function only in the case when money is 'neutral' or when the state balances the level of money with the level of production, preventing inflation. Since this is hard to be conducted in the real world, economic cycles become inevitable. In other words, the main cause of the economic cycles is the expansive monetary policy of the state that decreases the rates of the interest below the balanced level through the increased supply of money. The unrealistically low rates of interest that were not caused by the increased saving of the population, give misleading signals to the manufacturers and the consumers (Stefanović, Mitrović 2011, 39).

Hayek thought that for the prevention of the negative consequences of the Great Depression, it was necessary to support the system of the gold standard. However, the western states during the 1920s couldn't succeed to ensure such system. The loan expansion disturbed the stability of the relative prices in the economy which led to crises.

Keynes was doing research of the mentioned problems starting from the quantitative theory of money, according to which the change of prices is proportional with the change of the volume of financial resources in economy. In accordance with that theory the level of the emission of money is fixed, and consequently it can be concluded that in this way it is impossible to explain the fluctuation of the monetary stock. A certain amount of time is needed in order to completely influence the change of the monetary stock and in this period of the adjustment of the prices the economic growth or recession can occur. It is a so called transition period and for its research Keynes introduced the so called model of the uncertain expectations (Keynes, 1924). During the change of prices, the uncertainty of their future level calls for an immediate correction of the nominal and real gain. This correction is necessary for the confirmation of the conclusion about the quantitative theory of money. The owners of the companies can get the unexpected gain in the conditions of the sudden inflation, as well as the unexpected losses during the unexpected deflation. Keynes questioned the thesis about the neutrality of money, by pointing out that the quantitative theory in the short terms is not valid, while the long term shouldn't occupy a lot of attention of the

economists. Accepting the analysis of the long term economists gave themselves an easy task, similar to repeated giving information that in the season of the tempest one should expect waves, as Keynes explained picturesquely (Sm.: Collected Writings of John Maynard Keynes, Vol. IV 1971-1989, 34). He insisted on the practical meaning of the economic theory –the economists should research not only the tempest, but also the calm period, as well as the new methods for coping with the problems which can be caused by the mentioned storm.

Methodological Individualism versus Methodological Holism

A large number of scientific methods have been developed in order to come to the scientific truth. Methodological pluralism didn't prevent the scientists to, essentially speaking, create the two ways for the understanding and more complete explanation of the socio-economic reality: methodological individualism and methodological holism.

The representatives of the Austrian school have a special merit in the affirmation of the methodological individualism. One of them is Hayek, while Keynes is usually classified into the group of the authors who gave a special mark to the application of the methodological holism in the understanding of the economic reality.

The essence of the methodological individualism can be seen in the striving to bring down the complex economic phenomenon to their simple elements such as actions of the individual human beings. This practically means that for the understanding of the economic phenomenon it necessary to adequately comprehend the way of functioning of the human individual (Menger (1883) 1963, 93). It is considered that Hayek accepted the methodological individualism under the influence of Menger and Mises, although he used the composite or the synthetic method while he was formulating the conception of the spontaneous order (Hayek 1952). It provoked in some authors the suspicion in Hayek's loyalty to the methodological individualism. For example, he speaks about the 'real' and 'false' individualism (Vukotić 2005, 13), or about the irrational and rational individualism. The 'real' individualism starts from the fact that the role of the mind is not of key importance in constituting the order in the society, which why it is believed that some people if they are free can often achieve more than an individual human mind could predict or project. Contrary to the principle of the free society, the 'false' individualism presupposes that the 'Mind' is always and completely available to people, and consequently, that everything that is achieved by people is directly the result of the control of an individual mind, and therefore subject to this control. In this way the 'false' individualism leads to something opposed to individualism, or to constructivism and collectivism. That is why Hayek thought that the constructivism represented the idealisation of the individual power and engineering. As it is, it makes the 'devastating' human self-confidence

which, accompanied with the egoistic interests of the individuals, consequently leads to the inefficient using of the resources.

Although there are certain doubts, Hayek's attitudes still don't announce the break up with the methodological individualism (Hayek 1952, 27). The method that is by Hayek described as 'composite' or 'synthetic' is indeed the concealing of the methodological individualism, having in mind that he insisted on such explanation of the social whole that relies on the conceptual connecting of the individual parts (Jakšić, 1988, 13). Hayek didn't accept Keynes' methods of stabilisation of the economic movements, as well as the macro-economy as a science. According to him the individuals are governed by the subjective judgements of the events, which is why the general parameters can't influence the individual solutions (Petrović 2008, 188).

Contrary to Hayek, Keynes is believed to be the supporter of the holistic orientation, according to which the phenomena of the society can primarily be explained with the help of the social structures, institutions, and the culture of the society. The basic attitudes of the methodological holism are that there are specific characteristic of the whole that could not be brought down to the individual characteristics, or that there are laws in the social processes that can't be derived from the laws of individual behaviour (Šešić 1974, 318). The concept of Keynes is basically inspired by uncertainty and the insufficient knowledge of the economic subjects, which implies the occurrence of the unexpected consequences of the individual behaviour (Kitanović, Petrović 2007, 2). In that way his scientific orientation gets the character of the devotion for the application of the methodological holism, which has among other things influenced Keynes to see the solution of the economic problems in the state interventionism (Kitanović, Petrović 2008, 5). He made relative the role of the individual in the economic sphere of the social life, by proposing the economic policy of interventionism and by giving a completely new role to the state-different from the role it had in the eyes of the classicists. The state undertakes the important role in the national economy with the aim of regulating economic processes.

Hayek's dedication to the methodological individualism is one of the reasons why he and the other representatives of the neo-Austrian school didn't further develop the theory of the expectations. Contrary to this, and thanks to the methodological holism, Keynes can be classified among the theoreticians that think that the collective expectations make impact and express themselves through the individual preferences and expectations. In that way Keynes in fact 'calls' the state to influence the individual expectations and the growth of production and employment by governing the aggregate demand.

The Similarity of Hayek's and Keynes' Attitudes

The years before and during the Second World War have shown that Hayek and Keynes have many similar attitudes and values, in spite of the differences

mentioned above. In December 1939, Keynes stated that the final aim of the mindless, but also necessary war was not only in the victory against Germany, but in the fact that it was the return on the road of the historical progress of the Western civilisation, based on the Christian ethics, respect of law and the scientific achievements. Only in this institutionalised environment it was possible according to Keynes to develop personality and all the individual potentials. Except that, after war, there was a period of interest for the enlarged production and the reaching of full employment in the economic development of the Western countries, which decreased the discord between Keynes and Hayek (Скидельски 2006, 48).

The Attitude toward the Conception of the Economic Equilibrium

The neo classical economic theory has for decades the reputation of the leading economic paradigm. From the existence of marginalism in 1870 and the new subject and method of the economic science, *optimisation* becomes the basic way of description of the economic behaviour, and the analysis of the *balanced states* the basic method of researching of the economy dynamics. Hayek and Keynes opposed the positivistic orientation of the neo classical theory, questioning the theory of the general economic equilibrium and the theory of the complete rationality.

The theoretical disputes about the economy balance in Hayek's case can be perceived through the analysis of the static and dynamic balance, while the subjects of the Keynes' interest were the states of imbalance. As a matter of fact, reading of the Hayek's articles can further make us think about Hayek as the theoretician of the static balance. However the deeper understanding of his work can confirm that his interest was to a large extent focused on the dynamic character of the economic organisation (Stalebrink 2004, 34). It is well known that Hayek, in his works about knowledge, in a large number of cases points out an existence of the 'tendency for a balance' (Hayek 1948). He was not explicitly stating his opinion about the nature of the relationship of this tendency with the state of complete balance. The only thing that stays unexplained is whether and to what extent is the tendency for balance strongly connected with the understanding of the state of complete balance, or does this tendency results in practise with the fulfilment of complete balance.[2] For example, in his lesson from 1936 'Economic theory and knowledge', Hayek defined balance as the situation in which the intentions of all agents are in the mutual accordance (Скидельски 2006, 57).

[2] Hayek saw the economy as something that was always functioning in the state sufficiently close to the static state of balance, so that the prices at that moment consist all information necessary for showing the direction to the producers in order to optimally decide on how to divide the resources. It turns out that Hayek doesn't put accent on the necessity of the rational division of resources in the dynamic process of the judgement of the producers, that functions in the conditions of uncertainty that assume prediction of the future market data and analysis of the future prices.

However, if we ask a question what are the things that are necessary for reaching balance concerning the knowledge of the economic agents, then the state of balance gets the character of the empirically ungrounded construction. Therefore Hayek concluded that the market has to be perceived as a process (Palermo 2002, 62), and that the market systems rarely lead to the balanced state on the level of full employment. The monetary policy that is executed with the aim if improving the economic performances, as a matter of fact only makes the situation worse, causing the growth of inflation.

When we perceive Hayek's work in a broader context, the attitude toward him as a theoretician of the static balance becomes questioned. In his later work Hayek gave a lot of attention to the importance of the dynamic conceptions, so that he enriched the thesis about the efficiency of the market on the basis of using the existing knowledge with the idea of creating the new knowledge (although he ignored the importance of the new technological knowledge) (Witt 2011, 1). Hayek's followers pointed out that the 'old' Hayek understood how much the innovations, discoveries and the process of learning were important for the functioning of the social order, which gives as a right to see him as a theoretician of the dynamic balance.

Speaking of Keynes, he continued the tradition of his father, and opposed the classical tradition out of numerous reasons. He thought that the main methodological problem of the theory of the economic equilibrium was that there was no accordance between the abstract theoretic view of the world, that depicts only the special case of the extreme state of economic equilibrium, on one hand, and of the general state of the real economic system, on the other hand (Шапиро 2008, 122). According to Keynes, the representatives of the classical and the neo-classical school offer a view of the world suitable for people, giving propositions about how the society should function. However, in order to suppose that the society can function in that way in reality we can't pay attention to the real problems. That is why Keynes, as opposed to the opinion of the neo-classical school, strived to offer a different ontological or abstract theoretical picture that would take into account all the difficulties in the research of reality. In that sense he redirected the accent of his research from the problem of the allocation of the limited resources to the problem of determining the scope of production that provides full employment of the factors of production.

Keynes used his analysis of the market that was based on the presumption of reaching balance below the level of the full employment for the theoretical explanation of the necessity of the active state policy. Keynes sees the main contribution to the economic science in the research of the market system as a procedure and technique of discovering, and not as a strictly determined system.

Although Keynes and Hayek perceived the balance as the equality of the factual values, they still had different attitudes when it came to process of equating some of the aggregate variables. According to Hayek, the savings are slowly

transformed into investments, while according to Keynes the investments and savings can be only equated with the help of the stabilisation policy. The market system doesn't represent the automatic mechanism that unmistakably led to reaching balance between investments and saving, because such kind of balanced state is only a special case. That is why, according to Keynes, it is necessary to execute the policy of stabilisation that would give hope in the recovery of economy, which was not approved d by Hayek.

The Understanding of Uncertainty and the Theory of Bounded Rationality

We can say that Hayek belonged to the group of authors who were recognisable in the economic theory because of their understanding of the importance of the informational problems and who put accent on the role of knowledge in the economic process (Hodgson 1980, 258). Starting from the existence of the so called 'spontaneous order' he points out that it was not the result of an invention, but a consequence of the process of evolution in which a lot of information was incorporated, and whose quantity greatly surpasses the extent to which the greatest economic agents are informed. The individuals have their own plans and with the aim of their realisation they get in mutual contact independently one from another, by the means of market. The individual wishes and intentions, therefore, come across the general market process that is more complex than any intentional engineering of its participants, and that as such forms plenty of objective rules of behaviour. The process of exchange through cooperation and competition and the content of the production of goods suddenly incorporate the knowledge from all levels: from the level of the individuals, households and companies and through changes of prices, the rates of interest, rents, incomes, gains, losses etc. In that way, the spontaneous order of the market process surpasses the limits of knowledge of the individual human minds and plans (Mises, Hayek 1997, 12).

Hayek did not explicitly state his attitude in favour of the conception of the bounded rationality, but one of the basic strongholds of his scientific scope was certainly the conception of the limited cognitive capacities. Speaking about the conception of the limited cognitive capacities, it is certainly an introduction into the theory of the bounded rationality. Hayek based the doubts concerning the neo-classical model of complete rationality on the rejection of the presumption of the perfect knowledge. Contrary to proposing the idea of the perfect knowledge, Hayek insisted on the implicit knowledge that had the subjectivist character. The individual according to Hayek has limited cognitive capacities and is not sufficiently informed about the abilities of using its own resources (Шаститко 1999, 46). That is why he warned that people should not believe too much in their own knowledge by which he renounced the capability of the state and its clerks to govern the society (Mises, Hayek 1997, 13, 14).

Keynes also saw the oversights of the economic theory in the fact that in many researches the uncertainty that presented the immanent trait of reality was ignored, and in the fact that many economists avoided to analyse the consequences of the limitations of human knowledge (Макашева 2006, 146).

The methodological step forward that Keynes made in comparison to the neo-classical school, similar to Hayek's understanding of the social order, can be seen primarily in pointing out the existence of the unexpected, unintentional consequences of the impact of the economic subjects. Although the idea about the existence of the unintentional consequences was already present in the thesis of the classicists about 'the invisible hand', in Keynes's case it has its own specific traits. He put accent on the fact than the economic decisions could not be solely influenced by the rational motives of the economic subjects. The behaviour of the individuals was influenced not only by their natural striving to be rational, but also by the psychology, irrational thinking, intuition etc. Methodologically speaking, intuition relies primarily on the capability of the immediate perceiving of facts, without the help of experience. However, since there was a real danger that intuition could to a large extent be a product of fantasies rather than facts, Keynes also connects the notion of uncertainty with the notion of probability (Kregel 1976, 209), which is why he was considered to be one of the founders of the logic of probability in the literature about the methodology of the economic science. It is an epistemological school that analyses the judgement about the events in the case when there are no scientific bases for calculating of probability, or in the conditions of the existence of the real uncertainty.

The economic uncertainty means that the economic mechanism, in every moment, 'suffers the influence of various factors that have their meeting points and that are connected with the different ways of seeing the future.' Keynes started from the fact that the actual reality was under the influence of the past, but that the role of the future expectations and prognoses shouldn't be neglected. The special means that connect the present and the future according to him was money that was not only the means of exchange and paying. It was the factor that was 'warming' or 'crushing' the hope of people in the world full of uncertainty. That is where the demand for money comes from, since it is not only the function of the transactional needs, but also the consequence of the demand for money as a means of accumulation and 'the guarantee of hope'.

Formalisation of the Economic Science

The closeness of the scientific views of Keynes and Hayek is probably best seen when we need to objectively perceive, and determine in the versatile manner, the relation between the natural and social sciences. Both of them point out that the economic science was not similar to the natural sciences, criticising the scientism, or the uncritical application of the methods of natural sciences in those areas where they are not suitable. Hayek made a clear description of the method of practice as

opposed to the methodology of the natural sciences and he put accent on the empirical nature of axioms of practice in a broader sense (Golubović 2011, 53). The key difference is in the fact that in the natural sciences the process of deduction has to start from some hypotheses that are the result of the inductive generalisation, while in the social sciences it starts directly from the well-known empirical elements and uses them with the aim of discovering the regularities in the complex occurrences, that cannot be discovered by observation (Hayek 1935, 11).

Hayek and Keynes can be classified among the theoreticians that were not benevolently observing the growing process of formalisation in the economic science, while they were very sceptic toward the econometrics. Keynes's economic understanding was strongly influenced by the representatives of the so called 'logical positivism', whose programme of research consisted of the application of the means of the mathematic logic on the theoretical cognitive problem, which often had as a consequence the changes of orientation of the attention from the object to the form and language. However, Keynes stated his doubts in the possibility of the economic science to be exact by its definition, and in the possibility that the units of measure often used by economists could be completely precise. Although the aim of his analyses was determining of the functional dependence (the function of spending, the function of demand for money, the function of investment) or the causative - consequential relations, he was still suspicious about the possibility of getting the exact results. The problem was not whether something could be calculated, but in the fact that it was hard to be uninfluenced by the subjective feelings, which is why the economic theory necessarily has the subjectivist character. The decisions of people, if they have the influence on what is going to happen on the personal, political and economic plan, can not be relied on the rigid, mathematically based presumptions. The stereotypes, conventions and expectations, and not the optimised calculations determine the decisions of the individuals, which from these reasons do not undergo the precise quantitative analysis (Розманский 2007, 28). For example, having the same mathematical parameters, one entrepreneur can get a good result, and the other bad, one government can function efficiently but not the other. Therefore, it turns out that any kind of mathematic determining of the economic occurrences could only diminish the importance of the entrepreneurship, that is, one has to admit, at the very centre of the economic life.

The problem of mathematics in the economic research (Woods 2008, 220) was that it among other things connects those values that in the dynamics of time cannot always be connected and be considered synchronised.[3] According to him

[3] The opposing to the economic formalisation was probably the main reason why the Austrian school from the situation in which it was seen to be among the variants of the dominant neo-classical economy, it won its independence in the 1930s and became the economic theoretic approach that is very different from the neoclassical mainstreamism.

the nature of the economic life could not be understood through introducing plenty of information into the mathematical formulas and equations. As he said, the insight into the real structure of the human relations can only be lost in them; the static values can only teach us about the past and do not give us an excuse to suppose that these relations could stay constant, so that we do not come to the successful predictions of the individual events (Hajek 2001, 136).

Both of them believed in the importance of ideas, giving up the explanations of the economic events on the basis of the technological changes and the influence of the interested groups (Скидельски 2006, 50). They believed that the Western civilisation was rather 'rigid', which to some extent shook their belief in the possibility of the successful evolution of such system. In the end, they equally estimated the fundamental issues of the political philosophy and the personal freedom, although they proposed various methods of creating the free society, which as we could see made impact on their economic attitudes.

Conclusion

The diversity of the economic thought such as seen nowadays necessarily raises question of the relations of the most influencing economic theoretic attitudes, as well as the most famous theoreticians. Having in mind that Hayek and Keynes belonged to the corpus of the economists who among others indebted the economic science, the aim of this work is determining, clarification and deeper understanding of the differences, similarities and eventual connections of their scientific research programmes. Keynes gave a remarkable contribution to the economic theory, having in mind that he provided firm methodological basis for his theoretical concepts, formalising the logical and intellectual conclusions. Hayek, on the other hand, rejected the need for existence of macro economy and the whole of macro economic policy. However, he was superior when it came to the economic and political philosophy. The quality of his work from this area can be explained by the lack of need to elaborate the formal mathematical models. Hayek was very consistent in advocating his uncompromising liberal attitudes, pointing out the importance of the radical conclusions. Keynes was not so rigid in advocating his views, cultivating a certain dose of complying, ideological tolerance and elasticity. That is why, although there were contradictions among these authors concerning the role of the state in economy, the issues of short and long terms, the importance of establishing institutions and the stabile rules of behaviour considerable attention should be paid to those attitudes that can be characterised as similar and close. In that sense it is very useful to identify what is mutual for Keynes and Hayek when it comes to understanding the role of uncertainty in the economic life, the economic equilibrium, rationality, as well as the increasingly noticeable trend of formalising the economic science.

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DOPRINOS HAJEKA I KEJNZA RAZVOJU TEORIJSKO-METODOLOŠKOG PLURALIZMA U EKONOMSKOJ NAUCI

Rezime: Pojavom Kejnza i Hajeka ekonomska nauka počela je da menja principe svog razvitka od monizma ka pluralizmu. Njihove ideje postale su izvor novih koncepcija, što je dobra osnova za pojavu mnogobrojnih teorijsko-metodoloških varijacija i tumačenja. Pomak ka metodološkoj heterodoksiji praćen je značajnim razlikama među ovim autorima, ali i brojnim sličnostima. Stoga je cilj ovog rada da rasvetli odnos i pronikne u razlike i eventualnu povezanost naučnoistraživačkih programa Kejnza i Hajeka. U vezi s tim biće učinjen pokušaj ka određivanju teorijskih osnova i koncepcijskih sadržaja na osnovu kojih možemo sagledati u kojoj su meri dela ovih autora alternativa neoklasičnoj ekonomskoj teoriji, kao i inspiracija daljem razvoju ekonomske teorije i metodologije.

Ključne reči: metodološki pluralizam, privredna ravnoteža, neizvesnost, ograničena racionalnost, formalizacija ekonomske nauke

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FOREIGN ECONOMIC ACTIVITIES OF UKRAINE: CASE OF SMALL BUSINESSES

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Abstract: *Currently, international economic relations are under severe transformations related to new economic challenges of the XXI century. Critical role is played by the processes of globalization and the formation of post-industrial society. The technical base of production is rapidly improving. The optimization of branch and territorial structures of national economies are in the process. Among these changes are happening and the process of intensive development of small business: expanding its sphere of operation and a range of functions performed by them. Small business is a sector of the economy, which alone or in conjunction with large firms and state-owned organizations participates directly in shaping and promoting positive social and economic processes, largely determine the shape and trends in developed countries for coming decades.The aim of the research is to study the current state and problems of foreign economic activity of small business in Ukraine in the context of globalization, as well as determining the prospects of its development, involving into account international experience and national identity management.*

Keywords: *foreign economic activity, small business, globalization, world economy*

Introduction

Currently, international economic relations are under severe transformations related to new economic challenges of the 21st century. Critical role is played by the processes of globalization and the formation of post-industrial society. The technical base of production is rapidly improving. The optimization of branch and territorial structures of national economies are in the process. Among these changes are happening and the process of intensive development of small business: expanding its sphere of operation and a range of functions performed by them. Small business is a sector of the economy, which alone or in conjunction

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with large firms and state-owned organizations participates directly in shaping and promoting positive social and economic processes, largely determining the shape and trends in developed countries for coming decades.

Rationale

The aim of the research is to study the current state and problems of foreign economic activity of small business in Ukraine in the context of globalization, as well as determining the prospects of its development, involving into account international experience and national identity management.

Theoretical and methodological basis of the thesis consists of modern economic theory of the internationalization of enterprises, scientific works of domestic and foreign scientists on this problem. The basic method of research is the systematic approach. Methods of synthesis, comparative, economic and statistical analysis, sociological research are used in the research. Database of research data is an international and national statistics, Ukraine's legislation. In the paper data from periodicals, scientific publications and materials of conferences is used.

In world practice, there are the following basic forms of stimulation of small businesses:

- direct funding (grants, loans), which reach 50% of the cost of creating of the new products and technologies (France, USA).
- provision of loans, without interest payment (Sweden).
- subsidies (in almost all developed countries).
- establishment of fund innovations taking into account the possible risks (UK, Germany, France, Switzerland, the Netherlands).
- reduced state fees for individual inventors (Austria, Germany, USA).
- prolong the payment of fees or exemption from them, if the invention relates to energy saving (Austria).
- free record keeping at the request of individual inventors, patent attorneys free services, exemption from payment of fees (the Netherlands, Germany).

However, there are significant differences in the European (continental) and the Anglo-Saxon (American) model of small business development. If the French state supports small businesses providing guarantees up to 65% of loans, in the U.S. prefer to provide assistance to most innovative enterprises. In particular, the federal government finances 35% R&D expenditure of SMBs in the form of tax incentives and through government contracts. At the state level and local governments operate programs that support innovative SMBs to the specific needs of the territory. In addition, the state finances through a business venture created with the participation of the state in the small business investment companies (SBICs) that have a tax and financial incentives and government guarantees for

credits (up to 75%), provided to small firms. According to experts, the share of small and medium-sized firms account for 20 - 30% of all new products, while their share in the cost of innovation is only 4-5% (Makogon, 2009).

The global economic crisis at the end of the first decade of the XXI century found expression in a wide range of socio-economic phenomena. The small business sector was the most difficult situation, due mainly to a sharp and deep decrease in demand and deteriorating credit conditions. In different countries the decline in sales of small businesses varies considerably depending on the economic development and integration of these countries in foreign trade. During the crisis, many European countries have adopted measures to support small businesses, to help it to survive through difficult times:

- The provision of soft loans, the use of leasing, franchising, subcontracting.
- Provide (for low or free) advisory services and scientific and technical information.
- Develop and implement a "strategic development plans," taking into account the specific socio-economic characteristics of the region: economic development, specialization in industrial and agricultural production, historical, cultural and ethnic features of the territory.
- Helping the unemployed to build their own business.
- Creation of fair competition in tax minimization.

Shrinkage of the consumer market and a decline in sales, along with a decrease in liquidity of the enterprises and very grim prospects for the future, have a depressing effect on the small business sector. And, as mentioned above, the position of small business is largely exacerbated by the deterioration of terms of access to short-term and long-term lending. Polls are showed that among entrepreneurs waiting for further reductions in business activity will lead to further deterioration of the small business sector in 2011. This is due to the following key factors:

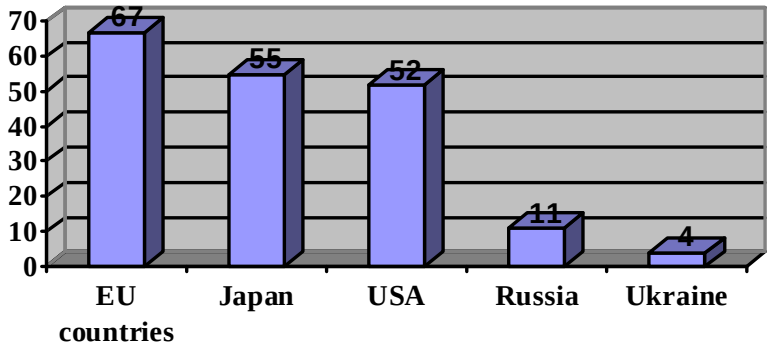
- increasing of the number of deferred payments, leading to steadily increasing shortage of working capital and, consequently, reduce the liquidity,
- increasing the number of outstanding commitments (non-payment, failure of delivery dates, etc.), leads to an increase in the number of bankruptcies and an overall reduction in business in the SMB sector,
- lack of financial resources and the growing unmet need in the credits.

Confronting the worsening conditions of access to credit, small business sector enterprises are seeking alternative ways of financing, such as the mobilization of its own reserves for self-financing, reduction of investment and innovation projects, and even their termination. The bulk of small businesses can be very effective use of financial resources, but access is difficult, especially in the context of the global crisis, and it is a major obstacle to the creation of new small

business units, to their survival and further development. Particularly active in seeking additional sources for a comprehensive resource providing small businesses are often involved in the implementation of investment and innovation projects. This is due to the realization that after the crisis, the results of investment in production modernization and innovation projects will be an important means of achieving economic success in a globalized economy based on knowledge of the latest scientific and technological achievements.

Despite progress in recent years, positive results, Ukraine lags behind the developed countries, where, as a rule, the majority of the working population is employed in small businesses, and the contribution of small businesses in the country's GDP is at least 60% (in Ukraine - 4%).

Figure 1 The Share of Small Enterprises in Ukraine's GDP,% (Yankovskiy, 2010 and State Statistical Service, 2011)



It should be noted that the advantage of developed countries, which is fixed by globalization, is that a high percentage of GDP, provided by small and medium-sized businesses, is balanced by the purchasing power of consumers, who are employees of a large business. In Ukraine, displaced from their jobs, many employees of industrial, scientific, educational and other systems solve the problem of existence by emigrating abroad. Today, a growing number of experts have come to believe that the rate of deindustrialization of the country (or the decay rate of non-competitive industries) is too much higher than the birth rate of production in small and medium-sized businesses, which can lead to increased social tension in society and the loss of entire segments of the Ukrainian industry. In this regard, the development of small and medium-sized businesses need to be considered in the context of the overall development of industrial policy in Ukraine. In other words, it is necessary to equalize the rate of elimination of consequences of hyper-industrialization and the creation of new jobs in small and medium businesses.

Also, large national differences, particularly on indicators of foreign economic activity. According to the OECD, in developed countries, about a quarter

of small industrial companies get 10-40% of revenues from international operations. Their exports account for 25-35% of world exports of goods and the export orientation of the SMBs of developed countries continues to grow, outpacing export growth of the largest companies in the 2-2.2%. In West SMBs proportion of products sold abroad, ranging from 20 to 47% (in Ukraine - 3.5%), and engineering industries of Japan and the United States this share is equal to 30 and 40%. As many SMBs work under subcontracts, their indirect participation in foreign operations is much higher, most are for Japan. For example, only the export of goods, the share of small companies in the U.S. accounts for about 20% of the total volume of commodity products sold by American business in the global market. In countries such as the Netherlands, Belgium, Germany, Japan, it reaches in some years 35-40%. Many SMBs of Japan, France and other countries from 20 to 50% of their output are exported (Makogon, 2011).

Foreign-economic activity of Ukraine is attracting increasing attention. And it is natural, because Ukraine is one of the first places in the world in terms of the ratio of foreign trade to GDP. Foreign trade turnover of Ukraine is almost equal to its GDP, and this means that a weighty share of Ukrainian business is connected with foreign trade operations. However, Ukraine created conditions for the functioning of small businesses, such as the export of their products is less profitable than sales of products in the domestic market. In terms of economic interests of Ukraine, the active participation of small enterprises in foreign trade and other forms of foreign economic relations can be a source of increasing foreign exchange earnings, to address a number of economic problems. The presence on the world market will allow them to implement to improve the production of modern technology, engage in various forms of business cooperation with foreign firms to attract foreign capital. In 2009 only 10% of small and medium-sized enterprises 20% of Ukraine's export operations carried out. The share of large firms exporting their products and services to more than 50% [4].

Table 1 Experts Estimate of the Proportion of Small Businesses Participating in the Export of Ukrainian Enterprises of Goods and Services for 2005-2010 (Makogon, 2011)

Indicators	2005	2006	2007	2008	2009	2010
Share of small enterprises in total sales	6,60	5,30	5,50	4,76	4,39	4,48
Share of small enterprises in the total number of enterprises	85,7	85,6	85,7	85,3	85,1	84,2
Exports of goods and services	27,31	37,97	40,36	45,87	58,36	78,70
Exports of small businesses	1545,0	1722,8	1902,5	1861,6	2180,2	2968,6
Share of small enterprises in total exports	5,66	4,54	4,71	4,06	3,74	3,77

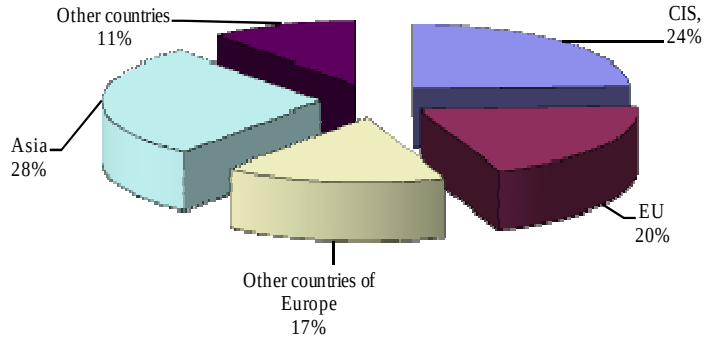
Based on the analysis of literary sources, the entrepreneurs survey results of Chamber of Commerce and Industry of Ukraine can say that of all forms of internationalization of the business environment of Ukraine the most typical are:

- Export-import transactions (household goods, consumer goods);
- Contract and cooperative partnership, in particular, licensing agreements and franchising;
- Services (consulting, buying real estate, travel);
- Attraction of foreign direct investment.

Other forms of internationalization of the business - first of all establishing of their own offices abroad - are absent.

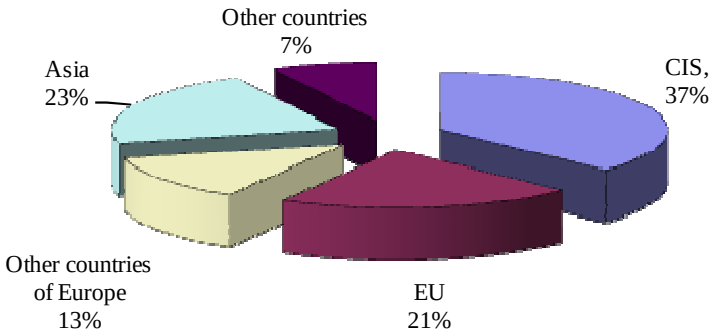
Thus, based on expert judgment, we can say that the geography of Ukraine's SMBs export in 2010 is distributed as follows: CIS (24.4%), EU (19.7%), other European countries (16.6 %), Asia (28.2%).

Figure 2 Exports of Small Enterprises in Ukraine in 2010,%



Source: State Statistical Service, 2011

Figure 3 Imports of Small Enterprises in Ukraine in 2010,%



Source: State Statistical Service, 2011

Import of small businesses is on the same geographical areas as exports, but is distributed as follows: CIS (37%), EU (21%), other European countries (13%), Asia (22%).

In the commodity structure of exports of small businesses, agricultural products and food industry are about 10%. A large proportion of both their imports and exports is the share of light industry: clothing, footwear. If in the whole structure of Ukrainian exports are the main items - pig iron, rolled metal, pipes, chemical fertilizers, the small businesses in the sector of foreign trade plays only the role of intermediaries, or commercial structures created for large industrial plants.

An important condition for the development of international cooperation of small businesses is a good level of awareness of the potential partnership. Local entrepreneurs are poorly informed about the prospects that they can be implemented with the help of various international organizations.

Conclusions

In the framework of the existing traditional approach to the essence of the world economy as its main subjects are the transnational corporations. However, the globalization of small businesses in the context of its participation in the innovation process, due to the accumulation of human capital makes it possible to regard the place of small businesses in the world economy as a full participant in global economic processes, along with traditional subjects and place it in the innovative model of global economic development. The process of globalization and technological change, determine innovation as a development vector of the world economy, which in practice is realized in the framework of national economic development that leads to the objective of diversification of small businesses in the area of innovation, adopted to their foreign trade activities: development of postindustrial areas – trade in services, research activities, international franchise, international leasing, attracting foreign capital in joint ventures, etc. There is an urgent need to develop adequate trends of globalization and internationalization of small business tools, the selection of priority species and forms of foreign trade for the innovative nature of small businesses that can be used in the administrative structures of a particular region to implement procedures for the formation of regional development programs for small businesses in the area of foreign economic activity.

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SPOLJNO-EKONOMSKE AKTIVNOSTI UKRAJINE: SLUČAJ MALE PRIVREDE

Rezime: Trenutno, međunarodni ekonomski odnosi su pod jakim transformacijama u vezi sa novim ekonomskim izazovima 21. veka. Kritičnu ulogu imaju procesi globalizacije i formiranje postindustrijskog društva. Tehnička baza proizvodnje se ubrzano poboljšava. Optimizacija granskih i teritorijalnih struktura nacionalne ekonomije je u procesu. Pored ovih promena dešavaju se i procesi intenzivnog razvoja male privrede: proširivanje sfere operativnosti i opsega intenzivnog razvoja funkcija koje vrše. Mala privreda je sektor ekonomije koji sam ili u vezi sa velikim firmama i državnim organizacijama učestvuje direktno u formiranju i promociji pozitivnih društvenih i ekonomskih procesa, uveliko odlučivajući oblik i trendove u razvijenim zemljama za decenije koje dolaze.Cilj istraživanja je ispitivanje trenutnog stanja i problema stranih ekonomskih aktivnosti male privrede u Ukrajini u kontekstu globalizacije kao i utvrđivanje perspektive njenog razvoja uzimajući u obzir međunarodno iskustvo i menadžment nacionalnog identiteta.

Ključne reči: spoljne ekonomske aktivnosti, mala privreda, globalizacija, svetska ekonomija

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KNOWLEDGE AND INNOVATION AS ESSENTIAL FACTORS OF SOCIO-ECONOMIC DEVELOPMENT OF THE COUNTRY: A STATISTICAL AND ECONOMETRIC MODEL

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Nenad Janković*

***Abstract**: Contemporary business enviroment has contributed to the growing importance of investment in knowledge, technology and innovation. Increase of the general level of education has contributed that a paradigm job for life is replaced by a new, lifelong learning, where education is considered the only viable resource of competitive advantage in the long run. Investing in knowledge should be in causal relation with other factors such as investment in research and development, application of research results, innovation, development and application of new technologies. This is the reason why innovation is considered to be the core strategy for Europe 2020, which should lead to the creation of some kind of "Innovation Union". The last revision of the ISO family of standards shows that the sustainable success of the organization can only be achieved by effective and efficient quality management system, managing the effects of environment factors,learning process and improvement and innovation applying. Applying this standard is achieved by continuously improving organization performance, as well as customer and other interested parties satisfaction exceeding. The aim of this paper is to specify the statistical and econometric model which has to show the factors of economic growth and countries development level.On the basis of established database and specified model, the shape, type and direction of functional agreement between the dependent variable were defined - GDP per capita and selected independent variables and hypotheses were tested using regression models.*

***Keywords**: knowledge, innovation, economic development, statistical and econometric model*

Introduction

Constant and dynamic changes in economic, technological and social-political circumstances have emphasised the importance of investments in

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knowledge, technology and innovations. Nowadays, technological development requires more than mere compliance to market forces and comparative advantages, and for this reason, research and development, and educational system have become key factors to meeting these objectives. An innovation system, in terms of a group of institutions and their interactions aimed at generating new knowledge and applying the existing knowledge, has become a part and parcel of any contemporary economy. It can be observed that there is a trend of rising levels of education, with a 'job for life" paradigm being replaced by a „lifelong learning" paradigm. Informal education has been given a considerable attention alongside the formal education. Simply put, learning and improving have become inevitable in all aspects of one's life, while at the same time, dynamic and turbulent working conditions are no longer to be taken for a threat, but for an opportunity to succeed and make progress in the period that is yet to come. It is no longer sufficient to possess natural resources, technology, or finances because education is now perceived as the only sustainable long-term resource with a competitive advantage. Naturally, education has to maintain a certain cause-and-effect relationship with other factors, such as investment in research and development, application of research results, innovations, development and application of new technologies (Veselinović, Stanišić and Janković 2011, 153-154).

The European Union, as one of the world leading economies follows the trends mentioned above in an effort to create a knowledge-based society. In the times of limited state budgets, factors such as climate changes, energy and resource restrictions, considerable demographic changes (in terms of health issues and aging of population), and increased global competition (which are only some of the growing problems) emphasise the importance of efficient and adequate knowledge and innovation management, with the state gaining an important role in making legal frameworks for adequate macroeconomic environment where knowledge and innovations will be fostered. With this on mind, it becomes obvious why innovations gain importance within Europe 2020 Strategy which is supposed to result in a sort of "Innovation Union". The biggest challenge for the European Union and its member states is to raise the approach to innovations to a higher, strategic level where innovations will be formulated within comprehensive mid-term and long-term goals. All instruments, measures and finances should be created in such manner that they contribute to innovations. National and regional policies should be harmonized and, at the same time, they should spur each other's development, while highest political levels should establish strategic plans, monitor progress and remove shortcomings. Naturally, the creation of such union should contribute to meeting a number of economic objectives.

High technology products, based on knowledge and modern achievements have become a pre-requisite for a long-term economic development, while, at the same time, harmonization of economic and export structures poses a condition to successful competition on a common, open market (Jovetić, Stanišić 2009a, 1). Inadequate export structures of underdeveloped countries (they export goods at a

lower procession stages) have become, to a large extent, a limiting factor to development of their economic structure. Investments made in education, research and development, and encouragement to innovations may be factors to enhance such structures, which may, in return, generate a positive effect to the overall competitiveness. If they fail to do so, underdeveloped countries will remain a place where work requiring lower skills, lower costs and cheaper labour is relocated.

The purpose of this paper is to specify an adequate statitical and econometric model. The resulting model will enable meeting other general objectives: generating a platform for successful decision making and management in the field of scientific-technological development based on scientifically-grounded information; a comparative analysis offering comparison both to countries with high-technological development and to the development of neighbouring countries; positioning and anticipating social-economic and scientific-technological development of Serbia; forming a statistical data base which will enable generation of scientifically-grounded information. The model also provides for meeting specific objectives: analysing and establishing GDP movement tendencies, and the rate of its growth (depending on the variable in the model), and all indicators of scientific-technological development (regardless of the variable in the model) in the long-run; determining the type, shape, and direction of agreement between GDP, economic growth, and all indicators of scientific-technological development; establishing statistical significance of the model and the influence exerted by certain indicators; defining the policy of scientific-research-development (SRD) policy, and defining concrete measures of scientific-technological-development policy for meeting specific objectives and the adopted policy; testing various hypotheses which would assist in adopting appropriate managerial measures at all levels of SRD with the purpose of making valid business decisions. The selected optimal statistical and econometric models may allow for making suggestions and carrying out realistic, both optimistic and pessimistic variety of future economic development in the function of it being the indicator of scientific-technological development.

2. Defining Variables in the Model

Contemporary circumstances within which business operations are carried out have emphasised not only the role of one's own knowledge, but even more the importance of making use of somebody else's knowledge to the benefit of one's own economic growth and development. It is considered to be of considerable help to know how to adequately collect, utilize and transfer somebody else's experiences. In this context, problems can be observed from two perspectives: (1) from the micro level – where research is carried out so as to define variables affecting innovations made by companies, and (2) from the macro level – where research is carried out so as to define variables affecting scientific-research-development (SRD) potential of a country and its economic growth and development.

(1) The principal instigator of development within any economy is an individual, a firm, i.e. a micro level. For this reason, it is important to monitor and measure innovation activities of firms by identifying factors which affect them (in a positive or a negative way). At issue here is the main characteristic of innovation activities – it is a continuous process, which means it is more difficult to measure and to be placed within certain boundaries. However, certain models and analytical frameworks for observing innovations emerged in 1980s and 1990s. OECD and Eurostat recognized the significance of the issue and by a joint effort they created the Oslo Manual (1992), which is but one in a "Frascati family" of manuals, covering innovation measurement and micro level technologies.

Research conducted on the basis of the first draft of the Manual, particularly the Community Innovation Survey (CIS), commissioned by the European Commission, shows that it is feasible to develop a system and collect data even for such complex processes as are innovation processes. Over time, the observation framework expanded resulting in the third edition of the Manual in 2005, which, apart from building upon a great quantity of data and upon experience from earlier research, expands into several important directions (Oslo Manual, Guidelines For Collecting And Interpreting Innovation Data 2005, 11):

- there is an emphasis on the role that linking to other firms and institutions plays in the process of innovation;
- there is a recognized importance of innovations taking place within industries which are less dependent on the functions of research and development;
- innovation definition is expanded so as to include two additional types of innovation – organizational and marketing innovations, and
- the manual contains the annex on research on innovation carried out in the countries which are not members of OECD and shows that there is a growing number of such countries which conduct research on innovations.

The most important objective of the Manual is to provide guidelines for collection and interpretation of data related to innovations so that their influence on economic growth can be better understood. "Innovation refers to the application of a new or significantly modified product (refers both to goods or services), or a process, new marketing method, or a new organizational method to a business practice, work place organization or external relations"(Oslo Manual, Guidelines For Collecting And Interpreting Innovation Data 2005, 46), where innovation can refer to any of the following three concepts – new to the firm, new to the market, and new to the world. In the third edition of the Manual the minimum requirement for innovation is that it has to be new (or significantly improved) to the firm. Harmonization of research methods with the help of the Manual should contribute to comparison at both national and international levels by using adequate resulting indicators.

ISO Standard family emerged as a response to a changed business environment. For this reason, general requirements of ISO 9000 family of

standards include an obligation on the part of the company to establish, document, maintain, and apply quality management system (QMS), and to continually improve its efficiency and efficacy. It has become obligatory for an enterprise to do the following: identify processes necessary for functioning of QMS and to apply them throughout the company, to determine the order and interactions among these processes, to ensure resources necessary for support to the system/processes, to measure and analyse their performance and to apply measures necessary for carrying out planned results and to enhance characteristics of the system/processes/products and staff.

Over time, ISO Standard family has developed and expanded to incorporate 3 standards now: ISO 9000 Dictionary, ISO 9001 Quality Management System, and ISO 9004 Management for the sustained success of an organization. The following principles of ISO Standards family can be identified: leadership; internal user orientation, end user orientation, and stakeholder orientation; inclusion of staff; systemic approach to management; mutually useful relations with suppliers; fact-based decision making; constant improvement, and process approach. The evolution of standards witnesses that it is not sufficient to introduce a standard and make success, but it is necessary to provide conditions for their continuous long-term implementation, as well as to continuously improve the system/processes/products/ staff competences. The term **sustainable success of an organization** refers to ability of an organization to achieve and sustain its long-term goals. Key segments related to it are as follows: **effective and efficient quality management system, managing external factors and learning, and implementation of improvements and innovations** (SRPS ISO 9004, 6).

Given the importance that is given to the issue of innovation, we will outline Article 9 of the ISO 9004:2008 Standard, titled as: Improvement, innovations, and learning. There is a sub-article 9.3 within it which is dedicated to innovations. It maintains that changes in the environment may require that an organization should adopt innovations in order to respond to the needs of stakeholders. Because of that an organization should: identify innovation needs, establish and maintain effective and efficient innovation process and provide the required resources related to that. The following factors affect establishing, maintaining and managing innovation processes: urgency of innovation needs, innovation goals and their influence on products, processes, and organization structure, determination of a company to introduce innovations, determination of people to respond to challenges and change the current state of affairs, and the availability or emergence of new technologies. At the same time, it is necessary to assess risks that may accompany planned innovations, as it is necessary to take preventive measures to mitigate such risks and be prepared for any emergences that may occur in such circumstances (SRPS ISO 9004, 23-24).

(2) There is another point of view with regards to the macro level. Lack of adequate institutional and legal solutions may prove to be adverse to any positive effects that may occur at the micro level. The state should play a key role in providing a fruitful macroeconomic environment. However, apart from considerable influence and importance of R&D, development and commercialization of new technologies is concentrated within a small number of countries. For this reason, over 1960s and 1970s, the USA and Switzerland, had a larger rate of international patents per capita than all other countries in the world.

The concept of National Innovation Capacity (NIC), created by individual states, is deserving for creating an adequate macroeconomic environment. The research conducted so far has been based on three theories (Jovetić, Stanišić 2009b, 91): the Romer Model of Economic Growth, based on ideas as driving force of development, The Porter Model of National Industrial Competitive Advantage, and Nelson's research on National Innovation Systems. It is very important to determine which factors influence the generation of NIC. A general assumption is that there are many factors, but they differ depending on the theory which is applied (Jovetić, Janković 2011, 145). The choice of variables for specifying statistical an econometric models (as is the case with our paper) is conditioned by the availability of data.

An attempt to create the „Innovation Union" within the EU is perceived as a sign that there is a vision, agenda, precise distribution of tasks that need to be fulfilled and a monitoring procedure aimed at accomplishing competitive advantage of member states. For this reason, *Directorate General Enterprise and Industry* started the initiative known as *PRO INNO Europe* within the European Commission, with the purpose of the initiative's becoming a centre of analysis by employing integrated approach in analysing innovation and cooperation policies in Europe. It comprises two main parts: Policy analysis and Policy cooperation. Policy analysis encompasses innovation performance benchmarking, analysis of leading innovation trends, and collaboration in the world of knowledge including contacts related to innovation policy and business innovations, facilitation of dialogue between state bodies, industry, and academic institutions with regards to innovation policy. Policy cooperation includes stimulating transnational cooperation in the area of innovation policy and giving stimulus to joint actions aimed at introducing innovations (http://www.proinno-europe.eu/overview).

Innovation performance benchmarking, as a constituent of Policy analysis, consists of two instruments: Innovation Union Scoreboard - IUS (once known as European Innovation Scoreboard (EIS)) and Innobarometer. IUS is aimed at comparing innovation performances of member states, annually, on the basis of various sources, above all on the basis of data provided by Community Innovation Survey. Innobarometer completes results provided by IUS, by analysing specific aspects of innovations through research based on a random sample of 3,500 enterprises operating within the EU (http://www.proinno-europe.eu/metrics).

IUS 2011 is a second edition, based on IUS of 2010 and on previous versions of EIS. It is a tool which is supposed to help with monitoring the progress made in reaching the objective of Innovation Union, formulated within Europe 2020 Strategy, which provides for comparative assessments of innovation performance among member states, indicating relative strengths and weaknesses of their research and innovation systems. The IUS 2011distingusihes between 3 main types of indicators and 8 innovation dimensions which are described by the total of 25 different indicators. The principal types of indicators are as follows: **enablers** which are driving force of innovation performance outside a company, a **company's activities** encompassing innovation efforts at the level of a company, and **outputs** referring to the effects of a company's innovation activities.

The overview of innovation systems characteristics within member states is enabled by the General innovation index representing a composite index which results from an appropriate aggregation of 25 individual indicators. The minimum value of the index is 0, whereas the maximum possible value is 1. Apart from the General index, the IUS is used to calculate the change of innovation performance of member states and the entire EU, based on five-year period data. The best results are marked by the countries which have adequately balanced research and innovation systems, accompanied by exemplary cooperation between public and private sectors, as well as by scientific institutions cooperating with enterprises and knowledge commercialization. On the other hand, countries lagging in innovations are characterised by disharmonized research and innovation systems.

3. Statistical and Econometric Model

Statistical and econometric model has been made for 4 successive years, namely for 2006, 2007, 2008, and 2009. One dependent and more independent variables have been defined, and following the testing of rejected hypotheses of the regression model and their removal from the model, regression models have been established for each year respectively (R1, R2, R3, and R4) based on structural data. A comparative analysis of the statistics resulting from individual models followed, as did the testing of hypotheses related to statistical significance of regression models, statistical significance of individual variables, and hypotheses related to population parameter equality. A comparative analysis such as the one described here may enable users to select variables and models which result in more accurate forecast, and it can be used more reliably for introducing measures related to macroeconomic and business policy, as well as for making macroeconomic business decisions.

3.1. Model Description

The objectives of the specified statistical and econometric model are as follows:

To determine the shape, type, and direction of functional agreement between the dependent variable – GDP per capita (Y) and independent variables:

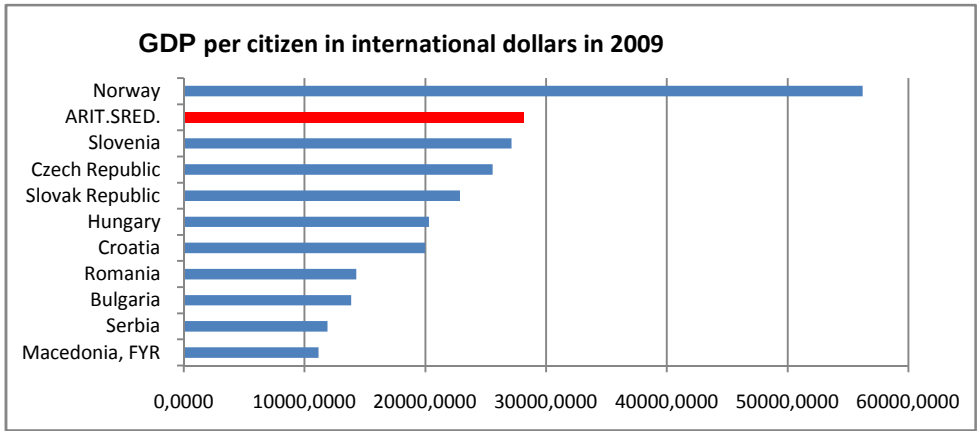
- Number of researchers per million inhabitants (X_1),
- Public expenditure on education – its share in GDP (X_2),
- R&D Investments – their share in GDP (X_3) and
- the Share of high technology products in the exports (X_4) and
- the Number of registered patents (total) (X_5).

