UNIVERSITY OF NIŠ

ISSN 0354-4699 (Print)
ISSN 2406-050X (Online)
COBISS.SR-ID 87230727

FACTA UNIVERSITATIS

Series
ECONOMICS AND ORGANIZATION
Vol. 14, Nº 2, 2017

Scientific Journal **FACTA UNIVERSITATIS**
UNIVERSITY OF NIŠ
Univerzitetski trg 2, 18000 Niš, Republic of Serbia
Phone: +381 18 257 095 Telefax: +381 18 257 950
e-mail: facta@ni.ac.rs http://casopisi.junis.ni.ac.rs/

Scientific Journal FACTA UNIVERSITATIS publishes original high scientific level works in the fields classified accordingly into the following periodical and independent series:

Architecture and Civil Engineering
Automatic Control and Robotics
Economics and Organization
Electronics and Energetics
Law and Politics
Linguistics and Literature
Mathematics and Informatics
Mechanical Engineering
Medicine and Biology
Philosophy, Sociology, Psychology and History
Physical Education and Sport
Physics, Chemistry and Technology
Teaching, Learning and Teacher Education
Visual Arts and Music
Working and Living Environmental Protection

SERIES **ECONOMICS AND ORGANIZATION**

Editor-in-Chief: **Dejan Spasić**, e-mail: *fueaoed@junis.ni.ac.rs*
University of Niš, Faculty of Economics
Republic of Serbia, 18000 Niš, Trg Kralja Aleksandra 11
Phone: +381 18 528 629, Fax: +381 18 523 268

UDC Classification Associate: **Miroslava Đorđević**, Library of Faculty of Economics, Niš
English Proofreader: **Andrijana Milošević**, University Library "Nikola Tesla"
The authors themselves are responsible for the correctness of the English language in the body of papers.

Secretary: **Olgica Davidović**, University of Niš, e-mail: *olgicad@ni.ac.rs*
Computer support: **Mile Ž. Ranđelović**, University of Niš, e-mail: *mile@ni.ac.rs*
Miloš Babić, University of Niš, e-mail: *milosb@ni.ac.rs*

The cover image design: **M. Ž. Ranđelović**
Publication frequency – one volume, four issues per year.

Published by the University of Niš, Republic of Serbia

Financial support: Ministry of Education, Science and Technological Development of the Republic of Serbia

Printed by "UNIGRAF-X-COPY" – Niš, Republic of Serbia

ISSN 0354 – 4699 (Print)
ISSN 2406 – 050X (Online)
COBISS.SR-ID 87230727

FACTA UNIVERSITATIS

SERIES **ECONOMICS AND ORGANIZATION**
Vol. 14, N^{o} 2, 2017

UNIVERSITY OF NIŠ

INSTRUCTIONS FOR CONTRIBUTORS

Contributions should be (preferably) in English, French or German.
Under the paper title, the name(s) of the author(s) should be given while the full name, official title, institute or company affiliation and the like should be placed at the end of the paper together with the exact mail and e-mail address, as well as short (running) title of paper.
Manuscript format. A brief abstract of approximately 100 to 150 words in the same language and a list of up to six key words should precede the text body of the manuscript. Manuscripts should be prepared as doc. file, Word version 6.0 or higher. Manuscript should be prepared using a Word template (downloaded from web address http://casopisi.junis.ni.ac.rs/index.php/FUEconOrg/about/submissions#authorGuidelines).
Manuscript length. Brief articles and discussions (10 pages or less) are encouraged. Otherwise, papers should present well-focused arguments of approximately 16 pages.
Style requirements. **Letters, figures and symbols** should be clearly denoted.
Equations should be typewritten and, with the number, placed in parentheses at the right margin. References to equations should be in the form "Eq. (2)" or simply (2). For equations that cannot be entered in a single line, use the Equation Editor in MS Word. In equations and in the text, *italicize* symbols that are used to represent variables or parameters, including subscripts and superscripts. Only use characters and symbols that are available in the Equation Editor, in the *Symbol font* or in *Times New Roman*.
All illustrations (figures, photographs, line drawings, graphs) should be numbered in series and all legends should be included at the bottom of each illustration. All figures, photographs, line drawings and graphs, should be prepared in electronic form and converted in TIFF or JPG (max quality) file types, in 300 dpi resolution, for superior reproduction. Figures, line drawings and graphs prepared using elements of MS Drawing or MS Graph must be converted in form of pictures and unchangeable. All illustrations should be planned in advance so as to allow reduction to 12.75 cm in column width. Please review all illustrations to ensure that they are readable.
All **tables** should be numbered with consecutive Arabic numbers. They should have descriptive captions at the top of each table and should be mentioned in the text.
References should follow the **APA Style** convention, in alphabetical order at the end of the manuscript. The list of references should be formatted so that the second row in each entry is indented (Paragraph Indentation, Special - choose Hanging, by 0.5cm). Wherever possible, the DOI number should be provided, too, in addition to other reference data.
The APA style **citation** is applied in the text (according to the instructions that can be downloaded from the link http://www.apastyle.org/ or using samples given in the template). Citations in the text should be given in brackets, stating the author's surname, year of publication and, possibly, pages, if it is a direct quote).
Electronic submission. Papers for consideration should be submitted to the Series Editor in electronic form via the Journal's home page: http://casopisi.junis.ni.ac.rs/index.php/FUEconOrg.

FACTA UNIVERSITATIS
Series: **Economics and Organization** Vol. 14, N° 2, 2017, pp. 93 - 104
DOI: 10.22190/FUEO1702093P

Original Scientific Paper

MARKET SIZE AS A DETERMINANT OF THE FOREIGN DIRECT INVESTMENT INFLOWS IN THE WESTERN BALKANS COUNTRIES

UDC 339.1:339.727.22(497-15)

Marija Petrović-Ranđelović, Vesna Janković-Milić, Ivana Kostadinović

University of Niš, Faculty of Economics, Serbia

Abstract. *Numerous empirical studies confirm that market size is one of the key determinants of foreign direct investment inflows, particularly market-oriented projects of foreign direct investment. Basically, the dominant view is that a larger market of the host country attracts a greater quantum of foreign direct investment. This paper examines the influence of market size, as well as the impact of market growth, trade openness, and population size on the foreign direct investment inflows into the six countries of the Western Balkans region in the period 2007-2015. Multiple regression analysis was applied in examining the impact of these variables on foreign direct investment inflows. The obtained results show that market size, market growth and population size had a significant positive impact, while trade openness had a negative impact on foreign direct investment inflows in the observed countries. Thus, the main findings of this research confirm that market size is an important determinant of the foreign direct investment inflows in the Western Balkans countries.*

Key words: *market size, foreign direct investment, Western Balkans countries*

JEL Classification: F21, F23, P20

INTRODUCTION

The global business environment is increasingly taking the character of multidimensional phenomena influenced by intensive changes in the modern world economy. In the conditions when the intensification of global flows of economic activity are accompanied by increased uncertainty and risk in maximizing profitable business expectations, a growing number of

Received November 2, 2016 / Accepted April 10, 2017
Corresponding author: Marija Petrović-Ranđelović
University of Niš, Faculty of Economics, Serbia
E-mail: mrjpetrovic76@gmail.com

companies are involved in the processes of internationalization realizing their activities beyond the borders of the national economy.

The significant processes of internationalization of the activities of multinational corporations in the period after the 1980s were followed by an impressive growth of international flows of private capital in the form of foreign direct investment. This statement is confirmed by the fact that global inflows of foreign direct investment increased from 54.396 million in 1980 to 1,762.155 million in 2015 (UNCTADstat). According to UNCTAD (1991), the explosive growth of foreign direct investment after 1985, is a consequence of the recovery of most economies in the world from the recession of the early 80s, achieving high growth rates in both developed and developing countries and improvement of cross-border mergers and acquisitions activity. In addition, the growth of the service sector in the world economy, supported by the measures of liberalization of regulations on the movement of capital flows in this sector, contributed to the increase of investment activities of multinational corporations. Practical research confirms that foreign direct investment "for two decades had sovereign rule on the global level in the role of promoter of growth and development, especially in developing countries and countries in transition" (Aranđelović & Petrović-Ranđelović, 2011, p. 143). Despite the fact that developed countries participated with the highest percentage of total inflows of foreign direct investment in the period from 1980 to 2015, an increase in inward foreign direct investment flows towards developing countries from 7,396 million dollars in 1980 to 764,670 million in 2015 is noticeable. In addition, the opening up of markets in the former socialist countries and entering into intensive processes of economic and political reforms in the early 90s the interest of multinational corporations to undertake foreign direct investment in these countries sharply increased. Inward foreign direct investment towards the countries in transition increased from only 75 million in 1990 to 34,988 million in 2015 (UNCTADstat).