Hypotheses are tested in regression models. Zero hypotheses are:

- Multidimensional hyperflat surfaces of functional dependability are statistically significant.
- The influence of certain independent variables is highly statistically significant.
- There is no problem of multicollinearity between independent variables.
- There is no problem of autocorrelation among data.
- There is no problem of heteroscedasticity
- There is an effect lag (one or two years long) of independent to dependent variables.
- There is an asymmetric effect of rise and fall of investments in R&D.

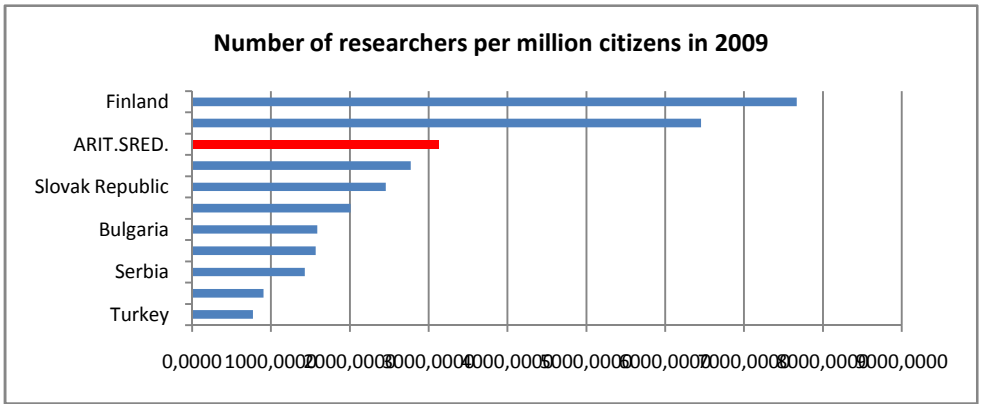
Structural data for 32 European countries have been used. Data are related to the period between 2004 and 2009, and they were found in statistical data bases of the World Bank and UNESCO. Differences in the observed variables are illustrated in Figures 1 to 6. The displayed values are: the highest values of the observed variables, the arithmetic mean, the values for Serbia and neighbouring countries, and data for the countries with the lowest values in 2009.

Figure 1



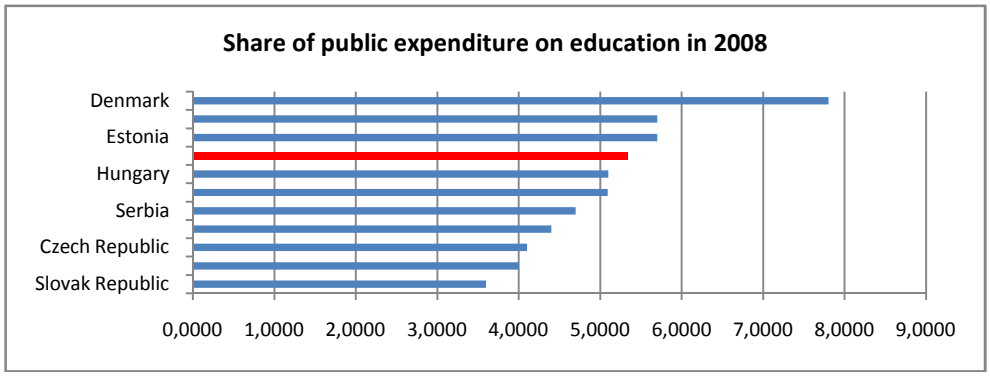
Stan.dev. (s) = 11200,114

Figure 2



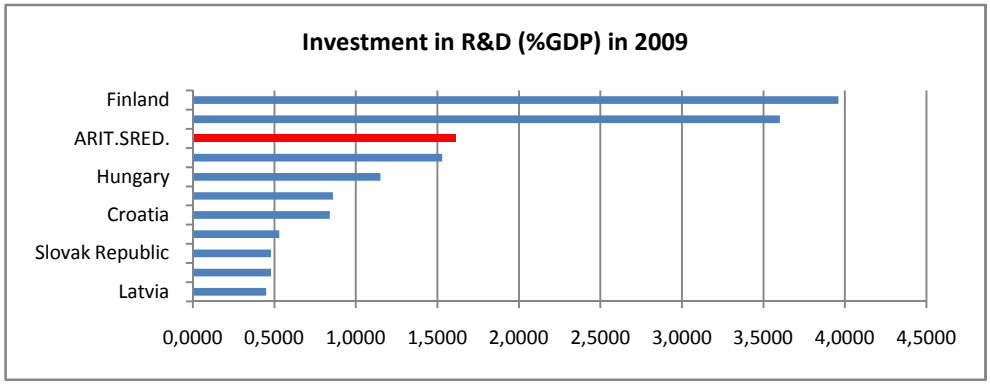
Stan.dev. (s) = 1666,254

Figure 3



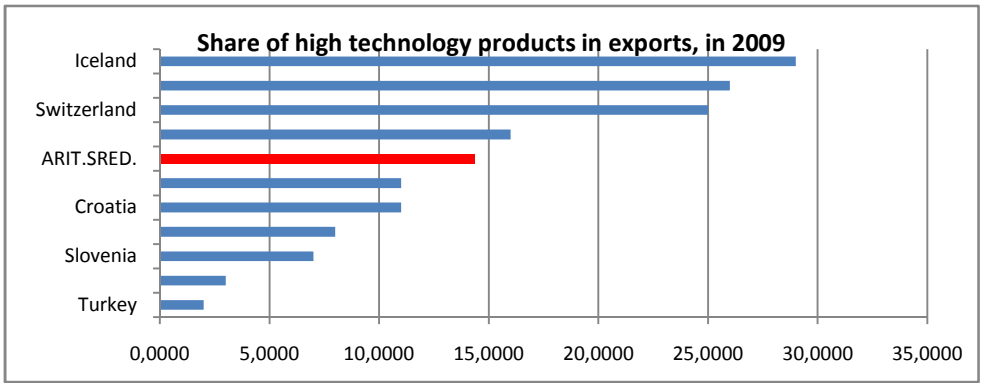
Stan.dev. (s) = 1,0173%

Figure 4



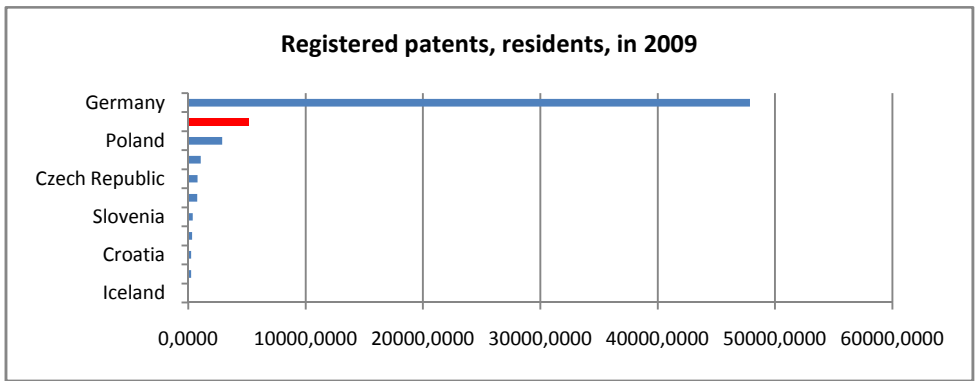
Stan.dev. (s) = 0,9379%

Figure 5



Stan.dev. (s) = 7,6798%

Figure 6



Stan.dev. (s) = 10435,4147

Source: World development Indicators, World Bank 2008, 2009 and UNESCO 2009

In this paper we have applied a statistical and econometric analysis. In the first step we test two-dimensional linear and non-linear models in order to determine the shape of the influence that selected independent variables exert on the dependent variable. The following models were experimented with: linear, log-log, lin-log, log-lin, and square. Lin-log model was found to be acceptable only in the case of two-dimensional specification model of the influence exerted by the number of patents (Jovetić 2007, 478-489). In the case of testing the problem of heteroscedasticity the above mentioned two-dimensional models were used.

Stepwise regression was used to specify multidimensional regression model. It is based on comparative analysis and the measurement of the optimal relationship and the influence of independent variables on the dependent variable, by using the *F-test.* At every step, variables are selected on the basis of their having the highest influence on the dependent variable. In the final step, all variables

within the model must have the value of *F* statistics above the lower critical value *F (3,90)* and all variables outside the model must have the value below the critical value *(3,90)* (Jovetić 1996, 84-88). The following multidimensional hyper-planes were experimented with: multiple regression model, multiple log-log model, multiple lin-log model, and multiple log-lin model (Jovetić 2007, 515-542).

The problem of multicollinearity is tested in the second step. The assumption of the model is that independent variables are mutually independent. However, this assumption is seldom proved to be true. It is more often the case that there is a functional relationship among independent variables. The problem is caused by the relationship among pieces of information within the sample and it causes imprecise assessment of variance and standard deviations. The assessed parameters may display the opposite sign of effect than the one recognized by the economic theory, due to the presence of bias mentioned above. Multicollinearity is tested by utilizing inverted correlation matrix whose diagonal elements are known as variance inflation factor (VIF), i.e. $VIF = 1/(1-R_k^2)$,where R_k^2 stands for a multiple determination coefficient of *k* independent variable to all other independent variables. Snee suggests that the strictest criteria should be applied in determining multicollinearity, i.e. that it exists if $VIF \geq 5$ (Jovetić 1996, 90). An ideal situation occurs when VIF takes the value of about one (1). However, one of the methods used to override multicollinearity is stepwise regression.

In the third step, we test the problem of heteroscedasticity. It is assumed that accidental errors of the model have constant and final variance $\sigma^2_{\varepsilon i} = \sigma^2$. If the assumption is verified, it can be said that accidental errors are homoscedastic. Otherwise, accidental errors are heteroscedastic. As a consequence of heteroscedasticity, assessments are not efficient, confidence intervals, and tests based on variance assessment are not reliable. In this paper we use Glaser's test for discovering heteroscedasticity (Mladenović, Petrović 2003, 172). Absolute values of residuals are regressed in relation to each independent variable respectively. All curves mentioned above have been experimented with. The *T*-test and *F*-test were then used to test the hypothesis related to the choice of dependability. The selected model of dependability and the calculated values of residual are used for transformation of all variables within the model. In the selected model of dependability, the generalized least squares model is applied to the transformed variables (Johnston 1998, 211).

In the fourth step, we test the problem of autocorrelation. It is assumed that accidental errors are not correlated, $cov(\varepsilon_i, \varepsilon_j)=0$. The existence of the first-grade autocorrelation does not affect bias and consistency of the assessed parameters of regression, but it does affect the efficiency of grades. To test the zero hypothesis stating that autocorrelation does not exist we utilized the Durbin-Watson Test (Johnston 1998, 211).

In the fifth step we test the asymmetric influence of the independent variable, because it is assumed that it may have such effect (Mladenović, Petrović 2003, 146). For this purpose, we introduce an artificial variable X_5, i.e..

$X_5 = 1$, *za* $X_i \leq X_{i-1}$ *i*

$X_5 = 0$, *za* $X_i > X_{i-1}$.

Testing the hypothesis related to asymmetric effect refers to testing the hypothesis stating that there is a statistical significance of parameters accompanying the artificial variable.

Since it is assumed that there is a one- or two-year lag effect, a multiple classic regression model was applied in the following circumstances:

- Where dependent variable refers to GDP per capita in 2006, and independent variables date back in 2004, 2005, and 2006 (Jovetić 2007, 539).
- Where dependent variable refers to GDP per capita in 2007, and independent variables date back in 2005, 2006, and 2007.
- Where dependent variable refers to GDP per capita in 2008, and independent variables date back in 2005, 2006, and 2007.
- Where dependent variable refers to GDP per capita in 2009, and independent variables date back in 2006, 2007, and 2008.

Finally, since there are four regression models specified, we tested hypotheses related to equality of parameters in population. Statistical analysis of data was performed by using the statistical software SPSS (Statistical Package for the Social Science for Windows, version 15.0) and Microsoft Excel. We used different tests in processing data (t-test, z-test, Durbin-Watson test, Glejser test, etc.) as required by statistical rules and procedures. To determine statistical significance we used the following confidence levels $\alpha=0,01$ *u* $\alpha=0,05$.

3.2.Research Results

3.2.1. Regression Model for 2006

In the first step all curves mentioned above were experimented with. In the year of 2006, a multiple logarithm regression model (log-log) was selected because of the highest values of grades of determination coefficient ($R^2 = 0,716$) and *Snedecor's F* statistics ($F = 25,261$, $p=0,000$). Since $F > F_{2;22;0.05} = 3,4434$ and since $p=0,0000$, H_1 is approved, which means that the regression curve is statistically significant. In this model, only two independent variables – Investments in R&D (X_3 - % share in GDP) and the Share of high technology products in the exports (X_4) have statistical significance in relation to the dependent variable, or in other words, *Student's t-statistics* is higher than the theoretical value $t_{v;\alpha/2}$ *i p* equals zero.

Testing multicollinearity In the model where GDP per capita in 2006 is the dependent variable, *VIF=1,653.* Since VIF is close to one, it is concluded that there is no multicollinearity among the selected independent variables in the model.

Testing heteroscedasticity: It has been established that there is heteroscedasticity in the data from 2006, or in other words, that there is a functional relationship between the absolute value of residual $|e|$ and independent variable of the Investments in R&D (X_3 -% share in GDP) and the absolute value of residual $|e|$ and the Share of high technology products in exports, i.e.

$|e| = f(X_3)$ *– shape of dependability:line, F = 27,915;*

$|e| = f(X_4)$ *– shape of dependability:line, F = 14,723.*

All variables are transformed by being divided by modelled absolute value of the residual. Generalized least squares model was applied here. All the multidimensional regression models mentioned above were experimented with. The lin-lin model applies best to all empirical data after heteroskedasticity has been removed.

Testing first-order autocorrelation: Darbin-Watson's *d* statistics was applied. Since d_{06}*= 1.53,* it is deduced that there is neither positive ($d>d_g>d_d$) nor negative first-order autocorrelation ($d_{06}<4-d_g<4-d_d$) in 2006.

The asymmetric influence of the independent variable Investments in R&D was tested. The artificial variable X_5 was introduced to the model.

$X_5 = 1$*, for R&D share in GDP at the level of average*

$X_5 = 0$*, for R&D share in GDPbelow the average.*

Student's t-statistics is lower than $t_{v;\alpha/2}$ *i* $p > 0,05$, so H_0 is approved, which means that there is no statistically significant effect of the Investments in R&D.

The 2006 Model is: $\hat{y}_i^* = 57336,1 + 8861x_{3i}^*$. In Table 1 there are figures related to statistics of two-dimensional linear regression model for the year of 2006.

Table 1 R1 Regression Model Statistics

Parameters	*Standard deviation grade*	*t-stat.*	*Parameters*	*Grades*
β_0	*9302,153*	*6,164*	ρ^2	*0,904*
β_3	*616,877*	*14,364*	ρ'^2	*0,899*
F-stat.	*206,338*		*DW*	*1,530*
VIF	*1*			

The following conclusions confirming the hypotheses can be drawn from what is stated above:

The selected multidimensional model is statistically highly significant because:

F_{06}= *206,338*> $F_{v1;v2}$ i *p=0,000.*

In the linear regression model, only the Investments in R&D variable (their share in GDP *(X_3)*) remained in the model, which means that this is the only variable which exerts a statistically significant influence on *GDP (t_3=14,364, p=0,000).* Determination coefficient shows that *90,4%* of variation in a dependent variable explained by the use of the linear functionand the transformed X_3^* variable. Since there are no variables from the years of 2004 and 2005 left in the model, it can be concluded that independent variables do not exert a lag effect on the dependent variable. VIF takes the value of one (1), so it can be concluded that there is no problem of multicollinearity in the model.

Regression model provides for calculating elasticity coefficient showing that if the Investments in R&D (share in GDP *(X_3))* changes by *1%,* independent variable takes the average value, ($\bar{x}_3 = 1,409032\%$), and then GDP per capita changes by 0,1788%.

3.2.2. Regression Model for 2007

For the year 2007, a double logarithm (log-log) two-dimensional regression model was selected, because of the highest grades of determination coefficient (R^2 = *0,67*) and *Snedecor's* F_{07} statistics (F_{07} *=40,591, p=0,000).* Since $F_{07} > F_{2;22;0.05}$ = *3,4434* and since *p=0,0000,* H_1 is approved, which means that the selected regression model is statistically significant.The independent variable the Investments in R&D (X_3 -% the share in GDP) has a statistically significant effect on the dependent variable in the model, or in other words, *Student's t-statistics* is higher than $t_{v;\alpha/2}$ *i p* equals zero.

In the second step we tested multicollinearity. In the model where the dependent variable is GDP per capita in 2007, *VIF=1*. Since VIF equals 1, it can be concluded that there is multicollinearity between the independent variables selected for the model.

The problem of heteroscedasticity was then tested. It was ascertained that there is no problem of heteroscedasticity among data, or in other words, that there is no functional relationship between the absolute value of the residual and the independent variable the Investments in R&D (X_3 -% share GDP), i.e.:

$|e| = f(X_3)$.

The **2007 Model** is log-log.

$\hat{y}_i^* = 4{,}376 + 0{,}543x_{3i}^*$, where $\hat{y}_i^*$ stands for dependent variable logarithm,and x_{3i}^* stands for independent variable logarithm X_3.

Table 2 R2 Regression Model Statistics

Parameters	*Standard dev. grade*	*t-stat.*	*Parameters*	*Grades*
β_0	*4,376*	*174,791*	ρ^2	*0,670*
β_3	*0,543*	*6,371*	ρ'^2	*0,653*
F-stat.	*40,591*		*DW*	*1,530*
VIF	*1*			

Hypotheses:

- The following alternative hypothesis is approved- the selected two-dimensional regression model is statistically highly significant because Snedecor's F_{07} statistics $40{,}591 > F_{v1;v2;\alpha,}$.i $p=0{,}0000$.
- Determination coefficient shows that *67%* of the dependent variable is explained by the selection of two-dimensional regression model and transformed X_3^* independent variable.
- Population parameter grades are at the same time elasticity coefficients in the stepwise function, or log-log model, and for this reason the following conclusion can be drawn: if the share of Investments in R&D changes by 1%, GDP per capita will change by 0,543% .
- There is no lag effect of the independent variables.

Although the assumption that there is an asymmetric effect of the Investments in R&D was not confirmed by introducing the artificial variable to the model, two different regression models were applied:

1. Countries whose Investments in GDP are larger than the average
2. Countries whose Investments in GDP are smaller than the average

However, the regression models which were selected, were not statistically significant (all econometric problems whose presence can lead to this conclusion were tested and removed), which confirmed the assumption that the sample is homogenous.

3.2.3. Regression Model for 2008

In the first step all the regression curves mentioned above were experimented with. A logarithm (log-log) multiple regression model was chosen for the year 2008, because of the highest grades of determination coefficient (R^2 =

0,749) and *Snedecor's F* statistics (*F =37,281, p=0,000).* Since *p=0,0000, H_1* is approved, which means that the selected regression model is statistically significant. The independent variables the Investments in R&D (X_3 -% share in GDP) and the Share of high technology products in exports have statistically significant effects on the dependent variable in the model, or in other words, *Student's t-statistics* are higher than $t_{v;\alpha/2}$ *i p* equals zero. The independent variables do not exert a lag effect on the dependent variable.

Testing multicollinearity In the model where GDP per capita in 2008 is the dependent variable, *VIF=3,048.* Since VIF is less than 5, it is concluded that there is no multicollinearity among the selected independent variables in the model.

Testing heteroscedasticity: It has been established that there is no heteroscedasticity in the data of 2008, because *p_1=0,150 i p_3=0,348* higher than *α=0,05* (zero hypothesis is confirmed).

Testing first-order autocorrelation: Darbin-Watson's *d* statistics was applied. Since *d_{08}= 1,497* it is deduced that the test for positive autocorrelation is undetermined ($d_g > d > d_d$), and that there is no first-order negative autocorrelation ($d_{06} < 4-d_g < 4-d_d$) in 2008. Since the test for the positive autocorrelation turns out to be undetermined the procedure for removing autocorrelation was followed. All independent and dependent variables were transformed in the following way:

$$Y_t^* = Y_t - \hat{\rho}Y_{t-1}, \quad X_{1t}^* = X_{1t} - \hat{\rho}X_{1,t-1}, \quad X_{3t}^* = X_{3t} - \hat{\rho}X_{3,t-1}, \text{where} \quad \hat{\rho}$$

stands for the grade of autocorrelation coefficient. Since there is autocorrelation it can be deduced that there is a functional relationship between residuals which means that $e_t = \hat{\rho}e_{t-1} + v_t$. The following equation is used to calculate $\hat{\rho} = \frac{\sum_{t=2}^{T} e_t e_{t-1}}{\sum_{t=2}^{T} e_{t-1}^2}$.

The following model was obtained after autocorrelation has been removed **The 2008 Model is:** $\hat{y}_i^* = 2,7578+0,2242x_{1i}^* + 0,3755x_{3i}^*$. In Table 3 there are figures related to statistics of three-dimensional regression model for the year of 2008.

Table 3. R3 Regression model statistics

Parameters	*Standard dev. grade*	*t-stat.*	*Parameters*	*Grades*
β_0	*2,7578*	*9,1543*	ρ^2	*0,7932*
β_1	*0,2242*	*1,899*		
β_3	*0,3755*	*3,1983*	ρ'^2	*0,899*
F-stat.	*49,8647*		*DW*	*2,023*
VIF	*1*			

We tested the asymmetric influence of independent variables: the Number of researchers per million people (X_1) and Investments in R&D – share in GDP (X_3). Artificial variables X_5 and X_6, are introduced to the model, i.e.

X_5 =1, for the number of researchers at the average level,

X_5 =0, for the number of researchers below average level,

X_6 =1, for share of R&D in GDP at the average level, and

X_6 =0, for share of R&D in GDP below the average level,

Student's t-statistics is lower than $t_{v;\alpha/2}$ *i* $p > 0,05$, so H_0 is approved, which means that there is no statistically significant asymmetric effect of the Investments in R&D.

The following can be concluded from what is stated above, confirming hypotheses:

The selected multidimensional model is statistically highly significant because $F_{08} = 49,8647 > F_{v1;v2}$ i p=0,000, and it is better than the model which was previously applied to data from 2008, because Snedecor's F statistics is higher in the latter model.

The following variables remained in the three-dimensional regression model: the Number of researchers per million people and Investments in R&D – share in GDP (X_3) in 2008. Only the Investments in R&D – share in GDP (X_3) displays a statistically significant influence ($t_3=14,364$, $p=0,000$). The Number of researchers variable does not exert a statistically significant influence. However, when it leaves the model, determination coefficient decreases. This indicates that there is some other independent variable exerting influence over this variable, and for this reason X_1 remains in the model.

Determination coefficient shows that *79,32%* of variation to the dependent variable can be explained by the selection of multidimensional regression model and transformed variables X_1^* i X_3^*. Since there are no variables left over from 2006 and 2007, it can be deduced that there is no lag effect of independent variables on the dependent variable. VIF equals one, and it can be concluded that there is no problem of multicollinearity in the model.

3.2.4. Regression Model for 2009

A double logarithm (log-log) multiple regression model was chosen for the year 2009, because of the highest grades of determination coefficient ($R^2 = 0,748$) and *Snedecor's* F_{09} statistics ($F_{09} = 29,758$). Since $F_{09} > F_{2;22;0.05} = 3,4434$ and since $p=0,0000$, H_1 is approved, which means that the selected regression hyper-plane is statistically significant. The independent variables the Investments in R&D (X_3 -% share in GDP) and the Share of high technology products in exports (X_4) have statistically significant effects on the dependent variable in the model, or in other words, *Student's t-statistics* are higher than $t_{v;\alpha/2}$ *i p* equals zero.

In the second step we tested multicollinearity. In the model where the dependent variable is GDP per capita in 2009, *VIF=1,22*. Since VIF is close to 1, it is concluded that there is no multicollinearity among the selected independent variables in the model.

Heteroscedasticity test followed. It was ascertained that there is no heteroscedasticity problem in the data, or in other words that there is no functional relationship between the absolute value of residual and the independent variable Investments in R&D (X_3 – share in GDP) and the absolute value of residual $|e|$ and the share of high technology products in the exports, i.e.

$|e| = f(X_3)$

$|e| = f(X_4)$.

The asymmetric influence of the independent variables the Investments in R&D and the Share of high technology products in the exports were tested. Artificial variables X_5 and X_6, were introduced to the model, i.e.

$X_5 = 1$, for the share of R&D in GDP at the average level,

$X_5 = 0$, for the share of R&D in GDP below the average level, and

$X_6 = 1$, *for* the share of high technology products in the exports(X_4) at the average level, and

$X_6 = 0$, *for* the share of high technology products in the exports(X_4) below the average level.

Student's t-statistics is lower than $t_{v;\alpha/2}$ *i* $p > 0,05$, so H_0 is approved, which means that there is no statistically significant asymmetric effect of the Investments in R&D. This confirms the assumption that the sample is homogenous, i.e. that the statistical population is homogenous.

The model is **log-log for the year 2009**:

$\hat{y}_i^* = 4,131 + 0,4679x_{3i}^* + 0,203x_{4i}^*$. In Table 4 there are figures related to statistics of three-dimensional regression model for the year of 2009.

Table 4. R4 Regression model statistics

Parameters	*Population parameter grade*	*t-stat.*	*Sig.*	*Parameters*	*Grades*
β_0	*4,131*	*48,201*	*0,0000*	ρ^2	*0,748*
β_1	*0,4679*	*5,587*	*0,0000*	ρ'^2	*0,723*
β_2	*0,203*	*2,443*	*0,024*	*DW*	*1,314*
F	*29,758*		*0,0000*		

The following conclusions can be drawn on the basis of Table 4 in support to the set hypotheses:

- The alternative hypothesis is approved – the selected multidimensional regression model is statistically highly significant because Snedecor's F_{09} statistics 29,758 > $F_{v1;v2;\alpha,}$ and $p=0,0000$.
- Determination coefficient indicates that *74,8%* of the variation of the dependent variable explained by the selection of multidimensional hyper-flat surface and transformed independent variables X_3^* and X_4^*.
- In the case of the step function, or log-log model, parameter population grades are, at the same time, elasticity coefficients, so the following conclusions can be drawn. If the share in R&D changes by 1%, GDP per capita will change by 0,467%. If the share of high technology products in the exports (X_4) changes by 1%, GDP per capita will change by 0,203%.

3.2.5. Comparative Analysis of the Results Obtained through Regression R1, R2, R3 and R4

The following conclusions can be drawn after the comparative analysis of regression data – R1 containing variables from 2006, R2 containing variables from 2007, R3 containing variables from 2008, and R4 containing variables from 2009 – has been performed:

- By analysing the shape of dependability it can be deduced that the shape changes year by year, i.e. In the years 2006 and 2008, it takes a shape of a straight line, whereas in the years 2007 and 2009, it takes the shape of a log-log model. It can also be noted that there is a case of two-dimensional regression in the years 2006 and 2007, whereas it takes the shape of three-dimensional regression in the years 2008 and 2009.
- All four regressions are statistically significant ($F_{06}=206,338$, $F_{07}=40,591$, $F_{08}=49,8647$ and $F_{09}=29,758$).
- No regression shows evidence of lag effect of the variables, and it can be added that there is no asymmetric effect by independent variables after stepwise regression has been applied.
- The X_3 variable – the share of R&D in GDP exerts statistically significant influence on the dependent variable; the variable of the Number of researchers per million people (X_1) in 2008 exerts statistically significant influence on the dependent variable; the variable of the Share of high-technology products in the exports (X_4) in 2009 is statistically significant. Public expenditure on education – the share in GDP, and the number of registered patents (X_5) proved to be statistically insignificant for all years.
- There is no problem of multicollinearity in the regressions.
- There is no problem of heteroscedasticity in the regressions. It existed in 2006 data but it was removed.

- There is neither positive nor negative first-order autocorrelation. A test to discover positive autocorrelation was administered for 2008 data, following which the positive autocorrelation was removed over the first iteration.
- Statistical population is homogenous.
- Given that X_3 variable – the Share of R&D in GDP exerts influence on the dependent variable and since the shape of the influence in 2007 and 2009 is a logarithm a hypothesis on population parameter equality can be tested.

Zero hypothesis H_0 suggests that the value of parameter β_3 indicates no significant statistical difference from parameters β_{30}, i.e. $\beta_3 = \beta_{30}$; $\beta_{30} = 0,5$.

Alternative hypothesis $H_0 : \beta_3 \neq \beta_{30}$, suggests that the value of parameter β_3 indicates that it is significantly different from the hypothetical value of parameter β_{30}.

The test is a two-way test. The probability of the test's significance level is α =0,05, and the critical value of the test is $t_{(v,\alpha/2)}$.

The test statistics is $t = \frac{b_3 - \beta_{30}}{s_{b_3}}$.

The acceptance zone for zero hypothesis is $|t| \leq t_{(v,\alpha/2)}$ and $p>0,05$.

The rejection zone for zero hypothesis and accepting the alternative is H_1 equals $|t| \succ t_{(v,\alpha/2)}$ i $p \leq 0,05$.

The 2007 test statistics, in this scase, is: $t = \frac{b_3 - \beta_{30}}{s_{b_3}} = \frac{0,543 - 0,5}{0,085} = 0,5059.$

The 2009 test statistics is: $t = \frac{b_3 - \beta_{30}}{s_{b_3}} = \frac{0,467 - 0,5}{0,084} = -0,3928.$

Since $|t_{07}| i |t_{09}| \prec t_{(v,\alpha/2)}$ and $p_{07}, p_{09} > 0,05$, zero hypothesis is approved in both cases, which can be interpreted, based on the samples from 2007 and 2009, that population parameter with variable X_3 *equals 0,5* or population parameters from 2007 and 2009 with variable *X3* do not indicate a significant statistical difference.

4. Conclusion

The variables included in the model we present in this paper, are only some of the possible alternatives. However, theoretical and practical perspectives and research in this issue suggest that in further analysis and specification of statistical and econometric models some other variables should be included as well. Here are some possibilities:

a. Absorption capacity variables: the number of people employed in natural and technical sciences, the number of people employed in medium and high technology-intensive industries, the number of people employed in high technology intensive services, etc.

b. R&D ability variables: expenses related to scientific research and R&D by business sector in terms of percentage of the share in GDP; the number of patents registered in highly technological fields. Justification for this claim can be found in the fact that determination coefficients indicate the following: the R2 regression does not incorporate 33% of independent influence, R3 does not incorporate 20.7% of the influence, and R4 does not incorporate 25,2% of the influence.

In this paper, there are four different models resulting in entirely different models in terms of variables in included in the model as well as in terms of shapes of dependability. The only variable which can be claimed to be statistically significant is the one referring to the Share of R&D in GDP, which means that this is the only variable the conclusions related to which can be used for making statistical deductions. Namely, if this variable changes by 1% (in terms of both its increase and decrease), GDP (per capita) will decrease by 0.5%. In the case of Serbia, in 2009, such decrease means spending about 59,465 international dollars per inhabitant at average, which totals to $43,5331,788.255 (In 2009, there were 7,320,807 inhabitants in Serbia). Among all the countries observed for the year 2009, it can be concluded that Serbia ($11,893) and Macedonia ($11,159) have the lowest GDP per capita. The following countries have the highest GDP per capita: Norway ($56,214), Switzerland ($45,224), Ireland ($40,697), and Holland ($40,676). The average GDP for the observed countries is $28,169.38. Serbia falls into the category of countries with lowest investments in R&D (0.86% in GDP). Finland and Sweden are on the top of the list, investing 3.96% and 3.6% respectively. If investments in R&D increased by 1% it would equal to 1.86% in GDP, and only then would Serbia reach the average level of investments that the 32 countries within the EU make. In this case, GDP in Serbia would be equal to $11,952.465, and this figure as well as that of Macedonia would still be at the lowest place in comparison to the 32 countries we observe here.

Further specification of the regression model will include another procedure, i.e. the first step will include a factor analysis. The second step will include specifying a regression model with factors being used as independent

variables. The results obtained in this way will be used for testing hypotheses and for making a comparative analysis with the specified regression models *R1, R2, R3,* and *R4.* This is of particular importance for measuring the influence of the lag effect exerted by independent variables.

Further analyses and specifications of this model will include all other years (2006, 2007, and 2008). It should be pointed out that there are published data for the year 2010, and both models (the classical regression model, and the model where factors are used as independent variable) will be specified so as to include the 2010 data, as well. Specifying the latter and testing hypotheses related to equality of population parameters would allow for selecting a regression model which creators of economic and business policies could use for managing development at both micro- and macro-levels. Following an adequate quality analysis, this model could also be used for economic and business decision making, planning, control, and management.

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ZNANJE I INOVATIVNOST KAO FAKTOR DRUŠTVENO-EKONOMSKOG RAZVOJA ZEMLJE: STATISTIČKO-EKONOMETRIJSKI MODEL

Rezime: Savremeni uslovi poslovanja su uticali na porast značaja ulaganja u znanje, tehnologiju i inovativnost. Porast opšteg nivoa obrazovanja je doprineo da paradigma „posao za ceo život" bude zamenjena novom, „učenje tokom celog života", pri čemu se obrazovanje smatra jedinim održivim resursom konkurentske prednosti u dugom roku. Ulaganje u znanje treba da bude u uzročno-posledičnoj vezi sa ostalim faktorima kao što su ulaganje u istraživanje i razvoj, primena rezultata istraživanja, inovacije i razvoj i primena novih tehnologija. Zbog toga inovacija predstavlja srž strategije Evropa 2020, što treba da dovede do stvaranja neke vrste „Inovacione unije". Poslednja revizija familije ISO standarda pokazuje da se održivi uspeh organizacije postiže **efektivnim i efikasnim sistemom menadžmenta kvalitetom, upravljanjem faktorima dejstva iz okruženja, učenjem i primenom poboljšanja i inovacija.** Primenom ovog standarda postiže se stalno unapređenje performansi organizacije i stalno poboljšanje i prevazilaženje zadovoljenja korisnika i ostalih zainteresovanih strana. Cilj rada je specificiranje statističko-ekonometrijskog modela koji treba da pokaže od kojih faktora zavisi ekonomski rast i stepen razvijenosti zemalja. Na osnovu formirane baze podataka i specificiranog modela utvrđen je oblik, tip i smer funkcionalnog slaganja između zavisno promenljive – bruto domaćeg proizvoda po stanovniku i izabranih nezavisnih promenljivih i testirane su hipoteze pomoću regresionih modela.

Ključne reči: znanje, inovativnost, ekonomski razvoj, statističko-ekonometrijski model

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DEPOSIT INSURANCE AS EX ANTE AND EX POST ANTI-CRISIS MECHANISM IN BANKING

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Abstract: *Due to the importance of deposits in bank operations and their vulnerability to crisis conditions, deposit insurance is being promoted over the past decades as one of the pillars of modern government-established financial safety network. Creation and implementation of an effective insurance scheme is a difficult task because the excessive bank protection may encourage banks to riskier behavior and destabilize the system that it should protect. The challenge for the designers of these systems is to ensure the protection of depositors without excessive undermining of market discipline. The global financial crisis has highlighted the importance of deposit insurance as an anti-crisis mechanism. By raising the threshold of insurance, the authorities have managed to protect depositors. This helped in the prevention of panic and highlighted the strength of the influence of deposit insurance on the public trust. Experiences have emphasized the importance of a proactive approach to the prevention of future financial crises. Efficient and stable national schemes of explicit deposit insurance are critical for global financial stability. This results in the necessity of their reform, together with achieving a higher rate of legal harmonization at the global level.*

Key words: *deposit insurance, financial stability, moral hazard, banking panic*

Introduction

A significant segment of the sources of the assets of banks are deposits, and within them demand deposits, which are particularly sensitive in unstable business conditions. Banking operations are based on partial coverage of deposits by reserves, meaning that a bank cannot simultaneously satisfy the requirements for payment of all its depositors. A sudden withdrawal of deposits is not only the

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problem of individual banks that have run into difficulties but, because of the domino effect, it can easily be extended to the entire banking system. In a situation where there are problems in the banking sector, depositors who do not have full information about the banks' operations suspect their impending insolvency, so they shall withdraw their funds, even in the absence of initial deterioration in their balance sheets. Depositors will besiege both bad and good banks, so the failure of one bank can contribute to the collapse of others. Bank runs can be avoided or moderated by the introduction of deposit insurance in banks. In the absence of deposit insurance, bank failure implies that depositors shall wait until the bank is liquidated (until its assets are converted into cash) to retrieve their deposits. Deposit insurance is a guarantee for depositors on the basis of which they are disbursed their deposits to some extent, no matter what may happen with the bank. Because of the psychological impact it has upon depositors, the existence of such protection reduces the pressure on the banks to withdraw deposits in critical conditions. Thus, the existence of a deposit insurance system contributes to maintaining the stability of the financial system.

However, the protection that deposit insurance provides to depositors encourages their risky behavior and indirectly the risky behavior of banks, as well. If moral hazard, inspired in this way, assumes major proportions, this may lead to instability in the banking sector. This negative consequence of deposit insurance should be borne in mind when regulating a specific deposit insurance system. A great variety of deposit insurance schemes in the world stems precisely from trying to reduce its disadvantages by different legal and technical solutions.

1. Functions of the Deposit Insurance Institution

The purpose of deposit insurance can be considered in a broad and a narrow sense. In the narrow sense, deposit insurance is aimed to provide *protection to depositors* in the form of compensation of deposits in case of the bank failure. The need to protect depositors in this way can be explained by the fact that not all depositors have sufficient knowledge and capabilities to independently assess risks of individual banks. This is especially true for small depositors who are less informed and are therefore in a worse position if the bank falls into trouble. In the payoffs of deposits, the rule "first come - first served" applies and, as bigger depositors are better informed, they will be the first to withdraw their deposits. Incorrect assessment of the bank risk could result in a loss of deposits of a large number of depositors. The existence of deposit insurance actually protects a wide range of smaller depositors.

In a broader sense, the objective of deposit insurance is *to strengthen the financial stability of the banking system*. Deposit insurance reduces the pressure of depositors on the banks in the crisis conditions. Then, a general withdrawal of deposits from banks may occur for fear that the banks could become insolvent (even when there are no objective reasons for it). Moreover, strengthening

confidence in the banking system creates a favorable environment for normal growth of savings. This improves the realization of the basic function of the banking sector as a financial intermediary.

The role of deposit insurance in preventing the run on the banks (bank runs) is explained in the well-known Diamond-Dybvig model (Diamond, Dybvig, 1983). According to this model, the bank run due to the panic of depositors is one of the few rational outcomes of the ratio of supply to demand of deposits. The bank borrows funds in the long term, while depositors can withdraw funds at short notice. The problem of incompatibility of the maturity structure of assets and liabilities increases the likelihood of bank runs. In a system without deposit insurance two situations (balances) may arise: a) the situation in which depositors do not withdraw their deposits because they have confidence in the bank (the "good" balance), b) the situation in which there is a run on the banks ("bad" balance). Douglas Diamond and Philip Dybvig explain the second situation by the effect of *coordination failure among depositors*. Some depositors withdraw their deposits from the bank because they believe others will do the same, which leads the bank to the state of insolvency (although the bank was liquid at the beginning) (Ahec-Šonje, 2002).

From the standpoint of depositors, participation in the general withdrawal of deposits from banks represents a rational behavior. Although the instigator of a chain bank run is a bank with an extremely unfavorable structure of assets and liabilities, it is a self-sustaining process that, in fact, has nothing to do with whether the banks are actually stable or unstable.

The extended Diamond-Dybvig model explains the problem of systemic risk and the spread of "contagion" through the banking system. In this model, it is assumed that any exogenous shock that leads to cash outflows of one or more banks could lead to a destabilization of the whole banking system. Problems in the operations of individual banks may encourage a general panic among depositors, which will cause withdrawal of deposits from all the banks in the system. A direct mutual exposure of banks in the interbank market can lead to an institutional contagion. Quick settlement of interbank claims by a temporarily insolvent bank could lead other banks to a similar situation, thereby destabilizing the banking system. The essence of Diamond-Dybvig model is that the establishment of an appropriate institutional and regulatory framework, where deposit insurance has a particular importance, weakens the effect of coordination failure among depositors and reduces the likelihood of "bank run." (Ahec-Šonje, 2002).

Apart from the mentioned basic functions of deposit insurance (to protect depositors and to prevent run on the banks) another reason can be added to justify its implementation. Deposit insurance *allows the authorities to shut down failed banks more easily* because it is politically more acceptable due to the lower socialization of the costs of such action.

2. Theoretical and Methodological Controversies of the Establishment and Functioning of the Deposit Insurance System

2.1. Review of the Deposit Insurance Institution

Moral hazard, accompanying all kinds of insurance, represents a basic shortcoming of deposit insurance, too. Generally, the very existence of insurance encourages taking of risks that lead to its disbursement. The awareness of the existence of an institution for risk reduction provokes the system to become inclined to assuming a higher degree of risk in the next period. Deposit insurance schemes contribute to maintaining stability of the financial system but can potentially encourage more risky behavior of both banks and depositors and to foster increased moral hazard.

Due to the protection offered by a system of deposit insurance, depositors lack incentives to monitor the operations of banks. Since there is no market discipline imposed by depositors, banks engage in riskier investments in order to achieve higher rates of return. Banks indulge in more risks than would be the case if there were no deposit insurance, and this increases the probability of their bankruptcy. Thus, the deposit insurance system, which is intended to reduce the liquidity risk in banks, can finally increase the likelihood of their insolvency. That is the paradox of the government deposit insurance: an attempt to make banks more stable (by protecting them from "the storming of depositors") can actually weaken them.

The institution of deposit insurance has been exposed to much criticism due to the presence of moral hazard as the side effect of its functioning. Fundamental criticism of the deposit insurance was given by Kevin Dowd. His analysis is based on the comparison of the banking system where there is no government deposit insurance and the banking system with government deposit insurance (Dowd, 1993).

In the first case, if the bank fails depositors lose money. Because of the existence of this risk, depositors are more cautious when deciding on depositing their money. On the other hand, in order to attract deposits to their banks, bank managers need to put more effort to build and maintain the trust of their depositors. It involves more cautious policy of placement, maintaining a proper level of liquidity reserves and keeping an adequate level of capital relative to risk-weighted assets.

Substantially, the financial health of banks is determined by demand: if the public wants to have safe banks, it will get them, but at the same time it will also have to pay for this by accepting relatively low interest rates on deposits and by paying relatively higher interest rates on loans (Dowd, 1993, p. 16).

Market discipline strengthens the financial stability of the banking system in which there is no deposit insurance. When a bank which is doing risky business falls in trouble, there will be a loss of depositors' confidence in its stability.

Outflow of deposits from the "bad" bank may also end up in its bankruptcy. This leads to re-depositing funds in the "good" banks that are financially stronger and more careful in taking risks. In this way, "the run on the concrete bank" is manifested as a "storm into quality" as it acts towards strengthening the market discipline of all banks in the system. The process of competition among banks is oriented towards rewarding "good" and punishing "bad" banks (Ćirović, 2007).

In the banking system in which there is government deposit insurance, depositors know that their deposited money is safe. They become insensitive to the risks assumed by their bank, but their decisions are affected by the interest rate they receive. In such a case, there is a moral hazard in the behavior of banks. Banks may "gamble" with the deposits of citizens - they can invest in riskier placements that bring higher rates of return and increase the interest rates on deposits to attract additional funds for investment (Dowd, 2009). If the risks turn out to be a business success, benefits belong to the banks; otherwise, the government deposit protection schemes assume the payment of deposits.

In a system with government deposit insurance, competition act towards deterioration in the financial stability of the banking system. Riskier banks can offer their depositors higher interest rates and can achieve higher rates of return for their shareholders, so conservative and cautious banks lose in this competition (Dowd, 2009, p. 17). Dowd came to the conclusion that the government deposit insurance is in substantial conflict with the stable and healthy banking system, so it should therefore be abolished (Ćirović, 2007, p. 427).

Demirgüç-Kunt and Huizinga (Demirgüç-Kunt, Huizinga, 2004) considered that the lack of market discipline is an adverse effect of the financial safety net. Market discipline plays an important role in the prevention of excessive risk-taking by banks. It forces them to a behavior by which they will avoid excessive losses and reduce the risk of failure. If the bank takes excessive risk, depositors will demand higher interest rates on deposits or withdraw their money from that bank. However, in the case of the existence of government deposit insurance, the ability of a bank to attract deposits is independent of the risk it has assumed. If there is a correlation of risks in the banking system, this may contribute to financial instability and to the emergence of a financial crisis.

The results of some of the earliest empirical studies went in favor of the criticisms of deposit insurance. A study of banking crises of the early eighties to mid-nineties of the last century established that the existence of explicit deposit insurance tends to increase the likelihood of run on the banks. However, subsequent research has found that poorly designed deposit insurance system in a weak institutional environment, and not the existence of explicit deposit insurance itself, increases the likelihood of banking problems (Demirgüç-Kunt, Kane, 2002).

2.2. The Moral Hazard Control and the Optimal Deposit Insurance System Designing

Numerous economic theories analyze the advantages and disadvantages of deposit insurance and explore how balancing between them can lead to an optimal deposit insurance system. The starting assumption is that the main benefit of deposit insurance is the prevention of bank runs. The theoretical debate is centered on how effectively hypothetical variations of deposit insurance arrangements can reduce the moral hazard of banks.

The risk that banks assume is limited by two mechanisms: regulation and market discipline. *Bank regulation* imposes immediate restrictions on the operations of banks, thus reducing their risky behavior and keeping it within acceptable limits. In the conditions of effective regulation and supervision of banks, deposit insurance would not significantly affect the bank moral hazard. This primarily refers to the regulation of the rate of bank regulatory capital. It is often argued in the literature on capital adequacy that the regulation of capital is necessary to control moral hazard, like the existence of deposit insurance. Deposit insurance encourages banks to take excessive risks because the benefits go to shareholders, while the loss is at the expense of the Deposit Insurance Fund. Such behavior of banks can contribute to the emergence of the financial crises. In this sense, requirements for capital adequacy can be considered, in a way, a means to neutralize taking of the risk resulting from the deposit insurance (Allen, Carleti, 2008, p. 16). In addition, banking regulations, based on which the risky assets are restricted, directly force banks not to engage in excessive risks.

On the other hand, depositors can impose market discipline on banks by withdrawing funds from risky banks or by requiring higher interest rates. Given the potentially negative effects of deposit insurance on market discipline, some authors have suggested the possible solutions to this problem. The issues here are various designs that offer scope for the functioning of market discipline in explicit deposit insurance schemes. Various methods have been proposed to control the moral hazard of banks: linking insurance premiums for the degree of risks, limiting the insured amount, co-insurance, inclusion of private insurance.

Thakor gave considerable analytical arguments for *the implementation of appropriate range of insurance premiums that is consistent with the level of bank risks* (Thakor, 1993). This concept is based on the idea that higher risk taken by deposit insurers should be compensated by a higher premium. This means that banks characterized by risky business should pay higher deposit insurance premiums as compared to safer banks.

However, here the problem arises of the so-called private or asymmetric information relating to the fact that banks have better knowledge of the risk of their portfolios from the state regulatory agency. Consequently, the problem appears that deposit insurers adequately measure the risk assumed by certain banks (Ćirović,

2007). Thakor explains the solution to this problem in the following manner: regulatory institutions offer banks a choice between two different contracts on deposit insurance: a) the first, containing low insurance premiums with a high amount of regulatory capital b) the second, which contains a high insurance premium and a low rate of regulatory capital. Banks that invest in low-risk projects (with a greater likelihood of success) will most likely choose the first type of deposit insurance contract while banks that invest in high-risk projects (with a lower probability of success) shall choose the second contract type. The choice between the offered contracts actually reveals the private banking information, enabling the construction of a premium system in which each bank is burdened with the premium amount that covers the average loss that the banks of this type transfer to the insurance fund (Thakor, 1993).

One of the possible ways to solve the problem of measuring the risk of banks is a regulatory ranking, in which banks are ranked from the safest to the riskiest and the insurance premiums to be paid are determined in accordance with the rank to which they belong. This principle underlies the CAMELS (Capital adequacy, Asset quality, Management quality, Earnings, Liquidity Risk Exposure, Sensitivity to market risk) methodology of insuring deposits in the United States, which is a composite ranking based on the evaluation of various aspects of bank operations whose results are presented with a single grade (depending on the grade obtained, banks are ranked from 1 to 5). The premium amount can be associated with some parameter(s) that reflect the level of risk taken by the bank. The following can be used as parameters: profitability, quality of assets, quality of credit placements, large exposures, and similar.

Edward J. Kane (Kane, 2000) proposes solutions that include the greatest possible involvement of different individuals in the deposit insurance schemes, so that the harmonization of their interests would exert preventive impact on the excessive risk taking by banks. One of the solutions is a *combination of public and private deposit insurance*. The involvement of private deposit insurance should affect the strengthening of market discipline, because these participants are motivated to monitor and limit excessive risk-taking as they are required to bear a portion of the losses themselves. Another method is the *limited amount of deposit insurance* (incomplete coverage) and the third way is that *depositors agree, under a contract, to absorb part of the losses* in the event of their bank failure (co-insurance).

3. Basic Aspects of the Deposit Insurance Scheme Operationalization

Although the purpose of each deposit insurance scheme is the same, there are different legal and technical solutions for their realization in countries around the world.

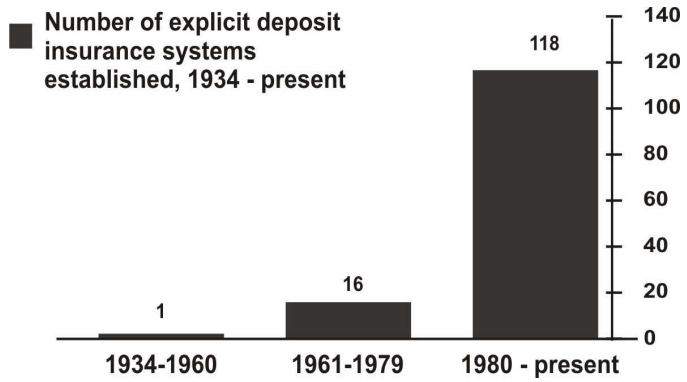
From the standpoint of depositor protection immediacy, there are numerous methods to protect depositors applied by countries all over the world:

fully explicit deposit guarantee, explicit limited deposit coverage, deposit insurance with unlimited coverage, the legal basis of payments instead of deposit insurance, total reliance on market discipline.

In the absence of explicit insurance, deposit security is realized indirectly through strengthening the financial stability of the banking system. The state will provide assistance to the bank so that it can survive the liquidity problem and prevent its failure. However, if the bank fails despite the support provided to its liquidity, there are no guarantees that depositors will be compensated. *Explicit* deposit insurance is a mechanism used by governments to promote the stability of the financial system. Deposit insurance is explicit if it is grounded on a legislative form. In the absence of formal arrangements, it is assumed that the state has implicit deposit insurance (Demirgüç-Kunt, Sobaci, 2001, p. 482).

Explicit deposit insurance was first introduced in the United States in 1934, and then it spread throughout the world especially in the seventies and eighties of the last century, due to the large number of banking crises in many countries in that period (Figure 1).

Figure 1: The Dynamics of the Introduction of Explicit Deposit Insurance Systems over Time



Source: Carns, 2011

Number of countries offering explicit deposit insurance grew rapidly in recent decades. Among the last of them are the Eastern European countries in transition, which were introducing it in an attempt to meet the EU Deposit Insurance Directive. The introduction of explicit deposit insurance has become one of the basic advices that the external experts have been giving countries that are implementing reforms. However, the question is whether this is a good solution if there are weaknesses in the institutional environment (which is actually one of the characteristics of these countries) (Demirgüç-Kunt, Kane, Laeven, 2008).

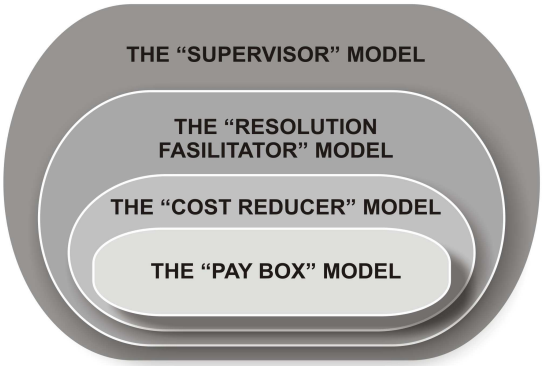
From the perspective of the legal form of deposit insurance systems, there are the *private legal* system and the *public legal* system. In the first case,

banks themselves find their interest in the system establishment and membership is voluntary as a rule (deposit protection is provided solely for the banks participating in the scheme). In the public legal system, which is regulated by law, the membership is, as a rule, compulsory and the state affects its establishment and functioning.

Most of the current deposit insurance schemes are characterized by compulsory membership. By compulsory membership in the deposit insurance scheme, the problem of adverse selection is avoided (which would be especially pronounced in the combination of voluntary membership and a system with undifferentiated premiums). Also, the banks that would remain outside the scheme would be less competitive, given that depositors are extremely sensitive to the existence of institutional protection. (Marinković, 2004)

From the aspect of insurers' powers, there is a great diversity of deposit insurance systems in the world. At one end of the spectrum, there is the American model in which the Federal Deposit Insurance Corporation (FDIC) has a great number of functions: in addition to deposit insurance and disbursement of the insured sum in the event of bank bankruptcy, they also include supervision as well as reorganization of problematic banks. At the other end of the spectrum, there are the so-called "pay-box" models that restrict the powers of insurers to the payment of depositors' claims. In-between are the models that provide the insurer with powers between these two models (Fig. 2). "Cost reducer" model allows the insurer, in specific circumstances, to intervene by taking preventive or corrective measures to preserve deposits and reduce costs and externalities. "Resolution facilitator" models provide proactive support to banks that run into problems (help in their sale, recapitalization and the like). (Bernet, Walter, 2009)

Figure 2: Types of Deposit Insurance Schemes According to the Extent of Insurers' Powers



Source: Bernet, Walter, 2009, 28

According to the method of financing or time to raise funds for compensation to depositors, there are two basic models of deposit insurance: ex-ante and ex-post systems.

Ex ante deposit insurance means that the fund for the payment of insured deposits is established in advance. Funds are raised before the need arises for compensation of depositors by making banks pay deposit insurance premiums.

With the *ex post* model, the fund is not created in advance but resources are collected at the moment when it is necessary to pay the insured deposits. When the need arises to compensate depositors of a bank, the necessary resources are collected from other banks in the established appropriate proportion. Taking into account the stated characteristics of these two models, we can conclude that the first model provides greater security for depositors and for the financial system. The funds raised in advance are available immediately, while avoiding the possibility that compensation of depositors of one bank spreads the crisis to other banks, due to their liquidity shocks, and reducing pressure on the state to reimburse depositors by fiscal resources (Markovinović, 2011). The mixed system combines the characteristics of both systems: one part collected in advance (premium payments) and another part to be collected later if needed.

According to the method of determining premiums, there are the deposit insurance systems with differentiated premiums adjusted to the risk (*risk-adjusted differential premium system*) and the systems with undifferentiated premiums (*flat-rate premium system*). In the first system, premiums are determined by the degree of business risk of individual banks, while in the other there is no connection between the risk inherent to the individual institution and the amount of premiums.

The first system has multiple advantages over the other (Markovinović, 2011, pp. 795-796):

- One of the fundamental principles of insurance is applied - the premium is determined in accordance with the probability of occurrence of the insured event;
- Costs of establishing the system of insurance are allocated impartially because their greater amounts are charged to the banks in which there is a higher probability of occurrence of the insured event;
- It encourages banks to be more conservative as they thus reduce the costs of deposit insurance, which at the same time contributes to the stability of the banking system as a whole.

For a successful implementation of the protective function, the amount of the premium should reflect the actual level of risk taken by banks. Otherwise, the deposit insurance system can further encourage banks to take excessive risks.

Considering the position in the market, there are:

- Deposit insurance system which has a *monopoly position* - holder of a deposit insurance system has the exclusive right to exercise the function of deposit insurance.

- If the function of insurance is left to the market rules, then the system has *no monopoly position*. However, if there are several entities that perform the function of deposit insurance so that it is clearly demarcated which entity insures the deposits of which banks in the manner that they are not in a competitive situation, it is then a monopoly position. (Markovinović, 2011)

Coverage of deposits by insurance varies in different schemes and depends on several factors:

a) *Limit per individual depositor in one bank* - since it not forbidden that individuals have accounts in more than one bank, the total amount of guaranteed deposits is potentially determined by the number of banks in the country and the limit per individual depositor (Table 1).

Table 1: The Total Guaranteed Deposit Amount per Depositor in Selected Countries (April, 2011)

	Limit per individual depositor in one bank	Number of banks in the country (approximate)	Total available guaranteed deposit amount per depositor
United Kingdom	£85.000	200	£17,000.000
Germany	€100.000	2000	€200,000.000
USA	$250.000	7500	$1,875,000.000

Source: Huertas, 2011, p. 146

b) *Coverage of depositors* - insurance usually refers to deposits of natural persons, but deposits of legal entities may also be included, while deposits of financial institutions are excluded as a rule.

c) *Coverage of deposits* - insurance is usually related to current, savings and other transactional accounts and it does not include investments such as bonds.

d) *Coinsurance* - determines whether, and to what extent, depositors bear the risk of bank failure. In a system with the participation of depositors, the depositor is paid only a portion of the deposit even if his claim does not exceed the insured limit (for example, if the limit is €50,000 with 10% of coinsurance, the depositor will receive maximum 45,000 euros). Without the existence of coinsurance, depositor is paid the full insured amount of the deposit. It should be noted that the system that includes coinsurance operates efficiently in normal circumstances, because depositors are aware of the limits rather than the coinsurance, but when the bank encounters problems they become aware of potential losses below the limit. Therefore, this system is not capable of preventing an outflow of deposits when the crisis is already underway (depositors withdraw deposits to avoid losing part of their deposits that would not be recovered in the event of a bank failure).

In their empirical investigation of the deposit insurance schemes, Demirgüç-Kunt and Huizinga (2004) found that higher levels of coverage, coverage of interbank deposits, ex ante funding and public management are associated with declining market discipline. On the other hand, market discipline is more pronounced in case of coinsurance and private management. Empirical results obtained by Cull, Senbet and Sorge (Cull, Senbet, Sorge, 2005) have shown that a wide coverage of deposit insurance scheme without an adequate regulatory framework has an adverse effect on financial stability and development of a country. Laeven (Laeven, 2004) tried to explain the differences in the design of deposit insurance schemes in various countries from the political, regulatory and institutional aspects, stating that the coverage of deposits by insurance is higher in countries where banks with relatively low rates of own capital constitute a major part of the banking system. This indicates that the deposit insurance systems are not socially optimal in most countries.

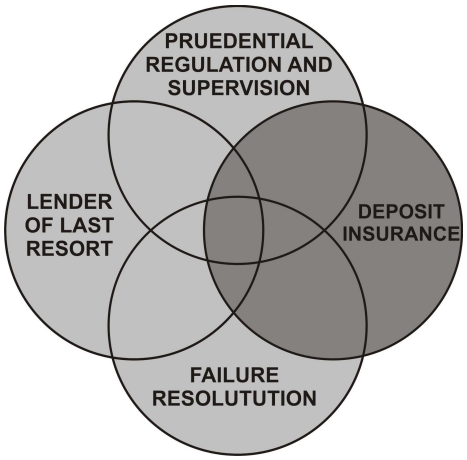
4. Ex Ante and Ex Post Effects of Deposit Insurance as an Anti-Crisis Mechanism in Banking

Protection of depositors by the state plays a very important role in the management of banking crises. Its role is crucial when public confidence in the banking sector is declining and there is a risk of "banks runs". Insurance of deposits by the state acts to restore confidence in the banks and reduce the risk of deposit outflows. However, the state does not ensure the safety of depositors only by deposit insurance but also by credit support to troubled banks by the central bank or the government, as well as through the takeover of banks by the state. Thus, deposit insurance is only one element in a broader national network of safety (*Government Safety Net*). The narrow definition of government safety network, apart from the deposit insurance, includes the function of lender of last resort, while the wider one includes also banking regulation and supervision.

The definition of a government safety net is expanded, in order to reduce the risk of future financial crises, by mechanisms for the efficient restructuring of failed institutions unless they go into liquidation (failure resolution mechanisms for financial institutions). All elements interact with each other and each faces a similar trade-off between preventing a disruption in the banking system and reducing moral hazard (Fig. 3) (Schich, 2008).

Efficient public safety network plays an important role in controlling systemic risk which arises primarily from the specificity of financial intermediation characterized by maturity transformation of assets and interconnectedness of financial institutions. In times of crisis, systemic risk is manifested as: general run on deposits, general illiquidity of the financial sector and the loss of confidence in the financial system.

Figure 3: Interaction between the Four Key Elements of the Government Safety Net



Source: Schich, 2008, p. 5

Before the introduction of the first explicit insurance in 1934 in the U.S. banking panic used to be a common occurrence in the United States. In the nineteenth and early twentieth century, bankruptcy of banks represented a serious problem occurring every twenty years. In the period 1929-1933, approximately 9000 banks collapsed and the public lost confidence in banks. After the FDIC was established, the number of banks that were failing annually decreased (about 2000 banks before, and about 15 banks per year after that, until 1980) (Mishkin, 2006, p. 261). Due to the growing concern for the stability of their banking systems, countries around the world have begun to secure deposits since the sixties of the twentieth century.

By the eighties of the twentieth century, it seemed that the deposit insurance was perfectly performing its function. However, the introduction of the institution of deposit insurance has to some extent contributed to assuming greater risks by individual banks and thereby also contributed to their bankruptcy in the eighties and the nineties of the last century. During that period, the justification of the existence of state deposit insurance was widely discussed. The focus was on the question of whether the state deposit insurance (with liquidity credits of the central bank) was responsible for the widespread occurrence of moral hazard, or whether systemic risk was overrated. In the United States the FDIC was the subject of sharp criticism that resulted in the FDIC Improvement Act of 1991. However, criticism was not so much directed towards the fundamental concept of deposit insurance, but rather towards the mode of managing the FDIC, which could lead to its insolvency. Also, in many countries, deposit insurance never had a significant role in causing the crisis (e.g. in Norway, Sweden and Finland in the late eighties and early nineties, Latin American banking crisis, Japan in the nineties, etc.). Experience has indicated that the willingness of the state to help the banks

(regardless of whether deposits are insured or not) may affect the increase of moral hazard. Financial liberalization was a significant factor in the occurrence and development of financial crises. Widespread financial innovation during this period affected the reduced profitability of traditional banking. Banks were looking for new and riskier business activities in order to maintain their profits. The emergence of new financial instruments and new markets (financial futures, high-risk bonds, swap transactions and the like), as well as the deregulation of the banking sector, facilitated engaging in higher risks to the banks. The existence of deposit insurance only increased the moral hazard of banks (Mishkin, 2006).

It can be concluded that deposit insurance is not negative or positive in itself, but it should be viewed in the context of the wider environment. If financial liberalization takes place in a country with deposit insurance, and this is not accompanied by a well-designed and effective system of prudential regulation and supervision, it is possible for banks to take on excessive risk, which will ultimately increase the likelihood of a banking crisis.

The financial crisis that began in mid-2007 in the real estate market and in the financial sector of the U.S. spread around the world, because of the high degree of globalization, having caused a sharp decrease in aggregate demand, which eventually lead to a global recession. The global character of contemporary financial crisis has highlighted the problem of systemic risk. The crisis has shed light on the fundamental weaknesses in the regulation and supervision of financial systems in the countries worldwide, and particularly in the United States and the European Union. Also, negative effects of the financial crisis emphasized once again the importance of deposit insurance as an anti-crisis mechanism.

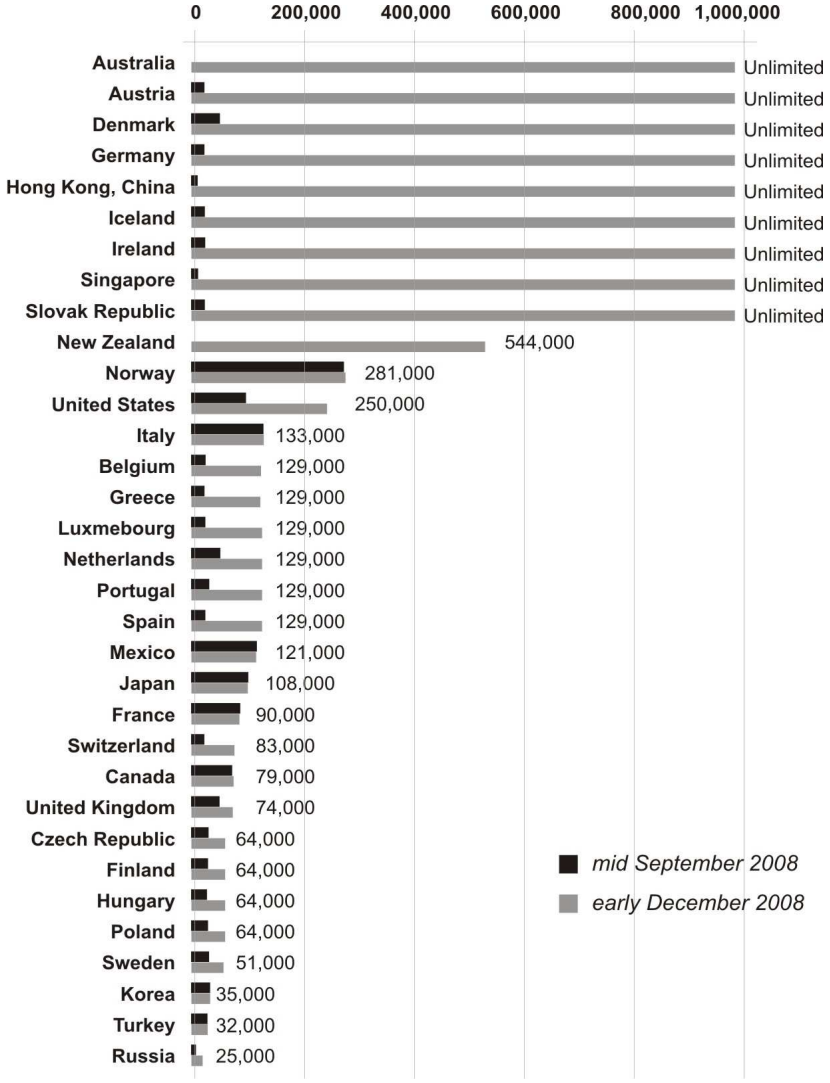
The effect of deposit insurance as an element of the anti-crisis banking regulation differs from the effects of direct banking regulation. While other regulatory measures are aimed at controlling banks, deposit insurance is actually in the function of controlling fear of depositors of losing their deposits.

Action of deposit insurance as the anti-crisis mechanism can be proactive and reactive. As an ex ante mechanism, it strengthens confidence in the banking sector, which helps prevent the drain of deposits from banks and the occurrence of financial crises. As an ex-post mechanism, it protects depositors from losses in the event of insolvency of banks and prevents the spread of "contagion" through the banking system.

A psychological role of deposit insurance as an instrument for maintaining financial stability is very important in times of crisis. When a crisis arises, the primary task is to restore confidence and prevent panic. Sharp, reactive measures, considered indispensable in a given situation, are taken. A common measure that is taken in the circumstances of the crisis is raising the amount of insured deposits. It is a simple instrument that has a positive psychological effect on the public in the short term. It is, therefore, easy to understand why the first reaction of countries

worldwide to the panic that began in October 2008 due to the collapse of *Lehman Brothers Bank* was to raise the amount of insured sums and even to introduce unlimited deposit insurance. In some countries, such as Australia and New Zealand where it did not exist, explicit deposit insurance was introduced. Due to fears of a systemic spread of contagion, in addition to raising the insured amount, other measures were also undertaken to strengthen the mechanism of deposit insurance: reducing the importance of coinsurance, providing quick access to insured deposits, expanding deposit insurance coverage (Schich, 2008).

Figure 4: Amount of Insured Deposit per Depositor in Selected Countries in mid-September and early December of 2008 in USD



Source: Schich, 2008; OECD

In early October 2008, the insured deposit amount per depositor of the bank was increased in the U.S. from $ 100,000 to $ 250,000. Before the crisis, the EU regulations required that the deposit insurance limit be € 20,000. Quick reactions of EU member states caused a lack of mutual coordination, so there were differences in terms of coverage and amounts of insured deposits. In October, the ministers of finance of member states agreed that the minimum amount of insurance increase from € 20,000 to € 50,000 (Fig. 4).

Prompt reaction of the European Commission was to make the proposal of a deposit insurance directive amending the existing Directive from 1994. The ECB opinion was that the insured amount must continue to increase in order to maintain the confidence of depositors and financial stability. At its meeting in 2008, CMF (Committee on Financial Markets) concluded that the systems with low insured amount and partial insurance may not be effective in preventing run on the banks.

Raising the insured amount is a rapid anti-crisis medicine that "cures", however, not the disease itself but its symptoms. In the long run, this measure implies an increase in contingent liabilities for the state and healthy banks. It also increases the moral hazard of bad banks (because it reduces the contingent liabilities of the bank owner), which, in the ultimate instance, can impair financial stability. Therefore, these measures, undertaken *ad hoc*, must be accompanied by adequate exit strategy. In this, it is primarily important to limit the time duration of these measures. In the United States, the current limit for deposit insurance ($ 250,000) will be valid until the end of 2013, when it will be limited to $ 100,000. The maturity of completely state-covered deposit insurance in EU member states was generally anticipated to happen by early 2010.

Coinsurance was characteristic of a deposit insurance scheme in Great Britain before the bankruptcy of *Northern Rock*, but it was not applied when the bank collapsed. After that, the FSA abolished coinsurance from the scheme and increased coverage to 100% of the limit. In mid-October 2008, the European Commission proposed the abolishment of coinsurance in order to increase the effectiveness of deposit insurance in the spread of banking panic. In most countries (Austria, Czech Republic, Ireland, Poland, Russia, Luxembourg, Hungary, etc.), where the pre-crisis schemes of deposit insurance comprised coinsurance, it was abandoned by December 2008.

To restore public confidence, some states have expanded coverage of deposit insurance. Most often, the insurance included deposits of legal entities. Ireland, for example, guaranteed all deposits in the six largest banks at the end of September. In addition to measures aimed at ensuring higher deposit coverage, the measures were undertaken also for faster payments in the event of bank insolvency.

With the said emergency measures, the authorities managed to protect depositors and a general bank run during the crisis did not happen. Apart from having helped in the prevention of banking panic, these interventions shed light on

the effect of deposit insurance on strengthening the public confidence and its importance for financial stability. However, despite their efficiency, these initially taken measures represent only buying time. The right solution for the prevention of systemic risk is the reform and creation of stable and secure national deposit systems in the presence of international coordination in the actions.

The reform of the deposit insurance system in the EU is based on new principles formulated in the provisions of the new Directive of 2009 (Directive 2009/14/EC). EU directive on deposit insurance schemes from 1994 (Directive 94/19/EC) was limited to the provision of harmonized minimum deposit protection, with a minimum amount of insured deposits totaling € 20,000. The revision of the Directive provisions was directed towards increasing the limit for deposit insurance, expanding the spectrum of possible ways of funding and introducing risk-adjusted premiums, where an attempt was made to achieve a higher harmonization level of regulations of member countries.

In order to maintain the confidence of depositors and to preserve financial stability, it was stipulated that coverage of total deposits of each depositor shall be € 100,000 as of January 1st, 2011 (this condition was in due time fulfilled by all members). In July 2010, the European Commission proposed amendments for a thorough review of the 1994 Directive on Deposit Guarantee Schemes. These proposals accompany and justify the emergency legislative changes which were proposed by the Commission in 2008, and entered into force in 2009. Determination of the insured amount per depositor to the maximum of € 100,000 contributes to the harmonization of insured amounts and prevents unlimited deposit insurance. Also, with the new Directive insurance was extended to the deposits of legal entities and the practice of netting was discontinued. The period in which it is obligatory to disburse the insured amount to the depositor in the event of bank failure was shortened (payment deadline is one week, while earlier it was the three-month period). The agency of the member country is obliged to pay out its citizens if they had deposits at a failed bank in another member country, and local agencies will subsequently collect the payment from the responsible agency or fund of the country in which the failed bank was registered. A very flexible form of financing deposit insurance funds was introduced through a combination of ex ante and ex post contributions (in the ratio of 75:25), along with the introduction of the possibility of mutual crediting of agencies or funds from different member states. Mandatory membership in an explicit deposit insurance scheme implies that all depositors are protected and that each bank bankruptcy is covered by the scheme.

Major international initiatives also include the establishment of The Core Principles for Effective Deposit Insurance Systems. These principles, which were, in June 2009, published together by IADI (International Association of Deposit Insurers) and the Basel Committee on Banking Supervision, represent a specific guide for the reform or establishment of an effective deposit insurance system. A further initiative is directed towards establishing the Core Principles as an authoritative

international standard of Deposit Insurance (IADI, together with the IMF and the World Bank, is developing a methodology to assess the compliance of individual deposit insurance systems with the Core Principles, which would enable it).

Conclusion

The preservation and strengthening of the banking sector is the main purpose of the implementation and operation of deposit insurance systems, and the means for its realization is to ensure immediate protection of depositors. Efficiency of the deposit insurance system as a mechanism for limiting the systemic risk should be considered in the context of a wider institutional environment. Adequate institutional and regulatory framework represents a specific balance between the positive and negative effects of the introduction of national deposit insurance.

The importance that the deposit insurance system has for the preservation of financial stability is clearly indicated by the initial response of many countries to the formation of today's global financial crisis: raising the deposit insurance limit and abandoning the participation of depositors in the insurance eased the pressure for payment of deposits to which banks were exposed.

Measures that are taken as an initial response to the banking crisis can be useful in preventing further collapse of confidence of depositors. They are used for buying time, but the price paid could be quite high if the following is not taken into consideration:

- in the conditions of increasing global financial integration and rapid overflow of shocks, the lack of international coordination of activities could lead to regulatory arbitrage,
- they affect the growth of moral hazard (which is particularly associated with the unlimited deposit insurance, so this partially explains why only several countries have done so). It is therefore important to have an exit strategy which will determine when the extra-insurance stops and to provide consistency in its implementation.

The financial crisis has highlighted the weaknesses of pre-crisis schemes of deposit insurance and, therefore, along with considering the exit from *ad hoc* anti-crisis measures, the process of their reform is also taking place. Regulatory changes in countries around the world are based on the idea to build a stable system of deposit insurance on the grounds of "lessons learned", which will help prevent the emergence and expansion of future financial crises. Efforts to define, on the international level, the basic rules and principles for the reform and establishment of an effective deposit insurance system are intended to facilitate these processes and contribute to the harmonization of regulations. In this, the concrete deposit insurance scheme should be operationalized in a specific way that respects the economic, historical and cultural characteristics of each country.

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OSIGURANJE DEPOZITA KAO EX ANTE I EX POST ANTIKRIZNI MEHANIZAM U BANKARSTVU

Rezime: Zbog značaja depozita u poslovanju banaka i njihove osetljivosti u kriznim uslovima, osiguranje depozita se poslednjih decenija promoviše kao jedan od stubova moderne državne mreže sigurnosti. Kreiranje i implementacija efikasne šeme osiguranja je težak zadatak, jer prekomerna zaštita banaka može da podstakne banke na rizičnije ponašanje i destabilizuje sistem koji treba da zaštiti. Izazov za kreatore ovih sistema je obezbeđenje zašitite deponenata bez prekomernog podrivanja tržišne discipline. Globalna finansijska kriza je istakla značaj osiguranja depozita kao antikriznog mehanizma. Podizanjem praga osiguranja, vlasti su uspele da zaštite deponente. To je pomoglo u prevenciji panike i osvetlilo je snagu uticaja osiguranja depozita na poverenje javnosti. Iskustva su apostrofirala značaj proaktivnog pristupa u sprečavanju budućih finansijskih kriza. Efikasne i stabilne nacionalne šeme eksplicitnog osiguranja depozita imaju ključni značaj za globalnu finansijsku stabilnost. Iz toga proizilazi potreba njihove reforme uz postizanje većeg stepena harmonizacije propisa na globalnom nivou.

Ključne reči: osiguranje depozita, finansijska stabilnost, moralni hazard, bankarska panika

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FOREIGN BANKS IN SERBIA – ENTRY STRATEGY AND PERFORMANCE

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***Abstract**: The paper explores the strategic choice of banks to enter foreign markets: their motives and modes. Moreover, it reviews the case of foreign banking in Serbia, with special attention to the strategy of entry and business performance, which make us able to assess whether the realized performance met the expectations. There is found rather mixed support of foreign banks superior performance. Although inconsistent with the theory, it is in line with some other empirical investigations. This might be because the Serbian banking industry was constantly reshaping within the last decade, with most foreign banks operating no more than a couple of years. It happened that late entrants had to catch up with foreign banks that came early and up to that time took over a lion share of the market. The employed methodology gives no conclusive result about relative performance of foreign vs. domestic banks, but it rather states that foreign ownership per se does not guarantee better performance.*

***Keywords**: banking industry, internationalization, foreign banks, business performance*

Introduction

In the last decade, foreign entry is that which predominantly restructured ownership structure of the Serbian banking industry. Foreign competitors penetrated the local market most often by acquiring domestic either private or public owned banks. The same force is responsible for changing both ownership structure of the banking industry and its level of consolidation. A sequence of acquisitions gradually led to increase of the concentration of the banking industry and the predominance of foreign ownership.

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Purely from the theoretical point of view, diversity in bank ownership is taken desirable because it might contribute to smooth credit growth, allowing firms with binding credit constraints to optimize investments and households to better smooth consumption over time (Haas, Lelyveld, 2010). However, reality frequently challenges this point of view.

Since the burst of recent global financial crisis, there has been a lot of debate and argument on different effects, which foreign banks entry may have on the stability of host banking systems. On the one side, multinational banks are frequently considered bringing systematic risk and global financial volatility to the higher level. Some papers claim opposite. For instance, Navaretti et al. (2010), by researching a large sample of banks that operate in the European Union found that multinational banks have not endangered stability of home markets. On the contrary, the authors conclude that the ratio of local multinational bank claims to liabilities have not declined, and it even increased in some countries, where foreign banks account for the dominant share of total banking activities. Similarly, Haas and Lelyveld (2010) have concluded that during systemic banking crises, multinational bank subsidiaries kept lending, whereas domestic banks were forced to sharply cut back their credit supply. They conclude that domestic bank lending is pro cyclical, and tightly related to local business cycle. Namely, in the events of economic downturn, domestic bank lending experiences sharper problems and the level of lending shrinks more than is the case with foreign competitors. On the other hand, foreign banks are not so tightly dependent on the host county's business cycle, because they can easily access capital from home country. The authors conclude that the presence of multinational bank subsidiaries could benefit host countries' economies by generating rather stable bank lending activity, since the multinational banks are not so tightly dependent on domestic sources of financing. The aggregate credit supply in the host country becomes more stable and less correlated with the local business cycle. However, such analysis ignores the possibility that domestic banks' lending shrinkage must come largely as a consequence of the fact that more competitive foreign competitors drive local banks out of credit market (Giannetti, 2009). For instance, in case of India, Gormley (2010) found that after foreign bank entry, business borrowers were eight percentage points less likely to receive a loan because of a systematic drop in domestic bank loans. It brings us to the issue of competition within host-country banking systems. Again, we face opposite views. Certain analyses show that consolidation is apparent side effect, but without deterioration of the banking sector's competitiveness (Gelos, Roldos, 2002; Ljumović, 2011), while Tassel et al. (2007) alert that the increased participation of foreign banks has questioned survival of domestic institutions, boosted loan interest rates, and raised other efficiency-related adverse implications of increased competition. Completely in line with these conclusions, Marinković and Radović (2010) confirmed that the massive entry of foreign banks into the Serbian banking market was not accompanied by a statistically significant decrease in loan interest rates and interest rate spread.

The import of capital is considered the most important motive for host countries to open access to their markets. If carefully monitored, the new capital would incite the growth of host economy. This motive is particularly important for transitional and emerging markets, since the presence of foreign banks has typically been considered a positive development in those countries. The impact that comes from the abundant and smooth flow of capital is just a part of the whole story. Foreign banks could also bring additional resources such as new technologies, marketing, staff training, acquisition of managerial, organizational knowledge and knowledge about surveillance and control. The study of Goldberg (2009) showed that foreign banks stabilize host markets since they bring a superior lending practice and thus more efficient allocation of productive resources.

Bank Internationalization as a Business Strategy

The developments concerning growing banking multi-nationalization have profound implications for the countries that are receiving the services of globally oriented banks, as well as for the banks, which engage in international banking. This section reviews motives of multinational banks behind entering foreign markets.

The main driver of banks entering foreign markets is profit increase in the medium or long term, within an acceptable risk profile. This motive is well elaborated in economic literature. Among others, Focarelli and Pozzolo (2005), by researching a sample of twenty eight countries, of which eight were from transitional market economies, found that foreign banks 'migrate' to those markets where economy were expected to grow above average. Similarly, banks more often enter the markets where profit rates are high and the ratio of bank assets to GDP is low. Some other researches also have come to the conclusion that foreign banks 'migrate' to those markets where it is feasible to achieve economy of scale and high growth rates, and in last fifteen years those markets are transition or emerging (Buch, DeLong, 2004). The features of emerging and transitional markets make them perfectly suitable for attracting this way motivated foreign bank investments. It does not surprise that the profitability and risks related motives have been found to be the most important drivers of a bank's decision to entry in emerging or transitional economies.

Second group of motives concerns competitive advantages, and it is said that banks will decide to enter new market only if they have at least some competitive advantages over domestic and foreign banks that operate in the target market (Classens, Van Horen, 2006; Ljumović, Jovanović, 2010). According to Marinković et al. (2011), competitive advantage is particularly important in situations where multinational banks decide to enter banking systems in developed countries. The more developed host country the more likely foreign banks will originate from a developed country, as well. In less developed host economies, this argument has also potential to explain country of foreign bank origin.

The third group of motives can be gathered around the market seeking theory. The most important motive in this group is 'following activities of major clients', but in this case market has to be viewed as a category that shows internationally mobility rather than it should be viewed as a static category. This way of looking at foreign bank motives is known as classical defensive expansion hypothesis. It was set by Aliber (1984), and assumes that banks follow their customers abroad, afraid of losing them to banks that already operate in the host country. There are two ways of following clients. First one implies just 'blind' following the clients from the bank's country of origin, where multinational bank does not offer its services to domestic population and other multinationals. This type has little or no influence on domestic economy. The second type includes doing business with clients from the bank's country of origin, but also expanding into other segments such as domestic economy, population and other multinationals. The motive of following clients can be easily verified by comparing level of foreign banks presence and the amount of bilateral trade and foreign direct investments in the host country. Numerous studies confirm this activity (Goldberg, Johnson, 1990; Goldberg, Grosse, 1994; and Fisher, Molyneaux, 1996).

The last set of motives includes those related to the risk management and geographic area. Depending on their attitude toward risk, banks should search for new markets that fit into their more comprehensive business policy. According to the modern portfolio theory, any investor has to differ between two types of risk: specific risk (idiosyncratic) and systemic risk (diversifiable). By pooling together enough number of mutually uncorrelated investments, the former type of risk becomes largely avoidable. The larger sample, the larger part of this risk is able to move out from investor's portfolio. The later type of risk, since it depends on the factors that have impact overall market, cannot be fully diversified. Nevertheless, an investor is still able to alleviate its exposure to systemic risk, if it pools together investments on different (and uncorrelated) markets. Therefore, it is recommendable to invest in several different markets, and in that way reduce systemic portfolio risk. However, globalization, *per se*, connects even geographically distant markets, leaving the room for successful implementation of international diversification rather shrunk. Finally, there is a range of motives, which stress importance of geographical, historical and cultural determinants of foreign bank's entry.

In terms of origin of foreign banking capital, the Serbian banking industry is largely in line with more generally observed regularity. All foreign banks came from more developed countries, with economic integration and geographical proximity played greater role. In all but one case, the equity of foreign bank subsidiaries originates from the European Union. It supports both market seeking and competitive advantage arguments. The regularity also might support "follow the client" explanation, since the countries of bank origin are also the countries of foreign direct investments' origin, as well as the main trade partners.

Foreign Banks' Business Performance

The effect of bank ownership on various measures of bank business performance recently has become an extensively studied issue. In a nowadays-classic paper, Bonin et al. (2005b), by allowing for different mode of entry, confirm that foreign Greenfield banks were the most efficient of all bank types in six explored transition countries. The following are banks sold to strategic foreign owner after being initially restructured. The study reports that state-owned banks are the least efficient. Those foreign banks that entered local markets by acquisition of control share, post privatization operated more efficiently than foreign banks with dispersed ownership. Foreign banks also tend to be more prudent and reluctant to lend in weak environment (Clarke, et al. 2005; Yilmaz, Koyuncu, 2010). Some other studies came to the similar conclusions. The banks controlled by local industrial groups are often more exposed to credit and interest rate risk (Boubakri et al., 2005), but they have local advantage in fee generating business (Bonin et al., 2005a). Nevertheless, effect of foreign ownership on bank efficiency is not invariably assessed as positive. In a recent study (Lensink et al., 2008), that covers broad range of countries, foreign banks are found inferior comparison to domestic banks, with inferiority in the relative level of efficiency weakening along with the disappearance of gap between institutional development of home and host country. Furthermore, studies on ownership effects on efficiency of banks operating in developed environment (e.g. the German market) confront the results for developing and transition countries. Chen and Liao (2011) found that foreign bank profitability crucially depends on differences between home and host country conditions (competitiveness, supervision, etc.). Altunbas et al. (2001) found public banks superior than privately owned counterparts with all appear to benefit from economies of scale. Superior efficiency holds even when controlled for size differences, and it is explained by lower cost of funds.

The ability of type of ownership to explain variability of business performance across banks that operate inside the region has been also studied extensively. Košak and Čok (2008) found foreign-owned and domestic banks in six Southeastern European countries, but the evidence of better performing type of ownership was rather mixed. Paghosyan (2010) found foreign bank participation with no relevant influence on net interest margin in Central and Eastern European countries. The differences in financial conditions among the ownership status can reflect a different customer base, procedures, and tax regime (Claessens et al., 2001). The only fact that goes in favour of domestic banks is local knowledge and existing customary base.

There is a plausible explanation for rather mixed results over the influence of type of ownership on bank performance. The first at hand, when addressing transitional and emerging banking, is the influence of privatization policy. Privatization itself transforms the efficiency of a banking system in transition, but the ultimate effects will strongly depend on whether the government will firstly

privatize better-performing banks and hold its stake in loss-making ones, or *vice versa* (Bonin et al., 2005a). Namely, empirical findings suggest little optimism about the impact of privatization on divested banks (Megginson, 2005). This implies that relative efficiency among the banks that differ in ownership status will be country-specific, since the model of bank privatization and sequence of steps will depend on the national policy of privatization.

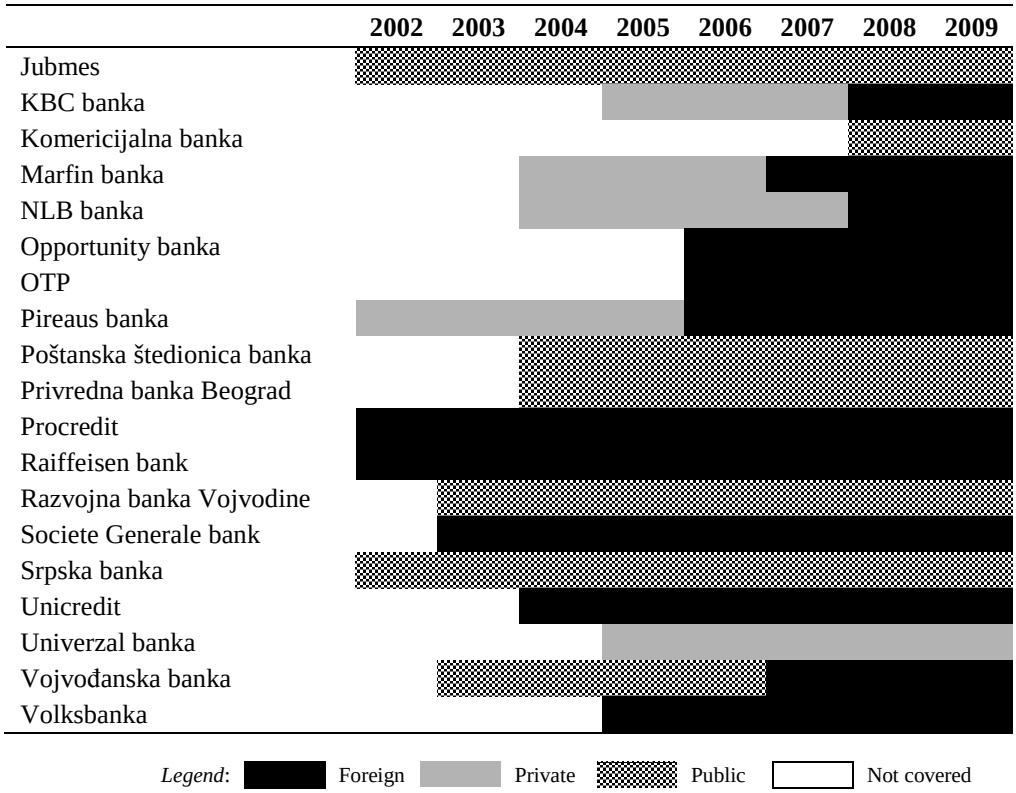
Empirical Issues in Defining Type of Ownership

The ownership transformation of Serbian banks is a phenomenon that has been underway for some time now. The above review indicates that inter-bank variation in business performance may be related to differences in ownership. In order to examine it, the first step is to disaggregate total sample into subsamples of foreign ownership, domestic private ownership and domestic public ownership. The banks are assigned among the classes according to the origin of equity. If there is no type of owner that controls over fifty percents of equity, a bank is going to be classified upon the major owner.

It is a challenging task to study the effects of bank ownership on performance of banks that operate in industry that went trough privatization and a constantly reshaping institutional environment. Within the period covered by analysis, many banks that operate in Serbia switched from one to the other types of ownership. Therefore, the ownership structure from the end of the period differs a lot from that appeared at the beginning of it. Since the dataset consist of bank-year observations, in classifying banks into different groups of ownership attribute, we examine the actual year within each bank has changed its ownership class. The data on the year in which a bank shifted to the other class is provided in the table below (1). Separating the years of previous ownership from the year of new ownership is made according to the following rule. The first year of new ownership is taken to be the first year after the year that ownership transformation actually took place.

Table 1: List of Banks Entering the Sample: Ownership Status and Coverage

	2002	2003	2004	2005	2006	2007	2008	2009
Agrobanka								
AIK banka								
Alpha banka								
BancaIntesa								
Čačanska banka								
Credi Agricole								
EFG bank								
Erste banka								
Findomestic								
Hypo Alpe Adria								



Empirical Findings

The bank business performance is assessed according to the well-established methodology, but subject to data availability. All data are ratios directly selected from the database (BankScope, Bureau van Dijk), or recalculated from annual financial statements. The analysis covers several performance criteria, with at least one ratio included for each of them. Bank profitability is assessed with return on average equity (ROAE) and return on average assets (ROAA). Two additional ratios enter the set to represent bank efficiency: net interest margin and cost to income ratio. Net interest margin is computed by dividing net interest income, which is the difference between interest revenue and interest expenses, with earning assets, and represents both pricing policy and asset and liability composition. Cost to income ratio is computed by dividing overhead costs with a sum of net interest income and other operating income. It is a specific bank financial ratio designed to cover the influence of nonfinancial expenses (fixed asset depreciation, salaries etc.), and exclude loan loss provisions. The influence of asset structure on performance is assessed with the ratio, which represents a share of earning assets to total assets. Loan loss reserves to gross loans is a frequently used indicator of asset quality. It does not show a bank ability to allow reserves, but

rather the level of contamination of assets portfolio, since banks are obliged to reserve as much as stated by the unified methodology imposed to them by the regulator (National bank of Serbia). Equity to assets ratio is taken to represent bank liability structure, capturing the influence of financial leverage on the ultimate performance indicators. Bank liquidity is regularly assessed by comparing the amount of its liquid assets to the amount of liabilities maturing within a year or even shorter. For instance, on reporting purpose, Serbian banks use one-month maturity horizon for both assets and liabilities. Unfortunately, those data are not publicly available, so that we have to operate with a less straightforward ratio, which compare liquid assets to short-term liabilities, which are taken to be a sum of deposits and short-term non-deposit funding. It is not flawless indicator, since not all deposits maturing within a year. Finally, a proxy for interest rate risk, the difference between earning assets and a sum of deposits and non-deposit short-term funding, deflated by equity. The interest rate risk arises when maturity composition of assets differs from maturity composition of liabilities. This ratio suffers from the same data inconsistency as the previous one.

The data presented (Table 2) are subsamples' averages (mean) for three most recent years (and for the banks for which the data were available), and an average for the entire period 2002–2009. Note that the data are not size-weighted. They are 'equally weighted' bank-year observations. Therefore, since bigger banks are regularly better performing, this way of sampling the data might misrepresent overall standing of banks that belong to different types of ownership.

We see that average profitability (ROAE, ROAA) differs across ownership subsamples. Apparently, the domestic private banks are the most profitable. They, on average, report a return on average equity higher than foreign counterparts do for all years except year 2007. The change of the ranking overtime deserves scrutiny but we shall return to the time dimension of reported performance measures in later sections of the paper.

Foreign owned banks operate with the lowest net interest margin. Domestic private owned banks come immediately after them, and domestic public owned banks come at the end. The same rank holds in respect of asset quality and equity to asset ratio. The foreign banks more conservatively allocate loans, and they are less capitalized, meaning that they lead in using financial leverage to boost their profitability. The differences among the classes in terms of broader asset structure are rather negligible.

A closer look at the data on distribution (Table 3) indicates high variability of all ratios. The impression holds no matter which subsample is concerned. It means that banks assigned to the same type of ownership extremely differs in terms of financial performance, what further questions reliability of analysis based solely on average figures. The huge differences may arise either because the business conditions have been rapidly changing overtime, or because of significant non-homogeneity within each ownership class.

Table 2: Selected Bank Performance Indicators: The Simple Mean Data for Selected Years

Financial ratio	Foreign ownership				Domestic Private				Domestic State			
	2007	**2008**	**2009**	**entire**	**2007**	**2008**	**2009**	**entire**	**2007**	**2008**	**2009**	**entire**
Profitability												
Return on equity	3.28	2.23	–3.52	2.16	1.37	11.29	6.80	10.01	–2.91	–3.95	3.73	–7.68
Return on assets	0.48	0.48	–0.61	0.15	0.31	3.45	2.28	3.39	3.18	0.22	0.52	0.23
Efficiency												
Net interest margin	7.85	8.55	7.04	7.72	8.92	10.66	9.10	10.07	11.50	14.59	7.08	11.84
Cost to income ratio	70.65	149.26	145.76	103.80	66.35	66.19	59.96	65.02	81.44	93.56	108.65	73.87
Assets structure and quality												
Earning assets to total assets	65.47	69.32	68.46	69.27	70.58	75.02	75.44	70.67	51.03	60.92	70.50	64.52
Loan loss reserves/Gross loans	6.68	7.36	9.61	6.42	10.00	7.97	8.00	11.33	23.73	17.56	15.92	27.36
Solvency												
Equity to total assets	23.25	23.69	20.62	19.71	26.19	31.04	24.26	30.32	31.98	28.17	18.63	29.87
Liquidity												
Liquid assets/deposits and short-term funding	62.48	46.81	32.79	52.35	59.29	37.02	40.53	52.11	82.68	72.25	34.62	69.85
Interest rate risk												
Earning assets – (deposits and short-term funding)/equity	53.89	58.48	47.81	97.84	26.42	41.98	49.62	48.19	141.55	42.83	23.35	63.03

Table 3: Selected Bank Performance Indicators: Data on Distribution

Financial ratio	Foreign ownership			Domestic Private			Domestic State		
	St. dev	Max	Min	St. dev	Max	Min	St. dev	Max	Min
Profitability									
Return on equity	17.33	42.70	–70.12	26.27	124.36	–68.05	39.29	36.71	–110.31
Return on assets	3.11	9.86	–12.66	7.42	28.74	–20.80	8.77	21.32	–28.11
Efficiency									
Net interest margin	3.35	26.01	1.63	3.49	18.24	3.25	5.94	24.29	2.77
Cost to income ratio	77.87	419.84	32.20	26.53	155.39	10.54	20.76	136.42	40.79
Assets structure and quality									
Earning assets to total assets	11.33	96.18	49.25	10.01	87.24	34.42	14.51	92.44	34.25
Loan loss reserves/Gross loans	5.50	25.86	1.37	8.49	41.86	0.68	26.27	97.95	1.97
Solvency									
Equity to total assets	11.73	91.44	5.03	14.32	77.71	13.28	16.04	65.52	7.52
Liquidity									
Liquid assets/deposits and short-term funding	22.25	145.74	15.86	22.40	164.61	16.66	31.12	150.14	23.46
Interest rate risk									
Earning assets – (deposits and short-term funding)/equity	99.81	553.90	0.33	45.58	220.97	2.52	82.75	494.12	0.32

The analysis includes all banks for which the data were available, and covers the period that spans eight most recent years, with special attention paid on years that surround the break up of recent global crisis. Such a framework makes us able to assess the differences that belong to different way of responding to the global shock. Credit crunch and liquidity evaporation that followed the turbulent 2008, made it hard for internationally exposed banks to survive. Nevertheless, more diversified international banks have been placed in better position than their geographically focused competitors have. Namely, in times of financial crisis, global banks that have affiliates in different markets have advantage in providing liquidity by borrowing from their foreign affiliates. This internal capital market channel supplements the funds available to a bank on any local market. The better access to foreign capital markets will probably explain why international financial groups that spread their operations worldwide managed to 'stay on the track'. The turbulent times were especially harsh for Greek banks. For 2009, Alpha bank reported –20.15, and Pireaus bank –5.21 per cent return on average equity. Among the worst performing banks that year was also Slovenian NLB (–10.43 per cent). For other loss-making foreign banks, that year was just the next in the row of several continuing bad years (e.g. Credi Agricole, Marfin or KBC).

The average ranking of foreign banks relative to their domestically located competitors also depends on so far largely ignored issues. It is the moment of entry as well as the mode of entry, which could explain diversity in profitability overtime. The moment of entry has certain implications on bank profitability in foreign markets. Completely in line with other empirical investigations (e.g. Schmidt, 2008), is the fact that foreign banks that late enter the local market, especially *via* Greenfield investments, have reported lower profit than other foreign banks that already operate in the market, since they are more exposed to higher competition. Early entrants, Raiffeisen, Hypo Alpe Adria, and Procredit invariably report profit for the entire period from 2003 to 2009. An exception is Societe Generale, which reported huge losses in 2003 and 2005 (24.33 and 24.18 per cent of average equity, respectively). It is interesting also the case of Unicredit (former HVB) which came a bit later than above-mentioned competitors come, but, from the very beginning, managed to set up a continuous profit-making trend.

For late entrants that appear on the market *via* Greenfield investment, extremely high values of cost to income ratio regularly follow negative profit figures reported in the first year of operation. For instance, it took several years for the Opportunity to cover overheads, and to come up to the break even point. This mode of entry, on the asset side come with over-investments in fixed assets and an empty loan book, while, on the liability side of balance sheet, the biggest problems are shrunk deposit base, and predominance of equity type of finance. Because of predominance of equity finance, the financial ratios, which are deflated by the equity, approach their extremes. There is another disadvantage, which could possibly explain losses of Greenfield entrants in starting years. Their pricing policy is usually limited by desire for fast increasing of market share. An aggressive

under-pricing could have negative effect on bank profitability. A bank will survive or experience failure on a chosen target market depending on how much, and how fast, the aggressive pricing policy will result in gaining a market share up to the point, which enables it to enjoy economy of scale comparable to that available to the main competitors.

If a bank decides to merge with, or purchase a local bank, there is a concern that the target bank could have 'window-dressed'. For an acquiring bank, it is important to evaluate the balance sheet positions of a target to determine the amount of nonperforming loans. Those banks report rather peculiar profit figures in years in which ownership transformation took place. It is the case with BancaIntesa, Credi Agricole, Marfin and KBC, which all switched from profit to loss in the year of accomplished acquisition. The figures stay negative in all consecutive years for all the banks except BancaIntesa. For example, skyrocketing profit rates of Meridian bank turned to high losses since the acquisition has been accomplished by Credi Agricole. For Credi Agricole and Marfin it closely corresponds with rapid increase in loan loss reserves. In 2006, when the bank Panonska banka has been acquired, BancaIntesa reported record levels of both loan loss reserves and cost to income ratio. The later is probably the consequence of excess labour costs. Similarly, first year after acquisition of Post bank, EFG reported losses as high as 37.52 per cent of average equity. For EFG, this year was record both in terms of cost to income ratio (117.59) and loan loss reserves to gross loans (6.91). The under-reservation policy, or 'window dressing' is probably a reason why the same banking entities, when held in hands of domestic industrial groups, reported return on assets and equity, significantly higher than after being taken over by foreign players, and consequently, why, in this analysis, the private-owned domestic banks performing better than foreign and state-owned counterparts.

Conclusions

In order to gain insight into regularities that explain differences in business performance across type of ownership we disaggregate the data covering 29 banks into several subsamples: foreign owned banks, domestic private owned and domestic state owned. We found rather mixed evidence of best performing type of ownership. Concerning the proposed regularity between type of ownership and bank performance indicators, we see that foreign banks on average operate with the lowest net interest margin, the least risky loan portfolio, and with the smallest share of equity. In the year before the recent financial crisis, the foreign banks outperformed domestic competitors with regard to both return on average equity and return on average assets. The following turbulent years brought some changes in ranking. However, an average masks specific elements, which have a potential to explain variability within subsamples. We are keen to assign a great deal of variability to the moment and mode of entry. Early entrants have reached a level of activity that makes them able enjoying economy of scale. They have greater

potential to cover overheads, to operate with more relaxing asset and liability structure, and to acquire a pool of best customers. Those banks are currently market leaders. However, being 'new kids on the block' the late-entered foreign banks were forced to fight aggressively against 'incumbents'. Currently, those banks are struggling to survive, performing event worse than pure locally based banks. The applied methodology gives no conclusive result about relative performance of foreign vs. domestic banks, but it rather states that foreign ownership *per se* does not guarantee better performance.