The growing role of foreign direct investment in the global economy over the past three decades has launched a number of discussions and intensive research in order to determine the relationship between foreign direct investment and economic growth and development. The availability of capital and the level of applied technology is an essential difference between developed countries, on the one hand, and developing countries and countries in transition, on the other hand. The low level of domestic savings certainly represents a far greater development problem for developing countries and countries in transition. In order to compensate for the gap that exists between the volume of domestic savings and the need to finance investment, developing countries and countries in transition are forced to hire additional funds from abroad. The transfer of capital through foreign direct investment represents significant support in their development efforts and catching up with developed countries. Besides, the importance of foreign direct investment in this country lies not only in providing financial support for the establishment of new production capacity and the purchase of equipment, but also in technology transfer and higher forms of organization from a relatively technologically advanced economy. Hence, the fact that the attraction of foreign direct investment has become an important element of the development strategy of developing countries and countries in transition is not surprising.

However, despite the existence of consensus among researchers that foreign direct investment is accompanied by a variety of developmental benefits to the host country, "the major reasons behind foreign investors seeking a country in which to invest and the uneven spatial distribution of FDI across countries are still unanswered questions in both

the theoretical and the empirical international business literature" (Burcak, 2015, p. 39). Basically, the point is to clarify why companies from some countries decide to locate their production activities in other countries.

The structure of this paper is as follows. After introduction, an overview of the determinants of foreign direct investment is given. The third part of the paper provides a brief review of the empirical literature on market size as a determinant of foreign direct investment inflows. In the fourth part of the paper, is presented the methodology and the information base of research are presented and the initial hypothesis is defined. The fifth part concerns the research results and their discussion. In conclusion, the research results are summarized.

1. An Overview of the Determinants of Foreign Direct Investment

The fact that foreign direct investment is an extremely complex phenomenon gave rise to an active consideration of all relevant factors that basically encourage the movement of this form of private capital in the international context.

Great debates are led in the scientific community about the determinants of foreign direct investment inflows. Dunning's approach in explaining the limits and models of international production synthetized the OLI paradigm or eclectic theory on foreign direct investment, and is the most reliable theoretical framework for analyzing the determinants of international production. As a comprehensive and internationally accepted concept of foreign direct investment, the OLI paradigm represents a synthesis of the key elements of the three partial theoretical explanations (O + L + I) and their combination into a single theory on foreign direct investment. Its importance is reflected in the fact that it implicitly indicates the conditions under which foreign direct investment is realized. These terms do not represent anything other than benefits (ownership advantages of the company, internalization advantages and locational advantages of the host country) which, in themselves, do not represent a direct incentive for the transfer of business activities abroad, but a precondition for achieving adequate profits.

The expansion of cross-border activities of multinational corporations in the period after the second half of the 1980s is the result of imperfections in the market as a dominant feature of international economic relations. In such circumstances, ownership specific advantages are gaining importance. The most common of these are technology or marketing. In this regard, O - (ownership-specific advantages) provides an answer to the question why invest abroad. Multinational companies undertake direct investment abroad on the ground that having one or more specific benefits must clearly outweigh the additional costs which the company is exposed to in its operations in foreign markets. Ownership advantages of the company relate to the possession of a particular product or a particular manufacturing process which other companies do not have the right to use. Also, this includes parts of intangible capital of the company, such as managerial, marketing and entrepreneurial knowledge and skills, organizational skills, and more. Regardless of the form in which they appear, the ownership advantages either increase revenue or minimize the cost of doing business to the extent that is sufficient to neutralize the adverse circumstances in the investment environment of the host country.

However, the ownership-specific advantages alone are not sufficient to explain the expansion of cross-border investment activities of multinational corporations, since the company could exploit them either through licenses or through trade. Therefore, Dunning (2001) analyzed the following elements:

1. L - locational advantages (locational advantages - the specific advantages of the host country) which provide an answer to the question of where to execute an investment location. The selection of a specific investment location depends not only on the availability of resources, but also on economic, social and political factors, such as the size of the market and its structure, the achieved level of economic development and prospects for future growth, cultural, legal, political and institutional environment and national legislation and policies. Besides, the market potential of the host country of foreign direct investment should offer such a package of locational advantages that will make it a profitable attractive investment location compared to other ways of servicing foreign markets; and

2. I - Internalization advantages provide the answer to the question of which model of entering the foreign markets the company should choose. In the conditions of the existence of market imperfections, companies find it more useful to exploit internally their specific ownership advantages, rather than to sell, or transfer the right to use through the market. Internalization of transactions within the system of multinational corporations is a way not only to use more efficiently the specific ownership advantages, but also a condition for the retention of control over the use of the transferred benefits.

The eclectic theory of foreign direct investment provides a framework for fundamental understanding the motives for undertaking foreign direct investment from the perspective of the investor, as well as the determinants of foreign direct investment inflows. Starting from the fact that in deciding on the operations abroad, multinational corporations have in mind different kinds of motives. According to Dunning we could distinguish the following types of foreign direct investment in terms of their motivation: "(1) Natural-resource seeking foreign direct investment, which aims to gain access to a natural resource not available in the company's home market; (2) Market-seeking foreign direct investment, which aims to gain access to new customers, clients, and export markets; (3) Efficiency-seeking foreign direct investment, which aims to reduce production costs by gaining access to new technologies or competitively priced inputs and labor; (4) Strategic-asset seeking foreign direct investment, which aims to go after strategic assets in a local economy, such as brands, new technologies, or distribution channels" (Hornberger et al., 2011, p. 2).

From the point of the eclectic theory of foreign direct investments, the determinants of foreign direct investment can be classified into two groups: micro determinants or factors on the supply side (company specific), which are specific to each company and involve ownership advantages and internalization advantages, and macro determinants or the factors on the demand side (country specific), which refers to the location advantages of the host country. The importance of individual determinants in determining inward flows of foreign direct investment is largely determined by the country of destination, the sectoral orientation of foreign direct investment, and the model of entry of foreign direct investment in the host country. Let us add that although the role of individual factors in certain situations can be crucial for making investment decisions, yet usually it brings on the basis of observing the interactive operation of factors that shape the investment environment.

Since the attractiveness of a prospective host country of foreign direct investment is conditioned by the location-specific advantages it possesses, it is quite understandable that variations in the distribution of inward foreign direct investment flows globally solely attributed to a number of factors on the demand side, or country specific determinants different in character and practical intensity. According to the literature on foreign direct

investment, the country specific determinants of inward foreign direct investment flows can be classified for analytical convenience into three categories: a) the policy of the host country, b) economic determinants, and c) business facilities (UNCTAD, 1999).

This study will focus on the economic determinants, with special emphasis on market size as an important economic determinant of inward foreign direct investment flows.

2. LITERATURE REVIEW

In modern conditions and trends prevailing in the global economy the question of the amount of the rate of profit as the driving force that encourages owners of private capital to undertake direct investment is becoming less important in comparison to the question of ensuring and maintaining the market. Following the logic of modern economy, it is better to stay in one market in an even lower rate of profit, than to be eliminated from the market. "The former magnetic force high profit rate is now replaced by the large and expansive perspective of the market, former aspirations for higher wages - the desire to avoid large losses. So, the need to conquer new and retain existing markets and the need to establish a long-term fundamentals of international economic cooperation are motivated by the desire for direct foreign investment. They are offered either to provide a long-term investor mainly export finished products or provide long-term and safe imports, mainly raw materials or semi-finished products" (Trlin, 1983, p. 289).

One of the main reasons for undertaking market-seeking foreign direct investment is to avoid the tariff and non-tariff barriers that exist in the country in which it invests directly and to avoid high transaction costs. However, generally speaking, they are taken in order to achieve market access of the host country, as well as achieve a favourable position on it, especially in those where there are good prospects for achieving a dynamic growth in the future, so that the market size of the host country and its growth play a significant role in determining the inward foreign direct investment flows.

According to Chakrabarti (2001), market size has, by far, been the single most widely accepted significant determinant of foreign direct investment flows. Pointing to the importance of market size as the fundamentals of inward flows of foreign direct investment has a long tradition in the literature on foreign direct investment. The market size hypothesis, proposed by Balassa (1966) and later developed by Scaperlanda & Mauer (1969), supports the idea that "a large market is necessary for efficient utilization of resources and exploitation of economies of scale: as the market-size grows to some critical value, foreign direct investment will start to increase thereafter with its further expansion" (Chakrabarti, 2001, p. 96). By investigating the determinants of US foreign direct investment in the European Economic Community in the period 1958-1968, Scaperlanda & Mauer (1969) came to the conclusion that the size and growth of the market of the host country play a significant role in the decision on the location of foreign direct investment. The market size hypothesis claims that, due to economies of scale, foreign direct investment will not be taken in any country, if it does not meet the market requirements in terms of size which is necessary for the effective implementation of production technology. When a foreign investor builds production capacity in a given country, the inflow of capital will increase as the demand grows. The role of demand growth is based on the relationship between the total (aggregate) demand and the capital necessary to meet the demand. The hypothesis of growth presupposes the existence of a positive

relationship between capital inflows and the growth rate of GDP of the host country. By applying simple regression, Scaperlanda and Mauer proved that the inflow of US direct investment, measured on the basis of annual changes in the value position of the European Economic Community, is in accordance with the hypothesis about the size of the market.