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STRANE BANKE U SRBIJI – STRATEGIJA ULASKA I POSLOVNE PERFORMANSE

Rezime: U radu istražujemo strategijski izbor banaka da prodru na strana tržišta: motive i postojeće modalitete. Pored toga, bavimo se i položajem stranih banaka u Srbiji, sa posebnom pažnjom na strategiju ulaska na tržište i poslovne performanse. Na taj način možemo proceniti da li su ostvareni poslovni rezultati ispunili očekivanja. Nismo potvrdili pretpostavku da strane banke ostvaruju najbolje performanse. Mada u neskladu sa teorijom, ovakvi rezultati su ne retko empirijski potvrđivani. Ovo može biti zbog toga što je bankarski sektor Srbije pretrpeo snažne promene tokom poslednje decenije, a većina stranih banaka posluje tek nekoliko godina. Zbog toga se događalo da su bankama koje su kasnije ulazile na domaće tržište najžešću konkurenciju predstavljale upravo strane banke koje su do tada ostvarile dominantnu poziciju na tržištu. Primenjenom metodologijom nismo u stanju da nedvosmisleno odgovorima na pitanje koji tip vlasništva obezbeđuje najbolje poslovne performanse, ali smo ukazali da ih strano vlasništvo, samo po sebi, ne garantuje.

Ključne reči: bankarski sektor, internacionalizacija, strane banke, poslovne performanse

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MARKETING DIMENSION OF THE INTERNATIONAL TRADE COMPANIES WITH SPECIAL EMPHASIS ON THE SERBIAN MARKET

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Abstract: *The internationalization of trade indicates the possible direction of strategy of growth and development on international and global scale. This business can be done ad hoc, but implies a careful design and orientation of activities. In other words, it is necessary to carefully consider the possible strategy of internationalization based on clear and proven marketing guidelines. Thus, trade marketing dimension of internationalization comes to the forefront, which is the subject of this paper. Through theoretical and practical research will try to answer questions that come to mind to retailers in the determination of business outside the national market, namely: 1) whether to operate outside the national market? 2) Where to perform? 3) What program of marketing activities to present with in the foreign market? For this reason, the focus is firstly on the theoretical basis of marketing international trading companies, and then the practical analysis with special emphasis on the Serbian market.*

Keywords*: internationalization, trade, marketing, marketing mix, the Serbian market*

Introduction

Trade has quickly gone from local to international activities. In nowadays conditions, trade internationalization became inevitable and unstoppable process. Relying on theoretical explanations, internationalization can be seen from evolutional, matrix and global aspect. All these aspects point to the fact that trade internationalization is the strategy with strong marketing impulse. In fact, many

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trade companies have achieved remarkable results thanks to the broad marketing aspects and incentives. All this confirms the thesis about the interconnectedness of international marketing and internationalization, regarding marketing dimension of trade internationalization. In conditions of growing internationalization of trade, marketing gets guiding and advisory role as directly contributing to learning about international business environment and market opportunities, consideration of market attractiveness and prospects of individual business formats, and integration of all business functions in the direction of realization of the target markets. On the other hand, marketing experience and marketing ability of company are a significant factor in the successful implementation of the strategy of trade internationalization. It is therefore not an accident why it comes to a rapid and parallel development of international marketing, on the one hand, and internationalization of trade, on the other. Based on these facts, there is a need to analyze the marketing of international trading companies, or research, selection and choice of market to perform, which is the subject of the first part of the work. It logically opens the question of standardization versus adaptation of "package" offer to requirements of the local (target) market. As the Serbian market in recent years becomes attractive for international retail chains, this suggests that the internationalization of trade has not missed our market. The starting hypothesis of this paper is that international trade companies have their own marketing guidelines and experience. In order to test this hypothesis, firstly, the paper will analyze theoretical basis for marketing of international trade company, with a focus on research, selection and choice of market to entry and strategic options in creating a "package" deals. The second part of the paper, using secondary data sources, methods of analysis and comparison, aims to highlight the similarities and differences of international marketing activities of trade chains in Serbia. The ultimate goal of this paper is to present the marketing aspect of internationalization of trade companies in Serbia.

1. Theoretical Basis for Marketing of International Trade Companies - Research, Selection and Choice of Markets to Entry

Marketing activities of international trading companies in the first place require international market research regarding market of countries where the business is expanding. Afterwards, the selection and choice of markets is applied, where the performance goes either through standardized "package" offer, or by customizing it to local requirements. These activities are the subject of research in future presentations.

Information in the international market and the conditions under which it operates is a key component of successful marketing strategies of trading companies that want to enter that market. Information can range from general, in terms of assessment of market opportunities to specific, related to the product assortment, price, promotion and distribution. Numerous studies about arising

mistakes in international marketing suggest that most mistakes could have been avoided if only the decision makers have better known international market (Cavusquil, Ghauri, Agarwal 2000, 10). The above mistakes typically occur because the need for market research was ignored, because of inadequate research, or errors in the assessment of cultural, economic, political and other differences between the markets.

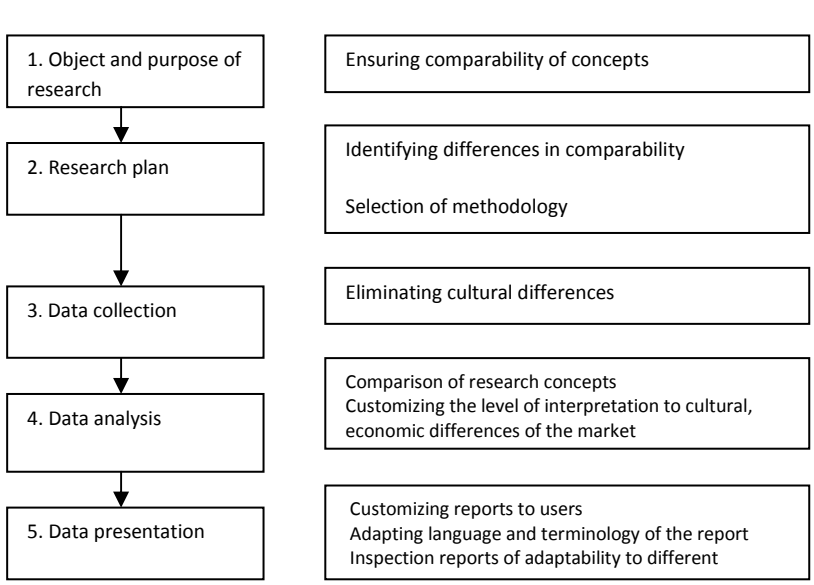
The very fact that trade companies are spreading their operations outside the national market, indicates the need for current and accurate information, which is obtained through market research.

Speaking of market research, in the literature there are many definitions (Rakita 2009, 71-78). The most widely accepted is the one which indicates that it is the systematic collection, processing and analysis of data to obtain information in order for making marketing decisions. Essentially the research of domestic and international market is the same, except that the environment is different. Tools and techniques that are applied are the same, with the very object of study varying from country to country.

Regardless of whether it is a study of domestic or international market, all information obtained in this way, can be divided into three groups (Ghauri, Cateora 2006, 151): 1) general information about the market, 2) the information necessary for the assessment of market opportunities by anticipating the social, economic and consumer trends in selected market, and 3) specific market information needed for making decisions about product, price, promotion, distribution and marketing plan development. In the domestic market research focus is on the third group of information, given that the prior two are usually available from secondary sources. In the international market research focus is on all three groups of information, with a wider scope of research which in particular should include the following information (Douglas, Craig 1997, 380): 1) information about the economy, 2) information about the sociological and political climate, 3) information about market conditions, 4) information about technology, and 5) information about the competition.

Given the broad subject of research, as well as the need for making complex marketing decisions, international market research is a multidimensional activity that is conducted through a process composed of the following stages (Ghauri, Cateora 2006, 151): defining the object and purpose of research, development of research plan, data collection from primary and secondary sources, analysis and interpretation of collected data, drawing conclusions and presenting the results. Although the stages of market research are similar for all countries, differences in implementation are due to differences in cultural, political, economic and technological conditions between countries. These differences may be visible already at the first stage of international market research - defining the object and purpose of research. For this reason, in the process of market research its international dimension should be considered also, as can be seen from Figure 1.

Figure 1: The Process of Market Research and Its International Dimension



Source: Douglas, Craig 1997, 154

Such analysis of the market research process is applied to all countries, and we should bear in mind its international dimension so we could be able, with the market research, to obtain accurate and credible data that will be used to make decisions on the selection of country to which market the trade company will expand its business.

International market research does not end with marketing activities of trading companies that expand their business outside national markets. The initial goal was achieved, and created a global picture of the situation in the international market. After that, it is necessary to determine target markets and countries in which to do business in the future. Activity of selection of the market further make complicated the changes in the international business environment, including the formation of regional trading groups, strategic alliances between companies and the exponential growth of information technologies, which as a whole affects the elimination of barriers between countries and the need to consider the world as a global entity. As a result, the choice of adequate access to selection of the market becomes more complex, therefore as a solution is applied the application of systematic approach to selection of the market by each company individually (Onkvisit, Shaw 2009, 253).

In accordance with the foregoing, the selection and choice of international market should be the strategic orientation of the trading company, and as such a part of an overall business strategy, which is linking its resource base, on the one hand, and position relative to the competition, on the other.

In process of selection and choice of the market that can offer the best potential for growth and development of trading company, it is necessary to perceive the characteristics of individual markets, as well as the extent to which these markets are integrated with others. From the standpoint of trade companies, special emphasis should be placed on the structure of the trade sector of potential market, as well as strategy for existing and potential competitors (Burca, Fletcher, Brown 2004, 227).

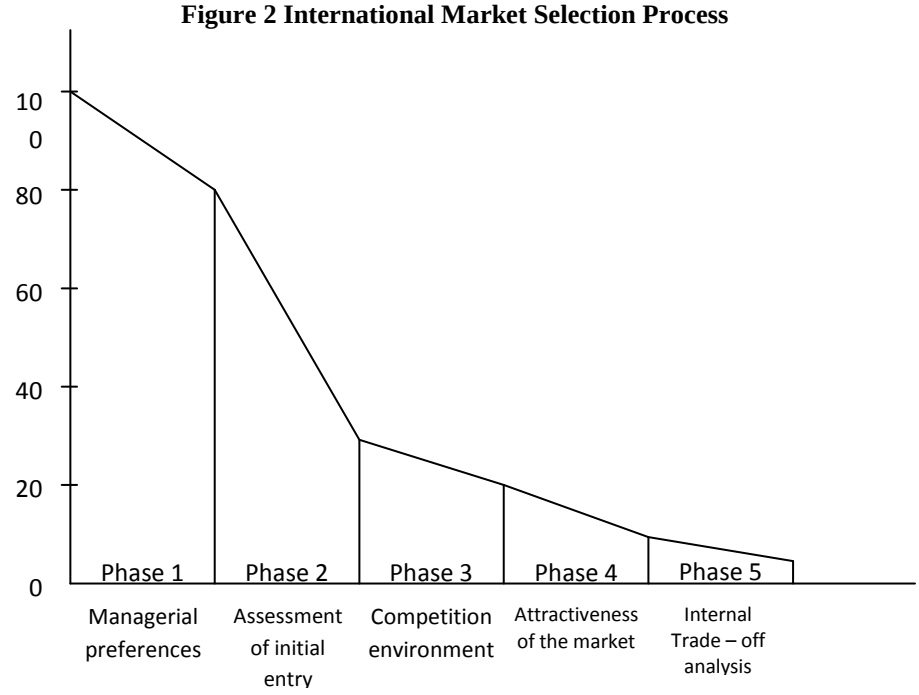
To meet these challenges, many approaches have been developed to approach the selection of international markets and adoption of the winning choice for business expansion. So the Australian Trade Commission (AUSTRADE User Guide 1990, 55) has developed the international market selection approach, which takes place in two phases, namely: 1) analysis of the attractiveness of foreign markets, and 2) assessment of the competitiveness of local firms. In the first phase the attractiveness of individual markets is perceived based on an analysis of market characteristics (growth rate, predictability of growth, the degree of market segmentation, the degree of market concentration, the availability of substitute products, etc.), conditions of competition (concentration of competitors, the concentration of exporters, the complexity of the distribution system), financial and economic conditions (price strategies, payment terms, parity of domestic currency, export requirements, operating costs, entry barriers) and the legal and socio-political conditions (political stability, trade legislation, consumer legislation, licensing, legislation on foreign investments, labor legislation, protection of intellectual property). Within this phase markets with the best competitive, financial, economic, legal and socio-political conditions stand out. For these markets, in the second phase, assessment of competitiveness of local companies is carried out, which can be potential competitors to the trade company. In assessing of competitiveness their managerial characteristics are perceived (resources, presence in international strategic alliances), market characteristics (efficiency of the distribution network, pricing strategy, advertising), technology characteristics (the introduction of modern information technology) and the assortment of products and services characteristics (quality of products and services, introduction of new products, packaging, trademark). Markets with the best competitive conditions are markets on which trade companies will focus in future operations.

Previously described approach to selection of international markets has experienced its modification and improvement by the authors Toyne and Walters, who have perceived international market selection process in five stages, which can be seen from Figure 2.

In the first phase determination of markets that are not interesting for the trading company is conducted because of its growth potential, as well as markets that are excluded from further analysis because of the statutory legal and political limitations. It often happens that many markets are excluded due to the subjective preferences of manager (e.g. a bad experience while traveling to India can result in

having India off from further analysis by manager). As you can see from the chart, in this phase from further analysis are excluded approximately 20% of countries as potential markets for future operations.

Figure 2 International Market Selection Process



Source: Toyne, Walters 1993, 103

The second stage involves the assessment of macroeconomic factors on international markets. Described as "assessment of initial entry", this phase excludes economically unattractive markets. In this context the evaluation of market attractiveness is done in terms of political and social conditions, as well as the potential for further growth and development. The aim is to evaluate the existing demand in the market, as well as unmet demand or market niches that may represent a potential source for generating income of trade company. As you can see from the chart, in this phase about 50% of countries are excluded as potential markets.

In the third phase, in which object of analysis has 30% of the countries of the world; the conditions of competition on the potential markets are analyzed. First of all, object of study are entry barriers (customs, quotas, standards), exit barriers (repatriation of profits, dividends and capital markets, tax payments and transfer of technology), and market barriers (staff, availability of storage, transportation, allocation of resources). Especially in this phase are analyzed existing and potential competitors in the international market, which may pose a threat to trade company.

The fourth phase of international market selection process focuses on understanding the conditions that apply to potential markets in terms of efficient accessing resources (procurement from local sources, the use of local distribution networks, access to local resources of promotion), and using the appropriate strategies and models of performance in these markets. For example, if one trade company internationalize its operations through licensing arrangements, and on the potential market there are legal restrictions on the number of licensing arrangements that may be realized, appearance in that market may be questionable. As a result of this phase, excluded from further analysis are another 10% of countries as potential markets.

In the last phase (internal trade-off analysis) the selection of markets for trade companies to expand their business in the future is realized. In this context, the evaluation of market attractiveness in terms of the need for additional investments and their compatibility with the objectives of the company and the possibility for creating and maintaining long-term competitive advantage is done. Priority may be given to those markets that require less resources and whose conditions are compatible with the aims of trade company and its plans and capabilities to maintain competitive advantage and attract and retain customers. As a result of this last phase singled out are markets that are of interest to trade companies, and on which further marketing activities will be realized, from creating a "package" offer, over the price strategy, distribution, up to the location of sales outlets.

2. Strategic Options in Creating a "Package" Offer - The Global Standardization versus Customization to the Needs of Selected Market

International trading companies, in order to expand their global presence, increase market share and overcome problems related to the saturation of existing markets, continuously find opportunities for growth and development. When they decide to start a business outside the national market, in the specific country, one of the key strategic decisions is whether to use standardized marketing mix (assortment of products and services, price, promotion, distribution, location) and the same marketing strategy in all countries, or to adapt marketing mix and operating strategy to local market conditions. In this regard, in the literature on international marketing two diametrically opposed interpretations can be found, in which one argues about the standardized "package" offer, while other argues the need to adjust the "package" offer to conditions which are applicable to the selected market.

Thus supporters of a standardized "package" offer justify their thesis by the fact that consumers live in a global world in which different markets and conditions in them does not represent the determinant for marketing activities. According to them, consumers belong to homogeneous groups whose needs can be met by standardized "package" offers that are created by international companies.

In this group of theorists also belongs Levitt (1983, 100), according to whom only successful are those global companies that are able to offer their customers a globally standardized "package" offer of products and services.

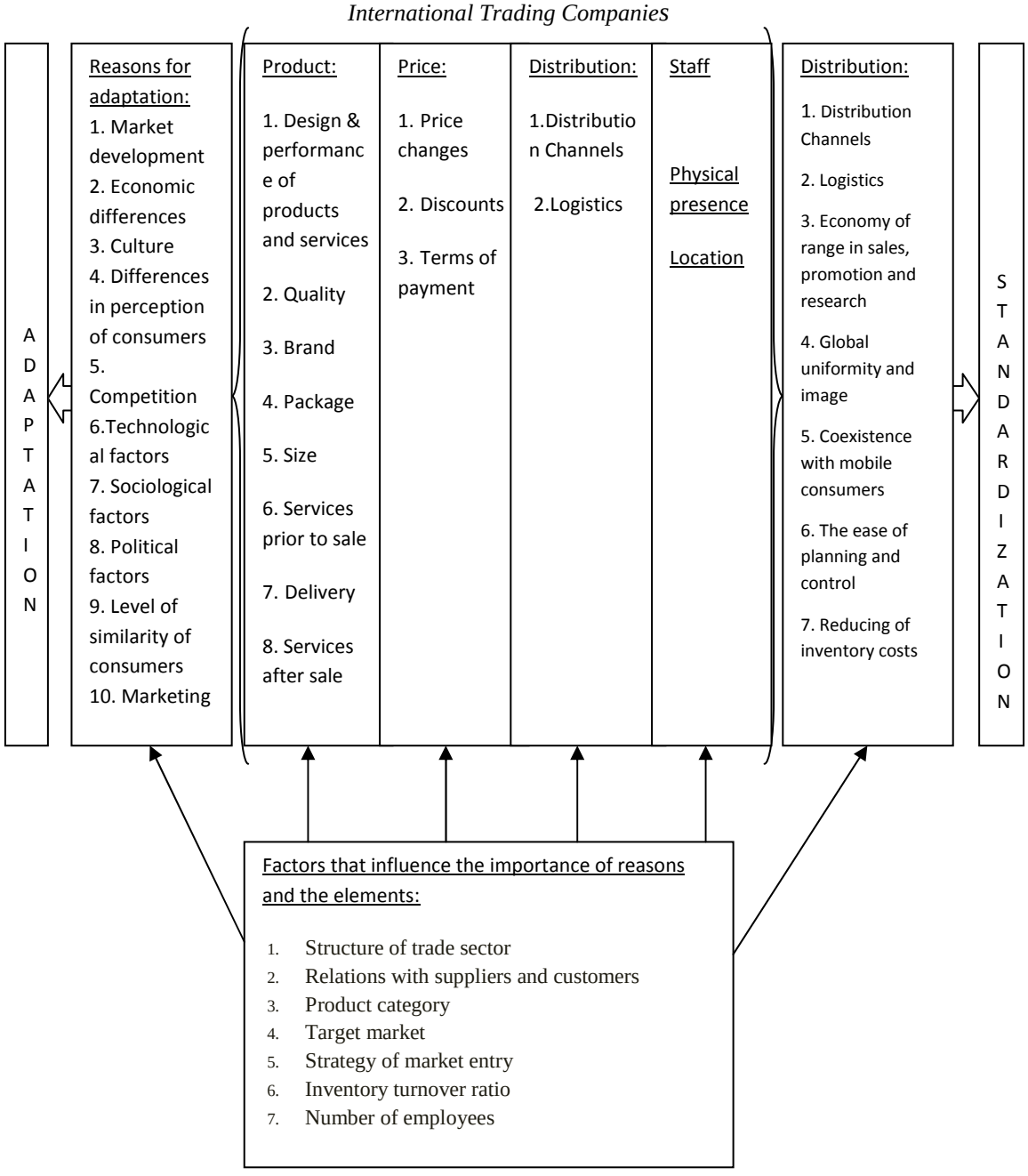
In their theoretical explications, Papavassiliou and Stathakopoulus (1997, 504) state four reasons that are justifying Levitt's thesis. First, it allows international companies to maintain a consistent image and brand identity on a global basis. Second, it minimizes confusion for customers who travel around the world. Third, it allows international companies to develop a unique strategic approach. Fourth, it allows companies to use the advantages of economy range in area of product sales, and also the experiences which are gained in some markets.

Contrary to the theoretical stance of Levitt, supporters of adaptation or custom "package" offer start with an assumption that the exaggerated philosophy of global standardization of "package" offer is completely contradictory to real facts. According to them standardization is at best case impractical. Therefore Ruigrok and Van Tulder (1995, 210) suggest that it is impossible to achieve market efficiency simply by using the same marketing mix and same marketing strategies in all countries (markets). The point is in adjustment to the marketing mix elements and to the needs and desires of consumers in target markets, due to differences in the macro and micromarketing factors that determine those markets.

Previously mentioned diametrically opposed theoretical interpretations (standardization versus customization) are rejected by different authors who point out that it is difficult to implement only one strategy in practice, and emphasize the importance of simultaneous application of both strategies, both standardization and adaptation (Choi, Jarboe 1996, 33; Van Raij 1997, 260; Hennessey 2001, 50; Akaka, Alden 2010, 40). According to them, the companies that expand their operations outside the national market must incorporate elements of both approaches. Hence, international or trading companies in this case, will standardize various elements of marketing mix and marketing strategy, on the one hand, and shall adjust them when necessary, in order to meet the demand of the target market, on the other. How will the international trade companies incorporate elements of these two approaches depends on a number of determinants. Vrontis (2001, 290) has these determinants grouped into the reasons and factors, which can be seen in Figure 3.

As it can be seen from the picture, reasons are those determinants from which depends whether the company will decide for standardization or adaptation, and integrating them, while factors are those determinants that affect both the reasons for selecting strategic options, and the instruments of marketing mix that are to be standardized and/or adapted to the needs of the local market.

Figure 3: The Conceptual Approach to a Standardized or Custom "Package" offer of International Trading Companies



Source: Vrontis 2001, 290

3. Marketing Dimension of Trade Internationalization - Example of the Serbian Market

By moving onto the concept of an open and modern market economy in the end of 2000, the Serbian market became attractive for foreign trade companies. Arrival of the first foreign trade company is registered in 2002, and after that came the period of more intense appearance of foreign retail chains in our market. Currently in Serbia the following foreign retail chains are operating: 1. Mercator (Slovenia), 2. Merkur (Slovenia), 3. Energo Tuš (Slovenia), 4. Metro Cash & Carry (Germany), 5. Veropoulos (Greece), 6. Pevec (Croatia), 7. Interex - Intermarche (France), 8. Idea (Croatia), 9. Mr. Bricolage (France) and 10. Delhaize (Belgium).[1] Given the business strategy, time of arrival at our market and spread of its retail network, subject of following analysis will refer to these companies: 1. Metro Cash & Carry (Germany), 2. Mercator (Slovenia), 3. Interex - Intermarche (France), and 4. Idea (Croatia) (Ćuzović, Sokolov Mladenović 2011, 295). By using secondary data sources, methods of analysis and comparison, we will point out the key characteristics of these companies, their operations in the Serbian market, their strategies of appearance, composition of marketing mix instruments, competitive advantage, in order to show by comparative analysis the similarities and differences between these companies, the prospects of their further growth and development in the Serbian market, with special emphasis on the marketing dimension of the internationalization of their operations.

3.1. METRO Cash & Carry

Metro Cash & Carry is the market leader in wholesale, which operates within the METRO Group retail chain that is the third largest in the world. The group is now present in 31 countries of the world to more than 2,200 locations and has 270,000 employees. The structure of the METRO Group is formed by retail chains that are operating independently on the market: 1) The wholesale chain Metro Cash & Carry, which are the largest members of the group, 2) Real supermarkets - retailers of food commodities, 3) Media Markt & Saturn - European market leader, specialized for retail trade of media and other electrical devices, 4) Gallery Kaufhof - the modern department store.

Metro Cash & Carry, during its historical development, has noted the success in developing the concept of self-service wholesale. Founded in 1964 in Germany, it soon began expanding operations in many countries of Europe, Asia and North Africa. The traditional concept of self-service wholesale of this company is followed by the social legacy of the development of international corporate culture (Mierdorf, Mantrala, Krafft 2010, 32-36).

[1] There are indications that the German retail chain Lidl will soon expand its operations in the Serbian market, given that it has announced opening of its sales outlets in Subotica.

Therefore, the international expansion of company is an important element of its corporate strategy. For more than four decades of business, Metro Cash & Carry has achieved outstanding growth in Western Europe and became a leader in self-service wholesale, operating through 670 stores in 31 countries. Strategy of company's internationalization is focused on emerging markets of Asia and Eastern Europe and the Middle East and North Africa. Most of the locations where the company operates belong to the group of growing regions, and over three billion people, nearly half the world's population, lives in countries where the company is currently present.

By entering new markets, Metro Cash & Carry does more than enough to ensure its future: creating new jobs and often trace the direction of development of modern trade and supply structures. The company is committed to social responsibility, given that developing strong relationships with local producers and consumers, which builds trust and increases success.

Its development in Serbia, Metro Cash & Carry started in 2005 with the opening of the first distribution center in Belgrade - Krnjača. The value of investments at that time amounted to 15 million Euros, 300 workers were employed, and construction period was three months. Further development of the company Metro Cash & Carry was carried out by opening one more store in Belgrade and Kragujevac in 2005, followed by opening stores in Novi Sad and Nis in 2006, and one more in Subotica in 2010.

So, Metro Cash & Carry in Serbia operates through six distribution centers, or self-service wholesale. So far, the company has invested in the Serbian market a total of 120 million Euros, and employed around 1500 workers (www.metro.rs).

As in other markets, performing in the Serbian market company Metro Cash & Carry uses a strategy of direct investment, particularly Greenfield investment. The company has decided for the Serbian market by analyzing all the prerequisites that were mentioned before. The feasibility study is done by which, as positive aspects of doing business in Serbia, are characterized: market potential, opportunities to generate profit, a good business climate and tax policy, political and financial stability. In addition, through the feasibility study the market research was carried out, which is an integral part of the decision for expanding operations in a country.

The company's operations in the Serbian market are based on the strategy of adapted "package" offer to the needs of local market. In doing so, it goes for the assortment development concept which structure is about 80% of domestic products, depending on the season, and about 50% of the products under the trademark. Trends that the company have brought to the Serbian market are: transparency of operations, quality of products, services and human resources, focus on specific market segments (professional customers), developing long term relationships with suppliers and customers and B&B operating concept.

What makes the company Metro Cash & Carry recognizable in the world, and in the Serbian market, is the introduction of the self-service wholesale concept where under one roof a wide range of products can be found, designed for customers from sectors of catering, merchants, craftsmen, who use the goods for further performance of their professional duties. From this we can mark the primary groups of the company's customers and the advantages that Cash & Carry concept offers them. Thus, the primary groups of the company's customers are: 1) HoReCa – hotels, restaurants, cafes, bars, catering services; 2) Dealers – kiosks, STR, gas stations, bookstores; 3) Other professional customers – service companies, ministries, diplomatic agencies, associations, which in one place can find all needed for the equipment of their office space, as well as products for everyday use (detergents, office supplies, paper for photocopying, scanners, computers, etc.).

The concept of self-service wholesale provides to these customers the following advantages: 1) In one place, under one roof, a wide range of products, easy shopping, saves time and increases efficiency in procurement; 2) Self choice of desired product; 3) Very competitive prices; 4) Prolonged working hours 7 days a week, allows purchase at any time of day during the week; 5) regular catalog deliveries that keep customers informed about action products in a given time period; 6) 80% of the assortment consists of products of domestic manufacturers and suppliers.

The competitive advantage of company Metro Cash & Carry on Serbian market is based on two aspects. First, the development of partnership relations with suppliers, and second, development of partnership relations with customers.

Development of partnership relations with suppliers are initially based on selected approach and their selection, which includes several key aspects: 1) product quality, 2) competitive prices 3) continuous quality assurance and product excellence in monitoring of qualitative and safety standards, 4) reliability of deliveries, 5) the efficiency of logistics for each distribution center, 5) technological infrastructure, 6) financial stability, and 7) business in accordance with the policy of environment.

These aspects also indicate that the company Metro Cash & Carry is having the optimal combination of marketing mix instruments, which, on the other hand talks about marketing dimension of international companies operations, which we have already spoken.

The system of Metro Cash & Carry operating allows the selection of suppliers exactly based on the above criteria, after which starts the cooperative arrangement that obliges suppliers to respect internationally recognized standards: ISO 9000, ISO 14000, IFC (International Food Standard), HACCP, CODEX ALIMENTARIUS. In this way is provided a guarantee of operating in accordance with the satisfaction of quality control. The ultimate goal is to accomplish a high quality of provided services, which applies as on products in stores, as well on the way of operating and on the manner of providing services in the 40 year long tradition of doing business.

In order to maintain the high quality of products, in Metro Cash & Carry facilities a detailed internal product control is conducted. Control is implemented in terms of: quality assurance of products, manufacturing products under the trademark, and imports.

A particularly important aspect of the development of partnership relations with suppliers is related to the production of commercial products under the Metro brand. Product of Metro trademark is the one product that is manufactured exclusively for Metro and for no one else. In its business portfolio company Metro has over 200 commercial brands, and in Serbia has begun a production of products under the name: Aro, Horeca Select, Sigma and Fairline. Products that are labeled on the packaging Aro features the quality and low price, while the products with the Horeca Select are mainly for caterers.

Metro in Serbia cooperates with more than 1,000 manufacturers and suppliers. Project launched in 2007 so far has achieved the following results: 1) collaboration with 56 manufacturers in the production of trademark products, 2) 320 locally manufactured products with trademarks, 3) 10 manufacturers who export, 4) 70 products that are exported, 5) countries in which is exported: Czech Republic (4 products), Ukraine (19 products), Hungary (20 products), Romania (1 product) and Croatia (over 50 products).

Another aspect of building and maintaining competitive advantage of Metro Cash & Carry in the Serbian market is based on developing partnership relations with customers, given that this is a specific market segment that uses the company's products to continue operations. In this context, the "package" offer, prices, promotion and distribution services are tailored to the demands of this target segment.

In support of this fact stands a project entitled "Partnership Relations with Customers", which was developed by the company while operating in Serbian market. Characteristics of this project are the following: 1) project aims to improve the business of small traders, 2) by the rules of regulation of retail space is provided full customer support, 3) the project is implemented with the participation of employees of the Metro company by providing consulting advices, 4) end result is to achieve better offer for consumers and advantages over the competition, 5) participation in the project "Partnership Relations with Customers" is open to all current and future professional company’s customers.

The implementation of such project by the small traders allows them achievement of multiple benefits, especially because they are threatened by competition from large retail chains. The end result is to increase sales volume of both small traders and Metro company, which leads to strengthening the competitive advantage and business performances.

Basic competitive advantages of company Metro are focused on creating distinctiveness from the competition. This mode of operation leads us to the conclusion about the implementation of differentiation strategy from the company Metro, which is based on building partnership relations with suppliers and customers, as we have already spoken.

In addition, building the competitive advantage of company Metro based on previously analyzed aspects, have led it to the level that currently generates 221 million Euros turnover, 8% of market share and outstanding financial performance.

3.2. Mercator-S, d.o.o.

Mercator Group is one of the largest and most successful retail chains in Southeastern Europe, a leading retail chain in Slovenia and increasingly affirmed chain in the markets of Serbia, Croatia, Bosnia and Herzegovina, Albania and Macedonia. We are talking about fast growing markets where in the big cities trade centers are opening because of population and their purchasing power. The aim of company is that in this way gain significant market share and to become the first or second largest retail chain in each market.

The most important and broadest activity of Mercator Group refers to retail and wholesale of food and non-food products, which are offered under various business formats. Currently, the structure of Mercator Group consists of the following companies that are dealing with trade activities: 1) Mercator IP, d.o.o. (Slovenia), 2) Mercator-H, d.o.o (Croatia), 3) Mercator-BH, d.o.o (Bosnia and Herzegovina), 4) Mercator-B, d.o.o. (Bulgaria), 5) Mercator-S, d.o.o. (Serbia), 6) M-BL, d.o.o. (Bosnia and Herzegovina), 7) Mercator-A, sh.p.k. (Albania), 8) Mercator-Mex, d.o.o. (Montenegro).

Mercator Group has a vision, mission and strategic goals that are the same for all markets in which it operates, as well as for the Serbian market, where it operates since the 2002 Annual Report 2010, 13-14).

The company's vision is to be a leading retail chain of food and non-food products. The mission of the company is by its business activities to realize: benefits for consumers by providing quality commercial services, high quality of goods and competitive prices, assuring benefits for employees by providing a safe and pleasant working environment and opportunities for personal and professional development, benefits to suppliers by cooperation in developing of quality and original products and providing opportunities for growth in Slovenia and in foreign markets, providing benefits for owners by assuring profitable operating, improving business efficiency and increase of enterprise market value, benefits for the wider environment, a responsible attitude towards the natural and social environment and respect for business ethics and social values in all areas of activity.

The values of Mercator Group's corporate culture are based on the following: 1) company is connected by trust and mutual respect, 2) no one knows the desires of our customers better than the company, 3) the company's operations are at any time and at all levels transparent and in the spirit of corporate culture, 4) company is expanding by a solid corporate culture.

From the pre-defined vision, mission and values of corporate culture stems further strategic orientations of Mercator Group:

- The largest retail chain in Slovenia, by: improving the competitiveness of the "package" offers and development of its own retail network;
- The leading retail chain in the markets of Southeast Europe, through: strategic alliances and development of its own retail network;
- Entering new markets, by: purchasing attractive locations, the development of its own retail network and strategic alliances;
- Development of "package" offers by: positive synergy of different products in the assortment, the introduction of products with potential long-term growth and profitability in the target markets and improving long-term competitive advantage;
- Profitable business, through: achieving a satisfactory level of trade margins, rationalization of costs and increasing productivity and increasing of return on invested capital.

Mercator Group has entered the Serbian market in 2002 with the construction and opening of the trade center in Novi Beograd. Therefore, a strategy of direct investment was used, to expand this strategy in 2006 starting with acquisition of Holding Rodić M&B, firstly with 88% of the capital, and then with 100% ownership over the capital of mentioned company. So far, the company invested 80 million Euros in the Serbian market and employed 3,700 workers (www.mercator.rs). The appearance on the Serbian market was preceded by a feasibility study which included all phases of foreign market research, as well as identifying the preconditions for performance in selected markets. The company's operating on the Serbian market is based on a strategy of adapted "package" offer to the needs of local market.

Creating competitive advantage of the company Mercator Group in the Serbian market is based on the following: 1) development of business format portfolio, 2) development of trademarks, 3) organizing of permanent price discount activities, 4) development of loyalty cards and 5) socially responsible behavior and concern about the environment. These activities are also the trends that the company brought to the market in Serbia.

What distinguishes company Mercator from competitors, both in the Slovenian market, and in the Serbian market, is the diversification of business formats. In response to the different needs and consumer demands companies

permanently audits the business format that includes the following activities: redistribution of retail space by product category, the expansion of retail space and increase of efficiency "package" offers in stores. The Serbian market company's business portfolio consists of the total of 108 stores within which there are: 12 hypermarkets, 24 supermarkets, 25 superettes, 3 convenience stores, 2 cash & carry facilities, 7 objects to sell technical products, 19 fashion stores, 10 facilities for the sale of sports equipment and 6 restaurants. Certainly, the biggest novelty that Mercator has brought to the market of Serbia is the construction of modern shopping centers.

Mercator shopping centers "under one roof" offer a variety of products and services in their own shops or in facilities that are leased. These centers provide our customers much more than shopping opportunities as they represent the centers of entertainment, relaxation and time saving. There are 3 Mercator trade centers in Serbia: in Belgrade, Novi Sad and Niš. The opening of these centers, through a strategy of direct investment, has brought multiple benefits to local governments, employment of new workers, obtaining construction permits, land acquisition, payment of taxes, etc.

Aside from the development of diversified commercial formats, Mercator also develops its own trademark. In that way trying to differentiate itself from competitors and to offer added value to consumers. On the other hand, seeks to employ local producers to manufacture products under the trademark and thereby encourage them to export. Mercator is currently working with 10 Serbian producers, while the products from prestigious brands are imported from Slovenia. In the Serbian market the Mercator trademark consists of the following products: Mercator products; Mercator Line; Table, get set; Healthy Life; Lumpi; Generic line and Complete care.

These trademarks include a wide variety of products for different consumer categories. It is particularly important that they are characterized by high quality and low price, which is in our market conditions important in attracting and retaining the target group of consumers.

Constant promotion activities are complementary with the trademarks development. Constant actions cover the following: Serbian basket, permanently low prices, weekly action, 5 a day and double points. Serbian basket offer comprises over 100 products of Serbian products that are sold in Mercator hypermarket at affordable prices, and the choice is adapted to the season, needs and desires of consumers.

Action of permanently low prices includes more than 300 products of acclaimed, best-selling brands. These are products for daily consumption, which occupy a significant share of the consumer basket. At permanently low prices are offered numerous products for everyday use, and lower price is available for a longer period of time. In addition, each week is offered five interesting products at very favorable prices.

Action 5 a day aims to encourage the Serbian market intake of fresh fruits and vegetables, considering that the selected types of products are offered at very reasonable prices. Action double points offers Mercator Pika cardholders double points for every purchase in Mercator hypermarkets, centers of technique, fashion and restaurants.

So, Mercator Pika card is an integral part of regular promotional activities of the company. On the other hand, it is the foundation of building and maintaining loyal customers in the Serbian market, which is a basis for creating and maintaining long-term competitive advantage. Users of Mercator Pika loyalty card have numerous advantages, which leads to an increase in the number of its users. Thus, in 2008th there were 129 017 users, while in 2009th this number increased to 154 915. The company plans are that the number of loyalty cardholders increases over time.

These activities indicates that the company Mercator has the optimal combination of marketing mix instruments, which, on the other hand, says about the marketing dimension of international operating of companies.

Besides, what distinguishes company Mercator from the competition is the socially responsible behavior and care about the environment. Through sponsorships, donations and participation in humanitarian campaigns, the company has the socially responsible behavior. The funds are intended to sponsor the development of sport, culture, education and projects for environmental protection. So Mercator promotes economic, social and society development of local community in which operates. It is the local community involvement what is creating wider economic and social results, forms a pleasant and orderly environment for customers and employees and increases the quality offer of products and services.

Basic competitive advantages of company Mercator are aimed at creating diversity related to the competition. This leads us to the conclusion about the implementation of differentiation strategy from this company, and based on the business formats, "package" offers trademarks and corporate social responsibility.

Besides, the operations of company Mercator in the Serbian market in the last eight years based on the described activities, has enabled it to reach a level of 9% market share.

3.3. Interex (C.D. S. d.o.o.)

Interex is part of French retail chain Intermarché, which is a supermarket chain located in accessible locations for consumers. Currently, in its business portfolio has about 4,000 stores, present in 10 countries. Total number of employees of the company amounts to 112,000, has 46 logistics bases and 10 specialized trademarks.

Business strategy of the company Intermarché in all parts of the world is offering products at low prices, with an emphasis on freshness and quality of products that are sold in stores sized between 2,000 and 2,500 square meters, located in accessible locations for consumers.

From the company's business strategy stems the values of corporate culture:

- Low price: in accordance with the purchasing power of consumers a wide selection of products are offered at low prices;
- "Friendly" retail facilities: the size of stores is tailored to the needs of consumers, allowing them to quickly and easily find the required products and save time when shopping;
- Nearness: retail facilities (supermarkets) of company Intermarché are located in the vicinity of residential consumers, by which is worked on creating and maintaining the loyal customers.

The company Intermarché in the Serbian market has appeared in 2004, after a detailed analysis of all factors that create the overall market ambient of a country. Investment feasibility study in the Serbian market is done through all phases of market research, as well as identification of the satisfactory market potential, as a landmark of decision on expanding the business. The company's operations in the Serbian market are based on the strategy of a custom "package" offer to the needs of the local market.

In our market, the company has started its operations through its Interex stores. Mitigating factor for the company was the fact that before Serbia, company expanded its operations to the market of Bosnia (1999th), therefore are observed the cultural, linguistic, demographic and sociological similarities between Serbian and Bosnian consumers. What differentiates retail chain Interex from competitors is the fact that it opened its first objects in Priština and Čačak, unlike other foreign trade companies which began with its operations in Belgrade. Assessing of the company was to begin from the "heart" of Serbia, to realize there good results, get to know the market thoroughly, and then open the facility in Belgrade, the largest and most demanding trade segment of Serbia. The assessment of the company is realized, so that after the facilities in Priština, Čačak, Niš and Zaječar, followed the opening of a supermarket in Belgrade, so the company currently operates in Serbia with 7 stores (www.interexsrbija.rs).

The appearance strategy of the company Interex in the Serbian market is realized through direct investment, so that the company has so far invested over 50 million Euros and employed about 200 workers. For the construction of its facilities in most cases the land was purchased at the selected locations, which is another reason why the company decided first for the central and southern Serbia, since the land prices there are much cheaper than in Belgrade.

Creating and maintaining competitive advantage in the Serbian market of company Interex is based on two facts: 1) a rich offer of products at low prices ("to be the cheapest on the market") and 2) a rich range of products under its own trademark. These are both trends that the company has brought to the market of Serbia, since that after 2004 is recorded a trend of increasing market share of products under the trademark.

With low prices company Interex offers to Serbian consumers deferred payment for 30 days, with respect to obligations to suppliers in order to avoid the risk of suspension of deliveries, which is contrary to its business policy. Offer of the cheaper products, which are cheaper acquired, has enabled the company to become recognizable by that in the Serbian market.

In addition, the company Interex is in the Serbian market identified by selling products under its own trademark, which started in 2004. The greatest success of the company derives from its trademark Top Budget, for which is in Serbia currently producing 80 products from 10 manufacturers, while imported from France are 120 products that are cheaper than products of the same quality. Thus Interex develops cooperation with Serbian producers who motivates to export in Bosnia and Romania.

Under the Top Budget trademark part of home care assortment, shampoos and personal hygiene, confectionery, chocolate and soft drinks are sold. The decision on who will produce products under the trademark is determined based on market conditions. Specifically, the company Interex has recipes for the production of trademark products and based on them decides which manufacturer to choose. If the formulas coincide with those by which the existing producers are working then their product is taken and packed under the trademark, and if not, then the manufacturers start to work by recipes of the company. Currently, in total Interex's assortment share of products under the trademark is about 30%.

The previous activities of the company Interex, that obtain its form of expression through a wide range of different products, a policy of low prices, trademarks policy, long-term relationships with consumers and producers, suggests that company is implementing the optimal combination of marketing mix, which, on the other hand, indicates the marketing dimension of the business internationalization.

Basic competitive advantages of company Interex are aimed at lowering the operating costs. This leads us to conclude that it is the implementation of costs advantage strategy, which the company achieves through cheap acquisition of products and low prices.

Furthermore, creating and maintaining a competitive advantage based on the above described activities has allowed the company Interex to achieve in Serbia a market share of 5% and accomplish outstanding business performance.

3.4. Idea, d.o.o.

Idea d.o.o. is part of the Croatian company Agrokor Concern, which is the largest private company in Croatia and one of the strongest companies in Southeast Europe with consolidated income of $ 7 billion Euros and 40 000 employees.

Inside the Agrokor Concern, whose primary activities are the manufacture and distribution of food and beverage and retail, among others also operates the Croatia's largest producer of mineral water - Jamnica, ice cream - Ledo, oil, margarine and mayonnaise - Zvijezda, the largest Croatian meat industry – PIK Vrbovec, then Belje - the largest agro-industrial capacity in Croatia, as well as a leading retail chain Konzum.

During 30 years of existence, Agrokor started as a small family business for manufacturing and selling flowers, and thanks to a clear business vision, strategy and prudent investments, managed to grow into a leading food-trading system in the regional market. Leadership positions of Agrokor companies are expressed by a high market share, therefore Ledo occupies 80% of the Croatian market of ice cream, Zvijezda firmly holds 83% market of margarine, while Jamnica dominates the market of mineral waters in Croatia with 82%.

By having achieved and reinforced such leading position in the Croatian market in all its activities, Agrokor is further moved towards accomplishing its strategic goal of achieving a stable and long-term key position in the region. Alongside companies from Croatia, Agrokor also comprises of companies in the region who joined over the past few years: from Bosnia and Herzegovina these are Ledo Čitluk, Sarajevski kiseljak and Velpro Sarajevo, then Dijamant, Frikom and Idea from Serbia, as well as Ledo and Fonyodi from Hungary.

Croatian retail chain Idea is present in the Serbian market since 2005 when through its acquisition became a part of the Agrokor Concern. Before that, the Idea in Serbia has operated as a local company in the wholesale segment. This indicates the fact that the Croatian company Agrokor entered the Serbian market through acquisition strategy, thus taking the company Idea. This business venture was preceded by a feasibility study which included market research, as well as identifying and satisfying all the preconditions of market potential, which resulted in a decision on expanding the business into the Serbian market. The company's operations in the Serbian market are based on adapted "package" offer strategy, with some degree of standardization of part of a "package" offer.

First store of company Idea is opened in Belgrade, after that company went into an intense expansion of its retail network in other cities in Serbia (Subotica, Čačak, Nis, Leskovac, Užice, Vrbas, Kula, Paraćin, Kraljevo), so that now in its business portfolio has 122 sales outlets in categories of hypermarkets, supermarkets and superettes. Part of it is also 7 wholesale establishments. Expanding the retail and wholesale network company Idea in Serbia carries out

through acquisition strategy, by taking over some formerly state trading enterprises in the larger cities in Serbia (www.idea.rs).

The Croatian company Idea has performed in the Serbian market after careful analysis of all factors that determine the overall market ambient (economic, political, demographic, institutional factors). Starting from the linguistic, cultural and demographic similarities between Serbian and Croatian markets, as well as the estimated market potential, the company's operations began in 2005th, with a vision to become one of the leading retail chains in the Serbian market. What differentiates the company from the competition is quite extensive retail network covering almost all parts of Serbia. Besides, in the structure of assortment it has about 60-70% of domestic producers.

Creating and maintaining competitive advantage in the Serbian market company Idea bases on providing value to consumers through superior service, satisfaction when purchasing and carefully selected assortment of goods with an emphasis on quality and trademark. In addition, the company has a well developed system of human resources management as well as management policy of environmental and working environment protection.

During several years of operations in the Serbian market, the company Idea has become known for its branched network and its retail stores that are affordable to consumers, in which a significant part of the assortment are products under the trademark. In recent years, this is especially attractive to consumers given the low prices of the products under the trademark, on the one hand, and a high quality, on the other. Recognizable brands of the company Idea are K + and Rial, which share in the assortment structure is around 30%.

Manufacturing of products under the Idea trademark is implemented by domestic producers, while in the process are included 20 Serbian manufacturers. At the same time, their products are exported to Croatia and Bosnia, where the company Idea is present. In this way the company makes its contribution to export promotion of Serbian producers who are involved in the production of products with trademarks of Idea. However, in selection of the right manufacturers, priority have those who adapt their production to requirements of quality management according to international standards: ISO 14001:2004 – Environmental Management System, ISO 9001:2000 – Quality Management System, HACCP – a system of hazard analysis and critical control points, GLOBALGAP – system of security and quality control in agricultural production. The quality and health safety throughout the entire production and trade cycle, work safety and complete cycle of environmental protection, are all realized through these management systems. The goal is to meet the needs of consumers with respect to the most important international standards.

Implementation of previous activities points out the fact that the company Idea has the optimal combination of marketing mix instruments, which, on the other hand, says about the marketing dimension of the internationalization of the company's operations.

Company Idea has a developed concept of human resources management, since they are the most valuable part of the company, permanent and comparative advantage in the market game and initiators of new achievements. In this sense, the company provides numerous opportunities for career development and promotion, provided that they are capable and willing to respond to the demands and dynamics of the business, ready for dedicated work, learning and loyalty to the company. The results are employee's satisfaction, positive organizational climate and culture that value and appreciate success in all areas.

Idea Company has precisely defined policy of environmental management. In this context general and specific objectives of environmental protection are determined with specific programs to achieve them. Along with consumers, knowledge is transferred to all other stakeholders, and with their behavior they are trying to set an example and guide to all for the benefit of nature and environment.

The basis of competitive advantage of the company Idea are aimed at creating diversity related to the competition. This leads us to conclude that the implementation of differentiation strategy in the case of company Idea is realized through its extensive retail network, concept of human resource management and environmental management policy.

In addition, creating and maintaining competitive advantage in the manner described above has led the company Idea to the level of market share of 8.3% in Serbia and achievement of remarkable business performances.

3.5. Comparative Analysis of International Trade Companies Operating on the Serbian Market

Starting from the previous case studies that illustrate operating of foreign trade companies in the Serbian market, we can make a comparative analysis which aims to highlight the key similarities and differences between these companies, which, on the other hand, create a basis for understanding the marketing dimension of trade internationalization in the example of Serbia. Comparative analysis of these companies will be done based on the results obtained from research of selected companies, so that we can show the following similarities and differences of the analyzed foreign trade companies:

- Metro Cash & Carry has appeared in the Serbian market in 2004, Mercator in 2002, Interex 2004, while Idea is present since 2005. This indicates that its operations in the Serbian market have first expanded Mercator, and later other trading companies. Among them only Metro Cash & Carry is in the

list of the ten most successful trading companies in the world, considering the sales volume.

- Current **number of employees** in analyzed companies is the following: Metro Cash & Carry has 1,500 employees, Mercator 3,700, Interex 200, Idea 2000. This indicates the fact that currently retail chain Mercator gives the largest contribution to the solving of unemployment problem in Serbia.
- In the **business portfolio** of company Metro Cash & Carry are type of objects like cash & carry (wholesale self-services), a total of 5 buildings. Business portfolio of company Mercator consists of shopping malls, supermarkets, hypermarkets, superstores, convenient stores and cash & carries, a total of 108 objects. Interex's business portfolio consists of supermarkets, a total of 7 buildings, while the business portfolio of company Idea consists of supermarkets, hypermarkets, superettes and wholesale centers, 120 objects in total. These data suggest to us the fact that the diversification is characteristic for the company Mercator, while by the number of facilities the company Idea has a leading position. Diversification, spatial and numerical expansion of business formats are trends that these companies have brought to our market.
- **Market share** of foreign companies is: Metro Cash & Carry 8%, Mercator 9%, Interex 5%, and Idea 8.3%. These data indicate that foreign trade companies have roughly the same market share.
- All of the analyzed companies had detailed **analysis of market conditions** and opportunities in Serbia, which were made within the investment studies. Within this analysis, it is estimated that Serbia has the potential for market performance of foreign trade companies. Comparative advantage have the companies Idea and Mercator, because of linguistic, cultural, geographic and demographic similarities between the domestic and the Serbian market.
- METRO Cash & Carry, Mercator and Interex have entered the Serbian market through a **strategy of direct investment**, except that in 2006 Mercator had also applied a **strategy of mergers**, by merging with the Serbian company Rodić. Idea is entered through **acquisition strategy**, by taking over domestic state trading enterprises. Total funds that the companies have invested so far in the Serbian market are: Metro Cash & Carry 97 million, Mercator 80 million, Interex 50 million, and Idea 40 million Euros. This indicates the fact that the company Metro Cash & Carry is the leader in terms of total funds invested in the Serbian market.
- METRO Cash & Carry, Mercator and Idea have started their performance in the Serbian market first from Belgrade. The company Interex has initially decided for central and southern Serbia, since the land prices are cheaper there than in Belgrade.

- Analyzed foreign companies on various grounds **create and maintain competitive advantage** in the Serbian market. Metro Cash & Carry is developing partnership relations with customers and suppliers, developing the trademark and serves a specific market segment (professional customers). Mercator has a diversified portfolio of business formats, develops the trademark, has regular price discounts, develops loyalty card and is characterized by socially responsible behavior. Interex is developing the concept of supply of products at low prices ("to be the cheapest in the market") and offers products under the trademark. Idea's emphasis is on services, selected assortment of products, quality, trademark, and managing the human resources and environmental protection. These are the trends that mentioned companies have brought in the Serbian market, thus putting the challenge to the domestic trading companies.
- Basics of creating the competitive advantage indicate the use of various strategies. **Strategy of differentiation or differentiated benefits** is applied by companies Metro, Mercator and Idea, while Interex has implemented a **cost advantage strategy**.
- All analyzed foreign companies adjust **"package" offer** to the conditions of the Serbian market, with the exception that "package" offer of company Idea is partly standardized.
- **In the assortment structure** of analyzed companies dominates the participation of domestic products in comparison with foreign products. The percentage of domestic products in the overall assortment of the analyzed companies is: Metro Cash & Carry 80%, Mercator 50%, Interex 60%, and Idea 70%.
- All analyzed companies have **their own trademark** for which production are engaged Serbian producers, who are both encouraged to export to markets where these companies present. Thus, Metro Cash & Carry cooperates with 10 manufacturers who are exporting at the same time. With the same number of manufacturers cooperates Mercator, and Interex and Idea are cooperating with 20 Serbian manufacturers.
- Structure of the assortment (the share of domestic products in total), as well as sales of products with trademarks (manufactured by domestic producers) indicates the fact that analyzed foreign companies have **developed relations with Serbian manufacturers**.
- All the analyzed companies have **developed the concept of long-term relations with customers** through loyalty cards and permanent research of needs and demands of consumers. In the development of loyalty cards Mercator has gone furthest by issuing for its consumers the Mercator Pika Card.
- All analyzed companies tend to have a **policy of the lowest prices in the market**. In this segment, Interex particularly stands out who seeks to offer products at low prices, under the slogan "be the cheapest in the market."

- All analyzed companies have a permanent **promotion policy** through various means (printed catalogs, television, newspapers, advertising, publicity, etc).
- Plans of all analyzed companies are to continue the expansion in Serbian market, by using the same strategy as while entering the Serbian market for the first time.

Previously shown similarities and differences of the analyzed foreign trade companies indicate the characteristics of their operating as well as the process of internationalization of trade in the Serbian market. On the other hand, with the arrival of these companies have started a new stage in the development of the trade sector in Serbia. Processes, tendencies and basic flows of modern trade are starting to be implemented in our trade sector. From the stage of obsolescence and dispersion, our trade gradually moves to the phase of concentration and gradual modernization. Domestic consumers changing consumption habits, sharpen their needs and demands, and gradually accepted the concept of "large" purchases and shopping in hypermarkets and trade centers, to which is often needed to pass some geographical distance to reach them.[2]

Given these facts, but also the results of research, we can conclude that the changing the habits of local consumers are consequence of trends in the business that brought with them international trade companies in the Serbian market. The results show that these trends are related to the introduction of new business formats, adapting the "package" offer to the Serbian market, offering a diverse assortment, low-price policy, the development of private label, long-term relationships with suppliers and customers, loyalty programs, etc. At the same time, these trends have a different degree of implementation of the analyzed companies. Apart from that, the results indicate the marketing aspect of internationalization of trade companies in Serbia, which was one of the fundamental aims of this paper.

Conclusion

Internationalization of trading companies cannot be done *ad hoc*, but with a careful design and directing the activities. In other words, it is necessary to carefully consider the possible internationalization strategies based on clear and proven marketing guidelines. Thus comes to the forefront the marketing dimension

[2] Numerous studies have been conducted in the Serbian market, and the results illustrate that Serbian consumers change their shopping habits, they gradually oriented to the weekly and monthly "big" purchases. These surveys are regularly conducted by GfK marketing agency and the results are published on the official website, as well as journals in the area of trade, retail and consumer behavior (magazines Market, Progressive Magazine, Our store, Instore magazine). See more about this on www.gfk.rs.

of trade internationalization, which includes a set of complex activities, ranging from selection, market research and selection of market for performance, to the decision about whether to perform with standardized or customized "package" offer. In such circumstances, marketing takes on an advisory and guiding role, so that researches confirms the fact that those trade companies that have marketing experience and marketing capabilities meet all prerequisites for the successful implementation of the internationalization strategy. Starting from the theoretical explanation of the interconnectedness of marketing and internationalization of trade, we aimed to test this on practical example of the Serbian market, which in previous years became attractive to many international trade chains. In this paper are made case studies of companies Metro, Mercator, Interex and Idea, that appeared in the Serbian market in different time periods, by using specific strategies of performance with a combination of marketing mix instruments. Comparative analysis of these companies operations has shown that there are both similarities and differences in marketing dimensions of internationalization of their operations. On the other hand, the arrival of these companies has started a new stage in the development of the trade sector in Serbia. Processes, tendencies and basic flows of modern trade are starting to be implemented in our trade sector, which from the obsolescence phase gradually moves to the phase of concentration and modernization.

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MARKETINŠKA DIMENZIJA INTERNACIONALNIH TRGOVINSKIH KOMPANIJA S POSEBNIM OSVRTOM NA TRŽIŠTE SRBIJE

Rezime: Internacionalizacija trgovine ukazuje na mogući pravac strategije rasta i razvoja trgovinskih kompanija u međunarodnim i globalnim razmerama. Ovakvo poslovanje ne može se odvijati ad hoc, već podrazumeva pažljivo osmišljavanje i usmeravanje aktivnosti. Drugim rečima, neophodno je oprezno sagledavanje mogućih strategija internacionalizacije na bazi jasnih i proverenih marketing smernica. Na taj način do izražaja dolazi marketinška dimenzija internacionalizacije trgovine, što je i predmet istraživanja u ovom radu. Kroz teorijsko-praktično istraživanje pokušaćemo da damo odgovor na pitanja koja se nameću trgovinskim kompanijama u procesu opredeljenja za poslovanje izvan nacionalnog tržišta, a to su: 1) da li poslovati izvan nacionalnog tržišta?, 2) gde nastupiti?, 3) sa kojim programom marketing aktivnosti se predstaviti na inostranom tržištu? Iz tog razloga, u fokusu rada najpre se nalaze teorijske osnove marketinga internacionalnih trgovinskih kompanija, a zatim i praktična analiza s posebnim osvrtom na tržište Srbije.

Ključne reči: internacionalizacija, trgovina, marketing, marketing miks, tržište Srbije

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MARKETING THEORY AND PRACTICE DEVELOPMENT

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Abstract: *The theory and practice of marketing have evoluted significantly. The research area is constantly expanding and adapting in response to a very dynamic and numerous changes. A number of authors, organizations and institutions contributed to development of marketing theory. Various methods and models have been developed and their application contribute to improving the efficiency of the economy and society. The authors have analyzed the development of marketing thought, marketing approaches, changes in the marketing and research challenges for the theory and practice of marketing in the modern economic environment.*

Keywords: *marketing, marketing theory, approaches to marketing, marketing research*

Introduction

The challenges faced by marketing are numerous and increasingly complex. Answers to very complex and important issues are being sought from the theory and practice of marketing, which conditions the need for their continued development. Changes in the form and content of marketing thought reflected the nature of dominant marketing problems. Given that since the occurrence, i.e. separation of marketing as a scientific discipline, business conditions have been changed constantly, often even drastically, the subject of marketing research has been assuming new outlines. Consequently, marketing concepts have evolved, were modified, or even disappeared to give way to those who interpret the current business environment more adequately.

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A number of dynamic changes in the conditions in which market participants are operating at the beginning of the twenty-first century have led to further modifications and development of the subject of marketing research. The group of factors that affect the enterprise's operations were constantly becoming more complex, and these factors were supposed to be incorporated into the subject matter of marketing by defining new concepts. Numerous entities with which diverse relationships are created have significant impact on the operations of modern enterprises, so one of the major challenges is related to the coordination of mutual interests, needs, goals, resources and capabilities. On the other hand, modern enterprises have to coordinate their business practices with specific business operation standards, professional ethics, legislation, moral principles and requirements for environmental protection. The above mentioned and other factors of influence (political, economic, technical and technological) have intensified the need for continuous development of marketing theory and practice in order to find sustainable sources of competitiveness in the changed marketing environment.

Due to intensive changes such as the development of technology, globalization, deregulation, privatization, strengthened position of customers, increased competition, convergence of industries, transformation of retail and elimination of brokerage (Kotler, Keller, 2006, pp. 13-15), a holistic marketing was defined in response to these and similar changes that have occurred since 2000 and to the newly formed marketing environment. This more comprehensive, cohesive approach that exceeds traditional marketing concept applications starts from the development, design and implementation of marketing programs, processes and activities, to which the wide range and interdependence of effects are recognized. Holistic marketing is based on the assumption that everything is significant in marketing, and that a broad, integrated perspective of all the activities, functions and processes is necessary.

The aim of the present study was to determine whether a widely set and comprehensive concept of holistic marketing represents an appropriate theoretical conceptualization by which it is possible to interpret the key processes in the marketing environment of today. Namely, the essential research questions are: *Can holistic marketing also include the ongoing changes in the business environment or the development of a new concept or a new theory of marketing is needed? Or: Should the subject of modern marketing research be only what is included in this concept, or it needs to be extended? These questions have been "provoked" by the works of a large number of authors*[2] *which, in the light of the discrepancy between the theory and practice of marketing, contributed to numerous innovations in marketing and business models.*

[2] We have analyzed numerous papers of referential authors and publications (books and journals), on the basis of which we provided an overview of the development of theory and practice of marketing. Reference list includes the sources that are most often cited in the literature.

The evolution of marketing thought

Peter Drucker (according to: Kotler, 1988, p. 21) believes that the concept of marketing was first accepted in practice in the mid-seventeenth century. However, the emergence of marketing as a discipline is formally related to the first decade of the twentieth century (Milisavljević, 1998, p. 51; Vasiljev, 2001, pp. 21-24; Hanić, 2003, pp. 35-38), since when its subject and scope of research were changing and developing in a way that was considered from different points of view in the theory of marketing. Defining the development of the central issues in marketing, the authors have analyzed the evolution of marketing thought chronologically by decades, like, for example, Bartels (Bartels, Milisavljević), while others (such as Hunt) explained this development in terms of the dominant approaches to marketing.

Historical development of marketing as a scientific discipline - The development of marketing thought can be explained chronologically, mostly through decades. Bartels (by: Milisavljević, 1973, pp. 34-35) divided the development of scientific thinking about marketing in the period from 1900 to 1960 into six decades or stages:

1. *Period of Discovery*, which lasted from 1900 to 1910, was marked by the appearance of the conception of marketing (as a response to the increasingly complex problems of distribution in the U.S.), based on the concepts in advanced scientific fields such as economics, psychology and sociology. In this decade, the expression "marketing" was first used for a university discipline that started to be taught in some business schools.

2. *Period of Conceptualization* (1910-1920) is considered to be the inception period of marketing research[1]. In fact, marketing departments started to be established during this decade, at the beginning as departments for market/commercial research. At that time, papers were also published in which the fundamental marketing notions and ideas were explained, having enabled crystallization of the basic conceptions of marketing and definition of the activities that fall within the domain of marketing.

3. *Period of Integration* lasted from 1920 to 1930, and was marked by the further development of the theory and practice of marketing. That was the time of the emergence of extensive writings which integrated former knowledge, including the book "Principles of Marketing" by Clark from 1921 (Milisavljević, 1973, p. 35). This work is significant because the author has dealt with the role of marketing from a social point of view, unlike his predecessors whose analyses had the starting point in the subject-matter approach. Simultaneously, in practice, the area of marketing study was being developed, specifically focused on the market research.

[1] It is believed that the idea of marketing research emerged around 1910, with Stanley Latshaw stated as its creator. More in: Milisavljević, 1973, p. 34.

Departments for performing these activities were established in almost all organizations. Owing to them, appropriate methods and techniques were formulated (for example, George Gallup began to develop the technique of measuring the effects of economic advertising, and Arthur Nielsen developed the concept of measuring market share[2]).

4. During the *Period of Development*, between 1930 and 1940, particular, specialized areas of marketing were developed and the number of business schools that had specialized courses in this area in their curricula rapidly increased. Numerous and extensive studies appeared, including the book "Market Research and Analysis" by Lyndon Brown (cited according to: Hanić, 2003, p. 37). In the area of marketing research, quantitative and socio-psychological methods were increasingly applied.

5. *Period of Reappraisal* (1940-1950) marks the challenging of previous, traditional approaches and the affirmation of a new - management approach to marketing. During this decade, there was a significant progress in the development of research methodology, and new specific aspects of marketing were discussed, as well.

6. In the *Period of Reconception*, between 1950 and 1960, the trends that had started in the previous decade continued, with a pronounced effort to integrate the existing conceptions in a general theory of marketing. Therefore, the focus in the research orientation changed from the market analysis to research in the function of marketing management. This period was marked by increased orientation to decision making, societal aspects of marketing and quantitative analysis.

Further development of marketing thought by decades took place in the following manner[3]:

7. The most significant changes that occurred between 1960 and 1970 are the expansion of the concept of marketing to non-economic and non-profit organizations and the inception of the concept of social marketing.

8. Over the next decade, 1970 - 1980, the concept of social marketing was further developed and defined as the requirement that organization managements align three objectives when deciding: making profit to the enterprise, satisfying the desires of customers and fulfilling the interests of society (see: Kotler, 1988, p. 26). During this period, numerous papers were published relating to the marketing in the business (B2B) market.

[2] See: Hanić, 2003, p. 36.

[3] Bartels' review of the history of marketing thought applies only to the period from 1900 to 1960. For the definition of further trends in the development of marketing thought following sources were used: Milisavljević (1975), Bartels (1983), Kotler (1988), Hanić (2003) and the text of Ruth N. Bolton (2011) in the special issue of the relevant Journal of Marketing on the occasion of the 75th anniversary of its publication, which gives an overview of the dominant areas that the authors of published articles dealt with in the subsequent decades of the 20th century.

9. The ninth decade (1980-1990) is marked by development of the marketing of service organizations and by the increasing interest in the field of global marketing, macromarketing, comparative marketing, marketing ethics, and relationship marketing. During this period, particular development was registered in macromarketing, which refers to the analysis of environmental factors and evaluation of marketing activities from the standpoint of the wider public interest, not just of customers[4].

11. In the last decade of the 20th century, new concepts and techniques of marketing were developed: electronic marketing, relational marketing, direct marketing, 1 to 1 marketing, etc. In the works of authors of this period, special attention was focused on the study of market-based assets (brand equity, customer's equity, market knowledge and the like) and on the attempts of their evaluation. Empirical studies were conducted in order to assess and evaluate the contribution of market orientation to the business success of enterprises.

12. In the first decade of the 21st century, the dominant themes explored in marketing were: the development of a new marketing approach aimed at creating and delivering value to market participants and other constituents; the improvement of relationships and relationship networks among different actors and groups; their interconnection and involvement in the process of creating value; the contribution of marketing to the increase of intangible enterprise assets; the development of adequate systems of measuring business and marketing performances; innovations in marketing and marketing of innovations; the impact of technology and globalization on marketing and the marketing based on sophisticated information and communication technologies, and others.

The development of approach to marketing - In order to analyze the subject of marketing research, it is important to consider also the evolution of the approach to marketing (Hunt, 1976; Milisavljević, 1973, 1975; Hanić, 2003), which occurred due to the development of marketing as an economic process, a business concept and a business function, and its increasingly evident interdisciplinarity.

Institutional, subject-oriented and functional approaches were focused mainly on the review of the existing (positive character) business systems (for profit organizations) from the perspective of the marketing environment (macro aspect). *The subject-oriented approach*, focused on the study of marketing of certain types of products (i.e. products manufactured in a particular industry), was developed during the Period of Conceptualization, between 1910 and 1920, and is considered the first serious step in marketing research. Achievements of the subject-oriented approach are the specific areas of marketing, such as marketing of

[4] The development of this field followed the shift in the analysis of the impacts of the environment - public actions were initially regarded as a factor upon which the enterprise has no influence whatsoever. But, in the 1980s they were increasingly regarded (in particular the activities of government agencies and organizations) as a factor controlled by enterprises.

food products, marketing of pharmaceuticals and the like. *The institutional approach*, also created during the Conceptualization Period, is characterized by studying the performance characteristics of certain marketing activities in different institutions/organizations. This approach represented the grounds for the development of the marketing of production enterprises, the marketing of service organizations and so on, or more specifically - the marketing of agricultural enterprises, bank marketing, etc. In the analysis, the organizations were evaluated from the aspect of the product they make and the markets they supply, in order to explain the role and mode of inclusion of a specific organization in the marketing system. *The functional approach* (developed in the same period as the previous two) refers to the study of marketing from the perspective of functions or groups of activities performed by an enterprise in the domain of marketing and it is aimed at improving the processes related to these activities.

The management approach was founded during the Reappraisal Period, between 1940 and 1950, and was particularly developed during the 1960's. This approach is focused on optimizing the process of marketing management (through the stages that comprise analysis, planning, organizing and controlling), and on improving the role of marketing as a business function. It is considered the normative, micro approach that applies to the profit sector and is focused on issues related to the optimization of the marketing mix. This approach is characterized by an increased application of the theory of management and decision-making on issues of marketing in the enterprise. Given that marketing decisions are made under conditions of risk and uncertainty, the emphasis is on information, strategy and tactics in marketing, which was enabled through the development and use of behavioral science and quantitative analysis.

The systemic approach to marketing started to evolve in mid 1960s and it was focused on the study of various marketing institutions as specific systems. The main objective was to investigate the optimal ways of functioning of these systems (in the presence of restrictions in the environment) as entities, but also in their mutual interactions. *The systemic approach* involves both the micro-normative aspect (e.g. analysis of possible application of sophisticated optimization models, such as programming developed through operational research in the enterprise management) and the macro-normative aspect (examination of the system efficiency and effectiveness in the presence of constraints such as competition and government), but also the macro-positive aspect related to profit-making organizations (investigation of interactions among various marketing institutions).

The environmental approach to marketing, developed in the late 1960s includes a descriptive analysis of the limitations of marketing activities that come from the environment and relate to customers, competition, culture, legal framework, technology and institutional framework. Being of a macro-positive character, it refers to the profit-making organizations and includes a descriptive analysis of marketing activity limitations coming from the environment.

The emphasis on social marketing, with a focus on societal problems, leads to the expansion of the field of marketing research that acquires a micro-normative character and applies to non-profit organizations as well.

2. Changes in the subject of marketing research

In 1972, Kotler defined the field of marketing research by classifying previously studied areas in corresponding groups based on three categorical dichotomies: 1. whether the area relates to profit-making or non-profit sector; 2. whether it implies the micro or the macro aspect; and 3. whether it has the positive or the normative character (Kotler, 1972). Starting from these, as well as from other researches, certain conclusions can be derived about the development of the subject and scope of marketing research as a scientific discipline. Chronologically, the research focus has shifted from distribution problems, through market trends (at the beginning of marketing development, when it included only market research), various activities and specific aspects of marketing, manners of decision making and organizing activities, to the societal aspects of marketing, marketing ethics, marketing environment, interactions of entities operating in that system and the effects of their actions, marketing problems in the non-profit sector, in business, service and international markets, the impact of globalization and technology development on marketing, and issues such as innovation, marketing performance measurement, etc.

If the development of marketing thought is observed from the aspect of subject-oriented approach, it may be concluded that first the marketing of commodities developed, then the industrial marketing (i.e. marketing in the business, B2B market), which appeared much later, in the 1970s, while the marketing of services emerged in the 1980's. The subject-oriented approach is still the starting point of studies related to specific areas of business. The logic for the application of this approach lies in the fact that the marketing strategies, instruments and techniques vary considerably in the market of final consumption in relation to the business market, as well as in a variety of activities within these markets.

Today it is considered that the marketing concept is applicable to all organizations, but historically (Kotler, 1988, p. 21) the marketing research subject developed gradually, from the aspect of the institutional approach. The concept of marketing was initially applied exclusively in for-profit organizations from the business sector, in the following order: first, in the enterprises that produce and sell non-durable consumer goods; later, in the enterprises that produce consumer durables, and then in those for the production of industrial equipment; then subsequently in transportation companies (first aviation), banks, insurance companies and other service organizations. As mentioned above, the

implementation of marketing in non-profit organizations has also been advocated since the 1970s[5].

The development of marketing research from the aspect of the functional approach is most evident through the development and diversification of marketing activities, which are now largely defined from the aspect of the marketing-mix concept as all the activities aimed at creating, delivering and communicating superior value to customers. In the management approach, the subject of marketing can most appropriately be seen through the emergence and development of strategic marketing, in the systemic approach - through the development of relational, while in the environmental approach - through the development of social marketing.

The analysis of the marketing theory and practice development shows that significant changes have occurred that gave rise to the need for a modification of the subject of marketing research. The development of strategic management and marketing has affirmed the importance of proactive response, which conditioned the need to expand and deepen the subject of marketing research. Analyses show that some of the most significant changes in the theory of marketing and even in marketing research occurred in the late 1960s, when so-called alternative theories began to develop worldwide through the approaches in which marketing is viewed as an interactive process in a social context, whereupon the focus is on building and managing relationships. In this respect, a redefinition of fields and subjects of marketing research is advocated[6]. Unlike the previously dominant approach based on the marketing mix, these theories integrate into consideration the facts that the seller may not necessarily be the initiator in trade relations, that relationships need not involve only sporadic transactions, but also long-lasting and close relations, as well as that the entities in the business environment are linked in specific networks

[5] Kotler (1972) has expanded the generic concept of marketing by having proposed the use of marketing in all markets and in all the cases of social transactions in which there is a moment of exchange and a kind of reciprocity. Kotler and Levi explained the extension of the field of marketing to non-profit organizations by the fact that "the essence of marketing is a general idea of exchange, rather than more specific market transaction". Hunt (Hunt, 1976, p. 18) states that most of marketing professionals define the marketing research subject as a transaction. Some apply the narrower view and want to restrict it to a market transaction, while others suggest more liberal views wanting to include in the marketing research subject all transactions involving any form of exchange of values between the parties involved. Marketing can therefore be defined as the science of transactions - their structure, properties and relationships with other phenomena. Thus defined, the subject of marketing research overlaps with the research subjects of other disciplines - economics, psychology and sociology, as transactions are analyzed in all of them. However, transaction is the focal point only in marketing (Hunt, 1976, pp. 18-25).

[6] In one of the most frequently cited scientific papers aimed at reviewing the subject, nature and developmental prospects of marketing, Grönroos (1994) emphasizes that the then dominant reduction of almost entire theory of marketing to 4P concept; research subject exclusively to the product, price, promotion and place of purchase (distribution); marketing activities to the creation, delivery and communication of values to customers; and marketing tasks to finding the optimal combinations of marketing-mix instruments - is totally inadequate and unacceptable.

in which processes of exchanging goods, capital, knowledge, information, ideas, etc. are taking place. Among the most important approaches in this regard, there are *the approach that is related to the interactions/networks in the industrial marketing* (developed at Uppsala University in Sweden in the 1960s) from which the relational marketing evolved, and *marketing of services* as a separate area of marketing with its own concepts and models that take into account the specificities of services.

Numerous dynamic changes that followed in the conditions in which market participants were doing business led to further modifications and development of the marketing research subject. Marketing theorists and practitioners have become aware of the fact that a group of factors that affect the operation of enterprises is becoming more complex, and that these factors should be incorporated in the subject matter of marketing. Theorists who dealt with the definition of market orientation (e.g. Kholi&Jaworski, 1990; Narver&Slater, 1990) considered customers and competitors as key stakeholders of enterprises. However, the business of modern enterprises is, undoubtedly, strongly affected also by: employees, companies that represent current and potential collaborators (members of marketing channels, supply chains, the network where the company belongs), financial institutions, scientific research organizations, NGOs, government institutions, media and other entities in the market, as well as (in)formal civic groups, and finally - the community as a whole. Moreover, modern enterprises must harmonize their ways of doing business with certain operating standards, professional ethics, legislation, moral principles and requirements for environmental protection. The above mentioned and other factors have intensified the need for new marketing theories and practices in order to find new sources of competitiveness in a changed marketing environment.

3. Challenges to the theory and practice of marketing

In the conditions when marketing and other managers must make complex and interrelated decisions concerning many issues inside and outside the enterprise, mass marketing techniques are beginning to lose their effectiveness. Consequently, the marketing in practice will appear as very different in the XXI century than during the previous period (Keller and Kotler, 2006) because:

a) Marketing activities are not conducted only in marketing departments and within the marketing function, but management reviews the internal structures and processes and methods for implementing these activities so as to include all employees;
b) Changes in business conditions and market relations necessitate proactive reaction, creation and delivery of superior value for all participants and personalization of marketing offer which requires adjustment of marketing research subjects and all the instruments of marketing: product, price, channel and communication;

c) In order to meet the increasingly sophisticated needs and preferences of customers, enterprises develop strong relationships with various partners;
d) Long-term and short-term goals of business operations are becoming more multidimensional, because they relate to balancing the need to maximize the return on investment with the requirements for enterprises to comply with the legislation, to be socially responsible, engaged in the community and so on.

Bearing in mind that marketing managers have to make decisions on a variety of issues, with decisions related to an area must be consistent with those that apply to other fields, the necessity of introducing an integrated perspective becomes apparent. As a response to these challenges, a holistic marketing concept was defined in the marketing theory, implying "the creation and implementation of marketing activities, processes and programs in a manner that reflects the wideness and interdependence of their effects" (Kotler&Keller, 2006; Keller&Kotler, 2006, pp. 300-301). A basic postulate of holistic marketing is that "everything matters in marketing" (Keller, Kotler, 2006), which is consistent with the known statement of McKenna (1991, p. 68) that "marketing is everything and everything is marketing" or that the marketing organization becomes "everybody's job "(Greyser, 1997). By this concept, the expansion of the field of marketing research as a discipline was summarized and a consensus was reached related to the fact that it exceeds by far the research of a marketing mix only. Namely, marketing mix is the object of research of the so-called integrated marketing that is (just) one of the pillars of holistic, comprehensive, modern marketing. The holistic marketing is set up as a concept that implies processes of integration on several levels: the integration of marketing activities within the marketing function, the integration of marketing and other business functions in the organization, the integration of activities of the focal organization and its partners, as well as the integration of the organization into the environment - natural and social. Accordingly, the concept of holistic marketing includes the following areas: integrated, internal, relational, and socially responsible marketing.

Integrated marketing is oriented on combining different tools for creating, delivering and communicating value in the optimal way. It involves the creation of integrated marketing programs which are related to a series of decisions that are, in turn, focused on improving the value of marketing activities pertaining to a set of marketing instruments used by the organization to achieve marketing goals.

Internal marketing is aimed to provide that all employees in the company accept certain marketing principles and be oriented to the satisfaction of consumer needs. It takes place on two levels - within the marketing function/department and in the processes of integration with other business functions/organizational units.

Relational marketing (Bruhn 2003, Egan 2010, Gummesson 2002, Dwyer et al. 2009, Harrell 2002) is focused on building and developing close, long-term

relationships with individuals and organizations that can directly or indirectly affect the success of marketing activities of the enterprise. These relationships imply powerful economic, technical and social ties between the parties concerned. For the development of relational marketing, the turning point is the shift from the attitude that only customers are the key stakeholders of the organization, to the understanding that these are many and varied partners[7]. The ultimate result of the development of these relations is the construction of a unique marketing property - the marketing network consisting of the organization and its supporting stakeholders. The importance of marketing networks stems from the fact that the competition is increasingly taking place between networked partners, and less frequently between the organizations as entities. At the same time, the main challenges in the development of strong relationships imply an understanding of the goals, needs, requirements, capabilities and resources of different groups (Martin, Schonten, 2012).

Socially responsible marketing is directed at incorporating the economic, ethical, legal, and environmental principles into business activities. It includes a consideration of the interests of the community or the public; of ethical, legal, social and environmental contexts; or the consideration of marketing activities and programs, taking into account that both the cause and consequences of marketing expand outside the organization and customers - to the society as a whole (Kotler&Keller, 2006, p. 22). Social responsibility also means that employees in marketing should carefully consider the role they play and can play in terms of improving the social welfare of citizens. The goal of the organization can be defined in this sense as the identification of needs, requirements and interests of target markets and satisfaction of those needs more efficiently and effectively than its competitors, while at the same time preserving and improving the welfare of customers and society as a whole. The major challenges in the field of socially responsible marketing are related to the alignment of often confronted goals - making profits and meeting interests of the community, while preserving and improving the environment.

Thus established, the concept of holistic marketing involves defining and implementing marketing strategies, as well as plans and programs that are derived from it in order to attain the objectives of enterprises, customers and other partners, in accordance with the ethical, legal, ecological, social, and other principles of fair business.

From the aforementioned, it follows that the subject of holistic marketing research includes all areas that are in the focus of studying its integrative parts. The subject-matter of holistic marketing research, and modern marketing at the same time, could then be defined as:

[7] In this sense, the basic concept of relational marketing, CRM (Customer Relationship Marketing) - management of relationships with (strategically important) customers, was expanded into PRM (Partner Relationship Management) - management of relationships with (strategically important) partners.

- *Developing the marketing strategy (corporate, marketing strategies of SBU, functional) and the marketing program* as a set of elements that are combined at the level of the organization, with the aim of finding the optimal combination at which the value for consumers, and other participants, shall be adequately created, delivered and communicated;
- *Implementation of the marketing strategy and program*, so that the organization is market-oriented and focused on the appropriate response to the needs of key stakeholders, where marketing has the role of an integrating function;
- *Relations between the organization and the subjects in its business environment*, with a focus on establishing and maintaining mutually beneficial relationships of the organization and entities that affect its business, including both business and non-business (commercial and noncommercial), for-profit and non-profit, formal and informal, public and private organizations and groups;
- *Ethical, legal, social and ecological aspects of business*, with the focus on achieving economic goals of the enterprise, while simultaneously meeting the interests of the community and preserving the natural environment.

4. Challenges for the development of marketing practices in the emerging markets

Having considered the level of marketing development nearly 30 years ago, Bartels (1983) posed the following question: "Is the modern marketing aligned with the requirements and opportunities given to it?" As one of basic shortcomings of the contemporary marketing as a discipline, this author stated the lack of considerations relating to the global character of marketing and its global responsibilities and opportunities. Bartels, in fact, concluded that marketing, originally developed in the context of strong national economies and the theory of the domestic market, is not the discipline with globally developed principles that can be applied to a variety of national economies. In this sense, the author believes that marketing was not the instrument by which it would be possible to help underdeveloped economies to develop. The ultimate question is related to the positive and the normative character of marketing - what marketing is and what it should be (Bartels, 1983, p. 35)

Almost 30 years after Bartels, Sheth (2011) reopened the question of applicability of the established marketing constructs, theories and approaches in the context of so-called emerging markets, which have very high growth rates and which are considered the arenas where the most important struggles among global competitors will take place. This author also states that current marketing theory is based on the study of processes that took place in developed economies, that is, in industrialized markets and raises the question of how much and in what way strengthening of the emerging markets will affect their change. He even believes

that "many fundamental concepts such as market segmentation, market orientation and brand equity, are in contradiction with the reality of emerging markets" (Seth, 2011, p. 166), and that the growth of these markets, with changes in ways of thinking about them (because the scientists from developed countries have until now been exploring these markets from the aspect of "colonizers", along with many prejudices and stereotypes), provides an opportunity to develop or discover new prospects and practices important for the neglected and economically unsustainable markets (or market segments) within the more developed markets of national economies. The main issue that this author raises is: *Will the emerging markets be driven by the marketing which is known to us (as it was until now) or the new marketing practices and the discipline itself will be guided by these markets?* (Seth, 2011, p. 166). The basic characteristics of these markets are, in fact, significantly different from the characteristics of the traditional industrialized capitalist society, so there is a need to revise key assumptions and concepts of marketing theory and practice. Seth (2011) states the following as basic *specific characteristics* of most emerging or developing markets:

1. *Market heterogeneity* - These markets are local and very fragmented, while their heterogeneity is not caused by differences in the needs, desires and aspirations of customers (because most of them have little purchasing power and sophistication of demand is low), but rather by limitations in the resources available for the purchase of products and services. In rural areas, except for significantly lower incomes, customers do not buy products and services because they are often unavailable. These markets, with offers that are mainly provided by small local enterprises in which the director is also the owner, resemble the economy before the era of industrialization, or the agricultural economy;

2. *Great influence of sociopolitical institutions*, such as religion, government, business groups, non-governmental organizations, local communities, *on market trends*, with significantly lower impact of competition. These markets are often dominated by state-owned enterprises and highly diversified commercial and industrial groups whose position allows lobbying and advocacy in the definition of national economic policies. Achieved confidence in domestic providers (which sometimes includes even forced loyalty, due to the lack of choice) also implies aggravated entry of global competitors to these markets;

3. *Domination of products and services of unknown brands or unbranded products and services* - about 60% of consumption in these countries relates to unbranded products and services, as branded goods are still not available in large parts of rural areas, while households are not only consumer units, but the units that produce unmarked goods as well. Disorganized competition is also reflected in the facts that used products represent direct competitors to the new ones, that products generally have a longer life cycle, that imitation, forgery and duplication frequently occur due to the lack of regulation and standardization, and that the barter and reciprocal offers are the most common forms of exchange;

4. *A chronic lack of resources* is characteristic for the production, exchange and consumption, and it is therefore assumed that the perspective of improvisation in the use of resources should be the clue for innovation, distribution and exploitation of products.

5. *Inadequate infrastructure*, not only in the classical sense, but also in terms of underdeveloped infrastructure that should enable market transactions: sophisticated logistic systems for the distribution of goods, transport systems that provide consumers with easy access to retail stores, adequate telecommunication services, financial services that accelerate cash transactions, availability of appropriately directed electronic and printed means of communication, and so on.

However, despite the mentioned problems, it is also possible to identify the *comparative advantages* of these with regard to the developed markets:

1. *Advantage based on a strong reform-oriented economic policy* - the government policy contributes to strengthening the competitiveness in many ways: from the fact that the state is the largest purchaser in these markets, to the export promotion and protection from foreign competition and the development of special economic zones. Moreover, the government can run large marketing initiatives to strengthen the position of domestic brands, to emphasize the social interests in marketing, to promote regional integration, and similar initiatives related to enabling greater presence of enterprises in the markets.

2. *Advantage based on the possession of raw materials*, from labor (e.g. IT experts from India have already become highly demanded in the world, and the same may be expected to happen with the employees or personnel in other professional services), through industrial basic materials and energy to natural resources;

3. *Comparative advantage based on NGOs* - contrary to the trends in developed markets, where the marketing conception was first applied in the for-profit, and then in non-profit organizations, non-governmental organizations in developing countries launched incredible new, non-traditional marketing practices to reach markets that were previously unattainable, i.e. inaccessible, which were subsequently adopted by for-profit organizations, too. The concepts that were used in this were the inclusive marketing, related to serving a large number of people below the poverty line in an innovative way, and public-private partnerships as more frequent initiatives for satisfying the social needs of consumers that the free market could not meet properly.

This has provoked the need for changes, especially in marketing practices which are reflected primarily in aligning business and marketing strategies with the changing environment and, therefore, in adjusting the subject of marketing research. As in developed markets, it is possible to identify different conditions of demand requiring appropriate strategic responses of business entities in the emerging markets as well. On this basis, it is possible to conclude that the adjustments of marketing practices are imperative.

5. Conclusion

The conclusion that can be drawn from the analysis of the development of marketing, both in developed and in emerging markets, is that significant adjustments may be expected in marketing practices. It is very important for the theory of marketing to insist on the development of marketing guided by social interests. Marketing guided by social interests would allow perception of the discipline as a positive driving force in the society. The greatest challenges will, in this sense, refer to the fusion of the existing prospects with the opportunities ensuing from the new context: how to integrate new and old concepts, how to harmonize market orientation with market development, resource-based priority with a lack of resources, marketing practices in the developed and in the emerging markets?

Changes in the way of thinking and constant adjustments of marketing concepts and models are necessary. Transformation of the theory and practice of marketing is a continuous process that takes place through:

- Theory development,
- Realization of adequate empirical research,
- Analysis of the results of empirical research to test the theory, and
- Continuous learning.

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RAZVOJ TEORIJE I PRAKSE MARKETINGA

Rezime: Teorija i praksa marketinga su značajno evoliuirale. Područje istraživanja se stalno širilo i prilagođavalo kao odgovor na veoma dinamične i brojne promene. Razvoju teorije marketinga doprineli su brojni autori, organizacije i institucije. Razvijani su različiti metodi i modeli čija je primena doprinosila unapređenju efikasnosti privrede i društva. Autori su u radu analizirali razvoj marketing misli, marketing pristupa, promene u predmetu marketing istraživanja i izazove za razvoj teorije i prakse marketinga u savremenim uslovima privređivanja.

Ključne reči: marketing, teorija marketinga, pristupi marketingu, marketing istraživanja

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THE CHALLENGES OF SERVICE QUALITY AT HIGHER EDUCATION INSTITUTIONS

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Abstract: *Expansion of the scope of application of services marketing into education industry is especially manifest in higher education institutions. Dynamic and increasingly prominent changes in the services marketing result in a real need for a different approach to service provision in higher education. Essentially, universities, faculties and colleges should regard students as consumers of their services. In the second decade of the 21st century, students are increasingly perceived as buyers of higher education services, who expect higher quality of educational services, lower costs, up-to-date and practically applicable curricula. Conceptualisation of education marketing enables its distinction from business marketing and opening a separate niche within services marketing. Higher education institutions should achieve a balance between the students' needs and expectations on the one hand and building their academic reputation and attaining education goals on the other. It is for this reason that higher education institutions' service quality is gaining importance in education marketing, bearing in mind that it is a key component of enhancing the scientific competence of knowledge and academic affirmation of higher education institutions.*

Key words: *service quality, services marketing, higher education institutions.*

1. Introduction

Extending the scope of application of marketing into non-profit-making sector started in the 1960s, and the first more significant theoretical and practical research was conducted by Kotler and Levy 1969, arguing that marketing is a generic activity for all organisations. In an article dealing with the expansion of the marketing concept, the authors (Kotler & Levy, 1969) point to broader possibilities of applying marketing, thus paving the way to the dynamic growth in non-profit-making marketing. Having identified the emergence of an increasing number of different offers on the market, one can also single out the offers of higher education institutions and competing to attract students.

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Extending the scope of application of marketing in the first decade of the 21st century has resulted in new areas of study into marketing activities (Kotler, 2005), analysing, for instance, performance of social marketing, marketing in education, marketing in health care, marketing in sports, celebrity marketing, culture marketing and location marketing.

Comparisons between higher education and companies in what we call real sector in terms of marketing were almost unacceptable until about twenty years ago. If, however, students are regarded as consumers of higher education institutions' services, one can identify their interest in obtaining value for money, i.e. the best possible product or service (Glišović, 2003).

Education marketing theories feature an increasing number of comparative analyses of industrial companies and higher education institutions, in terms of both financial and other types of marketing performance (Kotler & Fox, 1995). The essential difference pertains to perceiving profit as the essential business objective in the real sector, unlike objectives that non-profit-making organisations strive to achieve. These analyses have resulted in identifying the specific practices of higher education institutions' marketing.

2. Marketing in Higher Education Institutions

Marketing theory offers multiple definitions of education marketing. Philip Kotler, the leading authority on marketing theory, defined education marketing very clearly, pointing out that it is *analysis*, *planning*, *implementation*, and control of *carefully formulated programs* based on consumer research de- signed to bring about *voluntary exchanges* of *values* with *target markets* for the purpose of *achieving* organizations' goals and *objectives* (Hemsley-Brown & Oplatka, 2006).

Essentially, institutions of higher education should balance students' needs and expectations with maintaining and enhancing academic repuation and other educational and social objectives. It is for this reason that marketers in education industry should accept social responsibility, and take into account the four relevant factors when making decisions (Kotler & Fox, 1995):

- consumers' needs
- consumers' wishes
- consumers' long-term interests and
- social interest.

Meeting the needs of students, as specific consumers, should be the priority objective, but not the only one, in the marketing of higher education institutions. Higher education services tend to meet wider social needs by it terms of developing students into human resources qualified to take over new social responsibilities actively. In view of the above, speaking objectively, higher education institutions have a social responsibility and therefore need to develop social marketing orientation.

The concept of social marketing orientation was promoted by Philip Kotler, arguing that the institution's essential task is to identify the needs, wishes and interests of its users in order to adjust them, and deliver service aimed at attaining satisfaction that we result in preserving users' and social benefit and long-term interests (Glišović, 2003). Such a definition of social marketing orientation is close to the vision of higher education institutions, as it demonstrates the complexity and specific character of using marketing concept in higher education.

From the marketing aspect, students should be viewed as active and inventive users of higher education services, acquiring new knowledge, experience and skills over the several years of provision of these services; it is, however, a fallacy to regard students as buyers of professional qualifications, i.e. diplomas. In addition, the marketing environment of higher education institutions is becoming increasingly dynamic and subject to change, especially in terms of establishing the European higher education area, the Bologna process and the Lisbon Convention on Recognition.

Services rendered by institutions of higher education are referred to as complex educational products in professional literature, which points to the broad social role of educational institutions, impact of financial performance in designing and providing such services, and the growing intensity of competition and rivalry between higher education institutions (Gajić, 2011).

Accordingly, the market offer of higher education institutions is represented by a complex product, which can be viewed in a broad or a narrow sense. In a broad sense, higher education institutions' product includes knowledge and experience that will qualify students for active participation in the labour market. In addition, such a product in a narrow sense can be viewed from two aspects. Students are active participants in creating and delivering educational content, users of available educational resources and designers of their own professional development. At the same time, the complex social role of higher education is also confirmed in the form of their autonomy, which is further reflected on specific value added within the changes initiated by practical needs.

One cannot ignore the occurrence of situations when the process of providing higher education services is not in compliance with a higher education's mission, which opens the issue of the necessity of change in the education process, aimed at promoting a broader social role of such an institution. Under the conditions of commercialised higher education, when universities, faculties and colleges become market participants, higher education institutions should use their products attract the attention of students, employers, investors, sponsor, donors, i.e. stakeholders in the higher education process. Higher education institutions' market orientation provides the opportunity for gaining benefits both to institutions themselves and their service users, i.e. interested factors of the marketing environment. The direct effects of higher education's market orientation are reflected in functional difference and increased opportunities for choosing attractive study programmes.

Higher education institutions achieve their mission on a heterogeneous market with a growing intensity of competition, where gaining short-term profit is very often a wrong choice when compared to long-term professional establishment. Long-term survival and building a prestigious image in the higher education market requires good knowledge of the essence and structure of higher education institutions.

3. The Components of Services Provided by Higher Education Institutions

By definition, higher education services are regarded as non-profit-making segment of the service sector, whereas services marketing theory is mostly focussed on the activities of profit-oriented service providers. Such services can be provided by institutions established by the state, government bodies or institutions, but higher education services can also be provided by institutions established by individuals, consortiums, foundations, and other factors from the private sector. Regardless of the ownership status, the non-profit-making character of higher education services should be clearly recognisable in the formation and delivery of such service offers.

The expert and practitioner communities increasingly tend to focus their discourse on the commercialisation of higher education and universities' market entry (Bok, 2005). Actually, over the past 30 years, universities have become incomparably more active in market focussed competitive presentation of their services. The practice of higher education in the USA shows that modern-day academic policies are leaning towards profit-based competition in offering attractive and up-to-date study programs. Competition in attracting potential students' attention is even compared to attracting the attention of the retail customers in the consumer goods trade.

Market competition of higher education institution results in adapting their offers to changed expectations of students, employers, and factors of broad social environment. Identifying and developing the components of higher education services is the appropriate approach in marketing-based establishment of modern-day universities, faculties and colleges.

Managements of higher education institution encounter considerable difficulties to market-focussed adaptation of their offer. The essential problem lies in the intangibility of educational services and active participation of students in the education process, imposing the need for permanent care of the perceived higher education service. Comprehension of the intangible nature of higher education services will be facilitated if the component of these services are identified and developed. The market offer of high education services can be divided into four key components (Ljubojević, 2002):

- tangible product,
- service product,

- service setting, and
- service delivery.

Tangible product denotes the component related to what higher education institutions convey to students and users of their services, and can be physically presented and touched. This component is material and physically present, and represented with appropriate diplomas in academic practices. It is particularly shaped, recognisable, protected and in compliance with legal and academic determinants.

Service product denotes the key performance of higher education service which enables its distribution to users, and refers to a created sequence of events that are supposed to lead to a desired result. All contacts of teaching and administrative staff, i.e. staff interaction at universities, faculties and colleges with students aimed at the final objective of qualifying students, acquiring theoretical and practical knowledge, learning outcomes and competencies are integrated into the service product of higher education institutions.

Service setting is the physical environment where the process of service delivery actually happens. In the case of higher education, these are auditoriums, lecture rooms, libraries, i.e. accredited space, and in a broad sense, the service setting also includes dormitories, cafeterias, student resorts, sports facilities, and similar places aimed at raising the quality of students' lives. This is a component of high education services affecting the "critical incidents" that occur within academic events, and eventually lead to students' satisfaction or dissatisfaction. In addition, service setting also indicates the selected strategy of target marketing, and the market position of the high education institution.

The fourth component of the higher education service is service delivery, demonstrating what actually happens during the exchange of high education services. Service delivery clearly demonstrates what the offer of higher education looks like in practice, unlike the service product that defines it theoretically or conceptually. It can be geographically dislocated, and measuring its effects is not simple. Delivery of educational services includes delivering lectures, tutorials, holding consulting sessions and examinations, mentoring theses, down to administrative procedures prescribed by accreditation (exam applications, term verification, course enrolment, issuing certificates and warrants, recognising and awarding diplomas, etc.). Managements of higher education institutions are increasingly interested in sustainable delivery of high-quality educational services, which demands permanent commitment to raising qualifications of the hired faculty and staff, but also measuring satisfaction of students, i.e. service users.

Managements of higher education institutions should take into consideration all the components of their services, as they are entirely perceived by students, i.e. users. It is therefore more than desirable to harmonise the perceived components of higher education services with the desired service package. The

relative significance of individual components of higher education services may fluctuate, but providing high-quality services ought to be the permanent orientation of higher education institution managements.

4. Quality of Educational Services

Interest in studying and establishing quality in higher education, as well as measuring its performance, has been noticeable for quite a long period now. Well-know European universities have tended to evaluate their primary activities, as it were, since they were founded (Jovetić, Stanišić, Semenčenko, & Mosurović, 2011). Evaluation is deemed to be the key component of developing the scientific component of knowledge, with notable impact on determining the overall academic image. Essentially, it is necessary to perform constant assessment of new knowledge, certification of students and professors, and ranking them based on joint standards of the higher education system.

Until the 1970s, the quality of higher education services was considered with a fairly bureaucratic approach. Legislation regulated the work of higher education institutions, both through budget-based financing of these institutions, conditions that students had to meet to exercise the right to budget-financed studies, normatively set rules for enrolment quotas, and through formalised and centralised criteria for selecting the teaching staff and awarding them appropriate academic titles. Such an approach resulted in a fairly successful provision of high-quality state-controlled European higher education system.

Following the aspiration of a major number of both European and universities on other continents, early 1980s saw the specification and introduction of formalised procedures of providing quality of educational process in higher education, resulting in the development of a particular management tool, known as the System for *Quality Assurance in Higher Education.*

Development of the European *the System for* Quality Assurance in Higher Education resulted in the understanding that defined and specified procedures can provide the desired quality of systems, processes, staff and final outcome. Soon afterwards, the Bologna process greatly accelerated the specification and introduction of these procedures. Finally, at the EU's recommendation, most of the signatories of the Bologna declaration also established national agencies for quality assurance in higher education, eventually forming the *European Network for* Quality Assurance in Higher Education (EDNA). Serbia became an associate member of EDNA in 2010.

The aim of such an approach to the concept of quality in higher education services is to define joint criteria for establishing a quality system of European universities, i.e. developing external support mechanisms. It is interesting to note that EDNA reached a conclusion in their work that there is no universally accepted definition of the higher education service quality system, despite the fact that

European Standards and Guidelines for providing quality in European higher education (ESG) had been defined previously.

It was concluded that quality assurance in higher education was a generic concept that could be interpreted differently, implying that a single definition could not include all statements. The problem is reflected in the occurrence of a large number of subjects of different specific features and interests, which must be harmonised in order to achieve the appropriate quality of higher education services. One must also bear in mind that, in addition to EDNA, the ISO defined and adopted standards and requirements for educational institutions as early as 2003, which are even more comprehensive, detailed and clearly elaborated, and moreover, proved to be very good in practical application as well.

Based on the standards of the National Council for Higher Education, Serbian universities adopted the Quality Assurance Strategy, although the concept of assurance can be deemed as outdated. Rather than the term "assurance", it would be more appropriate to use the concept of quality management, for it points to the strategic goal of higher education institutions to manage an organisation by means of constant quality improvements, increasing effectiveness and efficiency, so as to meet and exceed stakeholders' expectations.

The Quality Assurance Strategy defines the principles that should be adhered to by universities in their work, the mission, objectives and measures of assuring quality, and the action plan elaborating the goals, measures, activities, deadlines, responsibilities and mandates. In addition to the Strategy, a network of processes has also been developed, in full compliance with the requirements of the ISO 9001 standard.

Study into the quality of higher education services is also conducted within the Tuning project, focussed on developing and implementing study programmes at European universities. Along with the intention to preserve the diversity in the work of European universities, the basic aim of this project is to create joint indicators based on which study programmes are to become comparable by structure, content and essential elements of the learning process. The Tuning project should enable creating a common framework of comparable qualifications for all signatories of the Bologna Declaration. The Project was implemented by using the research method in sixteen European countries and included key stakeholders.

The results of various researches demonstrate that reaching the adequate quality level of higher education service requires introducing a quality management system in compliance with a series of ISO 9000 standards, whereas the total quality management (TQM) concept is recommended for higher education institution managements. Such practices in the work of higher education institutions would enable higher comparability levels of study programmes and result in meeting demands for constant improvements in systems, processes, personnel and results.

5. Research into Service Quality in Higher Education

The expert community has produced a large amount of research into the quality of higher education services (Chua, 2004; Sherry, Bhat, Beaver, & Ling, 2004; Barnes, 2007; Legčević, 2009; Oliveira & Ferreira, 2009; Faganel, 2010; Rozsa, 2010; Shauchenka & Buslowska, 2010; Bahadori et al. 2011). The methodology of this research has been farly uniform, and the most frequently used tool was an adapted SERVQUAL questionnaire. Research results differ in terms of dfferent samples, institutions, and settings wehere the research was conducted.