The market size hypothesis, as an explanatory variable of inward foreign direct investment flows, is supported by a number of empirical studies on the determinants of inward foreign direct investment flows, in both developed and developing countries, which take GDP per capita as a proxy for market size. Among the earliest research, the study by Bandera & White (1968) is emphasized. They used pooled data on the United States manufacturing foreign direct investment in seven European economies over the period 1958-1962, and strongly supported the hypothesized dependency of the level of foreign direct investment on the level of national income and the host country. Schmitz & Bieri (1972) and Lunn (1980) also found a statistically significant effect of market size in determining inward flows of the US foreign direct investment in the EEC, while Kravis & Lipsey (1982) verified that the host country's market size had a decisive influence on the location decision by the US multinationals in the 1960s. By applying econometric analysis of data on the US manufacturing investment in 24 countries in the period 1954-1975, Nigh (1985) found that the host country GDP per capita was an important factor in determining the inflows of foreign direct investment. The market size hypothesis was confirmed in the study of bilateral flows of direct investment among 6 industrialized countries over the period 1969-1982 (Culem 1998).

By applying econometric analysis of a single equation model using aggregate sectoral data on US multinational investment in 42 countries in the period 1982-1988, Wheeler & Mody (1992) showed that market size is a more significant factor in determining the inflow of foreign direct investment in developing countries than in industrialized countries. The existence of a strong correlation between foreign direct investment and market size in developing countries as host countries is confirmed in previous studies by Root & Ahmed (1979), Schneider & Frey (1985) and Sader (1993).

By applying econometric analysis of a non-linear simultaneous equations model using pooled aggregate data for 62 countries over the period 1975-1978 and for 51 countries over the period 1983-1986, Tsai (1994) observed that a higher per capita GDP is associated with a higher level of inward foreign direct investment. His findings also support the research by Shamsuddin (1994), Billington (1999), and Pistoresi (2000).

"Looking at a set of 30 empirical studies that focus on developing and transition economies, which have been conducted since 2000, some interesting insights are revealed. The studies vary in geographic coverage, with some focusing on transition economies in Eastern Europe and Asia, some on Africa or Latin America only, and some on single countries. Regardless of the geographic focus, the majority of the studies find that the size and growth potential of markets are significantly associated with foreign direct investment inflows" (Hornberger et al., 2011, p. 327).

So, for example, Resmini (2000) investigates the determinants of the European Union foreign direct investment concentrates on the manufacturing sectors in the CEECs at the sectoral level. She found that Central and Eastern European countries with larger populations attract a larger quantum of inward FDI. Bevan & Estrin (2000) came to similar findings. They pointed out the fact that European transition economies with larger economies tend to attract more foreign direct investment.

Using panel data for 24 developing countries, Kok & Ersoy (2009) confirmed in a more recent study that there is a positive relationship between foreign direct investment and market size. Wadhwa & Reddy (2011) explored the impact of market seeking, efficiency seeking and resource seeking factors of host countries on foreign direct investment inflows of host countries by taking a sample of 10 Asian countries in the time period 1991-2008. Panel regression results show that among market seeking factors, GDP and exports show a significant and positive relationship with foreign direct investment which was also hypothesized.

Gabriel et. al. (2016) examined the influence of market size on foreign direct investment to Nigeria for the period 1970-2011, and found that economy size and population size have a positive and significant effect on foreign direct investment to Nigeria.

3. Methodology and Research Hypothesis

The data for this research is collected from the World Development Indicators. The data set covers the period 2007-2015 for the six Western Balkans countries, namely, Albania, Bosnia and Herzegovina, Croatia, Macedonia, Montenegro and Serbia. The dependent variable in this study is the annual FDI net inflow in current US$. The main reason why we use this dependent variable is because if we use FDI per capita the results may not be comparable, apropos; market size can impact the level of FDI per capita, but not its annual change.

For the purpose of this study we chose four independent variables.

The first independent variable is the Market size, measured by GDP per capita, which "in most empirical works on the determinants of foreign direct investment and has, by far, been the most widely accepted as having a significantly positive impact on foreign direct investment (Chakrabarti, 2001, p. 97). However, it should be noted that some studies have used absolute GDP as an alternative measure. "It has been pointed out that absolute GDP is a relatively poor indicator of market potential for the products of foreign investors, particularly in many developing economies, since it reflects the size of the population rather than income" (Chakrabarti, 2001, p. 98).

Starting from the fact that for "developing and transition countries perhaps more important than market size is market growth potential", (Hornberger et. al., 2011) in this study we introduce another independent variable that refers to Market growth, measured by the GDP growth rate. The introduction of these variables is based on the knowledge that the potential advantages of being a fast growing market are reflected in the realization of the basic motivation for investing - maximizing profits.

The third independent variable is Trade openness. The inclusion of this variable in the study was carried out because in the present conditions of globalization of the world economy, the survival and promotion of an economy is almost unimaginable if it does not follow the model of open and connected with the world economy. International economic cooperation between the countries causes an increasing dependence of countries on foreign trade. The degree of openness of the economy measures the involvement of countries in the international division of labor and the degree of its dependence on other countries. "Openness to "merchandise" trade is the value of merchandise trade (exports plus imports) as a percent of gross domestic product (GDP)" (World Integrated Trade Solution). When the coefficient of trade openness is greater than 50%, it means that one country is heavily dependent on foreign trade. Since by foreign trade the boundaries of the domestic market

expand, a greater degree of openness of the host country provides an opportunity for foreign investors to realize economies of scale through international markets, rather than just rely on the market of the host country. A greater degree of openness not only contributes to the achievement of economies of scale, but also encourages specialization and efficient absorption of the technology that is transferred through foreign direct investment.

As the fourth explanatory variable in this study, we take Population size. We include this variable in the analysis because, in the development process, population does not occur in a one-sided role of the manufacturers, but also in the role of the factor which, by its purchasing capacity, determines the scale of the internal market.

The objective of this paper is to analyze the impact of market size, along with market growth, trade openness, and population size on the foreign direct investment inflows in the context of the Western Balkans countries. However, the study does not analyze the impact of selected variables on the foreign direct inflow on each country, but on the region as a whole.

In order to investigate the impact of the selected variables on the foreign direct inflows in the Western Balkans countries, the following hypothesis are developed and tested:

H1: There is a statistically significant relationship between market size estimated by the GDP per capita and foreign direct inflows in the region.

H2: There is a statistically significant relationship between GDP growth, as a measure of market growth of the observed countries, and the foreign direct investment inflows.

H3: Trade openness does not have a statistically significant impact on the foreign direct investment inflows in the region.

H4: The inflows of foreign direct investment in the Western Balkans countries were statistically significantly determined by population size.

Multiple regression analysis will be applied in order to estimate the influence of the selected variables on the foreign direct investment inflows in the Western Balkans countries.

4. Empirical Results and Discussion

In connection with the discussion in the previous section, the following variables are included in the multiple regression model:

FDI – Foreign direct investment, net inflows (BoP, current US$)
GDPpc – GDP per capita (current US$)
GDP growth – annual %
TRDO – Trade openness (% of GDP)
POPULATION – total population in observed countries

In the multiple regression model variable, FDI has the character of a dependent variable, while the remaining variables included in the model are treated as independent variables.

This model provides the best value possible to predict the dependent variable based on the value of independent variables if all conditions are met. Based on the size of regression coefficients, it is possible to conclude what the relative impact or importance of each independent variable is if these coefficients are converted into beta coefficient β. One of the conditions for the use of regression analysis is that there is a linear dependence between variables. It is necessary because the analysis begins by calculating the coefficients of simple correlation (bivariate correlations) for all pairs of variables, all of these calculations require a linear relationship between pairs of variables.

Table 1 Correlations coefficients

		FDI	GDPr	GDPpc	TRDO	POPULATION
FDI	Pearson Correlation	1	-.050	.464**	-.322*	.599**
	Sig. (2-tailed)		.720	.000	.019	.000
GDP growth	Pearson Correlation	-.050	1	-.335*	.269	-.221
	Sig. (2-tailed)	.720		.013	.052	.108
GDPpc	Pearson Correlation	.464**	-.335*	1	-.341*	.147
	Sig. (2-tailed)	.000	.013		.012	.288
TRDO	Pearson Correlation	-.322*	.269	-.341*	1	-.146
	Sig. (2-tailed)	.019	.052	.012		.298
POPULATION	Pearson Correlation	.599**	-.221	.147	-.146	1
	Sig. (2-tailed)	.000	.108	.288	.298	

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Based on the value of the Pearson correlation coefficient (bivariate correlation), it can be concluded that there is a linear relationship between variables. The conclusion can be made that there is no multicollinearity between the variables included in the model, because the values of correlation coefficients do not exceed 0.5. Which means that this assumption of multiple linear regression model is fulfilled.

Table 2 shows the values of the coefficient of multiple determination and adjusted coefficient of multiple determination. On the basis of these values, it can be concluded that the selected independent variables explain 57% of the variability dependent return variables, i.e. FDI.

Table 2 Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.755[a]	.570	.534	900773997.19	1.887

a. Predictors: (Constant), POPULATION, GDPpc, TRDO, GDPr
b. Dependent Variable: FDI

Table 2 shows the realized value of the Durbin-Watson's statistics, which amounts to 1,887. This test is used to detect the presence of autocorrelation in the residuals, which is characteristic of the time series. For a number of observations at our disposal (54) and the number of independent variables included in the model (4), the upper limit value of the Durbin-Watson statistic is 1.72. Given that the realized value of the Durbin-Watson statistic is greater than this limit value, it can be concluded that there is no correlation between residuals.