Chua (2004) was one of the first researchers to deal with this problem in the above described way. The results of this research show that the largest negative gap is related to the Security dimension, and the smallest recorded gap was within the Responsibility dimension. Interestingly, like in other research, negative gap was recorded for all quality dimensions, so that comparison is reduced to the difference between the smallest and greatest negative gap. The comparison included students, parents, faculty and staff.

Sherry et al. (2004) researched the atttitudes of local and international students. Based on research results, it was concluded that there is a significant difference between the students' expectations and perception. In addition, research results also point to a significant difference the local and international students' perceptions of all the five dimensions of service quality, where the perceptions of the quality of service provided are lower among international students compared to local students. It was also noted that students of basic studies have higher expectations than students on master studies, and that the perception of quality of the services provided is somewhat higher at master studies than the perception of quality of the services provided at basic studies.

Barnes (2007) conducted research among Chinese graduate students at presetigious business and managerial higher education institutions in Great Britain, using the SERVQUAL questionnaire. The surveyed students, Chinese nationals, expressed low satisfaction levels, which can be explained by high expectations from studies in Great Britain when compared studying in China. Certain shortcomings and limitations were singled out based on research results, bearing in mind the cultural particularities of the respondents included in the sample.

Legčević (2009) researched the quality of educational services at the Law School of Osijek University (Croatia). The students of these institutions awarded the smallest grades to the quality dimension of Responsiveness, and the smallest negative gap was recorded for the Reliability dimension. Legčević compared the mean values, and factor analysis produced results identifying five factors within the Expectation scale: Empathy, Responsibility, Assurance, Reliability and Tangibility. This research demonstrates the justifiability of adapting SERVQUAL dimensions of quality of services provided at higher education institutions.

Oliveira and Ferreira (2009) dealt with adapting and applying the SERVQUAL questionnaire for surveying students. Comparing thus created questionnaire with the questionnaire used in the profit-making sector, they filtered a list of questions suitable for surveying students within research into quality of higher education services. Based on the conducted research, they concluded that all the quality dimensions of higher education services show negative gap, which further demonstrates that the level of services provided at higher education institution is not higher than the students' expectations regarding the quality of these services.

Bahadori et al. (2011) conducted research among students of the Medical School of the University of Tehran, Iran. The survey was conducted using a methodologically similar approach to previous, so it is not surprising that results highlighting the negative gap in all the dimensions of the quality of provided services are identical to those of previously described studies. The largest negative gap in this research was recorded in the Empathy dimension, and the smallest negative gap was recorded in the Assurance dimension. In addition, significant statistical differences were fund between all the five dimensions of the quality of services provided at the Medical School of Tehran University.

6. Research into Service Quality in Higher Education at the University of Novi Sad

Doctoral students at the Faculty of Economics of the University of Novi Sad conducted research into the quality of provided services from February to May 2012. The sample included 861 students of the University of Novi Sad (Table) 1. The aim of the study was to establish the level of quality of services provided, by way of comparing the perceived quality level of provided service to the expected level of service quality. In addition, they identified factors affecting the perception of level of expected quality and the actual quality level of higher education service.

Table 1 Structure of Respondents by Faculties

Institution	Number of respondents	Percentage
Faculty of Economics	219	25,4
Faculty of Science	136	15,8
Faculty of Agriculture	67	7,8
Faculty of Philosophy	143	16,6
Faculty of Technical Sciences	98	11,4
Law School	66	7,7
Teacher Training College	132	15,3
T O T A L	**861**	**100,0**

The sample was chosen randomly, so that it was a simple random sample, meaning that all the units of the overall sample were equally likely to be chosen into the sample.

The research was conducted by applying a modified questionnaire from the SERVQUAL quality model, measuring the gap between expectations and perception of service quality. The questionnaire was adapted to the needs of higher education institutions, in accordance with previously conducted similar research (Sherry, Bhat, Beaver, & Ling, 2004; Legčević, 2009; Oliveira & Ferreira, 2009; Shauchenka & Buslowska, 2010). The research also included gathering demographic and socio-economic data on the respondents.

The application of the adapted SERVQUAL questionnaire comprised gathering replies to 29 questions on the expected quality of high education service, and gathering the sam e number of replies to question related to level of provided higher education service. A 7-point Likert scale was used for measuring students' attitudes. On the scale used for measuring the expected service level, grade 1 meant the students' opinion that a given feature of he faculty has no essential significance, and grade 7 meant the respondents' opinion that a given feature is vital. As for the scale measuring the perceived level of service, grade 1 marks students' absolute disagreement that the faculty has developed a certain feature, whereas grade 7 means that the respondents are aware of full presence of a feature at the faculty.

Cronbach alpha coefficient was used for measuring the reliability of the scale. It must be noted that coefficients higher than 0.7 are regarded as acceptable, whereas coefficients higher than 0.8 are regarded as good (Ivy, 2008). In the research into quality of services provided at the University of Novi Sad, Cronbach alpha of 0.884 was measured for 29 questions related to the scale measuring expected service levels, whereas the same coefficient for the 29 variables related to the scale for measuring the level of perceived service amounted to 0.967, which proves the reliability of the used measurement scales.

Furthermore, Cronbach alpha was also established for each subscale (Tangibility, Reliability, Responsibility, Assurance and Empathy) of the above mentioned measurement scale. Apart from the Assurance subscale of the Expectation measurement scale, where the value of Cronbach alpha was 0.651, all other measurement scales show high reliability values. The lower Cronbach alpha in the Assurance subscale is explained by relatively frequent values for scales with fewer than 10 items. In the further assessment of the reliability of this measures scale, the authors used Briggs and Cheek's recommendation (Palant, 2009) to verify the calculated value of correlation between items, whose optimum value ranges between 0.2 and 0.4. In this particular case, the calculated value of correlation between the items amounted to 0.323, which confirms that the measurement scale of the Assurance subscale is also reliable.

Table 2 Reliability of Measurement Scales

EXPECTATIONS			PERCEPTION		
DIMENSIONS	**Number of variables**	**Cronbach alpha**	**DIMENSIONS**	**Number of variables**	**Cronbach alpha**
Tangibility	9	0,797	**Tangibility**	9	0,876
Reliability	4	0,752	**Reliability**	4	0,872
Responsibility	6	0,790	**Responsibility**	6	0,916
Assurance	5	0,651*	**Assurance**	5	0,879
Empathy	5	0,750	**Empathy**	5	0,877
ENTIRE SCALE	**29**	**EXPECTATIONS**	**ENTIRE SCALE**	**29**	**0,967**

Note: *Calculated value of correlation between the items amounts to 0.323

It must be noted that the gathered data in the research into quality of higher education services at the University of Novi Sad was analysed with the SPSS 17.0 statistical package for data analysis. The analysis of gathered data also included a t-test of paired samples for testing the significance of the gap between the respondents' expectations and perceptions related to the quality of provided higher education services. Moreover, factor analysis was performed, with ***principal components factor*** extraction. Factor analysis grouped 29 variables into a smaller number of factors reflecting the principal dimensions of respondents' expectations and perception related to the quality of provided higher education services.

Tables 3 and 4 show results demonstrating that all statements – except one –confirm the negative gap of expected and perceived higher education services. The greatest discrepancy was recorded for paired statements numbered 11, 16 and 14. These statements related to services provided by administrative staff in the student services, their empathy, accessibility and helpfulness to students. This confirms that respondents' expectations were not met in terms of services provided by student services staff, as the quality of these services is significantly below expected levels.

Table 4 shows the estimated difference between the expected and perceived quality of higher education service based on the t-test of coupled samples. Bearing in mind that Sig. (2-tailed) value is lower than 0.05 (except for one case), the conclusion is that there exist significant difference within pairs, meaning that the surveyed students differentiated the SERVQUAL dimensions of the higher education service

Table 3 Gap of the Quality of Expected and Perceived Higher Education Service

	Arithmetic mean of expected service (E)	SD	Arithmetic mean of perceived service (P)	SD	Gap of the quality of perceived from expected service (P-E)
P1.	6.54	0.967	4.22	1.747	-2.317
P2.	6.31	1.097	4.17	1.783	-2.135
P3	6.45	1.025	5.34	1.484	**-1.118**[b2]
P4.	5.70	1.334	3.93	1.738	-1.765
P5.	5.55	1.407	4.12	1.768	**-1.423**[b3]
P6.	5.68	1.387	5.75	1.447	**0.64**[b1]
P7.	6.64	0.794	3.94	1.773	-2.699
P8.	6.84	0.590	3.56	1.807	-3.281
P9.	6.01	1.278	3.10	1.832	-2.915
P10.	6.84	0.532	3.81	1.870	-3.028
P11.	6.79	0.678	3.09	2.035	**-3.696**[a1]
P12.	6.67	0.779	4.01	1.810	-2.660
P13.	6.74	0.626	3.93	1.850	-2.804
P14.	6.79	0.622	3.32	2.028	**-3.463**[a3]
P15.	6.75	0.596	4.34	1.787	-2.417
P16.	6.81	0.572	3.23	2.007	**-3.587**[a2]
P17.	6.74	0.635	4.33	1.796	-2.404
P18.	6.49	0.829	3.34	1.850	-3.151
P19.	6.70	0.631	3.62	1.917	-3.081
P20.	6.77	0.616	3.96	1.914	-2.811
P21.	6.32	1.199	3.60	1.909	-2.722
P22.	6.78	0.614	4.69	1.866	-2.089
P23.	6.79	0.629	5.15	1.752	-1.634
P24.	6.69	0.689	4.19	1.828	-2.509
P25.	5.89	1.266	3.04	2.032	-2.846
P26.	6.06	1.162	3.76	1.841	-2.300
P27.	6.30	1.154	4.19	1.978	-2.116
P28.	6.23	1.090	3.61	1.865	-2.623
P29.	6.76	0.627	3.71	1.964	-3.043

Note:

a1,2,3 three largest negative gaps of perceived from expected higher education service

b1,2,3 three smallest negative gaps of perceived from expected higher education service

Table 4 The Paired Samples Test

	Differences in pairs					t	df	Sig. (2-tailed)
				95% confidence interval				
	Arithmetic mean	d	standard error of the arithmetic mean	upper	lower			
Par 1	-2.317	1.892	0.064	-2.444	-2.191	-35.936	860	0.000
Par 2	-2.135	2.033	0.069	-2.271	-1.999	-30.811	860	0.000
Par 3	-1.118	1.872	0.064	-1.244	-0.993	-17.531	860	0.000
Par 4	-1.765	2.177	0.074	-1.911	-1.620	-23.798	860	0.000
Par 5	-1.423	2.268	0.077	-1.574	-1.271	-18.406	860	0.000
Par 6	**0.064**	2.053	0.070	-0.073	0.201	0.913	860	**0.361**
Par 7	-2.699	1.986	0.068	-2.832	-2.566	-39.885	860	0.000
Par 8	-3.281	1.944	0.066	-3.411	-3.151	-49.525	860	0.000
Par 9	-2.915	2.228	0.076	-3.064	-2.766	-38.394	860	0.000
Par 10	-3.028	1.968	0.067	-3.159	-2.896	-45.155	860	0.000
Par 11	-3.696	2.223	0.076	-3.844	-3.547	-48.780	860	0.000
Par 12	-2.660	2.010	0.068	-2.794	-2.525	-38.834	860	0.000
Par 13	-2.804	2.000	0.068	-2.937	-2.670	-41.135	860	0.000
Par 14	-3.463	2.218	0.076	-3.612	-3.315	-45.812	860	0.000
Par 15	-2.417	1.897	0.065	-2.544	-2.290	-37.382	860	0.000
Par 16	-3.587	2.152	0.073	-3.730	-3.443	-48.902	860	0.000
Par 17	-2.404	1.937	0.066	-2.534	-2.275	-36.416	860	0.000
Par 18	-3.151	2.105	0.072	-3.292	-3.010	-43.925	860	0.000
Par 19	-3.081	2.073	0.071	-3.220	-2.943	-43.623	860	0.000
Par 20	-2.811	2.053	0.070	-2.948	-2.673	-40.175	860	0.000
Par 21	-2.722	2.232	0.076	-2.872	-2.573	-35.789	860	0.000
Par 22	-2.089	1.949	0.066	-2.220	-1.959	-31.451	860	0.000
Par 23	-1.634	1.872	0.064	-1.759	-1.509	-25.615	860	0.000
Par 24	-2.509	2.002	0.068	-2.643	-2.375	-36.768	860	0.000
Par 25	-2.846	2.354	0.080	-3.003	-2.688	-35.466	860	0.000
Par 26	-2.300	2.106	0.072	-2.441	-2.159	-32.039	860	0.000
Par 27	-2.116	2.430	0.083	-2.279	-1.954	-25.552	860	0.000
Par 28	-2.623	2.161	0.074	-2.767	-2.478	-35.618	860	0.000
Par 29	-3.043	2.118	0.072	-3.185	-2.901	-42.149	860	0.000

Table 5 shows the gaps of quality dimensions of higher education institutions across faculties and colleges of the University of Novi Sad. The table

clearly shows that all dimensions have recorded negative gap, matching the similar research conducted worldwide.

Table 5 The Gaps of Quality Dimensions

EXPECTATIONS		PERCEPTION		Gap of perceived from expected higher education service
DIMENSIONS	**Arithmetic mean**	**DIMENSIONS**	**Arithmetic mean**	
Tangibility	6.192	**Tangibility**	4.238	**-1.954[b]**
Reliability	6.758	**Reliability**	3.711	**-3.047[a]**
Responsibility	6.714	**Responsibility**	3.697	-3.017
Assurance	6.671	**Assurance**	4.318	-2.353
Empathy	6.248	**Empathy**	3.663	-2.585

Note:

a the largest negative gap of perceived from expected higher education service

b the smallest negative gap of perceived from expected higher education service

Table 5 demonstrates that the smallest negative gap is present at the Reliability dimension, showing the commitment of the university personnel to provide service students, to understand students' needs, and to be consistent in providing higher education services. As a reminder, Oliveira and Fereira (2009), point out that reliability shows the organisation's consistency and certainty of performance, and, accordingly, is the most important quality dimension for the service user. Consequently, perhaps even the most significant quality dimension of higher education service also has the largest gap, primarily due to inadequate commitment of the employees in student services.

Unlike Reliability dimension, the smallest negative gap was recorded for the Tangibility dimension, describing the tangible indicators of higher education service, or existence of physical evidence such as facilities, equipment, tools, but also the employees' appearance (Faganel, 2010). This dimension was given a wider description in this research, and supported with questions related to the institutions' exterior, locations, study programmes and extracurricular activities. The results of the conducted research confirm the opinion of surveyed students that the perception of higher education service in terms of tangible indicators does not exceed their expectations, but is comparatively best positioned in relation to other quality dimension of higher education services.

The conducted research of the quality of higher education services at the University of Novi Sad shows the students' expectations and perceptions in these

terms. The value of research is reflected in the fact that three out of five generally accepted service quality dimensions were within the Expectation scale were identified by applying factor analysis, more precisely, Tangibility, Empathy and Assurance, which demonstrates the compatibility of research results with the original dimensions of the SERVQUAL service model quality. Thus, the applicavility of the SERVQUAL model in resesearching the quality of higher education services has therefore been confirmed.

7. Conclusion

The quality of service of higher education institutions results in corresponding non-financial effects. Managements of universities, faculties and colleges ought to strive to establish optimum ratio between financial and nonfinancial results, which means that measuring both is equally important. Performance monitoring methods should be dynamically based, and consider the internal and external changes in the higher education area. Attaining sustainable success of higher education institutions is virtually impossible without an appropriate quality management system.

The perception of quality of higher education greatly depends on the students' expectations. Appropriate management of students' expectations and constant focus on providing service of increasing quality will enable elimination of negative discrepancy between these two very important levels of higher education services. Student satisfaction is justifiably related to their retention and advancement in academic status.

Reaching the high quality levels of higher education services enables organisations to employ resources efficiently, base decision making on facts, focus on students' needs, demands and expectations, and satisfy the interests of all stakeholders. Bearing this in mind, the quality policy of higher education should be dealt with by the representatives of all stakeholders.

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IZAZOVI KVALITETA USLUGA VISOKOOBRAZOVNIH INSTITUCIJA

Rezime: Širenje područja primene marketinga usluga u obrazovnu delatnost posebno dolazi do izražaja kod visokoobrazovnih institucija. Dinamične i sve izraženije promene u okruženju uslužnog marketinga dovode do realne potrebe drugačijeg pristupa pružanju visokoobrazovnih usluga. Radi se o tome, da univerziteti, fakulteti i visoke škole trebaju studente posmatrati kao kupce sopstvenih usluga. Studenti u drugoj deceniji XX veka sve više se ispoljavaju kao kupci visokoobrazovnih usluga, pri čemu očekuju visok kvalitet obrazovnih usluga, niže troškove, savremene i u praksi primenljive studijske programe. Konceptualizacija obrazovnog marketinga omogućuje njegovo razlikovanje od poslovnog i izdvajanje unutar uslužnog marketinga. Visokoobrazovne institucije trebaju da ostvare balans između potreba i očekivanja studenata, s jedne strane i izgrađivanja akademske reputacije i ostvarivanja obrazovnih ciljeva, s druge strane. Upravo zbog toga, kvalitet usluga visokoobrazovnih institucija sve više dolazi do izražaja u obrazovnom marketingu, imajući u vidu da se radi o ključnoj komponenti unapređivanja naučne kompetencije znanja i akademske afirmacije visokoobrazovnih institucija.

Ključne reči: kvalitet usluga, marketing usluga, visokoobrazovne institucije.

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DISAVOWAL OF THEORETICAL ECONOMICS: CAUSES AND CONSEQUENCES

Slavica Manić*

Abstract: *The paper analyzes all previous curricula of the Faculty of Economics in Belgrade. In its longstanding tradition, they were (and still are) often changed for the purpose of forming different profiles of economists. A progress that has been made through the reforms undertaken includes minor amendments and "cosmetic" corrections, as well as the radical "cuts" that refer to the structure of curricula (and/or content of the courses). Differentiation of economic disciplines, changes in the names of subjects and courses were mainly caused by exogenously initiated impulses. The aim of this paper is to show that, despite the undoubted improvements (adjustments made in compliance with the applicable world-wide standards), theoretical economy experienced the deterioration of its general position (and particularly in relation to the business economy), caused by (among other things) commodification of educational process.*

Key words: *theoretical economics, business economics, reforms of curricula, commodification*

Introductory Remarks

The Faculty of Economics in Belgrade is an institution with a tradition of 75 years. Founded as Economic-Commerce High School in 1937, it became a faculty at the University of Belgrade in 1946, with the aim to educate (theoretically and practically) and train students in the field of economic, financial and commercial science, this way overcoming the problem of "insufficiency of high education in economics at the time" (40 years of Faculty of Economics, 1977, p. 11). From that time until today, curricula were (and still are) dynamic and constantly changing. Reforms were undertaken in good faith to provide creation of those economic profiles that meets the needs of the economy and society, as well as to promote (as much as possible and feasible) economic theory and practice.

Based on analysis of curricula's structure, this paper has the intention to show a tendency of generally unfavorable positioning of theoretical economics

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(especially in relation to business economics). Performing of that task is not easy due to existence of certain methodological limitations.

First of all, we have to determine very notion of the term theoretical economy; precisely, to refine what is understood by the term in the context of our analysis. For years theoretical economy has been considered as a part of economic science dealing with general laws about interdependency between economic phenomena and processes, providing qualitative information concerning the nature of these phenomena, constructing ideal, abstract models that reflect the regularities in economic processes. At the time, theoretical and mathematical economics were treated as two forms of capture and analysis of economic laws.

And then neoclassicism (as the *mainstream* in economic science), partly for the sake of raising the level of realism in microeconomics, and partly for proclaimed purpose of "defending" scientific value of economics (and in fact in order to strengthen its own "inner strength"), highlighted the use of mathematical formalism, this way fully reversing the idea of theoretical economics. Owing to the exclusive insistence on the logical consistency, theories have become either ancient idea spoken by different vocabulary (Guerrien, 2003, p. 105), or *ad hoc* hypotheses embedded in the neoclassical hard core (Nightingale, 2003, p. 182). Hence, the original concept of theoretical economy was subsumed under mathematical economics, and it got contextually and substantially a different meaning.

For these reasons, any attempt to find out or at least to indicate whether subjects belonging to "the realm" of theoretical economics are really incorporated in the curricula seems to be utopian. Therefore, in this paper theoretical economy is understood as a broad topic that covers a variety of disciplines from fundamental areas – micro and macroeconomics, history of economic thought, economic methodology, economic history, economic systems and labor economics. This interpretation also meant overcoming of another difficulty – terminology differences (ranging from minor to drastic ones) between the curricula. And for truly "figuring out" what was the position of this way perceived theoretical economics, it was necessary to determine which of these disciplines have had a status of compulsory or common to all students (in each of so far applied curriculum).

The paper is structured as follows: in the first section we review the main features and specificities of every curriculum, then trying to sublimate observations about the changes in status of theoretical economy; in the second part we shall examine some selected elements, chosen to corroborate previously established positioning of theoretical economy (precisely, we will show that its unfavorable status can be noticed according to the number of students who choose to explore this field, and the number of defended theses and dissertations covering this topic in relation to the theses in the field of business economics); in the third section we shall focus on internal and external causes of poor positioning of theoretical economics, in order to determine which of these we consider "responsible" for current status of theoretical economy at the Faculty of Economics.

Continuous Suppression of Theoretical Economy: A Case Study of the Faculty of Economics

The first seven decades of existence of the Faculty is perceived through the following stages (70 years of the Faculty of Economics, 2007, pp. 36-92): reconstruction of Economic-Commercial High School and the establishment of the Faculty of Economics (1944-1951), growth (1951-1967), development (1967-1997) and seventh decade (1997-2007). This conceptualization of its evolution, however, is not suitable for our analysis out of two reasons. First, the subject of our interest does not coincide with the above scheme. Second, the latest changes in curriculum (dating from year 2008), as well as their consequences (which have already manifested and materialized) are not covered by this scheme. That is why we will focus exclusively on those features of the curricula that are relevant for analysis of the status of theoretical economics. Overview of main characteristics (number of subjects, their status, specificities of each curriculum) is given in the following table:[1]

Curriculum	Number of subjects	Status of subjects	Specificities of the curriculum	Theoretical economics' position
1937	54	Compulsory	Too bulky; incoherent (subjects are designed either as quantitative and qualitative parts of various fields, or as a combination of disparate disciplines); business techniques are dominating.	Bad position: share of theoretical disciplines is negligible (under 10%)
1945/46	32	Compulsory	Result of the attempts meant to eliminate the identified gaps (composing of subjects from different fields, their theoretical inconsistency); radical and extensive changes in the content of courses followed by their different regrouping in structure of the curriculum	Better off: the share of theoretical disciplines has noticeably increased and reached 20%

[1] Calculations are made by author, according to: 40 years of the Faculty of Economics, 1977; 50 years of the Faculty of Economics, 1987; 60 years of the Faculty of Economics, 1997; 70 years of the Faculty of Economics, 2007.

Curriculum	Number of subjects	Status of subjects	Specificities of the curriculum	Theoretical economics' position
1947/8	24	Compulsory plus one optional subject	Compression of content and teaching materials; a more precise definition of scientific fields; focus on the formation of economists of a general profile (induced and imposed by external demands)	Improvement with caution: it was the consequence of circumstances in the economy at the time (higher degree of specialization was not required)
1951/52	up to 27	21 compulsory and common, others are determined by courses on third and fourth year of study	Ideologically "colored" in spite of adequately conceived preparations for its application (continuous review of previous curriculum through discussion at the Faculty, exchanging of experiences via inter-department conferences, consultations with professional associations and industry representatives)	Unchanged: disciplines of theoretical economy that existed in two previous curricula have kept their status.
1956/57	23	14 compulsory and common, others are determined by courses (starting from second year of study)	First radical separation of theoretical and business economics (through specialization in macroeconomics and general economic theory from one, and economics and organization from the other side).	Position was slightly worsened (one subject of theoretical orientation being moved from common to optional).
1958/59	15	Determined by the choice of department (A-General Economics and B – Business Economics), 1-2 elective subjects	Compression of content; drastic reducing of number of exams; conflicting demands (the pursuit of achieving unity of theoretical and applied economic work" , while retaining separation of departments	Dramatically worsened: theoretical disciplines almost completely disappeared in department B (only one subject has left)

Curriculum	Number of subjects	Status of subjects	Specificities of the curriculum	Theoretical economics' position
1960/61	26-28	Determined by Department (A – General and B – Business Economics), 1-5 elective subjects	Complete inversion in the structure of the curriculum (subjects belonging to business economics were located at the first level of study, whereas theoretical ones were moved to second level); this concept of teaching was applied only to Business economics department.	Theoretical disciplines improved their position: there were 3 of them in department B (caution exists since the benchmark for evaluation was very poor positioning of theoretical economics in previous curriculum)
1966/67	32-36	17 compulsory and common at first and second year of study, others are determined by the course on third and fourth year of studies	The inversion in the process of teaching and two-level economic education were completely abolished; number of courses is raised to 7; it was the first curriculum of long-term nature, having "internal" (embedded) flexibility (ability of programs to be extended in accordance with actual achievements in economic science, and without new "cuts" in the curriculum)	Relative improvement: number of compulsory theoretical disciplines increased; fund of classes is under one-fifth of total number of classes
1977/78	33-37	Some are common, others are either determined by choosing one out of three Departments (starting from second year of study) or determined by course.	Introducing of one-semester study for most of the subjects; practical training is required for all students; body of common subjects comprised approximately 60% of the total number of classes; possibility of creating new courses in accordance with the needs of the economy; differentiation of business economics' disciplines.	Fund of classes devoted to theoretical disciplines now makes one-seventh of the total number of classes during a four-year study.

Curriculum	Number of subjects	Status of subjects	Specificities of the curriculum	Theoretical economics' position
1987/88	38	Some of them are common, others are determined by choosing one out of 7 courses (starting from third year of study); 1 elective subject	Final establishment of one-semester study for all subjects; this curriculum is trying to combine main principles of previous two plans; further differentiation in business economics.	Fund of classes meant for learning foundation in economics was rarely at one-seventh of the total number of classes
2000	30-33	13 are common, others are determined either by courses (starting from second year of study) or by optional group; 1 elective subject.	Abounds with inappropriate solutions; lack of program's content analysis (generally unfavorable economic circumstances were "accused" and blamed for its incompleteness); related literature was changed (translation of acknowledged textbooks from English into Serbian language)	Position is worsened since another theoretical discipline was transferred from common to optional.
2004	27-32	13 of them are common and compulsory, others are determined by study program; 1 elective subject	Basic structure of the curriculum remains unchanged; formal reconstruction (compliance with the standards of ECTS); certain changes in programs for subjects on first and second year of study.	Deeper suppression of theoretical economy is reflected through the reduction of classes; number of classes devoted to the fundamental disciplines now makes one-ninth of overall fund of classes.
2008	30-33	13 of them are common and compulsory, others are determined by the module and sub-modules; number of elective subjects is increasing	The structure of previous curriculum is formally "reconstructed" and minor substantive changes are made (programs of study are transferred to modules, externally given structuring of disciplines is adopted, number of "baskets" containing elective subjects is increased).	The status of theoretical economics is unchanged: classification of disciplines in academic, theoretical, professional and applicative ones is roughly done.

What is the common denominator for variety of (formal and substantive) changes all curricula were subjected to? Each transformation in the sphere of economic education was self-proclaimed as reform one. The proper question is what was actually meant by the term "reform"? According to the "Dictionary" written by Vujaklija (1997, p. 778), the word reform is of the Latin origin and means: alteration, transformation, change, modification, repair of a state without changing its essence. Such a meaning contains "restorative component" (Liessman, 2008, p. 138) and is far from what was happening to us.

Any reform's attempt looks like similar to its original version only at its very beginning (pleading to be a complex endeavor and continuous/permanent process identically aimed at providing essential connectivity and harmonization of economic education with the needs of the economy and society). In doing so, even minor corrections or additions were (being the novelty at the moment) automatically treated as improvements and upgrades, even if, after a few years of their implementation, it turned out they are failures, needed another one reform "ventilation".

In fact, decades of reforming have finally demonstrated theirs exclusivity: nothing in the reform is a matter of return or restoration. Quite the contrary: each of past reforms has the same "texture" – it means abandoning the tradition "if it represents a brake on further economic development and progress" (40 years of the Faculty of Economics, 1977, p. 13). Business economics realized it was a call for "action" (and an appeal for fundamental changes), and achieved its intentions in formal and substantive terms: The Department of Economics and Organization was able to resist the influence of socialist ideology, successfully retaining its name for more than three decades; great expansion of the area of organizational science open the "room" for enormous growing of new subjects as well as for substantial changes in program's content (which ultimately leads to the renaming of the above mentioned department to the Department of Business Economics and Management).

On the other hand, theoretical economics mainly stuck to existing procedures and (already set) social commitments. Since introducing critical approaches to economic analysis, as well as methodological achievements were only incidentally mentioned, the impression that these were the elements of secondary importance in the design of the next curriculum was spread. Having in mind constantly present reform's claim about the necessity of adapting curricula to the requirements of the economy, no wonder that such an impression prevailed. In other words, if we exclude the existence of certain interest of foreign scientific community for self-managing socialism itself (along with contributions of our economists to this issue), the progress in the field of theoretical economics was neither motivated nor expected. Frankly speaking, with the exception in early postwar years (when its raise was caused by the influence of external factors), relative lethargy of theoretical economics culminated in its desperate positioning in the curriculum dating from 1958.

The decade of recovery and some kind of revival that followed, to those optimistically inclined represented the proof that reversibility of the process of theoretical economics' suppression was possible. However, followed sequence of events was a confirmation of suspicions that few innovative "minds" were not sufficient for long-term, highly aimed and far-reaching moves that would counter to "armada" of business economics. First serious steps in the field of business economics were initiated at the same time when the famous curriculum in 1966 was adopted. Although this plan resulted in relatively most favorable situation for theoretical economics (if we take into account formal presence of its disciplines in the curriculum), few years later the counteroffensive of business economics turned up**.** The differentiation in economic and organizational science offered the unique opportunity for business economics to materialize its advantage. As early as 1971 the field of economics and organization reached the maximum number of subjects (60 years of the Faculty of Economics, 1997, p. 126), which is further manifested by its separation into two distinct scientific areas, and reifies through penetration and development of subjects with similar orientation (Planning and Development Policy of Enterprises, Marketing and later on many other subjects).

And yet, the founders of marketing orientation were constantly complaining that there was a gap between the theory and its practical application. They pointed out that "the lack of political commitment to create economic environment which will function on the principles of modern market system" (60 years of the Faculty of Economis, 1997, p. 124) was to be blamed for the above-mentioned gap. Surely, this situation did not hamper its focusing on establishing of new management courses, expansion and strengthening of existing ones (marketing, organization, commerce and tourism) as well as continuous designing and organizing of innovative courses meant to satisfy businessman's need for permanent education. From the standpoint of theoretical economics, however, most of that time may be treated as a return to one-way process of its suppression. The only bright spot, having in mind the totality of economists' education, is the fact that the resistance of its teaching staff disabled profiling of professionally oriented, shorter studies (directed exclusively to the practice), since materialization of such tendency would go at the expense of core educational content and indirectly would threaten further (anyway unenviable) level of scientific value and reflectivity being still present in our economic science.

Measurable Consequences of Long-Term Suppression of Theoretical Economics

To what extent continual suppression of theoretical economy left its mark, is evident according to enrollment trends, both at undergraduate, postgraduate and doctoral studies.

According to data on the number of full-time students enrolled in third and fourth year of study during the period 1975-1977, we noticed the following: Economic policy and planning has been listed as the second of seven modules; at

that time 20% of total number of full-time students opted for it.[2] The number of students enrolled at the second year of study in the period 1980-1987 has also gone in favor of General versus Business Economics. However, in the third year, during the same period, the situation changed in favor of the business economy (especially in the period 1980-1982). Its further "aggression" in producing novelties (which even the gurus from this area considered to be nothing more than differently labeled folk wisdom)[3], initiated by the introduction of Marketing as new and attractive subject on the Department of Business Economics in 1977, resulted (one decade later) by positioning of the subject as compulsory to all students and by introducing the course (of the same name), "absorbing" 35% of the total number of students.[4]

Rapid decrease of interest in theoretical economy could be noticed according to absolute decline in number of students of theoretical orientation in fourth year of studies, as well as through structure of students enrolled in eight courses – the share of Economic Theory was 10% (in the period 1980-1982), while it was only 2% in the school year 1986-1987.[5]

In the next ten years (from 1986 to 1996), as a result of increasing interest in studies of economy itself, total number of students has doubled. During the period 1990-1996, the number full-time third-year students who have opted for general economics ranged from 35 to 79 (i.e. 6-10% of all third-year students), which was far less from those oriented to Marketing (whose share in total number of third-year students ranged from 24 to 38%).[6]

In the period 2007-2010, the number of third-year full-time students enrolling module Economic Analysis and policy was relatively similar, ranging from 20 to 69 (which makes 1.38 to maximum 4.6% of total number of third-year students). At the same time Marketing enrolled 123-244 students, i.e. 8.53-16.9% of third-year students.[7]

In this school year, 53 students of the third-year decided to enroll module Economic analysis and policy. Judging by the results of the survey that we conducted on a sample of 120 first-year students of the Faculty of Economics, it is unlikely that the unfavorable trend will stop or reverse. In fact, only three students (out of 120 respondents) are now ready to enroll the above-mentioned module. It

[2] Calculation of the author, according to: 50 years of the Faculty of Economics, 1987, p. 35.
[3] Kotler claimed that the business school gave "intellectual respect to what is actually folk wisdom," and have thus acquired an aura of respect. Quoted from: Crainer, 1999, p. 1.
[4] Calculation of the author, according to: 60 years of the Faculty of Economics, 1997, p. 123.
[5] Calculation of the author, according to: 50 years of the Faculty of Economics, 1987, pp. 65-67.
[6] Calculation of the author, according to: 60 years of the Faculty of Economics, 1997, p. 37.
[7] Calculation of the author according to the data got from student service. These results would be even more unfavorable, if we compared number of students at the module Economic analysis and policy with total number of students oriented to three modules of Business Economics (Marketing, Commercial management and marketing and Management).

leads to the conclusion that, at best, next year, only 4-5% of the total number of students will actually choose to do so.

The situation is similar in the so-called second cycle of economic education. Postgraduate studies were organized for the first time in school year 1960/61. During its 50 years of tradition, number of courses was adjusted to the needs of the economy and interests of students. The results achieved in the first fifteen years, was positively accessed from the standpoint of coverage. However, judging by the data from list of master courses and theses defended, three courses (Business Economics, Economic Development and International Economics) were filtered out and became dominant ones. Precisely, in the period 1960-1975, almost a third of all defended master's thesis belonged to Business Economics. In the next decade (till school year 1986/87), number of courses in business multiplied (through further differentiation), whereas General Theoretical Economy showed neither interest nor progress in this regard. During the ten-year period, 35% out of the total number of enrolled students (at six master courses) were inclined to business economy, and only 5.4% of them to general theoretical economy. Speaking of the number of defended thesis, the situation looked like even worse: there were four times more in business than in general economics.[8] The situation became slightly better in the period 1987-1997, as the number of defended master's thesis in business economics was "only" three times higher than the number of those in the field of theoretical economics.[9]

During a quarter of century (from 1961 to 1986), doctoral dissertations have been done in almost all scientific fields that were subject of study at the Faculty of Economics. However, they were most numerous in the area of applied economics: during this period, ratio of the number of thesis in business economics to those in theoretical economics was 3;[10] in the next decade this ratio was reduced to (reasonable) 50% more defended thesis in business economics.[11]

At first glance, positioning of theoretical economy seemed to be better off**.** However, one more thing should be add, if we really want to shed the light on real state of affairs. During the period 1977-1987, the Department of Business Economics (at the undergraduate studies) consisted of three modules - Organization, Marketing and Finance and Accounting; the next change in the curriculum brought about separation of the area of finance, i.e. Business finance and accounting became an independent educational profile. This change was naturally transferred to master's studies, where financial analysis ceased to be part of business economics. Such a change consequently brought less unfavorable ratio of number of defended theses in business to those in theoretical economics. Actually, realistic reflection of the power of these two "opposing camps" in the

[8] Calculation of the author, according to: 50 years of the Faculty of Economics, 1987, pp. 73-79.
[9] Calculation of the author, according to: 60 years of the Faculty of Economics, 1997, pp. 495-517.
[10] Calculation of the author, according to: 50 years of the Faculty of Economics, 1987, pp. 82-86.
[11] Calculation of the author, according to: 60 years of the Faculty of Economics, 1997, pp. 485-495.

whole observed period (1961-1997) remained unchanged – the number of theses defended in business economy was three times higher than in theoretical economy.

Over the next decade (from 1997 to 2007), number of management courses has increased dramatically (this way strengthening business economics), while theoretical economics (Macroeconomic analysis and transformation of Yugoslav economy) remained fairly isolated among accumulated 19 courses (70 years of the Faculty of Economics, 2007, pp. 54-55).

Share of theses defended on business courses in the total number of master's theses in this period amounted to 43.65%, while the proportion of theses chaired by lecturers from theoretical economy was only 4.9%.[12] At the same time, the number of doctoral theses in business economy was two times higher than those in theoretical economy.

These data on the number of students opted for theoretical and business orientation, and the number of defended master's and doctoral theses in the same areas, were used here as an illustration of measurable effects of continuous suppression of theoretical economics. Being familiar with consequences, we are up to return to the causes that initiated and/or encouraged the above-mentioned process.

Causes of Inadequate Positioning of Theoretical Economy

In order to conduct proper analysis of the causes that have (directly or indirectly) influenced poor positioning of theoretical economics, we have to divide them into two categories: internal, originating from theoretical economy itself, and external ones, being the resultant of individual or simultaneous effects of various factors (no matter whether they belong to the domain of economics or other sciences, or simply being induced by the overall social change).

Let us recall briefly the events within theoretical economics. For a long time economists have concerned about disagreement within the discipline, arguing that such diversity prevented the possibility of economics being perceived as a science. That is why they have invested great efforts to "copy" the methodology of natural sciences, expecting it to provide scientific value for economics. Later on, economics drew its driving force from the ideas of its own elitist status (within the corpus of social sciences), which was, all together, resulting in increased hierarchy, gradual or sudden weakening of heterogeneity within the discipline and "inauguration" of neoclassicism as the mainstream. Speaking of education of economists, these changes were materialized in the form of "embedding" neoclassical economic theory in programs, as the sole theory students were supposed to be familiar with (Lee, 2007, p. 315). Consequently, due to domination of neoclassicism, content of subjects was changing and inclining to a greater

[12] Calculation of the author, according to: 70 years of the Faculty of Economics, 2007, pp. 457-520.

degree of formalism.[13] Such developments in the lap of theoretical economics were, certainly, disincentive for enrollment in the study of economics. Frankly speaking, some moves were caused by complexity of new tendencies in society. In fact, the ever-growing needs of corporations regarding highly qualified labor initiated bringing of commercialization into "temples of knowledge"; side effect of this commercialization was a relative decrease in the number of students of economics comparing to those in business schools. In order to maintain its position and prestige, and to prove its being useful for business, economics naturally resorted to formalization. This way knowing of variety of modeling and quantitative techniques simply became mandatory condition of entering the profession.

Being aware of the fact that modules, as well as programs of theoretical economics at the Faculty are not extremely formalized yet, internal causes seem to be only partially "responsible" for long-term poor positioning of theoretical economics. Not to mention that they are usually modified by outside influence. That is why we shall focus on the causes of external type, as they are crucial for the current status of theoretical economics.

Following the example of universities and colleges from abroad, our institutions of higher education have sided with commercialization or the so-called entrepreneurial spirit (which "encouraged and legitimized such initiatives" – Bok, 2005, p. 21), trying to earn the money through research and education activities (in the form of consulting, projects and courses officially drafted in accordance with the needs of the economy, and unofficially treated as profit centers). Since close connection between the economy and Faculty of Economics is not considered to be troubling activity (quite the contrary – it gives teachers the opportunity to learn about emerging issues that will inspire their professional interest, and indirectly may affect the reconfiguration of the curriculum), then various forms of deepening cooperation have always been seen as a natural extension of previous processes. Moreover, from the standpoint of faculties, the undertaking of such profitable activities is justified by two reasons: state budget funding is far from the level necessary for the normal functioning of these institutions (Slaughter, 1997); on the other hand, profits from commercial activities bring benefits to all participants in educational process (this way, for example, can be funded research activity, purchases of computer equipment, renovation of auditoriums, etc).

However, in spite of the fact that this strategy is being undeniably attractive, it is appropriate to warn to its shortcomings (disadvantages), especially in circumstances of rapid commercialization. Additional problem is that the deficiencies are not tangible; instead, they are reflecting on the possibilities of compromising academic values and the quality of education. First of all, commercialization may undermine academic standards. In fact, inclination to

[13] Mainstream considers mathematical reasoning as extremely important; it identified loosening of insistence on mathematical methods with giving up the possibility that economics is treated as a science (Lawson, 2003, p. xvii).

ubiquitous trend of commercialization may cause a greater commitment of teaching staff to additional, better-paid activities, at the expense of quality of teaching on undergraduate studies. And designing of "How to make a business plan?" courses solely as a commercial ones, may produce risks to the reputation of the institution, in the sense of doubt in the applicability of basic studies (since it would be feasible and desirable to offer such knowledge to full-time students).

This undermining of academic standards is directly related to commercialization. It is, of course, also present in other circumstances. For example, as a consequence of the adjustment to the standards of Bologna Declaration, canons of testing students' knowledge noticeably changed. This includes artificial (and imposed by the institution) "lowering of the criteria", in the sense that professors are discouraged to test knowledge of students about demanding issues and harder problems.

Competing for students with a number of new, private universities, the Faculty overemphasizes the importance of business, marketing, management, and through the campaigns for enrollment highlights the value and worth of our diploma on the market. In this way, and before being admitted to the university, potential students became aware of the importance of material values. The situation is further complicated by constant stressing of the story about homo-economicus as rational being, who is motivated only by profit interests. Of course, the behavior of an institution in accordance with the profit motivation is not questioning compliance of its "words and deeds", but creates a "climate" in which some modules (like theoretical economy) are considered, to put it mildly, as less valuable.

Ruthless increase of commercialization actually seems to be the main reason for "changing nature of academic institutions" (Bok, 2005, p. 8), favoring only practical, marketable disciplines, at the expense of others, non-applicative ones.

If the definition of commercialization is expanded (Brennan, 2008; Shumar, 1997), so that it includes other trends (impact of broader processes and business culture, attempts to quantify unequivocally all elements of educational process), it seems that we are not only witnesses, but active participants in a sort of commodification. Nowadays, this process is regarded in two ways: either indicates that the exchange values suppressed use values, or more generally, describes how consumer culture (through a series of subtle processes) infiltrated into all aspects of everyday life (Gottdiener, 2000).

Proponents of commodification argue that faculties are slowly adjusting to contemporary demands, and that experimenting with market mechanisms in this area is desirable because it improves flexibility, strengthens the economic autonomy of higher education's institutions, and increased the transparency of the functioning of colleges and universities (Teixeira , 2004, pp. 344-345).

Typically, a variety of ideas directly related to orientation of faculties to their users, come from the field of business economics. And business paradigm is responsible for treating universities as firms (operated by managers of knowledge), measurable and comparable according to their result achieved in the market (Liessmann, 2008, p. 69). There are also more and more tests, evaluations, and rankings based on them, which will inevitably produce the need to establish "independent" bodies for the implementation of an "orchestrated" and administered control of educational work.

According to some authors (Slaughter, 1997), external interference in the way of organization and functioning of faculties and universities means reducing of the autonomy of the above-mentioned institutions. However, there are those who argue that such actions do not completely "suffocate" the autonomy (Maton, 2005, p. 697), since we have two types of it: positional and relational. The first suggests who manages higher education, and other deals with principles upon which it is done. At first sight, it seems to have witnessed the reduction of relational autonomy, without significant change in positional one. In other words, higher education is still (at least formally) controlled by people from the area, but targeting of activities is increased according to the principles derived from economics (Maton, 2005, p. 700).

However, the key problem is the fact that none of the control procedures occur as a result of internal needs of the faculty or university. Quite the contrary, they were given, imposed and taken from what business (managerial) economics suggested. And what tacitly existed for many years, was institutionalized and "strengthened" by political agreement resulting in the Bologna Declaration.

Education is, therefore, has ceased to be a common (social) good of which academic and professional associations "take care"; instead, it becomes a commodity in the global market, which appears as a mediator between education and employment (Munch, 2010). For a society like ours, suffering from unemployment, the fact that all have an interest in studying (to learn for the sake of learning, due to imposed requirements for permanent education), is welcome out of two reasons: to promote market values and to postpone dealing with the main problem – where and what will work those who complete colleges and faculties.

A goal of every student is to make the best choice of the so-called "easy to pass" subjects, to calculate in advance how to reach "the magic" number of points (with or without seminar paper and final-diploma exam, bringing two and four points respectively), so that the combination of activities will lead to a degree (regardless of the quantum and quality of knowledge all that entails).

The most problematic is the fact that pedagogical values are marginalized; then the student remains passive listener, although being an active consumer. In fact, the ubiquitous economism becomes clearly evident: logic known as "aims and means", and education for the sake of achieving greater competitiveness, prevailed at faculties and universities. That is why social processes of teaching and

researching are transformed into a set of standardized, measurable products. And the massive use of performance indicators also contributes to the reification of educational process (Ball, 2004, p. 14).

Referring to the effects of market laws remains a perfect excuse why, for example, employers prefer to employ highly educated persons instead of those who have completed secondary school of appropriate profile for the job of loan officer (for the same amount of money, any bank get a bachelor, and justifies its decision by the tough competition for each position).[14] Bearing all this in mind, pupils with finished secondary school will be left no alternative but to decide to study – at any cost. Obeying the dictates of current utilization, they will choose the faculty that offers a "marketable" degree (i.e. economics), and the module with greater opportunity and certainty for finding a better paid job.

That is why opponents of commodification emphasize that the transformation of universities in "knowledge factories" (where the money is given primacy over academic ideals (Bok, 2005, p. 22), and market power over higher education (Aronowitz, 2000, p. 164)), led to the undesirable outcome: teaching and researching are seen as the means of achieving practical goals, and valued exclusively according to their ability for being transferred in cash (Shumar, 1997, p. 5). In such a situation, all those who still believe (and act in accordance with their beliefs) that the purpose of science is to deal with the truth and knowledge, are in a very bad position. In fact, the importance of those subjects being not useful for finding a job is generally underrated. Taking into account the way of conceptualization of curriculum, no wonder that theoretical economy was crowded out by its business counterparts.

Conclusion

Through the analysis of curricula at the Faculty of Economics in Belgrade, we found that the suppression of theoretical economics represents long, mostly continuous, and up to now, one-way process. As a result it has got bad positioning against the business economics. This status of theoretical economy was caused and induced by external factors, predominantly by those arising from the sphere of managerial (business) economics.

Reorienting of educational goals to skills, abilities and competence made "uniformity" of all elements of the educational process possible, in order to facilitate the management (and some form of remote control) of knowledge. In this process of economization of knowledge, exchange values almost completely suppressed use values. And highlighting the advantages of commercialization is so exaggerated that its shortcomings (disadvantages) have been overlooked, or

[14] Munch (2010) also claims that undergraduate studies (BA courses) serve as an additional qualification for jobs requiring secondary education.

completely denied. The point is that benefits of commercialization are mainly tangible and achievable in short-term, whereas the dangers that entails are non-quantifiable, although very certain in the long run, as a result of "cumulative effects of similar activities" (Bok, 2005, p. 114).

In a situation where there is no method for assessing what students actually learn, in circumstances when the tendency of underestimating the importance of dedicated teachers even escalated, it is natural to expect that both students and teachers will follow the logic of "cost effectiveness" regarding their actions in the short or medium term.

Tackling with this problem, therefore, is far from being a naïve task, since the trends related to business and management far surpassed faculties of economics, and expanded to all spheres of higher education. In this situation it is almost irrelevant who "set the fire" because it spreads in unimaginable speed. This is reason why it is hard to believe in the idea that the reversibility of the process of suppression of theoretical economics could be achieved by sporadic and individual actions. Instead, they have to be massive and simultaneously run and implemented. Yet, the question is whether we are up to such a task.

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DEZAVUISANJE TEORIJSKE EKONOMIJE: UZROCI I POSLEDICE

Rezime: U ovom radu se analiziraju svi dosadašnji nastavni planovi Ekonomskog fakulteta u Beogradu. U njegovoj višedecenijskoj tradiciji isti su često menjani radi formiranja različitih profila ekonomista. Raznoliki pomaci načinjeni u dosada preduzetim reformama su ponekad podrazumevali minorne dopune i „kozmetičke“ korekcije, ali i radikalne „rezove“ koji tangiraju strukturu nastavnih planova. Diferenciranje ekonomskih disciplina, izmene u nazivima predmeta i usmerenja su, u najvećoj meri, bili rezultat egzogeno iniciranih podsticajnih impulsa. Cilj ovog rada je da pokaže da se, uprkos nesumnjivim poboljšanjima (u smislu prilagođavanja važećim svetskim standardima), primećuje trend generalno sve lošijeg pozicioniranja teorijske ekonomije (a pogotovo u odnosu na poslovnu ekonomiju), prouzrokovan, između ostalog, komodifikacijom obrazovnog procesa.

Ključne reči: teorijska ekonomija, poslovna ekonomija, reforme nastavnih planova, komodifikacija

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DESTINATION BRANDING: COMPETITIVE POTENTIALS OF OHRID AS A TOURIST BRAND

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Abstract: *Destination branding enrolls a spectrum of activities towards creating an image on a certain place. The process of globalization has increased the competitive potential of small cities, as the global competition is no longer limited to the capital or big cities. Visitors' opinion for a certain place is very important and must be always considered when creating strategy for tourist promotion. Very often foreign tourists create an image before they visit the tourist destination and have expectations based on that image. After they visit the destination, they meet their expectations with reality, and based on those experiences they create a complete image for the place. Positive experiences can be a useful tool to local governments and all stakeholders for destination branding. This research paper aims to identify eventual disproportions between expectations of foreign tourist before they visit Ohrid and their experiences after their visit in order to offer solutions for better destination branding.*

Keywords: *destination branding, Ohrid, foreign tourist, motivation, promotion*

Introduction

Tourist destination which represents each country, region, city or area that is attractive and visited by tourists, is composed of goods, services and other tourist values that can satisfy tourists' needs and can attract visitors to spend most of their

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This paper is a result of a conducted research in the frame of the project "Ohrid – a promising tourist brand, bridging the gaps between reality and what's promised" as a part of the "G1 program for supporting local economy development in 2011", supported and financed by the Municipality of Ohrid, Contract number 319/1 signed on 24/08/2011

free time there. Branding is a powerful marketing tool that can be used by all stakeholders in certain place in order to increase its attractiveness. Destination branding is considered to be a very interesting topic nowadays among place marketing professionals and governments. The process of globalization and innovative processes have amplified potentials to every city or place to become a popular tourist destination. Technological progress like the Internet for example "… can allow suppliers in a destination to come together to create a strong centralized site...", or "… can also facilitate a stronger presence for individual tourism suppliers in the marketplace who are now able to reach their potential markets more directly …" (Palmer A., 2006, p.129). The global competition is no longer limited to the big cities that compete for the headquarters of multinational corporations and international organizations bodies, or for large sports events. Thanks to technological advances and market deregulations, even smaller places can suddenly be confronted with competitors located on another continent. (Van Gelder S. & Allan M., 2011, p.5).

Creating image on a certain destination or city is a great challenge not only to local governments, but to all tourism stakeholders in the place as well. Tourists create an image for a place before they visit it based on the information they previously consumed. Quality of promotion has an influence on the decision whether the tourist will visit the one or another place. But still, imaging of the tourist destination is complete after the visit of the place when tourists compare their expectations with experiences they had.

Main objective of this research paper is to identify eventual disparities between the image the foreign tourist create for Ohrid as a tourist brand before they visit it and the image which is created when the foreign tourists visit Ohrid. As a result of the main objective, specific objectives are determined as follows: (a) Endorsing "original image" of Ohrid as a tourist brand; (b) Determining image of Ohrid as a tourist destination created through promotional marketing activities; (c) Obtaining data about "the image" the foreign tourists create by at their first visit of Ohrid; (d) Comparing the experiences that tourists have during their visit of Ohrid with their previous cognition about Ohrid as a tourist brand; (e) Giving directions to overcome previously mentioned disproportions, in purpose to improve the image of Ohrid and to promote it as a more competitive tourist brand. That way, this research should be a solid platform for further promotional activities that should be defined by the local government and other interested parties in tourism.

The research paper consists of four parts: Literature overview; Brief overview of Ohrid as a tourist destination; Research methodology and Results of the research. At the end of the paper conclusions and recommendations for all relevant stakeholders are given.

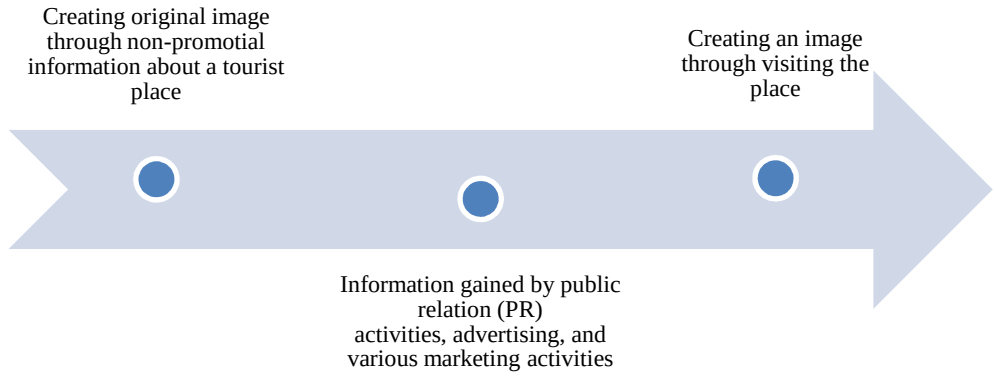
1. Literature Overview

Various studies paid attention to destination branding. It has been treated from different research angles. For example, some of them paid attention to international cases in tourism management (Susan Hommer & John Swarbrook, 2005). Other consider "…city branding is a discipline that is developing fast and whose theoretical underpinnings have only been developed and put into full practice in recent years …" (Van Gelder S. & Allan M., 2011). Some researchers paid attention to the process of innovation and they analyze place branding in the new age of innovation (Go F. & Goovers R., 2010). When analyzing destination branding and the tools for promotion we also must consider researches that analyzed motives, activities and satisfaction of the visitors (Marcussen C. & Zhang J, 2007; Prangoska Liljana, 2003) and researches that analyze the local residents opinion on the tourist potentials of a certain tourist destination (Trajkov A. & Kostoski S., 2011).

The image of a certain city (town) is "…the sum of beliefs and impressions people hold about places. Images represent a simplification of a large number of associations and pieces of information connected with a place. They are a product of the mind trying to process and pick out essential information from huge amounts of data about a place…" (Kotler P., & David G., 2006, p.42). All successful brands have social, emotional and identity value to users: they have personalities and enhance the perceived utility desirability and quality of the product (Kotler P., & Gertner D., 2002). Many cities have attractiveness but it is crucial to build a brand on something that uniquely connects a destination to the consumer now or has the potential to do so in the future. Also, interested parties must take into consideration the competition that will want and may be able to copy, but still they cannot surpass and usurp if the powerful brand is created. For example, other cities in the world can claim to be romantic and spiritual, but only Rome is "The Eternal City". Rome has got that epithet first and no other place can now claim it. However, "… the point of differentiation must also reflect a promise that can be delivered and that matches expectations. Good destination branding is therefore original and different, but its originality and difference need to be sustainable, believable and relevant…" (Morgan N., & Pritchard A., 2006, p.65)

According to all these theoretical and empirical findings, the promotion of certain place as a tourist brand can be done on three levels. The first level will be an original image about the tourist brand derived from personal contacts, media, books, movies, education etc. The second level, as an addition to the original image is one which is created over public relation (PR) activities, advertising and various marketing activities. However, the third and arguably most important level for creating complete tourist brand is the personal experience which is created through direct contact with the tourist destination. In this phase, tourist expectations about the tourist place created in the first two levels of promotion, should be met and justified (Picture 1).

Picture 1: Levels of Promotion of Certain City in Tourist Brand



Even though that Ohrid is a well promoted tourist brand and many people have already created an original image about it, but only by visiting the place the whole image will be completed. When visiting a place, tourist experience itself should have key role in confirming the "image" of the place. Therefore, policy creators and all stakeholders should pay a special attention to tourist opinion about the place which is being visited. Identifying disproportions between expectations before visiting the place and the image created after visiting the place, is a priority when building Ohrid as a brand in tourism. Thus, it is necessary to give directions for avoiding above mentioned disproportions so the promotional activities will be more effective and the number of tourists visiting Ohrid will increase.

This paper can be used as a solid basis for further promotional activities about Ohrid as a tourist destination. It should initiate a wider spectrum of activities towards promotion of Ohrid as an attractive brand in tourism. Such activities should lead to more interest in potential tourists to visit Ohrid, and when creating positive experiences from their visit, to multiple their number.

2. Brief Overview on Ohrid as a Tourist Destination

The city of Ohrid is located on the south-west part of the Republic of Macedonia and on the north-east coast of the Ohrid Lake at an elevation of 690-800 meters above sea level. According to the web site of the Municipality of Ohrid it has about 56,000 inhabitants. Ohrid is one of the oldest human settlements in Europe, containing Neolithic archaeological sites and other from the Bronze Age and the Hellenistic period. With its numerous prehistoric sites and its traces of the material culture which are older than 5,000 years, Ohrid is indeed an archaeological treasure and the surroundings of the Lake could be observed as a magical land of archaeology. A greater development in Ohrid occurred when the Slavs began living there in the VII century. It has the oldest Slav monastery (St Pantelejmon) and more than 800 Byzantine-style icons dating from the 11th to the

end of the 14th century. After the Tretiakov Gallery in Moscow, this is considered to be the most important collection of icons in the world (UNESCO, 2012). The city is rich of picturesque houses and monuments, and tourism is a predominant activity. The Ohrid Lake is one of Europe's deepest and oldest lakes as it is 286 meters deep and 4-10 millions years old (Municipality of Ohrid, 2012). It preserves a unique aquatic ecosystem with more than 200 endemic species with worldwide importance. The importance of the Lake was further emphasized when, in 2010, NASA decided to name one of the Titan's lakes after the Ohrid Lake. The city of Ohrid and the Ohrid Lake were accepted as a Cultural and Natural World Heritage Sites by the UNESCO. In fact, Ohrid is one of the 28 cities that are part of the UNESCO's World Heritage which are classified as both Cultural and Natural sites (UNESCO, 2012).

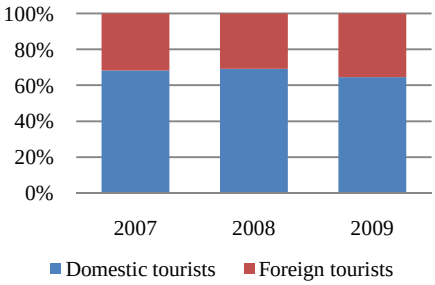
Table 1: Number of Visitors and Nights Spent in Ohrid in 2008 and 2009

	Visitors			Nights spent		
	2008	**2009**	**2009/2008**	**2008**	**2009**	**2009/2008**
Domestic	193643	122258	83.6	874071	774424	88.6
Foreign	62461	67441	108.1	172765	176830	102.4
Total	202104	189699	93.9	1046836	951254	90.9

Source: Municipality of Ohrid, 2010

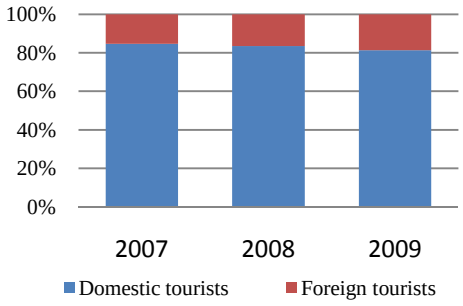
Table 1 shows the number of tourists and number of nights spent in Ohrid in 2008 and 2009. According to these data, the total number of tourists that visited Ohrid has been declining. It is a result of the decreased number of domestic visitors of about 12.4% in 2009 compared to the previous year. But more important is that the number of foreign visitors is increasing to over 8%, showing enlarged interest of the foreign tourists for visiting Ohrid.

Chart 1: Share of domestic and foreign tourists in Ohrid, 2007-09



Source: Municipality of Ohrid, 2010, own calculations

Chart 2: Share of nights spent by domestic and foreign tourists in Ohrid, 2007-09



Source: Municipality of Ohrid, 2010, own calculations

In the same period, the number of nights spent in Ohrid shows the same tendencies as the number of visitors. Domestic tourists spent 11.4% less nights in 2009 compared to the previous year. Still, foreign tourists have increased total nights spent (2.4%) in 2009 compared to 2008 and therefore they have neutralized the overall negative impact on total nights spent in Ohrid.

In 2009, 189699 tourists visited Ohrid, and 64% of them were domestic tourists and therefore, 36% were foreign tourists (Chart.1). In the same year, the tourists spent 951,254 nights in Ohrid and 81% of them were nights spent by domestic tourists and 19% were nights spent by foreign tourist (Chart.2). Although, the relative participation of the foreign tourists (visitors and nights spent) in the total tourists who visited Ohrid and spent at least one night in Ohrid is low, it is higher compared to the previous years. The participation of the domestic visitors from 68% in 2007 decreased to 64% in 2009, while the share of the number of nights spent in Ohrid by domestic tourists decreased from 85% to 81% in the same period. To compare, in the same period, the participation of the foreign visitors from 32% in 2007 increased to 36% in 2009, while the share of the number of nights spent in Ohrid by foreign tourists increased from 15% to 19% in the same period.

Table 2: Number of Nights Spent per Visitor in Ohrid

	2007	**2008**	**2009**
Domestic tourists	6,57	6,26	6,33
Foreign tourists	2,57	2,77	2,62
Total	5,30	5,18	5,01

Source: Municipality of Ohrid, 2010, own calculations

These tendencies resulted in increase of the average number of nights spent per foreign visitor in Ohrid from 2,57 in 2007 to 2,62 in 2009 (Table 2). At the same time, domestic tourists spent 6.33 nights in average in 2009 which is lower than 6,57 nights in average in 2009. The higher participation of the domestic visitors in the total number of visitors in Ohrid, as well as in the number of nights spent in Ohrid, resulted in lowering the average number of nights spent per visitor in Ohrid from 5.30 in 2007 to 5.01 in 2009.

3. Research Methodology

The research itself consists of two parts. The first part is a desk research which provides knowledge about the dynamics of tourist flows in Ohrid via set of indicators such as: number of foreign tourists, number of spent nights, tourism income etc. Also, systematization and identification of the sources that foreign tourists use to create the so-called "original image" and an overview of all promotional activities on local and national level which are in direction of creating

Ohrid as a tourist brand as well (PR, advertising, marketing etc.) will be made. Also, desk research will help in preparing the field research, especially in deterring the representative sample of respondents, arranging a questionnaire and scientific interpretation of obtained data. The second part of the research is connected with field activities, such as interviewing foreign tourists in order to find out their experience during their first visit to Ohrid and find out whether their previous expectations are met. According to the results, certain directions and suggestions for improvement of the tourist offer and tourist promotion of Ohrid will be created.

a. Desk Research

The desk research in a sense was the root of the field research. Scientific and expert literature was used for creating the methodology of research and to indentify criteria to determine the sources for creating an image of a tourist place. Numerous sources were used, mainly the Internet, for obtaining data about the ways and the scope of promotion and presentation of Ohrid in front of foreign tourists, and the dynamics of tourist trends in Ohrid over the previous years. The most relevant sources which were considered are: the Internet pages of the Local Government of the Municipality of Ohrid, the Macedonian agency for promoting and supporting tourism, the HOTAM (the Macedonian Hotel Association), the Ministry of Economy, the State Statistical Office of the Republic of Macedonia, etc.

b. Field Research

The field research was conducted by using the methods of interviewing foreign guests. In this sense, a questionnaire was prepared with 12 questions which are closely related to the main goals of the research. The questionnaire was translated in 3 languages: English, Serbian and Dutch. For the project purposes, 200 questionnaires were printed out and distributed to various hotels, private accommodations, travel guides and travel agencies. In order to provide properly filled questionnaires, few training sessions for interviewers were implemented. Approximately 45% of the previously distributed questionnaires were correctly filled and returned.

In addition, with an assistance of local travel guides and travel-agencies, an on-line questionnaire was distributed to over a hundred of respondents (return ratio approximately 1 out of 4). A relevant number of 111 filled questionnaires was provided.

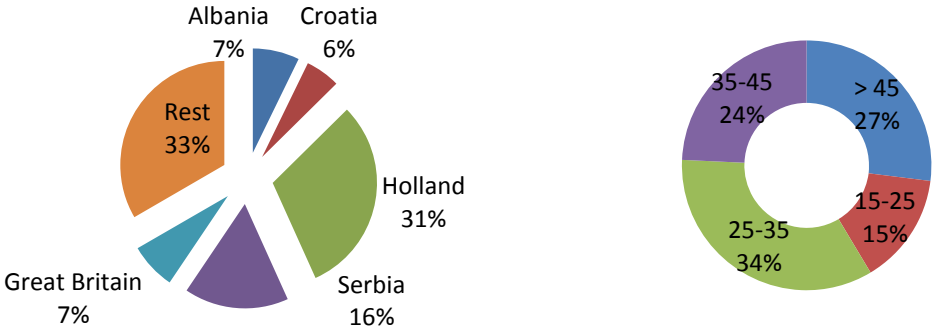
The relevant number of returned questionnaires is a solid base for making conclusions which could be used in decision-making process for further improvements of the tourist promotion of Ohrid.

c. Determination of a Representative Specimen

Structural analysis of the respondents was made according to the country they came from, their age, whether they have visited Ohrid before. Most of the

interviewed foreign tourists were from the Netherlands (31%), ahead of guests from Serbia (16%), Albania (7%), Great Britain (7%), Croatia (6%) and other countries such as: Algeria, Australia, Austria, Belgium, Bulgaria, Canada, Germany, Finland, Hungary, Ireland, Israel, Italy, Latvia, Morocco, North Cyprus, Norway, China, Romania, Slovenia, Spain, Sweden, Switzerland, Turkey and the USA (33%). The latest information on tourism given by the State Statistical Office, confirms that visitors from the first five countries enumerated above in the report, are about 30% of total number of foreign tourists that visited Macedonia in September, 2011 (SSO, 2011). Therefore, the structure of guests interviewed in the survey is proportional to the structure of guests that visited Ohrid and our country which means that representative sample of respondents is obtained. The structure of nationalities can be seen in Chart 3.

Chart 3: Percentage of Respondents (Country and Age)



Greater part of the respondents, or 66% visited Ohrid for the first time, while one third of them or 34% have visited Ohrid before. It is mentioned above that complete image about one tourist place is created during and after visiting the place, whereby expectations and impressions are compared. The structure of the interviewed guests is common for achieving the research objectives and will help to provide proper conclusions and recommendations for improving tourist promotion and tourist offer of Ohrid.

4. Research Results

The survey results indicate the reasons (motives) to visit Ohrid. Also, they help to identify the sources of information which foreign tourist were using in "creating the image" before the visit, and later the experiences of their visit. This enables identifying critical points in tourism promotion where disproportion between "expectation" and "reality" exists.

a. Reasons to Visit Ohrid

According to the World Tourism Organization, greater part or approximately 51% of all the international travel in 2010 is realized in tourists'

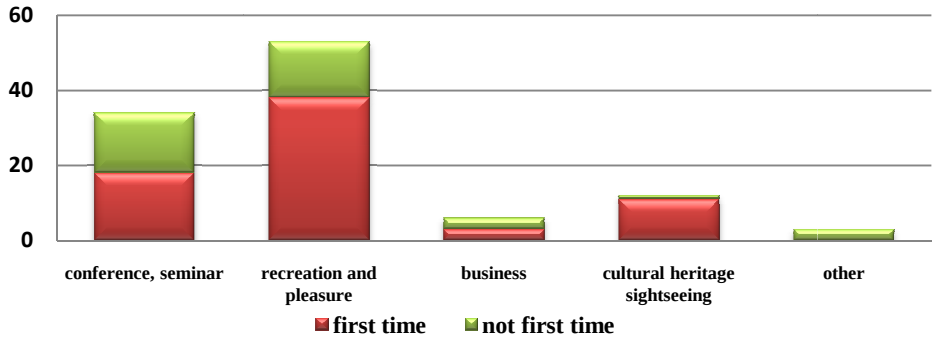
spare time and for vacation and recreation. Around 27% of tourists are included in international travel in purpose of visiting friends and relatives, religious reasons, health treatment etc. 15% of people travel for business and professional reasons and only 7% for "other reasons" (UNWTO, 2011).

Following these trends, greater portion or 43% of the foreign tourist who respond the questionnaire states that their main motives for visiting Ohrid are recreation and pleasure and 11% of the respondents answered that they motive to visit Ohrid was mainly sightseeing of the cultural heritage. Therefore, about 55% of foreign guests visited Ohrid to spend leisure time. Relatively high percentage of respondents (31%) came to Ohrid as participants on a seminar or on a conference, and 6% for business reasons. The survey was conducted off-season so results show that congress tourism has great potential in Ohrid.

Chart 4 shows the answers of the foreign tourists about the reasons to visit Ohrid. Additionally, the proportion of the foreign tourist who visit Ohrid for the first time and those who have visited Ohrid before is presented.

It is important that most of the foreign tourists who visited Ohrid for the first time, we mainly motivated by recreation and pleasure, as well as sightseeing of the cultural heritage. That confirms the undoubted attractiveness of Ohrid as a tourist and travel center which motivates guests from abroad to spend part of their spare time in Ohrid.

Chart 4: Reasons to Visit Ohrid



The results of the survey show that 75 percent of the foreign tourists answered that finances are not a decisive factor when making decision to visit Ohrid. About 25% of them admit that finances were decisive factor before they took the trip to Ohrid, but most of them will visit the town again.

It is important to notify that only a quarter of those who visit Ohrid for the first time, made their decision according to their finances which leads to a conclusion that foreign guests (75%) are usually motivated to visit Ohrid, regardless of finances. This information should be taken in consideration when the tourist price policy is being created.

b. Source of Information for Creating the Image of Ohrid as a Tourist Brand

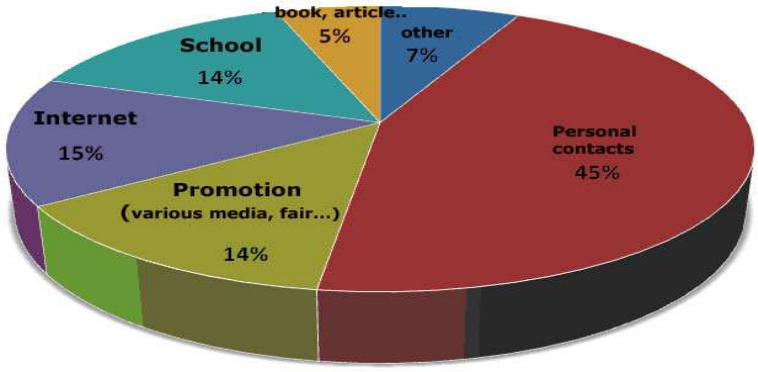
There are many sources that foreign tourists can use in order to provide an image for Ohrid as a tourist destination. Information can be granted from personal contacts, media, books, movies, education etc. or other sources that are not part of any promotional activities of governments or other stakeholders. For example, some of Macedonian movies use motives from Ohrid. One of them is Milcho Mancevski's movie "Before the rain", which was nominated for an "Oscar" and brought wider interests for Ohrid. Also, Ohrid is mentioned in many articles of powerful medias such as CNN, Lonely planet, Yahoo travel, Darmstader ECHO etc. The Dutch writer A. den Doolaard and his famous books "Oriënt-Express" and "The Wedding of the Seven Gypsies" are worth to mention, because they generated an extraordinary interest in Macedonia and Ohrid. Most prominent in promotional activities, are the central and local governments. For illustration, Ohrid has been presented on many TV and newspaper medias in Balkans, and in many tourism fairs organized in many cities such as: Utrecht, Holland; Budva, Montenegro; Istanbul, Turkey; Belgrade, Serbia; Sofia, Bulgaria; Berlin, Germany; Nis, Serbia; Brussels, Belgium; Veliko Trnovo, Bulgaria; Yalova, Turkey; Novi Sad, Kragujevac and Leskovac, Serbia etc.

However, as it is pointed out above, the third and arguably most important level for creating a complete tourist brand is the personal experience which is created through direct contact with the tourist place. Generally, tourist expectations created in the first two levels of promotion should be met and justified through direct contact with the tourist place. Motivation to visit certain place means that future visitors have certain expectations of the place. These expectations are based on the information received on the first two levels of promotion.

This part of the survey will determine how guests from abroad got the initial information which initiated the desire to visit Ohrid. Further, this knowledge will help us determine whether this tourist brand fulfills the initial expectations and what were the experiences after the first visit, which is, as mentioned above, the third level of promotion.

Obtained results show that even 45% of the foreign visitors heard about Ohrid for the first time from personal contacts. More that 14% of them, mostly from the Balkan countries have heard about Ohrid during their education and only 5% from a book or a newspaper. Somewhat unexpectedly, 65% of the respondents got the first image and expectations for Ohrid from the first level of promotion, or without any special activities of the tourist and travel representatives. This consciousness shows that tourists with positive experiences gained when visiting the place could multiply the number of visitors and nights spent in Ohrid. Also it enhanced the attractiveness of the city as a significant cultural and historical center on the Balkans which causes much information about it to be delivered through books, films, journals and various media. That motivates foreign tourist, especially from the Balkan countries, to visit Ohrid.

Chart 5: Sources Used as Initial Information for Ohrid



Opposite to the expectations, less than 36% of the visitors answered that their first information about Ohrid was from promotional activities of the tourist authorities. Most of them (15%) got initial information via the Internet and 14% via newspapers and various media. Small part of the respondents (7%) heard about Ohrid from promotional information on fairs, summer schools etc (Chart 5).

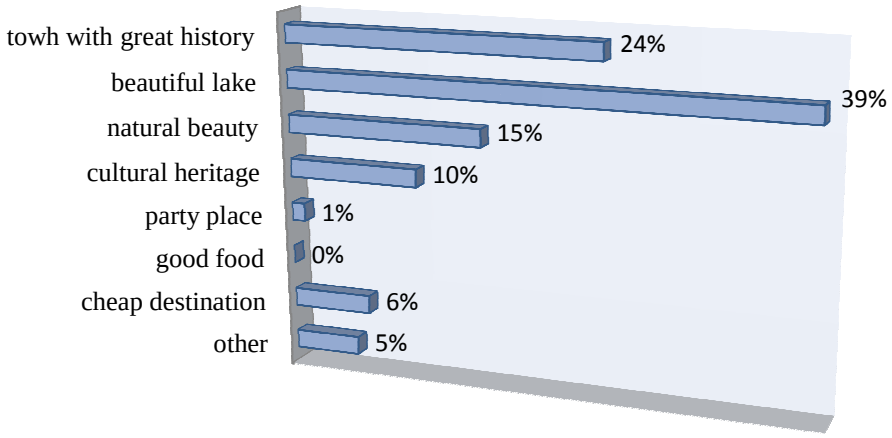
Although various presentations about Ohrid are made, still, most of the first-time visitors created an image about Ohrid from other sources. It can be concluded that the potential of specialized forms of presentation and promotion of the tourist values of Ohrid is insufficiently used by all interested stakeholders. Therefore, an increased number of foreign visitors is expected in the future by performing proper presentation created on a solid base and by meeting expectations of the tourists who will share their positive experiences with other potential tourists.

c. Experiences of Foreign Tourists

Before examining the degree of satisfaction from the visit of Ohrid, foreign tourists were asked about their initial opinion of this tourist brand before making the visit. Up to a certain level, that should be an indicator for the expectations that foreigners had before visiting the place.

The first impressions that potential visitor have about Ohrid varies from a "beautiful lake" (39%) to a town with natural beauty (15%). High percentages of the foreign tourists think that Ohrid is a "town with great history" (24%) and that Ohrid is rich with its "cultural heritage" (10%). Low number of respondents answered that Ohrid is a "cheap destination" (6%), while no one connected Ohrid with "good food" (Chart 6). According to these results, foreigners pay more attention to natural characteristics rather than to the cultural and historical significance of the place they are visiting.

Chart 6: First Impression of Foreign Tourists before Visiting Ohrid

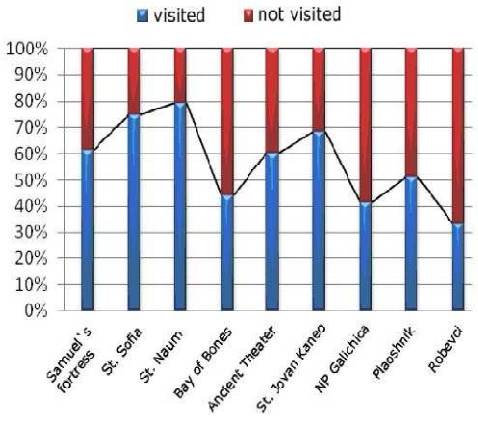


Other results show the degree of satisfaction of the visit of Ohrid, or whether Ohrid fulfilled their expectations and whether they want to visit it again.

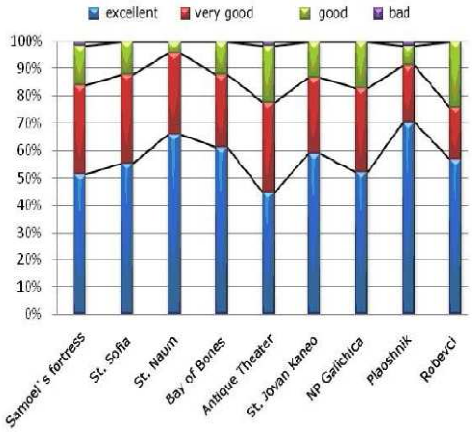
First, a survey was made about how many of the tourists have visited more significant places or tourist motives in Ohrid, which are usually used for its promotion. The least visited site is the national museum "House of Robevci" (70% have never visited it). Also, the national park "Galicica" has weak attendance (60% have never visited it) and the "Bay of Bones" as well (55% have never visited it). The most visited site is "St. Naum" (80%) together with "St. Sophia", "Kaneo" and "Samuel's fortress" (over 60%). Only half of the respondents have visited "Plaoshnik" (Chart 7).

Chart 7: Visited Places and Foreign Tourists Satisfactory Level

Percentage of visited places



Satisfactory level



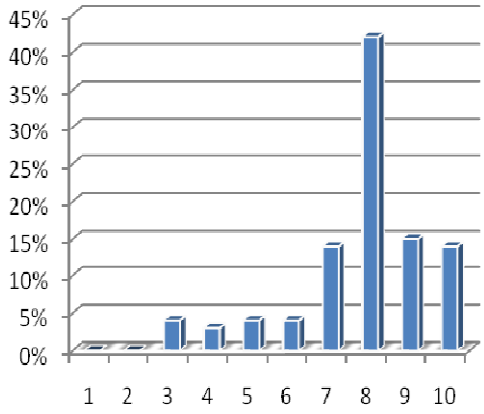
Foreign visitors gave their highest marks to "Plaoshnik" and "St. Naum". Also, the "Bay of Bones", "Kaneo" and the national park "Galicica" have a high satisfactory level. Lower level of satisfaction is shown towards the "House of Robevci", "Samuel's fortress", "St. Sophia" and the "Antic Theater" (Chart 7).

Although they have high satisfaction marks, it is obvious that some sites are scarcely visited by foreigners. This confirms the need of more organized trips and excursions. The increased level of satisfaction of certain places depends on correct presentation. People who carry out the process of presentation must be carefully chosen.

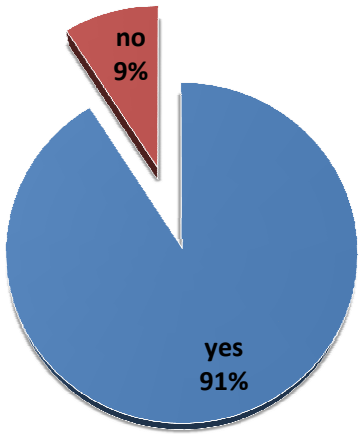
Part of this survey deals with "general level of satisfaction" from the visit of Ohrid and satisfaction from certain segment of tourist offer in Ohrid as well, such as accommodation, food, hygiene, prices, beaches, safety etc. Satisfaction level can be seen on Chart 8.

Chart 8: Level of Satisfaction and Percentage of Those Revisiting Ohrid

A. General level of satisfaction



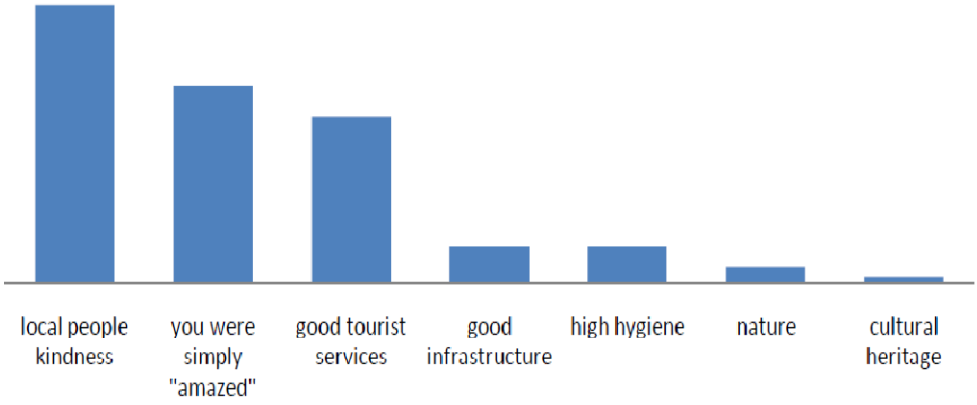
B. Would you consider visiting Ohrid again?



Every respondent individually evaluated personal satisfaction from their visit of Ohrid on a scale from 1 to 10, where ten was the maximum satisfaction. A greater part of the respondents (approximately 42%) marked 8 on the scale of general level of satisfaction, while only 15% evaluated with 3 to 6. *The average score of the general level of satisfaction was 7.8* More than 91% of tourists would like to visit Ohrid again, which, in general, leads to a conclusion that Ohrid meets the tourist expectations.

The main reasons for considering a visit to Ohrid again are: "local people kindness", "good tourist services" and "you were simply amazed" (Chart 9).

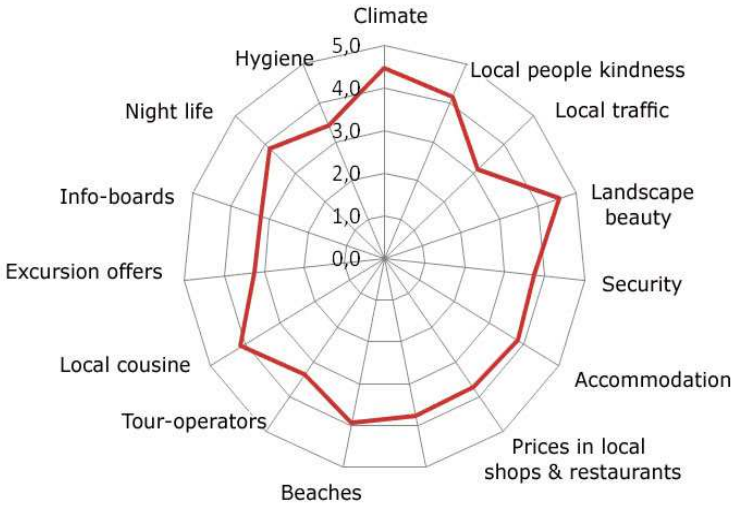
Chart 9: Main Reasons for Revisiting Ohrid



Respondents who do not consider visiting Ohrid again (9%), point out the "bad infrastructure", "distance" and "accessibility".

In order to identify certain dissatisfactions from the visit of Ohrid and to see where this tourist place failed in meeting the expectations, foreign tourists were asked to rank satisfactory level of various segments of tourist promotion.

Chart 10: Level of Satisfaction from Certain Segments of Ohrid's Tourist Offer

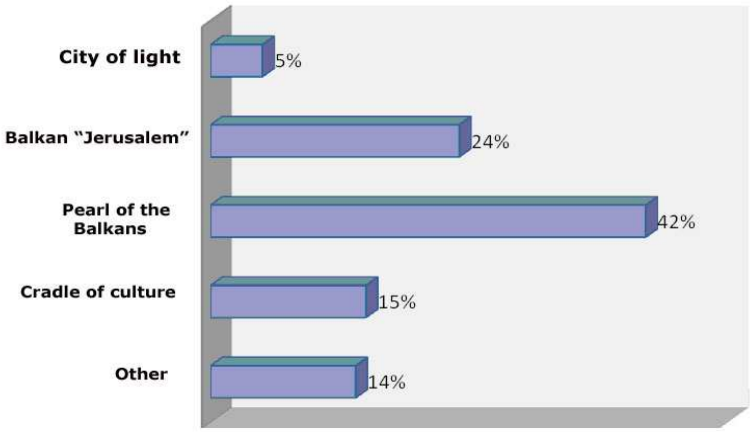


More reserved attitude was shown towards general feeling of security in Ohrid. Maybe this is a result or outcome from several incidents which occurred in the past year. Also, less satisfactory are the prices in local shops and restaurants, night life, accommodations and beaches, segments that received rather low marks during the survey.

Contrary, higher level of satisfaction is shown when it comes to "local people kindness" and "local gastronomy", so maybe these results should lead to even stronger promotion of these segments. As expected, the respondents were most satisfied with "landscape beauty" and "climate", two categories with almost perfect marks.

Taking in consideration that there is no unified or characteristic slogan that fits Ohrid, respondents were asked to choose between several offered answers on the question "Which parole suits Ohrid the most?"

Chart 11: Which Parole Suits Ohrid the Most? (According to Foreign Visitors)



High 42% of the respondents are in favor of the slogan "Pearl of the Balkans", while 24% of them think that Ohrid is the "Balkan Jerusalem". Few of them chose "Cradle of Culture", even fewer the "City of Light". More than 2/3 of the guests think that Ohrid is not only Macedonian but symbol of the Balkans, as well.

Conclusions and Recommendations

The survey results completely met the expectations and contributed in the project goals realization. Also, these results contributed in a direction of overcoming the differences between what is being promised to foreign visitors before the actual visit of Ohrid and the reality they face during the visit. As expected, Ohrid as a main tourist center of the Republic of Macedonia, mostly attracts foreign visitors with its "natural beauty" and for "recreation & pleasure", regardless of their finances. In the off-season period a high percentage of visitors come to Ohrid as members of various conferences, seminars, work-shops, schools etc. It's important to say that most of the tourists who visit Ohrid for the first time point out that the main reasons for visiting Ohrid were "recreation & pleasure" and "sightseeing of the cultural heritage" which confirms undoubted attractiveness of this tourist place as a recognized travel destination.

The results showed that people who visited Ohrid for the purpose of "congress tourism" (seminars, conferences etc.) planned to visit Ohrid again, but their decision would depend on "their personal finances" which leads to a conclusion that this segment of promotion must be carefully reconsidered from authorities and tourism subjects in a sense what prices are offered for organizing conferences, seminars etc.

During this survey a vast number of information sources (first impressions) about Ohrid were found, which are used by foreigners to help them make a decision and actually pay a visit to Ohrid. Despite large number of presentations of Ohrid in the travel market through various activities of tourism subjects (authorities), foreigners have already created an initial picture (opinion) about Ohrid, based on information from completely different sources. It leads to an impression that the potential of specialized form of presentation and promotion of the tourist values of Ohrid is insufficiently used by all interested stakeholders. Only proper presentation can lead to increased number of foreign visitors. When creating promotion strategy, the fact that most of the foreign visitors are attracted by Ohrid's natural characteristics rather than its historical or cultural significance (which is nevertheless undoubted) should be taken in consideration. Very few respondents see Ohrid as a "party place" or a "cheap destination".

Some of the most often represented sites in Ohrid such as: "Plaoshnik", the "Bay of Bones", or the national park "Galicica" get very few visits from foreigners. Also, places and monuments with great historical significance like the national museum "House of Robevci" are very undervisited, which urges the need for many more organized offers for excursions.

When promotions are organized, the main topics should be the questions related to who presents and how the tourism values are presented to the visitors, especially because the most of the foreign visitors are not satisfied with the poor offer of excursions, insufficient information, low tour operators' competencies, etc.

Significantly higher marks from the respondents were given to "local people kindness" and "local gastronomy". This fact enhances and in a way confirms well known hospitality of local people and renowned "local cuisine". Positive trends in this segment of tourist offer should continue and must be highlighted in presentations and promotion of Ohrid.

Furthermore, subjects like: safety, hygiene, prices in local shops, accommodation, beaches and night life were moderately rated. In order to achieve more effective promotion throughout the world travel industry, these segments of tourist offer must be immediately improved.

As expected, higher level of satisfaction was expressed about Ohrid's natural beauty and climate, segments of the questionnaire with convincingly highest marks. It should be mentioned that Ohrid needs a catchy slogan while promoting. From the given options (answers), 2/3 of the respondents consider

Ohrid as a "Pearl of Balkans" (something to have in mind while promoting the city as a travel destination).

Proper identification of advantages and disadvantages in tourism presentation, both at home and especially abroad, should lead to improved promotion of a tourist destination in order to create a destination brand. Main conclusion derived from this survey is that Ohrid as a travel and tourism center mainly fulfills the expectations of foreign visitors, but certainly there is space for improving its promotion and the quality of its international presentation.

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BRENDIRANJE DESTINACIJE: KONKURENTSKI POTENCIJAL OHRIDA KAO TURISTIČKOG BRENDA

Rezime: Brendiranje destinacije predstavlja spektar aktivnosti u pravcu kreiranja imidža određenog mesta. Proces globalizacije je povećao konkurentni potencijal malih gradova, jer globalna konkurencija nije više ograničena na glavne, tj. velike gradove. Mišljenje posetilaca o određenom mestu, veoma je važno i mora se uvek uzimati u obzir prilikom kreiranja strategije za turističku promociju. Veoma često strani turisti stvaraju sliku pre nego što posete turističku destinaciju i imaju određena očekivanja na osnovu te slike. Nakon što su posetili destinaciju, suočavaju se njihova očekivanja i realnost. Na osnovu tih iskustava posetioci kreiraju kompletnu sliku o posećenom mestu. Pozitivna iskustva mogu biti korisna alatka za lokalne samouprave i svim zainteresovanim stranama za odredište brendiranja. Ovo istraživanje ima za cilj da identifikuje eventualne disproporcije između očekivanja stranih turista pre nego što posete Ohrid i njihovih iskustava nakon njihove posete kako bi se ponudile rešenja za bolje brendiranje destinacije.

Ključne reči: brendiranje, destinacija, Ohrid, strani turisti, motivacija, promocija

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THE GOALS AND LIMITATIONS OF MULTICRITERIA MODELS OF ENVIRONMENTAL PROTECTION

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Abstract: *After considering the principal issue of the harmonization of the environmental and economic objectives and constraints, these conditions should be properly introduced in multicriteria mathematical models that are used to protect the environment. More recently, there is in the theory of decision making intensive work in developing optimization methods of mathematical models with multiple criteria. This method, we consider here briefly, in terms of appropriateness of its use in environmental issues. The main emphasis in this paper is on the constraints and their mutual interdependence of the multicriteria model of the environmental protection.*

Key words: *multicriteria optimization models, economic limitations of the model – minimizing costs, environmental limitations of the model – minimizing pollution, enviromental protection*

1. Introduction

A primary goal of progress and development of every social community, followed by adequate institutional behaviour and decisions, is related to preserving and increasing well-being of the human kind, as individual, and welfare of the whole society, meaning preserving and improving the real quality of life and increase of general prosperity. In this sense, further development and improvement of functioning towards individuals within the economic, social and health system, educational and other systems as subsystem actually depends on the development and improvement of the main social system. This is the main and prior aim of each community.

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In the first half of the last century, a common opinion was the one saying that the quality of life could be equalized with material life standard of the citizens in one state, and the overall well-being of the state with the gross national product of the state, i.e. gross domestic product, meaning with the level of availability, i.e. accessibility of material and other goods. Based on this kind of opinion in the second half of the last century, there was a change in the idea where great importance and priority were given to the economic objectives, especially the ones forcing economic growth and increase in material production, and where other social objectives in that period remain in the background.

However, different from previous periods, nowadays the prevailling idea is the one quoting that the life standard is too narrow objective, which cannot be seen as general and the only objective of development and growth in one social community, as well as the national product, i.e. gross domestic product, cannot be seen as safe and reliable benchmark of the general well-being of the observed society. The above mentioned change in the opinion was caused by many factors, where the most significant are the ecological problems within the environment effected by the constant economic growth of the observed community. Economic growth has huge proportions and therefore it has been seen as out of control. Uncontrolable economic growth actually presents „blind progress“ of one community.

Also, after all activities and comprehensive debates, a opinion was formed that the quality of life and social standard, i.e. social well-being, beside very important and emphasized material components, also consists of important and not less valuable non-material components which are vital for general well-being of the mankind and society. Mainly, these components are health and social security, quality of environment, education and satisfaction in work, etc. One of the main conclusions of the Club of Rome, which was dealing with these issues based on the modelling of environmental problems, was to demonstrate that there is divergent and disproportional development of the material and environmental components of the social well-being and it is caused by constant and continuous economic growth.

The aim of the research in this paper represents the possibility of choosing the adequate model of optimization of economic and environmental goals in order to simultaneously achieve economic growth with improvement of quality of the environment. Experiences of the developed countries in the field of environmental policy management show that while defining and implementation process the principle of economic efficiency has been appreciated, meaning maximization of the social well-being with investment minimization of available resources in society. Therefore, as limitations within the chosen model, it is necessary to discuss the minimization of expenses and minimization of the enviromental pollution.

The basic scientific hypothesis that the authors attempt to assert is the possibility of achieving both these objectives for which was once considered to be conflicting with each other with respect to limiting factors. Methodologically, the

possibillity of achieving the goals can be analyzed using a variety of methods and models. Based on the positive and negative features of the available methods will select the one that is best suited to determine the optimum balance of economic and environmental goals. To this goal, as the most appropriate ones are multicriteria linear programming models.

2. Structural Characteristics of the Economic Limitations

Economic theory agrees on the fact that the application of the economic principle is the basic condition for maximization of the material well-being, achieving better results with certain investments (first version of the economic principle), i.e. achieving planned results with less investments (second version of the economic principle), i.e. maximization of the material well-being with certain scope of social needs equal with minimization of the investments of available resources in the entire social system (Costanza, 1991). Therefore, the main economic goal of maximization of the material well-being in mathematical model with environmental problems could be replaced with the goal of minimization of the investments of available resources, i.e. with the goal of minimization of total expenditures in economy (Colby,1991). Since the monetary size is comparable, in this case its represent the ideal measure of cost.

One structural problem related to the use of expenditures as target limitations, and which occurs in every economic and environmental analysis, is the problem of the externalities of the production process, i.e. problem of the additional social costs. Briefly, social costs are all costs which are not covered by the one who caused them (Coase, 1960). For example, in this category are the costs related to purification of polluted water coming from some production subject located in the upper watercourse. In economic theory, there is a opinion that these kind of social costs are actually external part of costs of those activities which caused them and therefore must be calculated into total costs of these activities. Actually, the application of the principle „polluter pays“ is coming from this opinion.

Social costs, which mainly appear as damage costs and damage recovery costs, are difficult to establish, while their division into certain emitents and processes is mainly impossible (Anthoff, Tol and Yohe, 2009). Therefore, the procedure of „indirect assessment of social costs“ is usually used (Fujiwara and Campbell, 2011), where instead of damage costs and damage recovery costs the avoidance costs are assessed. Economic research show that avoidance costs are mainly on the same level as damage costs and damage recovery costs, and their estimation does not make any major difficulties.

Beside practical reasons, there are also principal reasons for usage of avoidance costs, especially when it comes to models for optimization of energy or economic efficiency. Namely, the objective of the long-term structural policy in the field of environment must be realization of the efficient protective measures, and

not the establishment of the damage compensation system through establishing the damage costs and their „equitable“ division on causers.

Based on the above mentioned arguments it could be concluded that the objectives of minimal costs must include social costs, but in the indirect form of avoidance costs. Of course, this concept of the economic objective determines a spectrum of measures that should be introduced in the environmental model, in the sense of logical cohesion of objectives, limitations and measures. On the other hand, this concept is enabling that every level of ecological objectives should have the best possible combination of avoidance costs, i.e. combination of measures with minimal total costs (including social costs of prohibition measures). It is not necessary to emphasize that this concept of objectives with minimum costs brings the best possible achievement of environmental objectives and more efficient protection against pollution of the environment.

According to Gylfason, „social costs of production does not simply compose the sum of individual production costs. Social costs of production consist elements on which pollution emitter does not take into consideration during the decision making on production activity. These costs include also performance of the production activity on quality of life – e.g. life in cities, different types of air pollution, soil, water...“ (Gylfason, 2001).

As seen here, the term „social costs“ presents certain modification of the mezoeconomic term of costs (Pearce and Atkinson,1993) in the sense that society, as totality, must take into consideration also some effects of production which occur no matter the cost accounting in production subject and no matter the goods and monetary flows in economic system, and which could have effect on the general well-being of society. The main problem of the private and social costs lies in the fact that efficient and optimal subsystem (according to its objectives, limitations and intentions) cannot assure social efficienty and economic optimality of the economy as a whole. On the contrary, rational subsystem direction towards principle of maximum interest will lead towards loss of these social goals and values which are very important for macrosystem and present foundation for individual well-being and survival. This is the reason why implements the concept of minimum social costs of prohibiting measures.

3. Structural Characteristics of the Ecological Limitations

Nowadays, with the high pollution of the environment, main ecological objective of the maximum environmental quality could be formulated also as an objective of minimal environmental pollution, i.e. as the goal of minimal emission. This type of reformulating of the main ecological objective presents certain simplification of the general problems related to the quality of environment, which also consists of certain estetic and sociological aspects of human existence. Contrary to economic limitations of minimum costs, for ecological limitation of

minimal emissions, there is no universal measure similar to costs. Emissions of sulfur dioxide and carbon monoxide cannot be summarized, as well as the river warming cannot be measured in units of air pollution. Therefore, for every type of hazardous emission and every life medium special objective criterions must be established in the form of adequate limitations, which was already done in the form of emission standards for many types of hazardous substances as well as for waste heat, and separately for air and water.

Principal incomparison of certain types of emission, however, was not the obstacle to various efforts of valuing different emissions and their impact on humans, flora and fauna, material goods, etc. In the field of energetics there were quantitative assessments of the „environmental suitability“ or „pollution level“ or certain power holders, based on more or less complicated weighting procedures of specific emissions for various pollutants and their effects on individual components of the ecosystem.

Finally, the possibility of comparing the monetary value led to attempts where monetary units were used for the evaluation of environmental objectives, primarily through the damage costs within the so-called "cost-benefit" analysis. However, behind the apparent benefits of common standards for economic and environmental limitations is actually an attempt of "economization" of environmental limitations, or attempt of monetary valuation of non-economic components of human well-being, with systematic underestimation of these components. The use of monetary measures, in any case, is less corresponsive to the need of environmental limitations, other than using other weights. However, this weighting is a very complex task with rather uncertain results.

4. Optimization of the Economic and Environmental Limitations

Limitation functions in the multicriteria model of environmental protections could be presented through the model of linear programming with two limitations. Usually, minimal costs are used as economic limitation, and minimal emission of hazardous substances. The scope of all efficient solutions presents complete solution of the examined problem (Zimmermann 1976, 455). From this complete solution, with additional criteria, there is one optimal solution, or optimal compromise. Depending on the applied procedure, Martić and Zimmermann distinguish following basic methods for establishing of optimal compromise, or following groups of multicriteria linear models of environmental protection (Martić 1977, Zimmermann 1976): models with weighting of limitations, objective programming models and interactive methods of searching for optimal compromise.

Methods within the third group were developed for all situations where decision makers cannot formulate their preferences in advance, but only on the basis of the additional information on possible alternative consequences (Martić 1977).

Models within the second group, Zimmermann describes as multicriteria models where optimal compromised solution is defined in a way that the distance from the ideal solution is minimized (Zimmermann 1976, 456-457). Ideal solution is the one where all the objectives are achieving their optimal level.

As first impression it could be said that the models of objective programming allow „pure mathematical" determination of the unique optimal compromise, without any need for additional value system. On the other hand, Zimmerman indicates the fact that the usage of parameter „distance" as one criteria of optimum is actually implies the existence of adequate preference system (Zimmermann 1976, 457).

Within the models of the first group, all preferences are explicitly introduced into multicriteria model. Assessment of the optimal compromise could be performed in following ways:

- that all objectives and limitations are divided into „main objective" and „secondary objectives", where goal function consists only of main objective, while secondary objectives are formulated as „objective limitations" (Zimmermann 1976, 456, Hax 1974, 32) ili
- to formulate complex function of weighted objectives of general form:

$$\sum_{i=1}^{n} p_i \cdot a_i(x),$$

where $0 \leq p_i \leq 1$, $\sum_{i=1}^{n} p_i = 1$, $a_i(x)$ is the function of i goal, or limitations, while p_i is relative aim (ponder) of this goal, or limitation (Martić 1977, Fandel 1972, 32-33).

All the above mentioned multicriteria models could be applied in ecological and economical issues, meaning they could present multicriteria models of environmental protection, where the choice of the most appropriate procedure in each concrete situation depends on many subjective and objective factors (Munda, Nijkamp and P. Rietveld, 1994). For example, successful application of interactive models of searching the optimal compromise usually suppose situations related to decision making where only one dialogue partner is competent decision maker. In the field of environmental protection this kind of situation is very rare, since the competences are usually divided within the range of institutions in charge for different levels of decision making (Mastrandre, 2009).

Considering the application of other models into ecological and economic issues, in expert literature the prevailing opinion (subjective factor) is the one saying that models with objective weighting are the best for expressing the real problem of valuing certain components of the social well-being and therefore enable critical review of the system of social values and preferences.