Table 3 shows the estimated value of the regression parameters obtained by the OLS (Ordinary Least Squares) method. Based on the obtained values it can be concluded that variable POPULATION (beta coefficient is 0.569) has the greatest relative impact on FDI, as well as the highest relative importance in her prediction. Variables GDPpc (significance <0,001) and GDPgrowth (<0,015 significance) also have statistically significant impacts on the inflow of FDI. Variable TRDO (beta coefficient is -0.170) has the smallest relative influence and importance in predicting the FDI inflow. The impact of

this variable is negative, indicating an inverse relationship with FDI. The estimated value of the regression parameter related to this variable is not statistically significant (significance = 0.105), so it can be concluded that the trade openness has no significant impact on the net inflows of foreign direct investment in the observed countries.

Table 3 Regression Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-228675232.622	740664830.473		-.309	.759
	GDPgrowth	103447572.743	40851735.385	.262	2.532	.015
	GDPpc	159752.147	40915.221	.408	3.904	.000
	TRDO	-12458245.146	7522325.622	-.170	-1.656	.104
	POPULATION	358.900	61.507	.569	5.835	.000

a. Dependent Variable: FDI

CONCLUSION

By applying multiple regression analysis, this paper examines the impact of market size, measured using GDP per capita, market growth, measured using GDP growth rate, trade openness, measured using the value of exports plus imports as a percent of gross domestic product GDP and population size, measured using the total population, on the foreign direct investment inflows in the Western Balkans countries in the period 2007-2015.

The key results of this study are consistent with the laid hypothesis. In the above mentioned period, the highest relative impact on the foreign direct investment inflows was recorded for variable population size (beta coefficient is 0.569); whereas, statistically significant impact on the foreign direct investment inflows was recorded for market size and market growth (significance <0,001 and <0,015, respectively). Also, the obtained results hold up the hypothesis that trade openness had no statistically significant impact on the foreign direct investment inflows. Moreover, this variable had a negative impact on the foreign direct investment inflows in the observed countries.

Based on the foregoing, it can be concluded that the results of our study support the findings of other empirical studies on the significant impact of market size on the foreign direct investment inflows. Besides, the obtained results of our study especially emphasise that market size occupies a particularly important place among the determinants of the foreign direct investment inflows and, on that basis, achieves a large influence over the investment decision of multinational corporations in the countries of the Western Balkans.

REFERENCES

Aranđelović, Z. & Petrović-Ranđelović, M. (2011). Uticaj države na priliv i efikasnost stranih direktnih investicija [The impact of the state on the inflow and efficiency of foreign direct investment]. *Ekonomika preduzeća*, 59 (3-4), 143-156.

Balassa, B. (1966). American Direct Investments in the Common Market. *Banca Nazionale del Lavoro Quarterly Review*, 77, 121–146.

Bandera, V. N. & White, J.T. (1968). U.S. direct investments and domestic markets in Europe. *Economia Internazionale*, 21, 117-133.

Bevan, A. A. & Estrin, S. (2000). The determinants of foreign direct investment into European transition economies. *Journal of Comparative Economics*, 32 (2004), 775–787.

Billington, N. (1999). The Location of Foreign Direct Investment: An Empirical Analysis. *Applied Economics*, 31, 65–76.

Burcak, P. (2015). Determinants of FDI Into Central and Eastern European Countries: Pull or Push Effect. *Eurasian Journal of Economics and Finance*, 3(4), 39-47.

Chakrabarti, A. (2001). The Determinants of Foreign Direct Investment: Sensitivity Analyses of Cross-Country Regressions. *Kyklos*, 54(1), 89-114.

Culem, C. G. (1988). The Locational Determinants of Direct Investments Among Industrialized Countries. *European Economic Review*, 32, 885–904.

Dunning, J. H. (2001). The Eclectic (OLI) Paradigm of International Production: Past, Present and Future. *International Journal of the Economics and Business*, 8(2), 176.

Gabriel, O. M., Chigozie, A. O. & Awara, E. F. (2016). Foreign Direct Investment in Nigeria: Reassessing the Role of Market Size. *International Journal of Academic Research in Business and Social Sciences*, 6(2), 95-104.

Hornberger, K., Battat, J. & Kusek, P. (2011). Attracting FDI: How Much Does Investment Climate Matter? The World Bank Group, Financial and Private Sector Development Vice Presidency, Note no. 327.

Kok, R. & Ersoy, A. B. (2009). Analyses of FDI Determinants in Developing Countries. *International Journal of Social Economics*, 36(1/2), 105–123.

Kravis, I. B. & Lipsey, R. E. (1982). The Location of Overseas Production and Production for Ex-port by U. S. Multinational Firms. *Journal of International Economics*, 12, 201–222.

Lunn, J. (1980). Determinants of U. S. Direct Investment in the E. E. C.: Further Evidence. *European Economic Review*, 13, 93–101.

Nigh, D. (1985). The Effect of Political Events on United States Direct Foreign Investment: A Pooled Time-series Cross-sectional Analysis. *Journal of International Business Studies*, 16, 1–17.

Pistoresi, B. (2000). Investimenti Diretti Esteri e Fattori di Localizzazione: L'America Latina e Il Sudest Asiatico. *Rivista di Politica Economica*, 90, 27–44.

Root, F. R. & Ahmed, A. A. (1979). Empirical Determinants of Manufacturing Direct Foreign Investment in Developing Countries. *Economic Development And Cultural Change*, 27(4), 751-767.

Sader, F. (1993). Privatization and Foreign Investment in the Developing World, 1988-1992. *World Bank Policy Research Working Paper*, 1202.

Scaperlanda, A. E. & Mauer, L. J. (1969). The Determinants of U.S. Direct Investment in the EEC. *American Economic Review*, 59, 558-568.

Schmitz, A. & Bieri, J. (1972). EEC Tariffs and U. S. Direct Investment. *European Economic Review*, 3, 259–270.

Schneider, F. & Frey, B. (1985). Economic and Political Determinants of Foreign Direct Investment. *World Development*, 13(2), 161-175.

Shamsuddin, A. F. (1994). Economic Determinants of Foreign Direct Investment in Less Developed Countries. *The Pakistan Development Review*, 33, 41–51.

Trlin, V. (1983). *Međunarodna ekonomija - determinante, mehanizmi i politika [International Economics - the determinants, mechanisms and policies]*. Sarajevo.

Tsai, P. (1994). Determinants of Foreign Direct Investment and Its Impact on Economic Growth. *Journal of Economic Development*, 19, 137–163.

UNCTAD (1991). *World Investment Report 1991: The Triad in Foreign Direct Investment*. New York: United Nations.

UNCTAD (1999). *World Investment Report: Trends and Determinants*. New York and Geneva: United Nations.

UNCTADstat, http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx, Accessed on: 15.12.2016.

Wadhwa, K. & Reddy, S. S. (2011). Foreign Direct Investment into Developing Asian Countries: The Role of Market Seeking, Resource Seeking and Efficiency Seeking Factors. *International Journal of Business and Management*, 6(11), 219-226.

Wheeler, D. & Mody, A. (1992). International Investment Location Decisions: The Case of U.S. Firms. *Journal of International Economics*, 33(1-2), 57-76.

World Integrated Trade Solution, http://wits.worldbank.org/openness-to-trade-visualization.html, Accessed on: 15.12.2016.

VELIČINA TRŽIŠTA KAO DETERMINANTA PRILIVA STRANIH DIREKTNIH INVESTICIJA U ZEMLJAMA ZAPADNOG BALKANA

Brojna empirijska istraživanja potvrđuju da veličina tržišta predstavlja jednu od ključnih determinanti priliva stranih direktnih investicija, i to naročito tržišno orijentisanih projekata stranih direktnih investicija. U osnovi, dominantno stanovište je da veće tržište zemlje domaćina privlači veći kvantum stranih direktnih investicija. Ovaj rad ispituje uticaj veličine tržišta, kao i uticaj rasta tržišta, trgovinske otvorenosti i veličine stanovništva na priliv stranih direktnih investicija u šest zemalja Zapadnog Balkana u periodu 2007-2015. U ispitivanju uticaja ovih varijabli na priliv stranih direktnih investicija primenjena je višestruka regresiona analiza. Dobijeni rezultati istraživanja pokazuju da su veličina tržišta, rast tržišta i veličina stanovništva imali značajan pozitivan uticaj, dok je trgovinska otvorenost ostvarila negativan uticaj na priliv stranih direktnih investicija u posmatranim zemaljama. Usled toga, osnovni rezultati ovog istraživanja potvrđuju da je veličina tržišta značajna determinanta priliva stranih direktnih investicija u zemljama Zapadnog Balkana.

Ključne reči: *veličina tržišta, strane direktne investicije, zemlje Zapadnog Balkana*

FACTA UNIVERSITATIS
Series: **Economics and Organization** Vol. 14, N° 2, 2017, pp. 105 - 115
DOI: 10.22190/FUEO1702105M

Preliminary Communication

MACROECONOMIC DETERMINANTS OF ECONOMIC GROWTH IN SERBIA

UDC 330.101.541:330.55(497.11)

Ivan Milenković, Branimir Kalaš, Jelena Andrašić

University of Novi Sad, Faculty of Economics Subotica, Serbia

Abstract. *Monetary policy is an important segment of the economic policy of each country where inflation and monetary aggregates represent its significant components. Their movement reflects the trends in the volume of money and the price level which is of great relevance for the economic situation in the country. The aim of the paper is to manifest the impact of macroeconomic indicators on the real gross domestic product. In this paper, inflation (INF), monetary aggregate (M3), public expenditures (PE) and foreign direct investment (FDI) are used as independent variables, while the gross domestic product is determined as a dependent variable. The results showed that there is a positive relationship between GDP and INF, PE and FDI, but it is statistically not significant. On the other hand, M3 has a negative impact on GDP, it is statistically significant. Using correlation matrix, a very high correlation between INF and PE was found, while the lowest correlation was recorded between GDP and INF.*

Key words: *gross domestic product, inflation, monetary aggregate, public expenditures, foreign direct investment, Serbia*

JEL Classification: C10, E52, E60, H50

INTRODUCTION - THEORETICAL BACKGROUND

Inflation represents one of the most important phenomena in the economy. Since the 1970 inflation was not considered as a threat to the economy and Phillips (1987) showed in his empirical study that inflation has a positive reaction to economic growth and it is negatively related to unemployment. Snowdon and Vane (2005) concluded that this world economic condition survived only until 1970. For this period, Friedman (1976) defined

Received February 24, 2017 / Revised April 19, 2017/ Accepted April 26, 2017
Corresponding author: Branimir Kalaš
University of Novi Sad, Faculty of Economics Subotica, Serbia
E-mail: branimir.kalas@ef.uns.ac.rs

that countries with high rates of inflation had lower rates of growth and determined the fact that high level of inflation is negatively related to growth. Further, Friedman and Schwartz (1963) argued that changes in money stock preceded changes in nominal income in the United States. The relationship between inflation and economic growth is one of the most popular macroeconomic issues among policy makers, central bankers, and macroeconomists (Barro, 1995).

There are many studies which researched linkage between inflation and economic growth (Barro, 1995; Ghosh and Phillips, 1998; Harris et al. 2001; Khan and Senhadji, 2001; Gokal and Hani, 2004; Mubarik, 2005; Lee and Wong, 2005; Saaed, 2007; Munir and Mansur, 2009; Quartey, 2010; John et al. 2011; Hasanov, 2011; Hossain et al. 2012; Kremer et al. 2012; Antwi et al. 2013; Shuaib et al. 2015; Ibarra and Trupkin, 2015; Ruzima and Veerachamy, 2016).

Ghosh and Phillips (1998) found a statistically significant negative relationship between inflation and economic growth, but their results showed that there can be a positive relationship between these variables when the inflation rate is ranged between 2-3 percent or below. Also, Harris et al. (2001) determined negative relationship using panel data for OECD and APEC countries from 1961-1997. Gokal and Hani (2004) used correlation matrix and Granger causality test for Fiji in the period 1970-2003 and found a weak negative correlation between inflation and economic growth and one-way causality which runs from growth to inflation. In his analysis, Quartey (2010) used Cointegration tests, Error correction model and Laffer curve on example of Ghana and determined that inflation has a negative effect on economic growth and it is maximized when the inflation rate is at 22.2%. Malik and Chowdhury (2001) found a positive and statistically significant relationship between inflation and economic growth as well as that the sensitivity of growth to changes in inflation rates was smaller than that of inflation to changes in growth rates. On the other hand, Dotsey and Sarte (2000) studied the effects of inflation variability on economic growth for the United States and they found a negative relationship between these variables. Also, Lupu (2012) developed a model for the period 1990-2009 in Romania where the two decades are analyzed separately. In the first period, high and volatile inflation was the main source of macroeconomic instability that led to the GDP decrease. From 2001 to 2009 Romania had higher economic growth which it accompanied by a lower level of inflation. The same results, Boyd and Champ (2006) argued in their analysis where higher inflation leads to lower economic growth and lower inflation encourages economic growth. Erbaykal and Okuyan (2008) researched this relationship in Turkey using quarterly time series data from 1987-2006. Results of their analysis reflect no statistically significant long-term relationship and statistically significant short-term relationship. Ihsan and Anjum (2015) found that consumer price index and interest rate have a significant impact on GDP, where inflation rate has no significant impact on GDP. Khan and Senhadji (2001) found a statistically significant long-run negative relationship between consumer price index and real gross domestic product. Polan and Grauwe (2005) determined that positive reaction of real output on money supply growth could only be realised in the short run. In an analysis of 125 countries in the period 1980-2004, Abott and De Vita (2011) looked at this relationship in different exchange rate regimes. Their results showed that developing countries with adopted flexible exchange rate have higher and significant costs of inflation on the economic growth compared to countries which use fixed or intermediate exchange rates.

Furtula (2007) emphasizes that central banks use different monetary instruments to achieve the ultimate objectives of monetary policy. Precisely their implementation or combination depending on their design, can be influenced by the amount of the money supply and thus provide an optimal economic development viewed from the standpoint of stability and economic growth.

On the other hand, Labus (2011) points out that the effects of monetary policy are reflected in the volume of money in circulation and in this sense monetary policy is politics of money. However, money supply and its growth rate is not the aim of monetary policy and not used for the assessment of its effects on production and level of prices and thus builds on the determination of monetary policy as a policy without money (Beck and Wieland, 2010). The concept of money supply should be positioned so that it is optimized for the national economy to function normally.

In contemporary conditions, the term of money supply includes the sum of financial forms which are considered as money in the economy of one country while the monetary aggregates used as a generic term for the different groups of financial instruments, money, and other financial assets. Monetary indicators are parameters that are affected by the central bank and they have the purpose of measuring the functioning of monetary policy (Hadžić, Barjaktarović, 2015).

1. DATA AND ANALYSIS

This segment of the paper reflects the movement of the annual growth rate of real gross domestic product and inflation and monetary aggregates as the main monetary indicators as well as government expenditures and foreign direct investment for the fifteen year period 2001-2015. Before statistic analysis of this variables, it is necessary to show their movement and level of growth rates.

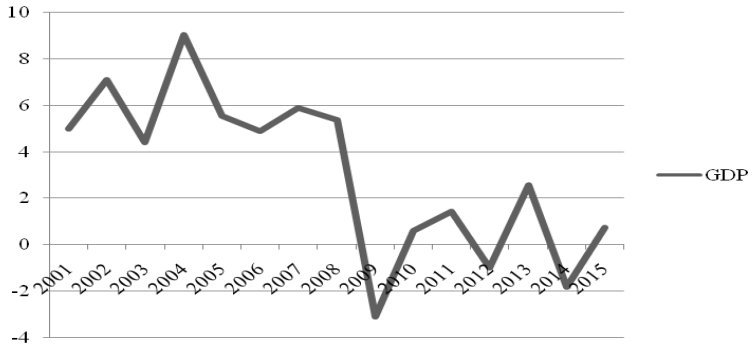

Fig. 1 The trend of GDP in Serbia from 2001 to 2015
Source: National Bank of Serbia

Based on Figure 1, it can be concluded that Serbia had high growth rates until 2008 after which there is a steep decline in 2009, when it stood at -3.8%. In the pre-crisis, this growth can be attributed to the inflow of foreign capital which is drawn through the process of privatization

in Serbia. However, after the slowdown of the global economy in 2008 and especially in 2009, there was a decline in the level of foreign direct investment in the world which is reflected on Serbia.

Bearing in the mind that growth of Serbian economy is dependent on foreign capital, Serbia uses an aggressive policy of attracting foreign direct investment by providing subsidies. In this way, it has managed to attract no small number of investors, including the Fiat and their components whose production and export directly reflected in the growth rate of the gross domestic product. At the end of 2015, Serbia had a modest growth of 0.74% which is far from the level that is required for the dynamic growth of our economy.

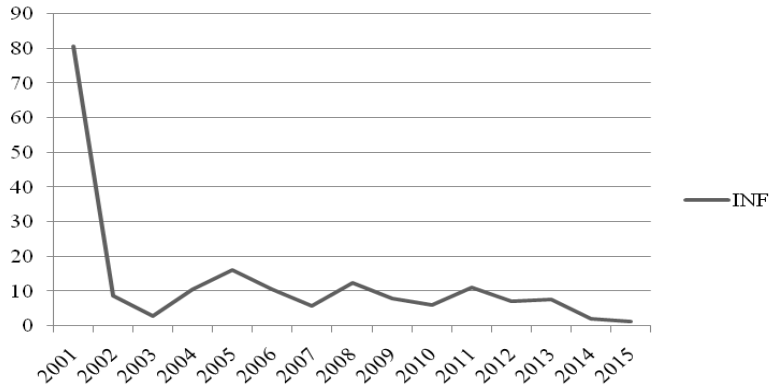

Fig. 2 The trend of inflation in Serbia from 2001 to 2015
Source: National Bank of Serbia

Figure 2 reflects the annual growth rate of inflation in Serbia for the period 2001-2015. At the beginning, the average inflation rate stood at over 80% and then the tenfold fall occurred in 2002 and 2003 when inflation was at the level of 2.71%. Next, in the period 2004-2008, the growth of inflation was higher than the growth of the GDP which implies that prices in Serbia increased faster than gross domestic product. This can especially be seen in 2005 when the inflation growth was three times higher than GDP growth or 16.25% compared to 5.54%. In 2011 a high inflation rate of 11.74%, was recorded, but in the coming years, inflation had slight decrease trend. However, looking at the previous two years and especially 2015, inflationary pressures remained low on the basis that the majority of domestic factors ,as well as on the basis of low prices of primary products (oil and agricultural commodity products) on the world market and generally low inflation in the international environment (National Bank of Serbia, 2015). In 2015, the economy had the lowest inflation rate of 1.39% which is over 98% less compared to the beginning of the observed period.