For models with quantitative objective valuing it is not recommended to form complex functions of weighted objectives due to practical reasons especially

when there are more than two goals (Martić 1977). Within current formal analysis, problem of optimization of economic and ecological objectives was presented as the problem of establishing the optimal compromise between two objectives, namely between objectives of material well-being (i.e. minimum costs) at one hand, and quality of environment (i.e. minimum emission) on the other hand. However, in reality this problem is much more complex, due to the fact that emission of hazardous substances cannot be summarized like costs, or because the „quality of environment“ presents the scope of mutually incompatible ecological objectives.

5. Introducing the Ecological Limitations into the Model

As previously mentioned, forming a complex function of weighted economic and environmental objectives and limitations would be extremely hard task, having in mind the incompatibility of certain environmental objectives. On the other hand, environmental objectives have already been established within the political decision-making process on the level of optimal compromise between material well-being and quality of environment, and formulated if the border values of allowed emissions of hazardous substances. This impose a conclusion that for environmental and economic optimization in structural models of power energy and economic development the best possible solution would be introduction of environmental objectives over goal limitations, where goal function contains only economic objective of minimum total costs. Treatment of environmental objectives as limitations enables direct introduction of border values of allowed emissions into model and therefore completely responds to the structure of real system.

Introduction of environmental objectives over objective limitations presumes qualification of all objectives into (1) „main objective“ of minimum costs presented with goal function and (2) „secondary objectives“ of maximum allowed emissions presented with limitations. This division into „main objective“ and „secondary objectives“ however does not have only formal characteristic, since it cannot be said that for estimation of optimal solution the goal function is not more „important“ than limitations or vice versa. In every multicriteria linear model of environmental protection, goal function and limitation system present unification of equally necessary conditions for finding the best optimal solution for this model.

Therefore, division of objectives into „main objective“ and „secondary objectives“ presents just certain technical procedure of multicriteria programming, while the relevance of certain objectives is defined through the level of goal limitations. Namely, the increase of level of goal limitations increases the relevance of these objectives in relation to the objective contained within the goal function, while decrease of level of goal limitations increases the relevance of the goal function related to the goals contained in limitations (Hax 1974, 33).

By determining the levels of specific environmental objectives, therefore, the relative importance of specific environmental objectives in relation to the economic objective is determined also. This agrees with the already mentioned opinion that with the determination of emission standards of hazardous substances in the process of political decision-making a compromise has already been achieved between the objectives of material well-being and quality of environment. System of specific emission standards is, therefore, together with the target function of the minimum costs, a weighted system of economic and environmental objectives. Evaluation of the objectives previously has already been done in the process of political decision-making and based on social preferences.

By converting the environmental objectives in the constraints, a mathematical modeling procedure for multicriteria linear programming method was reduced to the "classical" linear programming task with a target variable. The solution of this task is, in principle, an effective solution, and the optimum is the extent to which the weighted system of environmental and economic objectives corresponds to the real social preferences.

In principle, it can start from the assumption that the allowed emission standards according to the available knowledge set at the optimum compromise between the objectives of social and material well-being and the quality of the environment. Mathematical analysis can provide valuable information in the consideration of the goal system, because the alternative levels of environmental goals affect the achievement of economic goals (opportunity costs), which therefore increases the quality of the process of political decision making.

6. Introducing the Economic Limitations into the Model

As mentioned above, the multicriteria model for economic and environmental optimization of energy or economic structure as a key criterion for the target function is introduced as the most appropriate, minimization of the total cost in the social system. Target criterion of minimum costs can provide a selection of such variants that within the given constraints ensures the maximum possible material well-being, if other essential conditions of the economic policy are met within the overall economic and social system. These are, for example, the optimum conditions of the distribution of national income on the accumulation and consumption as well as certain forms of consumption (for personal, general and common use), the requirements of a balanced development of industries and regions, balanced development of foreign trade relations, the effective market mechanism for determining the price, etc. How the costs present the product of used quantities of production factors and their prices, features of the price system have a decisive influence on the reality of costs, and therefore the possibility of using total cost as a criterion of social optimality. In a system of market economy occur specific problems of deformation of the market mechanism (for example, the external effects of production processes and the "social costs", monopolies and

oligopolies, cartels, etc.), as well as the issues of the appropriate corrections. In the system of economic goals such conditions, in fact, are the main measures for achieving the economic objectives - maximum material prosperity and economic objectives are standing by the goal of minimum cost. Some of these "extra" economic objectives through the appropriate target constraints may be introduced into the model, for example through restrictions on the funds available for investment, restrictions of available foreign currency, and restrictions on imported energy and similar. R. M. Solow in his model for optimizing the energy structure has already predicted the possibility of introducing such target restrictions. In fact, R. M. Solow predicted an alternative formulation of the target criteria for target function (the criterion of minimum investment, criterion of the minimum requirements of foreign currency), where for each of these alternatives the other economic objectives are included in the model as constraints. If, for example, the target function chooses the criterion of minimum costs, investment objectives and foreign policy are introduced in the model in the form of restrictions of available investments and foreign currency (Solow, 2008). In the same way, meaning through appropriate constraints, other social goals can be introduced to the model.

7. Improvement Measures and Specific Limitations within the Model

Since many factors affect the environment, all the other goals that consequently should be optimized in multicriteria models of environmental protection are introduced into the model as appropriate goal limitations. In terms of the logical unity of goals, constraints and measures, the adopted concept of economic and environmental goals also defines a range of measures that can be introduced into the model. Economic goal of minimum costs is based on the concept of cost prohibit measures and environmental goals are formulated as the maximum allowed emissions of pollutants. It follows that primarily prohibitive measures are introduced in the model that somehow influence the reduction of total emissions.

Measures for reducing the emissions of specific pollutants of monitored production processes is the most important group of prohibit measures, and therefore the most important group of measures within the model (Tietenberg and Lewis, 2000). Measures for the substitution of fuel and energy systems do not have to be explicitly introduced in multicriteria model, because the replacement options are already built into the model structure. The possibility of optimization of the model is related to the existence of substitution possibilities.

Application of the principle "polluter pays" presents active compensatory measure acting as economic constraint in order to reduce emissions of harmful substances. This measure in multi-criteria model can be taken into account through corresponding increase of specific costs.

Quantitative and qualitative spatial and temporal limitations are prohibitive measures with direct effect on the overall pollution of the environment. Qualitative constraints in the form of emission standards in multicriteria model is taking over the corresponding coefficients of specific emissions (e.g. emission standards for cars), while all other constraints are introduced into the model only if they can be formulated in such a manner that corresponds to the structure of the model (Newbold and Daigneault, 2009). Time constraints, for example, should be preferably converted to a quantitative restriction. Physical limitations that apply to the entire observed region, can be downloaded directly into the model (for example, limit or ban the use of fuel oil in a given urban area with extremely high levels of pollution).

Due to environmental objectives each multicriteria model for economic and ecological optimization of energy structure must contain the dimension of space in the form of spatial division of the national generating capacity in the whole territory of the observed region (Hope, 2008). The regional character of environmental pollution and the need for protection against pollution, require that the model:

- Identifies the target limits of the maximum allowed emissions of pollutants for each region in particular and, on the other hand,
- Perform a spatial identification of all production processes that pollute the environment, i.e. all sources of pollution.

As previously stated, the most appropriate spatial distribution of the total territory of the national economy, in terms of pollution and environmental protection, is the division between urban and rural regions. Territorial regions in the model must identify all the processes that pollute the environment. Thus, for each region provides a link between the emission process, on the one hand and the target constraints, on the other.

For stationary processes the spatial identification is not a problem. In contrast, the spatial identification of mobile polluters is much more difficult, because the place of supply is often not identical with the point of fuel consumption and transmission of harmful substances. This is especially valid for the marine, rail and air, and to some extent, for road transport. Therefore, the model introduces factors, which indicate which part of the fuel, which is supplied in a certain region, is spent in the territory of that region. Thus, for each region we get the connection between the fed and the amount of fuel consumed in moving energy processes.

Thanks to the division of the whole territory of the national economy in urban and rural regions, the solution involves optimal energy structure and the optimal schedule of energy and emission processes in various regions. However, this solution cannot provide an answer to the question of the optimal distribution of energy and emission processes within each region separately, because each region

in the model is presented only punctually. This means that in the model all the energy and emission processes are concentrated at one point, which is both a focal point for optimization interregional energy transport.

Optimization of energy and emission structure within a region can only be made using the model with interregional division of space and regions, such as the example of model for determining the optimal energy supply for cities (Loucks, D at el., 2005), provided that environmental parameters are adequately engaged in the model. In such a multi-criteria model those measures which cannot enter the interregional models can be also taken into account, such as spatial displacement of issuers of harmful substances in the region, editing of green belt and similar.

Starting from the given model here is set up the multicriteria model for economic and ecological optimization of energy. This means that using the results of this model further optimization of the energy structure within the regions can be accessed, but also the partial optimal solutions of certain regions can be included into a "national" model. It would probably be useful for finding the optimal solution iteratively using both possibilities, but the optimum overall system (national economy) must always have priority over the optimum partial systems and subsystems (the regions).

8. Conclusion

Regardless of the constant economic growth and constant increase of economic and social resources and their general availability, the constant and main conflict between material life standard and quality of environment could be solved even without decrease of the material well-being of citizens, in the apsolute sense. Also, in expert literature the prevailing opinion is the one saying that investment in development and introducing the goods in production process that protect the environment (for example, setting the devices for air or water purification) is actually increasing the general social well-being since these production activities increase the total gross domestic product. These discussions and opinions present just one more proof that the above mentioned indicators of social well-being have many disadvantages.

In every society the compromise presents the most acceptable solution in conflicts between competitive objectives in the system of social objectives. Even though many compromises could be achieved, the most optimal is the one whose realization contributes to the greatest extent to the achivement of the main social objective, i.e. achievement of the highest level of social well-being. Therefore, the possibility of realization and achievement of the optimal compromise between competitive objectives mainly depend on the accessibility of criteria for comparions of some other alternative compromises, or on the possibility to measure the contribution of each individual objective and the level of their contribution to the general social well-being.

Compromises could vary. Some of them are efficient objective compromises. In the theory of multicriteria analysis, efficient compromises between competitive objectives are defined as „efficient solutions“ (see for example Zimmermann 1976, 455; Hax 1974, 32.); they are optimal in the sense of Pareto (Popović, Ž., Vasić, S. 2003, 388-395), since the level of realization of one objective cannot be increased without simultanous loss in the realization of the other objective.

As distinction from this other, non efficient compromises are suboptimal in the sense of Pareto: the quality of material standard can be increased without decreasing the quality of environment, and the quality of environment can be incrased without decrease of material well-being.

„Pareto efficiency does not understand the equity. Usage of all available social resources and technological possibilities that put one consumer into the best possible position, with the condition that all other consumers stay on the same level of utillity, results in allocation which is Pareto optimal, but not eligible from the point of distribution“ (Popović, Ž., Radukić, S., 2004, 112).

This paper describes the main aspects and characteristics of the most important objectives and limitations as well as their implications in the multicriteria models of environmental protection. The economic and environmental objectives and limitations are mainly pointed out in this paper, and even though mutually contrarious by compromised behaviour, they lead to the realization of the optimal social well-being. Achieving the optimal solution with huge number of limitations is possible to accomplish by developmental strategies and increase of social well-being where objectives and limitations are properly viewed and applied.

Based on the analysis set out in this paper, it is possible to point out theoretical, methodological and applicative issues that would be relevant for future research. One such issue is the possibility of extending the model to other goals and objectives that are relevant to each specific country or region. This approach leads to the introduction of specific restrictions on economic and environmental models. Certain regions or countries have a high level of development and therefore give priority to environmental issues in relation to others. It means that with the policy objectives in a hierarchical society, the optimal models differ from country to country. Based on the optimization model, each country could define the most desirable economic policy and environmental policy, and respond appropriately in order to increase the level of economic growth and quality of environment, meaning social well-being. In addition, future research could consider conditions, manner and the range of use for methodological instruments presented in this paper to solve specific environmental problems.

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CILJEVI I OGRANIČENJA VIŠEKRITERIJUMSKIH MODELA ZAŠTITE ŽIVOTNE SREDINE

Rezime: Nakon razmatranja principijelnih problema usklađivanja ekoloških i ekonomskih ciljeva i ograničenja, ove uslove treba adekvatno uvesti u matematičke višekriterijumske modele koji se primenjuju u zaštiti životne sredine. U novije vreme, u teoriji odlučivanja intenzivno se radi na razvijanju metoda optimizacije modela sa više kriterijuma. U ovom radu razmotrićemo ovaj metod, sa aspekta svrsishodnosti njegove primene u ekološkoj problematici. Glavni akcenat u ovom radu je na ograničenjima i njihovoj međusobnoj uslovljenosti kod višekriterijumskih modela zaštite životne sredine.

Ključne reči: višekriterijumski modeli optimizacije, ekonomska ograničenja modela - minimiziranje troškova, ekološka ograničenja modela - minimiziranje zagađenja, zaštita životne sredine

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AGENT-BASED MODELING – A NEW PARADIGM OF ECONOMIC MODELING

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Abstract: *Standard financial models are based on the assumptions of the market agents' rationality and the efficient market theory. A significant empirical evidence indicates the unreality of these assumptions. Agent-based modeling and simulations represent a new approach in the economic systems' monitoring and modeling by using nonlinear dynamic systems. Agent-based modelling is a computational method based on synthetic approach for building a model as a set of a number of autonomous entities (agents) and simulation of their behaviour and interactions. The aim of the paper is to give a review of the postulates of agent-based modeling and to stress the advantages of this approach in comparison to classical financial models. to show its application at the financial markets. Besides that, the authors develop a simple agent-based model of financial market with the periodic auction. Resulting time series of the model of artificial financial market replicate successfully the most important statistical features of the returns at the real financial markets and emphasizes the deviation of the normal distribution as a pillar of the classical financial theory.*

Key words: *Agent-Based Modeling, Agent-Based Simulation, Agents, Artificial Stock Market.*

Introduction

During the last two decades, a significant number of empirical evidence on the problematic postulates of the contemporary financial theory has been developed. Moreover, the basic characteristics of the perfect market have not been found in any market. In order to overcome the shortcomings of the classical theory, many research streams have been initiated. One of them is based on the *Theory of complexity*, and considers the markets as nonlinear adaptive systems built up from a high number of elemental components. The other course is presented by

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behavioural *finance* and the research in the field of cognitive psychology of investors. The *Hypothesis of Adaptive Markets*, a supplement to the *Hypothesis of Efficient Markets*, is developed as a combination of these two approaches. By merging the postulates of „new" theories, agent-based modeling provides a computational framework for verification of both relaxed classical models and new financial models.

Agent-based modeling (ABM) is a computational method for modeling a system as a set of autonomy entities (agents) which make decisions autonomously and interact among themselves. Agent-based artificial financial markets (ASM), as a part of agent-based computational economy (ACE), considered the markets as evolving systems composed of heterogeneous autonomous agents of a limited rationality, and the systems in which the security prices are developed as „emergent phenomena".

The aim of the paper is to give a review of the postulates of agent-based modeling and to show its application in the financial markets. In the first section we discuss a criticism of the classical theories, while in the second we discuss briefly the postulates of the „new" financial theories. The third section gives a survey of the postulates of agent-based modeling and simulation. The ABM application is theoretically described in the section 4 and 5. In the Section 6 we present a simple agent-based model of financial market, while in the following section we discuss the results of the simulation. The final section concludes.

1. Criticism of the Classical Financial Theories

The classical asset pricing theory doesn't take into account the internal market mechanisms; it is based on the assumption that rational investors immediately adjust their expectations to new information. The trading process is considered as a „black box" which doesn't have any impact on the price revealing. Central postulates of the classical financial theory are based in the *Efficient Market Hypothesis* (EMH) and *Rational Expectations Hypothesis* (REH). Both hypotheses are faced with empirical contradictions, and hence, the critics of the classical financial theories are based on these contradictions.

The controversies on the market efficiency mainly derive from the testing of the weak-form efficiency and from the assumption on the random price walk. The new researches, based on the higher quantity on available data, have pointed out to a significant autocorrelation in stock returns (Lo and MacKinlay,1988; Conrad and Kaul, 1988), and to the fact that the data on dividends (Fama and French, 1988) and P/E ratio (Cempbell and Shiller, 1988) increase the predictability of the returns. The tests on normal distribution of the returns also show that this assumption is not valid. The distribution of returns shows „fat tails" and high jumps, which is in contradiction to normal distribution. The recent studies suggest the existence of the distribution similar to Pareto-Levy distribution. It

could be concluded that the recent researches show the existence of predictability and give proofs that are in contradiction to the *Efficient Market Hypothesis*.

The market efficiency is mainly tested by the analysis of statistical features of time series. Empirical evidence which deviate from the EMH prediction are called market anomalies. Bailey (2005) summarizes the most important EMH anomalies. 1. ***The weak-form EMH anomalies***: (a) *Long-term memory or Long-term persistence* (Mandelbrot, 1969, 1972; Lo, 1991); (b) *Excess volatility* (Shiller, 1979; LeRoy and Porter, 1981; Cutler et al., 1989); c) *Volatility clustering* (Mandelbrot, 1963); (d) *Volume/volatility correlation* (Lobato and Velasco, 2000); 2. ***Calendar effects***: (a) *January effect or „'turn-of-the-year' effect* (Keim, 1983; Ariel, 1987; Haugen and Jorion, 1996); (b) *Monday effect* (French, 1980; Gibbons and Hess, 1981; Barone, 1990); (c) *Holiday effect* (Lakonishok and Smidt, 1988; Petengill, 1989); 3. ***The semi-strong form EMH anomalies***: (a) *Small-firm effect* or *size effect* (Reiganum, 1981; Banz, 1981; Fama and French, 1992, 1993); (b) *High earnings/price ratio effect* (Basu, 1977); 4. ***The strong-form EMH anomalies***: (a) *Insider transaction effect* (Finnerty, 1976; Lakonishok i Lee, 2001).

The central problem in empirical testing lies in the fact that the EMH itself is not testable. This is primarily the result of the impossibility to verify the market efficiency without significant limitations in the dynamics of expected returns. The second problematic assumption of the classical theories is the *Rational Investors Hypothesis*.

2. Complexity Theory and Nonlinear Dynamics

The theory of complexity explores interactions and adaptations in dynamic systems and their impact on the creation of a new quality and system evolution (Bar-Yam, 2003). ***Dynamic system*** is a system which evolves according to a set of well-defined rules. If these rules are nonlinear, the systems are called ***nonlinear dynamic systems***. The input of these systems is not proportional to the output. Small changes of the inputs can lead to exponential changes of the outputs. ***Chaos theory*** studies a specific class of nonlinear dynamic systems which show, under special conditions, chaotic behaviour. ***Complex nonlinear dynamic systems*** are special type of nonlinear systems. Even though, there is no generally accepted definition, a complex system is a set of relatively simple components without a central control, to which emergent behaviour is immanent. The presence of complex systems is observed at all the organizational levels, beginning from the galactic structures, over living organisms, to the atomic structures.

Complex adaptive systems are a special group of complex systems. The term Complex Adaptive Systems – CAS is described in the Santa Fe Institute (SFI) as „a dynamic network composed of interacting agents. Each adaptive agent is defined by a set of rules. The agents are adapting themselves by changing their rules of behaviour in accordance to their experience. In the CAS, the environment

of one adaptive system is represented by other agents, and in this way, the efforts of one agent to adapt to the environment depends on the adaptation of the other agents. This feature of the system is a main source of developing of complex patterns which are generated by CAS over time“ (Holland, 1995, p. 10). As it can be seen from the description, SFI researchers call the components of complex adaptive systems by their generic name – agents (cells, individuals, firms, nations etc.). By using this term, the active feature of the agents is stressed, i.e. the ability of the agents to „make a choice“ or to make decisions which affect the others in the system and the environment (Harrison, 2006, p. 3).

Even though, as we already mentioned, there is not a generally accepted definition of complex adaptive systems, the authors usually emphasize the following common features:

1. A high number of interconnected heterogeneous elements.
2. Multiple scales of resolution.
3. Multiple metastable resolution.
4. Sensitivity to the initial conditions.
5. Local processing of information.
6. Self-organization.
7. Emergence.
8. Adaptation and co-evolution.
9. Balance between chaos and order.

Tesfatsion (2002) looks at „decentralized market economies as complex adaptive systems, consisting of large numbers of adaptive agents involved in parallel local interactions”. Local interactions are the source of macroeconomic regularities, as for example, common market protocols and behavioural rules, which in turn affect local interactions. As result, a complicated dynamics emerges, with causal chains linking behaviours of the individuals, interaction networks, and the environment. This two-way feedback between microstructure and macrostructure has been observed within economics for a long period of time. Yet, they start to be again current in the work of Arthur (1990, 2005) with the possibility of computational simulation.

Within the scope of *the Complexity theory*, there are two different approaches of modeling of the features and behaviour of socio-economic systems - *Econobiology* (evolutionary economy) and *Econophysics* (Rickles, 2009). In order to explain collective phenomena, these two approaches start the analysis from the population level (agent level). Collective (macroscopic) features are treated as consequences of interactions at microscopic level (agent level).

3. Agent-Based Modeling

The methodology that encompasses the postulates of the new financial theories is agent-based modeling (ABM). ***Agent-based modeling*** is a

computational model by which the system is modelled as a set of autonomous entities that make decisions independently and interact in a nontrivial manner. ABM is consisted of a group of agents and a framework for interaction and decision making stimulation. Based on the Complexity theory, the aim of ABM building is in understanding of principles behind the emergent behaviour and the new quality formation. The basic idea of ABM is that many phenomena, even quite complex, could be understand as a system of autonomous agent which are relatively simple and which follow simple rules for interactions.

The advantages of agent-based modeling in comparison to the other modeling techniques, Bonabeau (2002) summarizes in three items: (i) ABM encompasses emergent phenomena, (ii) ABM gives a natural description of the system, (iii) ABM is flexible.

In order to build agent-based model of a system, we use the synthetic approach. The system should be analysed from micro and macro level. At the micro level we have to observe the basic components of the system. Essentially, there are two basic components of AMB (Wooldridge, 2002): agents and environment. Each agent is characterized by a set of individual features and behaviour. The agents' behaviour is determined by simple rules based on mutual interactions. The environment has a precise anatomy, i.e. it is independent of the agents' action, but is dependent on the agents' behaviour. Mutual interactions between the agents and the interaction between the agents and the environment are modelled.

In the first place, we would explain what is an agent, than what is the affiliation of agents and, at the end, what is the agents' environment.

The agent design is the most important component of ABM building. Even though, there isn't a generally accepted definition of the term „***agent***", usually, it is defined as different types of autonomous components (programs, models, individuals), which behaviour could be described from the very reactive rules for decision making till complex adaptive intelligent components (Bošnjak, 2006). Brustoloni (1991) considers the agents as simple systems capable for autonomous, intentional actions in real world. Maes (1995) replaces „real world" with the term „environment". He considers the agents as computer system placed in a complex dynamic environment. The agent is (computational) system that uses sensors to observe a subset of the world around it, to judge on the observed world and use limited set f actions for effectors activation by which it realizes the changes in the world (Merrick and Maher, 2009). The environment is observed and changed by the agents. Agent only partially perceives the states of the environment. Observation defers from the observed states.

The basic feature of an agent is ability to make autonomous decisions. This requires from the agent to be an active component of a system. Casti (1997) claims that the agents have to encompass two levels of behaviour: basic rules of behaviour

and a set of „rules to change the existing rules“. The basic set of rules determine the agent's reaction to the environment, while meta rules („rules to change the existing rules“) enable the adaption.

The basic building element of agent-based models is ***adaptive autonomous agent***. Such agents try to satisfy a number of goals (that can be fixed or time depending) in changing and unpredictable environment. These agents are „adaptive“ since they use their experience in order to continuously improve their capabilities in the conditions of changing goals and motivations. Also, their „autonomy“ tells about independence in work and about the lack of need for a central control. Depending on the system that is modeled and the agent's environment, the adaptive autonomous agent can have different forms.

By expanding adaptive and autonomy, Wooldridge and Jennings (1995) introduce the term „intelligent agent“, and define it as „computational system which is capable for flexible autonomous activities in order to fulfil projected goals“. Similarly, Poole, Mackworth and Goebel (1998) define the agent as a system which reacts intelligently to the given circumstances and according to the goals, which is flexible to the changes in environment and goals.

What defers an intelligent agent from a simple agent is its flexibility. According to Wooldridgu and Jenningsu (1995), a flexible agent has the following features: autonomy, social capabilities, reactivity and proactivity.

In different environments, the agents have special characteristics with different tasks. Reaction to the environment, autonomy, goal-orientation and persistence are the main characteristics of the agents. Besides that, the agents are often attributed with a special level of intentionality. Their behaviour is described by a metaphoric dictionary of convictions, wishes, motives, and even emotions, which are the concepts more applied to humans than to computational programs.

The agent's power is based on his interactions with the environment and other agents. More precisely, in social sciences, such is economy, or in population biology, the emphasis is put on the agent's interactions not on his autonomous acting (Schweitzer, 2007). ***Multi-Agent System*** (MAS) is a system consisted of a high number of agents which mutually interact with a little or without central control (Axelrod, 2003). Generally speaking, a MAS is characterized by the following features (Jennings et al., 1998): each agent in MAS is partially informed or has limited capabilities (knowledge, information, resources); (2) there isn't global system of control; (3) the data in MAS are centralized; (4) the actions are asynchronous: (5) the agents can be heterogeneous, for example, according to the knowledge, the data format, the model of reasoning, the goal, algorithm, language or hardware platform.

Beside above mentioned, the agents can represent different system components, which also can be complex. For example, in the financial market, some agents may represent traders, some investment analysts, banks, institutional investors, and others which indirectly affect the market.

While building MAS, it is often the question of choice between complex agents or complex relations and interactions. Arthur et al. (1997) points out that the way of interaction between the agents is much more important than the way of individual decision making. Therefore, the authors' opinion is that the researchers of the agent-based economic models have to find as simple agents' behaviour as possible which is going to build required emergent phenomenon (they shouldn't try to find the behaviour which is close to real human behaviour). In addition, some behavioural features affect the type and frequency of agents' interactions and doesn't affect the quality of the decision themselves. The control of these parameters can lead to the target emergent phenomena. The model which is developed in this paper puts emphasis on a cognitive-behavioural doing of the agents in a group, which is contrary to the model with highly intelligent agents (such is LeBaron model).

Generally speaking, agent-based modeling is a research methodology which builds model in a specific way, while agent-based simulations are concrete methods of simulation's application. Yet, almost all agent-based simulations are constructed by using ABM methodology, and vice versa. Thus, these two terms are often used as synonymous. This is the reason why we have integrated both terms in one term – ***agent-based modeling and simulations*** (ABMS).

The process of ABMS building starts from the monitoring of a real system and collecting the data. The model is built according to the target system abstraction and defined assumptions. A derived model is transformed into computational program which is performed many times. In the simulation process, the results are given in form of data series and appropriate statistics which describes the validity and reliability of the results. The simulated data can (and should) be compared with the data acquired from a target real system (Troitzsch, 2004). However, in the most cases, computational models are not directly derived from the observed data but from the theory on which the model is based. Then, we usually start with a verbal description of a theory that supports our beliefs on the real system functioning, and the simulation results are compared with stylized facts instead acquired data. We use this approach in the model building and simulation process. We do not use concrete financial time series form the financial market. The basis of the modeling is made of stylized facts observed in the vast majority of these series. Also, the aim of our model is to replicate the most important stylized facts, as our results are compared to common features of financial time series and to the results of other models.

4. A Simplified Agent-Based Model of the Financial Market

In the following text we present a simplified ABMS model of financial market. The basic elements of the artificial market design have been shown in LeBaron (2001) and Wan et al. (2002), and discussed more detailed by Radovic

(2011). The most important ABM model components are the market model (trade instruments, order type, mechanism of price forming) and the artificial agent model (investment policy and strategy, agents' preferences). We expose the most important components of the model.

The basic structure of the model is *N* agents (*i*=1, 2,... *N*). There may be several types of agents. The agents don't interact directly with each other, but only via single market maker. Model is based on a trading model that supposes all trades are performed only once daily (at the same time). This concept is frequent in the research (Levy et al., 2000; Chen and Yeh, 2001) and portrays trading which takes place in real markets on the orders that are not processed before the opening every day.

For simplicity, a market is consisted of two goods at disposal to traders for investing: (1) the riskless asset, named cash, and (2) the risky asset - shares (public company stock). The total number of cash (*C*) and shares (*S*) disposable on the market place is conserved. The stock price is assumed to be a continuous variable with price $p(t)$ per share at time t. Time is discrete (i=1,2, ...). Moreover, there is no interest paid to cash and the trades are realized without charges.

The standard asset pricing model represents the basic theoretical frame of the artificial stock market examined in the paper. The market dynamics has been seen as the interplays of numerous heterogeneous tradespersons whose aim is to maximize anticipated utility on the basis on estimations of the future. Each artificial agent is able to adapt his/her portfolio composed of risky stock (s shares) and riskless cash c. Assuming that the stock price is p, the overall agent's capital at time t equals $W_t=c_t+p_ts_t$. Traders increase their wealth by investing. Any trader, at any point of time, can preserve his/her wealth in two ways, i.e.

$$W_{i,t} = c_{i,t} + p_t h_{i,t} \tag{1}$$

where $c_{i,t}$ and $h_{i,t}$ represent the money and shares of the stock in trader's i possession at time t.

The choice variable of this optimization problem is $h_{i,t}$. It is well known that under CARA utility and Gaussian distribution for forecasts, trader i's desire demand (or the optimal investment fraction) $h^*_{i,t}$, for holding shares of the risky asset is linear in the expected excess return:

$$h^*_{i,t} = \frac{E_{i,t}(p_{t+1}) - p_t}{\lambda \sigma^2_{i,t}} \tag{2}$$

where $\sigma^2_{i,t}$ is the conditional variance of p_{t+1} given $I_{i,t}$, with the added constraints $s^*_t \geq 0$ (short selling is not allowed) and $w_t \geq p_t s^*_t$ (there is no cash borrowing). The agent decides on selling shares if $s_t > s^*_t$ or on buying them when $s_t < s^*_t$.

In real life, information arriving in the market highly influence traders' expectations concerning prices and dividends. In this model, information appears at the market at random intervals of time and may oscillate from 'very negative (-1)' over 'neutral (0)' to 'very positive (+1)'.

In our agent model artificial agents use simpler forecasting models. For simplification, we implemented three different agents type:

- *Fundamentalist agent*. It uses a fundamentalist strategy with a tendency to hold a price at a certain value. That means, it will sell if the price is higher than its fundamental value and vice versa buy at a price lower than its fundamental value. We emphasize that not every agent may interpret the same piece of information in the same way. Only this type of agents reacts on news.
- *Chartist agent*. It creates strategy by monitoring market trend for certain history referred horizon. This method is also known as moving average (MA). Agent sells if MA(h) value, computed with h time horizon, is larger than the current price. Moreover, they may behave like momentum traders. Momentum traders are simple technical analysis traders whose forecast of tomorrow's return is today's return.
- *Noisy agent*. It chooses transaction actions of selling (buying) randomly with probability 0.5.

When submitting of orders, the demand (supply) curve is made as a result of the collection of orders of all agents who decide to buy (sell). The equilibrium price is settled by the balance of the demand and supply, i.e. in the negotiation process of the market maker aiming at market clearing (for the sake of simplicity, we remove from the simulation all the instruments enabling the market maker to make a profit).

The main task of market maker (levelling supply with demand) can be accomplished by selecting a price which preserves the total number of shares in the possession of investors. We used a very simple price adjustment schema, based solely on the excess demand

$$p = \frac{\sum_j h_j^* c_j}{\sum_j (1 - h_j^*) s_j} \tag{3}$$

where, the values h^*_j, c_j, and s_j are all from before any trading occurs on the current day.

5. Simulation Results

The testing of the agent-based model of the market is done by the model validation, i.e. by checking the similarity of ASM with the real market. As we show in the Section 3.3, there are three methods of computational models'

validations: (1) *replicative validation*, by which we compare simulation outputs with real financial time series, (2) *predictive validation*, which compares the simulation results with future market trends, and (3) *structural validation*, by which we compare internal dynamics of the simulation model with the structure and dynamics at the real market.

In this paper, we use replicative validation of the artificial market. Perhaps, the most important feature of the agent-based models is that resulting time series which have the key features of the real time series (LeBaron, 2001). The model is assumed to be successful if time series of market returns (as the simulation results) replicate the key statistical features of the financial time series. Statistical features of financial time series of market returns are called „stylized facts".

The validation of the financial time series features is done using several statistical tools. For statistical analysis and graphical presentation of the simulation results we use program packages Matlab R2011, Eviews 7.2, i R. We initiate the simulations with N agents supposing that each agent possess a portion of total cash C and total shares S available. We separate the events into days. After the model initialisation, each of the agents place orders and have them filled only once daily. The basic algorithm is the following:

```
% Initialization
Market.Initialize
% Cash and shares distributed amongst agents.
Agent.Initialize
% Start of new day
loop until Market.Day ≥ EndData
    % Agents forecast return-on-investment (with noise)
    [return, variance] = Agent.Forecast
    % Agents calculate optimal investment fraction and
    % submit trading schedules (optimal holdings as a
    % function of stock price).
    Agent.SubmitOrder
    % Market maker finds market clearing price
    % (supply balances demand)
    NewPrice = Market.Clearing
    Market.Trade
    % Agents calculate stock's daily return-on-investment
    % and append to history
    Agent.Update
    Market.EndOfDay
end loop
```

The demonstrated model is implemented in the program NetLogo 5.0. It is based on the parameter values specified in Table 1. This generated a time series of the artificial stock price with 10,000 observations. The first step of the analysis involves pre-processing the data, so that it could be statistically tested. We

compute the logarithmic return on the simulated price to create the original time series. Figure 1 is the plot of the simulated price series (a) and logarithmic returns $\{r_t\}$, where $r_t = \ln(p_t) - \ln(p_{t-1})$. (b).

Figure 2 presents the basic statistics of the return series, including the mean, the standard deviation, etc. Artificial stock price series is divided to three parts (AS-1: from first to 3000th trading ticks, AS-2: from 3001st to 6000th trading ticks, and AS-3: from 6001st to 10000th trading ticks). Also, the normalized return time series have been random shuffled. All series show strong departure from normality, as the coefficients of skewness and kurtosis are statistically different from those of a normal distribution. All series are leptokurtic and have asymmetric tails. The histogram of the return series (Figure 2) shows fat tails and higher peaks than a normal distribution. Moreover, the distributions are not symmetric. In particular, there seems to be a flat for negative returns, but not for positive returns.

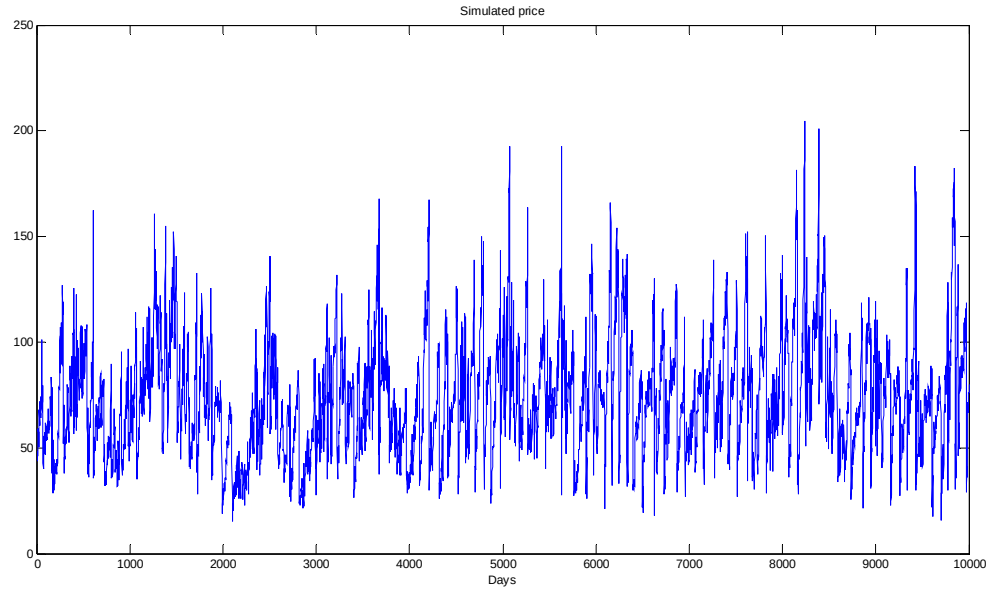
Table 1 Simulation Parameter

Parameters	Value
Number of agent (*N*)	500
Formation *fundamentalist-chartist-noisy*	40-40-20
Total Marketed Stock - Shares (*S*)	100.000
Initial capital - Cash (*C*)	1.000.000
Initial price	100
Number of simulation day (*T*)	10000

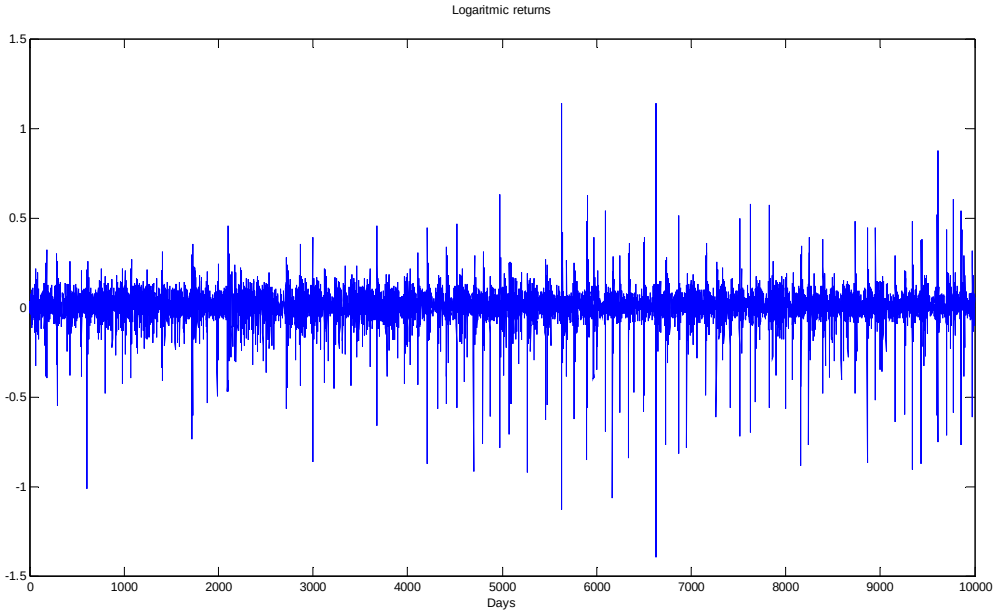
Table 2 Basic Statistics Tests for Heteroscedasticity and Nonlinearity

Series	JB(5%)	KS(5%)	ARCH	BDS
Return	141508.85	0.40817	2116.5075	A (71.971)
AS-1 (1-3000)	13616.64	0.41165	459.0469	A (38.231)
AS-2 (3001-6000)	43654.67	0.41001	669.7441	A (38.999)
AS-3 (6001-10000)	67124.87	0.40715	884.0673	A (46.284)
Shuffle (AS)	140010.87	0.05193	3.8917	R (2.044)

Critical value for Jarque-Bera (JB) is 5.98637, for Kolmogorov-Smirnov (KS) is 0.01356, and Arch test is 18.3070. The test result 'A' (accept) or 'R' (reject) in column BDS is based on significant level at 0.05 for ε=1, and DIM=5.

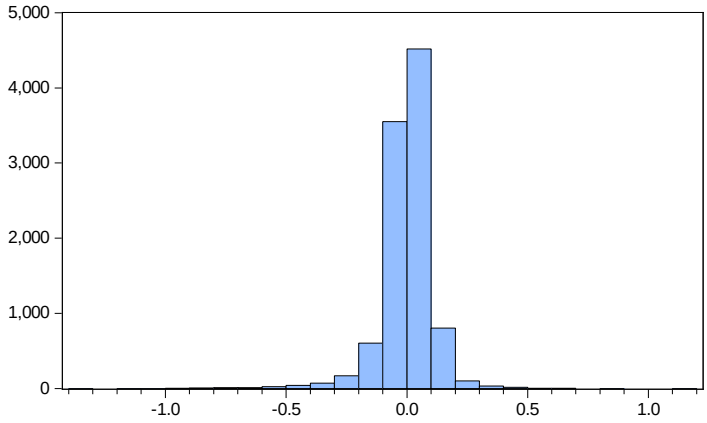


a)



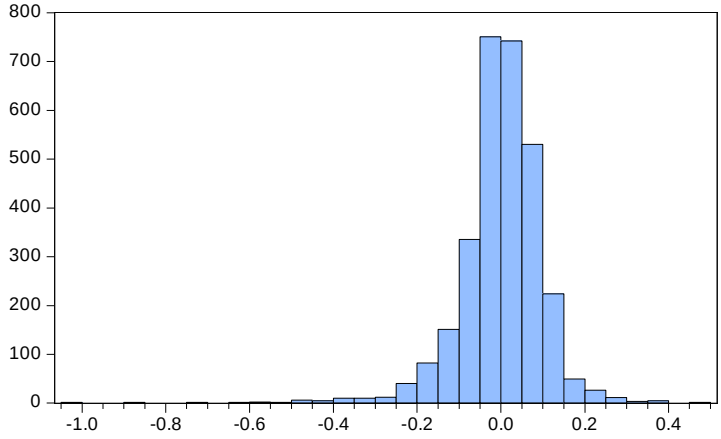
b)

Figure 1 a) Simulated Price Time-series; b) Line Graph of Logarithmic Return.



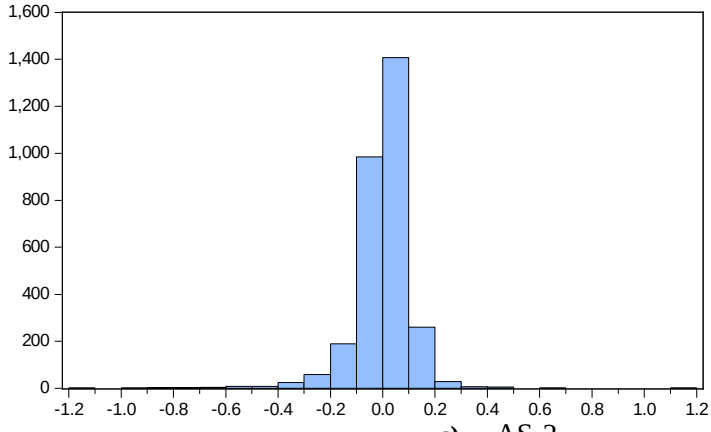
Series: RETURN	
Sample 1 10001	
Observations 10000	
Mean	5.34e-05
Median	0.008072
Maximum	1.142901
Minimum	-1.395651
Std. Dev.	0.112533
Skewness	-1.817014
Kurtosis	21.06696
Jarque-Bera	141508.8
Probability	0.000000

a) Return



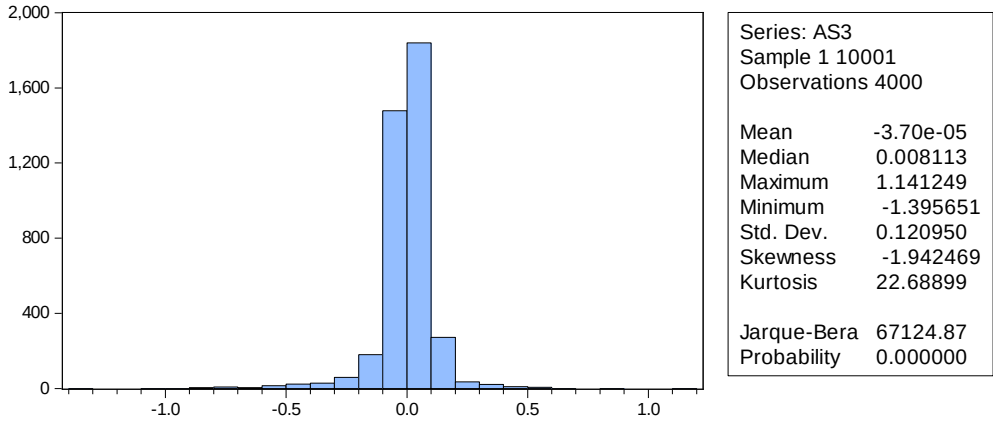
Series: AS1	
Sample 1 10001	
Observations 3000	
Mean	-5.00e-05
Median	0.005602
Maximum	0.453010
Minimum	-1.012366
Std. Dev.	0.099292
Skewness	-1.508201
Kurtosis	12.99172
Jarque-Bera	13616.64
Probability	0.000000

b) AS-1



Series: AS2	
Sample 1 10001	
Observations 3000	
Mean	0.000277
Median	0.009800
Maximum	1.142901
Minimum	-1.128670
Std. Dev.	0.113385
Skewness	-1.766504
Kurtosis	21.35089
Jarque-Bera	43654.67
Probability	0.000000

c) AS-2

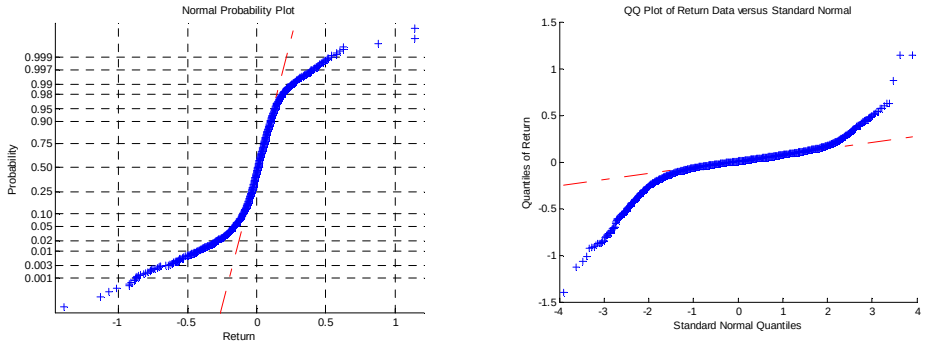


d) AS-3

Figure 2 Basic Statistics of the Artificial Stock Return Series

A normal probability plot is a useful graph for assessing whether data comes from a normal distribution. If all the data points fall near the line, the assumption of normality is reasonable. Also, a quantile-quantile plot is useful for determining whether two samples come from the same distribution (whether normally distributed or not). Both plots at the Figure 3 offer clear evidence that the underlying distribution is not normal.

All the simulated stocks return series shows the volatility clustering feature (heteroscedasticity) (Bollerslev, 1992). Engel ARCH test explores the existence of volatility clustering in the time series. Like previous tests, ARCH test also rejects the null hypothesis of non-existence of volatility correlation and normality of returns' distribution (Table 2).



c) d)

Figure 3. a) Normal probability plot and b) quantile-quantile plot.

The most interesting agent-based simulation result is that the resulting series of artificial data follow the power-law distribution, with apparent fat tail. This is shown in Figure 4 and Figure 5 where return per iteration described each for negative and positive tail and both fitted with square root distribution. Further, figure 5 is shown scaling behaviour that appeared in the existing time series data – as investigated by Stanley & Mantegna (1999). The figure shows the slope change of data presenting the occurrence of distribution crossover from Levy to Gaussian distribution. This property indicates the emergence of multi-fractal behaviour and self-similarity in time series data distribution.

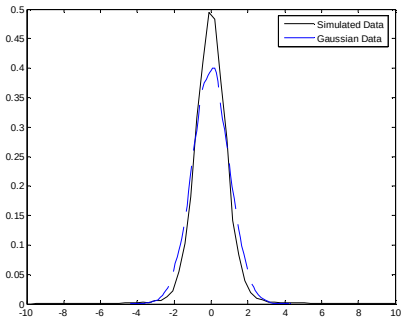


Figure 4 Distribution of Normalized Return

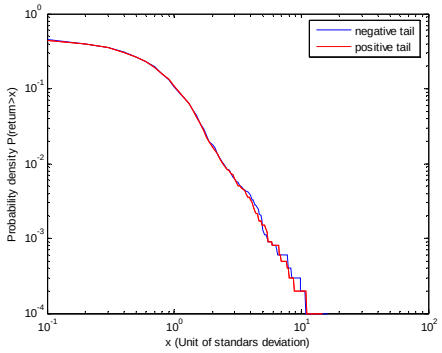


Figure 5. The Density of Probability of Negative and Positive Returns.

Conclusion

The empirical financial data departure from the assumptions of the classical financial theory has initiated many different research directions. One of them is agent-based modeling and simulations (ABMS) and its application in economy – agent-based computational economics (ACE). ACE monitors the economy as a nonlinear dynamic system and puts emphasis on modeling of the system components represented by the artificial agents and the relations among them in which the system dynamics is expressed by the components self-organization and the existence of emergent phenomena. This approach aims at better understanding of complex modes and phenomena of the economic systems.

Computational simulation of agent-based models is important in the processes of building and testing new theoretical models. Even though there are many different ways of the model's validation by simulation, this research field is still new and better acceptance of ABM models in the future depends largely on the building of clear and precise techniques for model testing.

We have applied the ABMS methodology in the building of a simplified model of the financial market. The agent model, that represents a trader, is based

on a simplified model of technical and fundamentalist trader. The mechanism of market price forming is based on the periodical auction model and the equilibrium price that equals demand and supply. Our results show that, even though the model relies on a quite simplified model of the market and market actors, time series market returns obtained in computational simulation exhibit the most important features of the returns of the real financial markets. Time series market returns show clearly departure from the normal distribution. Resulting series have high values of the coefficients of skewness and kurtosis, higher peaks than a normal distribution and tail distribution of returns. Finally, simulated series of returns reproduce the volatility cluster feature as well as the existence of nonlinearity of the return series.

The authors' future research in this field is directed towards creating of a more realistic trader model, incorporating microstructure of the market in the model and modeling of the agents' interactions. ABMS modeling also requires more qualitative predictive validation of the model and closer connection of the agent-based computational models and modeling of risk in the financial market. However, ABMS methodology represents a major step forward from the classical mathematical and computational modeling. With the rapid growth of computer processing power and parallel computing, it will gain an increasingly important role.

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AGENT BAZIRANO MODELIRANJE – NOVA PARADIGMA EKONOMSKOG MODELIRANJA

Rezime: Standardni modeli u finansijama polaze od pretpostavki racionalnosti tržišnih agenata i teorije efikasnog tržišta. Veliki broj empirijskih činjenica ukazuju na nerealnost ovih pretpostavki. Agent-bazirano modeliranje i simulacije predstavljaju nov pristup u posmatranju i modeliranju ekonomskih sistema kroz prizmu nelinearnih dinamičkih sistema. Agent-bazirano modeliranje je računarsko-matematički metod zasnovan na sintetičkom pristupu izgradnje modela od većeg broja autonomnih entiteta (agenata) i simulacije njihovog ponašanja i međusobnih interakcija. Cilj ovog rada je da prikaže osnovne postavke agent-baziranog modeliranja i prednosti ovog pristupa u odnosu na klasične finansijske modele. Pored toga, u radu je prikazan jednostavan agent-bazirani model finansijskog tržišta sa periodičnom aukcijom. Rezultujuće vremenske serije našeg modela veštačkog finansijskog tržišta uspešno repliciraju najznačajnije statističke osobine prinosa na realnim finansijskim tržištima i ukazuju na jasno odstupanje od normalne distribucije prinosa kao stuba klasične finansijske teorije.

Ključne reči: Agent-bazirano modeliranje, Agent-bazirane simulacije, Agent, Veštačka finansijska tržišta.

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