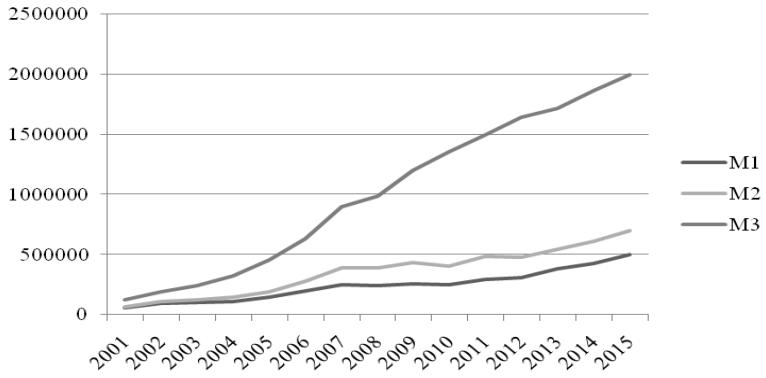

Fig. 3 The trend of monetary aggregates in Serbia from 2001 to 2015
Source: Ministry of Finance

Looking at the movement of monetary aggregates in Serbia, their growing tendency can be noted. What is noticeable that all indicators have recorded the highest growth rates in 2001 when there has been an increase of over 90% of M3 and more than 100% of M1 and M2 at the annual level. A similar trend was recorded in the next year where the growth of indicators ranged 50-60%. In the period 2003-2007, M3 increased faster than the previous two indicators and its average growth rate was 36.52% which is 14.4% more than M1 and 26.7% compared to M2. This can be attributed to positive growth rates of M3 during the whole observed period, unlike M1 and M2 which had negative growth rates. M1 had negative growth rates in 2008 and 2010 where it amounted to 3.3% and 2%, while on the other hand, M2 declined in 2010 and 2012 when rates were negative of 6% and 1.5%. However, in the last four years, M1 had the highest average growth rate of 14.75% compared to M2 and M3 whose average growth was around 7% and 9%.

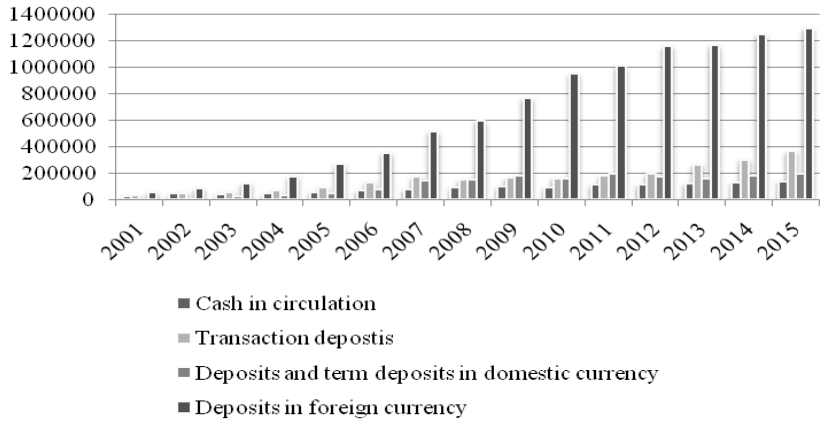

Fig. 4 Components of monetary aggregates in Serbia from 2001 to 2015
Source: Ministry of Finance

Following the previous figure, components of monetary aggregates for the same period were observed. First, as part of M1, both categories have growing trend during all years except 2010 and 2012, at cash in circulation and 2008 at transaction deposits which coincide with negative rates of M1. Second, deposits in domestic currency and term deposits have a growing trend except in 2010 and 2012, which is identical with the declining trend of M2, but it is indicative that in 2013 a declining trend in this category was recorded although it did not affect the observed monetary aggregate. On the other hand, deposits in foreign currency recorded the constant growth which shows greater confidence in the foreign currency compared to domestic currency. Also, in the last five years, the average growth of deposit in foreign currency amounted to 28.45% where in 2006 it recorded the highest growth rate of 44.41%.

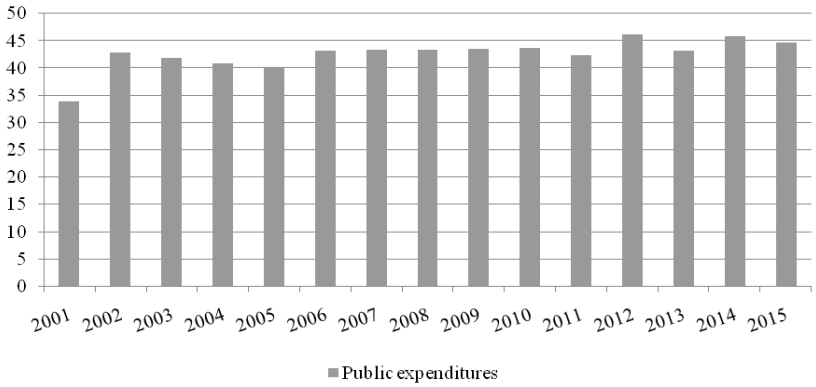

Fig. 5 The trend of public expenditures in Serbia from 2001 to 2015
Source: International Monetary Fund

It is necessary to reflect the share of public expenditures in GDP and their trend because this variable is included in the model. The average share of this indicator in GDP amounts to 42.61%. In 2001, it amounted to 33.81% in order for the next year there was an increase of 9.09%. A similar trend was recorded in 2006 and 2012. when the share increased by 2.92% and 3.74%. From 2012, public expenditures have a decreasing trend, where it was 44.74% in 2015.

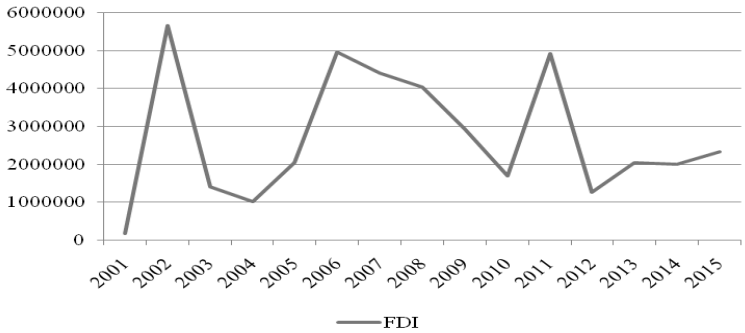

Fig. 6 Foreign direct investment in Serbia from 2001 to 2015
Source: Trading Economics

Figure 6 manifests the level of foreign direct investments in Serbia in the period 2001-2015. The highest level of FDI was recorded from 2006 to 2008 when the average level of foreign capital was 4.482 billion dollars. Since 2008, foreign direct investments are reduced as a result of decreasing foreign investments at the global level, which can be attributed to the economic crisis in the US and EU. At the end of 2015, FDI was 2.347 billion dollars which is almost double less compared to the pre-crisis period.

2. METHODOLOGY

The aim of this paper is to find out the nexus between macroeconomic determinants and economic growth in Serbia from 2001 to 2015. Therefore, the research is focused on inflation (INF), monetary aggregate (M3), public expenditures (PE) and foreign direct investment (FDI) as independent variables on gross domestic product (GDP) which is dependent variable in the given model.

Table 1 Review of observed variables

Variable	Notation	Calculation	Source
Real gross domestic product	GDP	Growth rate	National Bank of Serbia
Inflation	INF	Consumer price index	National Bank of Serbia
Monetary aggregate 3	M3	M2 + deposits in foreign currency	Bulletin Public Finances
Public expenditures	PE	% gross domestic product	International Monetary Fund
Foreign direct investment	FDI	US $ billion	Trading Economics

Source: Authors

Based on Table 1 it can be seen that real gross domestic product and inflation are calculated by growth rate and consumer price index, while calculation of monetary aggregates is created by the methodology of National Bank of Serbia. Public expenditures and foreign direct investment are determined as a percentage of the gross domestic product by International Monetary Fund and Trading Economics. The model specification can be manifested:

$$\log GDPt = \beta_0 + \beta_1 (\log INFt) + \beta_2 \log (M3t) + \beta_3 (\log PEt) + \beta_3 (\log FDIt) \ldots + et \quad (1)$$

where

GDP – real gross domestic product, the dependent variable, and proxy for economic growth;
INF – inflation, independent variable;
M3 – monetary aggregate, independent variable;
PE – government expenditures, independent variable;
FDI – foreign direct investment, independent variable;
β – the constant term;
βB – the coefficient of the independent variables;
e – the error term of the equation.

3. RESULTS

In the paper, descriptive statistics regression analysis and correlation of observed variables were used, to determine the level of independent variables impact and their relationship with gross domestic product as a dependent variable. Authors used the data for the period 2001 to 2015, where their values are logarithmically presented.

Table 2 Descriptive statistics of observed variables

Variable	Obs	Mean	Std. Dev.	Min	Max
GDP	15	3.107333	3.524641	-3.12	9.05
INF	15	.8942356	.4085159	.1430148	1.907089
M3	15	5.873867	.3946731	5.098346	6.300955
PE	15	1.628456	.0317917	1.529045	1.663795
FDI	15	9.260291	.3860589	8.249159	9.696185

Source: Author's calculation based on SPSS

Descriptive statistics reflects a number of observation and their mean, standard deviation, minimum and maximum values, while authors used their logarithmic values. Table 2 shows that standard deviation is the highest at GDP, while PE had the smallest standard deviation. This means that these components have the highest and lowest variations in the observed group of variables.

Table 3 Regression analysis of observed variables

Source	SS	Df	MS	Number of obs =		15
Model	107.340372	4	26.835093	F(4, 10) =		4.03
Residual	66.5829194	10	6.65829194	Prob > F =		0.0336
Total	173.923291	14	12.4230922	R-squared =		0.6172
				Adj R-squared =		0.4640
				Root MSE =		2.5804
				DWstat =		2.632
GDP	Coef.	Std. Err.	T	P>|t|	[95% Conf.	Interval]
INF	.9025162	2.813815	0.32	0.755	-5.367053	7.172086
M3	-9.186444	2.881479	-3.19	0.010	-15.60678	-2.766108
PE	11.41743	47.39382	0.24	0.814	-94.18258	117.0174
FDI	4.01959	2.576631	1.56	0.150	-1.7215	9.760681
_cons	.444854	67.25855	0.01	0.995	-149.4165	150.3062

Source: Author's calculation based on SPSS

Based on data from Table, R-square reflects that INF, M3, PE and FDI explain 61.72% of the variations in GDP. Further, there is a positive effect of dependent variables INF, PE and FDI on GDP, but it is not statistically significant and a negative effect of dependent variable M3 on GDP, which is statistically significant.

Table 4 Variance Inflation Factor

Variable	VIF	1/VIF
PE	4.77	0.209490
INF	2.78	0.359936
M3	2.72	0.367730
FDI	2.08	0.480644
Mean VIF	3.09	

Source: Author's calculation based on SPSS

Authors used VIF to confirm that there is not a problem of multicollinearity between independent variables. According to data from Table 4, it can be concluded that there is no problem of multicollinearity because the value of VIF is less than the reference value of 10.

Table 5 Correlations

		GDP	INF	M3	PE	FDI
GDP	Pearson Correlation	1	.402	-.706**	-.489	-.246
	Sig. (2-tailed)		.137	.003	.064	.377
	N	15	15	15	15	15
INF	Pearson Correlation	.402	1	-.562*	-.813**	-.436
	Sig. (2-tailed)	.137		.029	.000	.104
	N	15	15	15	15	15
M3	Pearson Correlation	-.706**	-.562*	1	.795**	.693**
	Sig. (2-tailed)	.003	.029		.000	.004
	N	15	15	15	15	15
PE	Pearson Correlation	-.489	-.813**	.795**	1	.662**
	Sig. (2-tailed)	.064	.000	.000		.007
	N	15	15	15	15	15
FDI	Pearson Correlation	-.246	-.436	.693**	.662**	1
	Sig. (2-tailed)	.377	.104	.004	.007	
	N	15	15	15	15	15

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Based on data from Table 5, there is a positive correlation between GDP and INF, where it is not statistically significant. On the other hand, there is a negative correlation between GDP and M3, PE and FDI, which is the nexus between gross domestic product and monetary aggregate statistically significant. Comparing the highest and lowest correlation, it is important to emphasize the relationship between INF and PE where it is negative and statistically significant (-.813, $p<0.05$). Also, it recorded the lowest correlation between GDP and INF, but it is not statistically significant (0.402, $p>0.05$).

CONCLUSION

The paper showed that there is a positive correlation between GDP and INF, but their nexus is not statistically significant. Also, a positive effect of PE and FDI on GDP is determined, but it is not statistically significant and a negative effect of M3 on GDP, which is statistically significant. The novelty is manifested in the fact that in Serbia, there is a small number of studies which are focused on determining the relation between GDP and macroeconomic determinants such as M3, PE, and FDI in this way.

Based on results, monetary indicators INF and M3 have a different impact on GDP. When monetary indicator INF increase, there is an increase in real GDP, while the increase in monetary aggregate M3 causes a drop of GDP. Although there is a high level of correlation between independent variables, there is no problem of multicollinearity and it is determined based on VIF test. The results of correlation found that the highest degree of correlation was recorded between INF and PE, while the lowest degree of correlation represented in relation INF and GDP. Further research could be directed to other countries in the region and thus reflect a similar or completely different trend in their movement and differences among them, if presented.

REFERENCES

Abbott, A., De Vita, G. (2011). Revisiting the Relationship between Inflation and Growth: A Note on the Role of Exchange Rate Regimes, *Economic Issues*, 16 (1), 337-352.

Antwi, S. (2013). Impact of macroeconomic factors on economic growth in Ghana: A cointegration analysis, *Internation Journal of Academic Research in Accounting, Finance and Management Sciences*, 3 (1), 35-45.

Barro, J. (1995). Inflation and Economic Growth, *Bank of England Quarterly Bulletin*, 166-176.

Beck, W., Wieland, V. (2010). Money in monetary policy design: Monetary cross-checking in the New-Keynesian model, *Working paper series*, No. 1191.

Boyd, H., Champ, B. (2006). Inflation, Banking and Economic Growth, Federal Reserve *Bank of Cleveland Working paper*, May 2006, 1-5.

Dotsey, M., Sarte, G. (2000). Inflation Uncertainty and Growth in a Cash-In-Advance Economy, *Journal of Monetary Economics*, 45 (3), 631-655.

Erbaykal, E., Okuyan, A. (2008). Does Inflation Depress Economic Growth? Evidence from Turkey, *International Research Journal of Finance and Economics*, (17), 40-48.

Friedman, M., Schwartz, J. (1963). *A Monetary History of the United States 1867-1960*, Princeton University Press, Princeton.

Friedman, M. (1976). Inflation and Unemployment, *Nobel Memorial Lecture*, 267-286.

Furtula (2007). Kompatibilnost Narodne banke Srbije sa Evropskom centralnom bankom [Compatibility of the National Bank of Serbia with the European Central Bank]. *Bankarstvo* (7-8), Udruženje banaka Srbije, 28-47.

Polan, M., Grauwe, P. (2005). Inflation is always and everywhere a monetary phenomenon, *Scandinavian Journal of economics*, 107 (2), 239-259.

Ghosh, A., Phillips, S. (1988). Warning: Inflation May Be Harmful to Your Growth, International Monetary Fund, *IMF Staff Papers*, 45(4), 672-710.

Gokal, V., Hanif, S. (2004). Relationship between Inflation and Economic Growth, Economics Department, *Reserve Bank of Fiji, Working Paper* 04.

Hadžić, M., Barjaktarović, L. (2015). *Monetarna ekonomija. [Monetary Economy]. I izdanje*, Univerzitet Singidunum, Beograd.

Harris, N., Gillman, M., Matyas, L. (2001). The Negative Inflation-Growth Effect: Theory and Evidence, Melbourne Institute, *Working Paper* No. 12/01.

Hasanov, F. (2011). Relationship between inflation and economic growth in Azerbaijani economy: Is there any threshold effect? *Asian Journal of Business and Management Sciences*, 1 (1), 1-11.

Hossain, Ghosh, C., Islam, K. (2012). Inflation and economic growth in Bangladesh, *International Refereed Research Journal*, 4 (2), 85-92.

Ibarra, R., Trupkin, D. (2015). Reexamining the relationship between inflation and growth: Do institutions matter in developing countries? *Economic Modelling*, http://dx.doi.org/10.1016/j.econmod.2015.09.011

Ihsan, I., Anjum, S. (2015). Impact of Money Supply (M2) on GDP of Pakistan, *Global Journal of Management and Business Research Finance*, 13 (6), 1-8.
International Monetary Fund. (2015). retrieved from: https://www.imf.org/external/pubs/ft/weo/2016/01/weodata/weoselser.aspx?c=942&t=1
John, J., Mohanty, D., Chakraborty, B., Das, A. (2011). Inflation Threshold in India: An Empirical Investigation, *RBI Working paper* 18.
Khan, S., Senhadji, S. (2001). Threshold Effects in the Relationship between Inflation and Economic Growth, International Monetary Fund, *IMF Staff Papers*, 48 (1), 1-21.
Kremer, S., Bick, A., Nautz, D. (2012). Inflation and growth: New evidence from a dynamic panel threshold analysis, *Empirical Economics*, (44), 861-878.
Labus, M. (2011). Kako vratiti novac u monetarnu politku? [Hoe to Return Money in the Monetary Policy?]. *Bankarstvo* (11-12), Udruženje banaka Srbije, 24-55
Lupu, V. (2012). The Correlation between Inflation and Economic Growth in Romania, *Lucrări Ştiinţifice* (5), Seria Zootenhie, 359 – 363
Mallik, G. and Chowdhury, A. (2001). Inflation and Economic Growth: Evidence from Four South Asian Countries, *Asian Pacific Development Journal*, (8) 1, 123-135.
Ministry of Finance (2015). Public Finance Bulletin, Republic of Serbia, retrieved from: http://www.mfin.gov.rs/pages/issue.php?id=8528
Mubarik, A. (2005). Inflation and Growth: An Estimate of the Threshold Level of Inflation in Pakistan, *SBP-Research Bulletin*, (1) 1, 35-44.
Munir, Q., Mansur, K. (2009). Non-Linearity between Inflation Rate and GDP Growth in Malaysia, *Economics Bulletin* (29) 3, 1555-1569.
National Bank of Serbia (2015). Annual Monetary Policy Report, retrieved from: https://www.nbs.rs/internet/english/90/90_7/monetary_policy_2015.pdf
Phillips, B. (1987). Time Series Regression with a Unit Root, *Econometrica*, (55) 2, 271-301.
Quartey, P. (2010). Price Stability and the growth maximizing rate of inflation for Ghana, *Modern Economy*, (1), 180-194.
Ruzima, M., Veerachamy, P. (2016). Impact of inflation on economic growth: A survey of literature review, *International Multidisciplinary Research Journal, Golden Research Thoughts*, (5), 10, 1-9.
Saaed, J. (2007). Inflation and Economic Growth in Kuwait: 1985-2005: Evidence from Cointegration and Error Correction Model, *Journal of Applied Econometrics and International Development*, 7 (1), 203-218.
Snowdon, B., Vane, R. (2005). Modern Macroeconomics: Its Origins, *Development and Current state, Edward Elgar*, Cheltenham, U.K.
Shuaib, M., Augustine, O., Frank, O. (2014). Impact of Inflation Rate on the Economic Growth in Nigeria, *British Journal of Economics, Management & Trade*, 9 (3), 1-11.
Trading Economics (2015). http://www.tradingeconomics.com retrieved from: http://www.tradingeconomics.com/serbia/foreign-direct-investment-net-inflows-percent-of-gdp-wb-data.html
Wong, Y., Lee, C. (2005). Inflationary threshold effects in the relationship between financial development and economic growth: Evidence from Taiwan and Japan, *Journal of Economic Development*, 30 (1), 49-69.

MAKROEKONOMSKE DETERMINANTE EKONOMSKOG RASTA U SRBIJI

Monetarna politika je važan segment ekonomske politike svake zemlje gde inflacija i monetarni agregati predstavljaju značajne komponente. Njihovo kretanje prikazuje trendove u količini novca i nivou cena koje su od velike važnosti za ekonomske prilike u zemlji. Cilj rada je prikazati uticaj makroekonomskih indikatora na realni bruto domaći proizvod. U radu, inflacija (INF), monetarni agregat (M3), javni rashodi (PE) i strane direktne investicije (FDI) su korišćeni kao nezavisne varijable, dok je realni bruto domaći proizvod (GDP) određen kao zavisna varijabla. Rezultati su pokazali da postoji pozitivan odnos između GDP i INF, PE i FDI, ali nije statistički značajan. S druge strane, M3 ima negativan uticaj na GDP i statistički je značajan. Koristeći korelacionu matricu, utvrđena je vrlo visoka korelacija između INF i PE, dok je najniža korelacija zabeležena između GDP i INF.

Ključne reči: *bruto domaći proizvod, inflacija, monetarni agregat, javni rashodi, strane direktne investicije, Srbija*

FACTA UNIVERSITATIS
Series: **Economics and Organization** Vol. 14, N° 2, 2017, pp. 117 - 126
DOI: 10.22190/FUEO1702117R

Review Paper

STRUCTURAL REFORMS OF THE BANKING SECTOR - REGULATORY APPROACHES AND IMPLICATIONS

UDC 347.734:005.44

Jelena Radojičić, Borko Krstić

Faculty of Economics, University of Niš, Serbia

Abstract. *This paper analyzes alternative regulatory approaches for structural reforms of the banking sector, triggered by the global financial crisis. The structural bank regulation measures proposed or adopted in several jurisdictions are based on the Volcker Rule in the United States, Vickers Commission's proposals in the United Kingdom and Liikanen Report in the EU. Despite the different approaches by legislatures, structural reforms have the same goal – a more resilient financial system. Their common element is to draw a line between commercial banking and certain investment banking activities,, whose combination is seen as a source of systemic risk. Structural reforms are designed to reduce the implicit government guarantees and moral hazard of banks.*

Key words: *financial crisis, systemic risk, structural reform, universal bank*

JEL Classification:G21, G24, G28, K22

INTRODUCTION

Global financial crisis revealed regulatory failures that have allowed the systemic risk to grow unchecked, which requires revisiting regulatory approaches. Pre-crisis capital regulation has not taken into account systemic effects (the social cost of failure). The regulatory response was raising capital requirements through Basel III and generally strengthening oversight and supervision. Capital requirements do not affect the business model. Basel measures relating to the bank size and scope are additional loss absorbency requirements for global systemically important banks and a capital surcharge of up to 2.5% imposed on banks is deemed systemically important. It turned out that failing financial institutions could not be identified on the basis of their business model. However, financial crisis has triggered a debate on the optimal size, organizational complexity, and range of activities of banks (Viñals et al., 2013)

Received March 21, 2017 / Accepted May 10, 2017
Corresponding author: Jelena Radojičić
University of Niš, Faculty of Economics, Niš, Serbia
E-mail: jelena.radojicic@eknfak.ni.ac.rs

and a reassessment of the economic costs and benefits of universal banks' involvement in proprietary trading and other securities markets activities. Structural separation of banks, widely seen as a useful complement to traditional prudential tools, began to form part of the post-crisis regulatory agenda. The various reform proposals aim at changing how banks organize themselves. The common element of all is to draw a line between retail banking and certain types of investment banking businesses whose combination is seen as a source of systemic risk. In order to understand economic impact of regulatory reforms, it is important to pay attention to their legal attributes which reflect society's post-crisis expectation on the role of banks (Lehmann, 2014).

1. ECONOMIC BACKGROUND ON BANK STRUCTURAL REFORMS

The basic rationale for bank structural reforms is to insulate certain types of financial activities regarded as especially important for the real economy, or significant on consumer/depositor protection grounds, from the risks that emanate from potentially riskier but less important activities (Gambacorta and van Rixtel, 2013, p. 1). Such a separation is nothing new in the United States but for many countries, particularly for continental Europe, restrictions on universal banking would be new. Glass Steagall Act (1933) prohibited the combination of investment banking and commercial banking within one banking group. Legislation prohibited commercial banks with privileged deposit insurance coverage from engaging in securities activities, while simultaneously excluding investment banks from accepting deposits. The most important restrictions were lifted in 1999 by the Gramm-Leach-Bliley Act (Lehmann, 2014).

The proposed regulatory changes do not go as far as the previous strict separation. Instead of introducing structural separation, the new measures aim to prevent systemic risks by separating bank's high-risk activities, primarily proprietary trading, from its 'core' business, such as deposit-taking or retail payment services. The starting point is that the banks which combine these activities are less safe or that their failure is more expensive for the community. Universal banks became vulnerable to falling asset prices during the GFC because of the over-allocation of resources to trading and suffered dramatic losses (FSA, 2009). Also, the crisis has shown that there are some pure investment banks (e.g. Lehman Brothers or Bear Stearns), some pure retail banks (e.g. Irish banks, Northern Rock), and some universal banks (e.g. ING or RBS) who either failed or were absorbed or required exceptional government support (Fernandez-Bollo, 2013). Although evidence on the probability of failure is indirect and mixed, the general conclusion is that greater reliance on investment banking activity does not lead to lower earnings volatility, or systematic risk declining and costs of failure of universal banks can be larger, since universal banking encourages size and complexity In fact, of the 28 G-SIBs that have so far been identified by the Financial Stability Board, 20 can be classified as universal banks (Gambacorta and van Rixtel, 2013). Moreover, besides benefitting from retail deposit insurance (access to stable deposit funding, guaranteed by the state), large banks that combine trading activities with retail banking activities often benefit from their "too big to fail" (TBTF) status (implicit subsidies). TBTFs are being bailed-out by the state to prevent a failure that potentially has systemic consequences) (FSA, 2009) Thus, expectations of explicit support lead to implicit guarantees. For this reason financial regulators have focused on reforms which limit the risk of taxpayer and deposit insurance money to be used to cover losses incurred by trading activities. The goal of the reforms is to separate activities that contribute to funding the

economy from speculative activities which will reduce the market risks that banks may take at the minimum level needed to conduct the trading activities that are necessary to finance the economy (Fernandez-Bollo, 2013).

2. STRUCTURAL REFORMS: REVIEW AND COMPARISON

Structural regulation of banking sector is based on the Volcker Rule (Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, sec. 619) in the United States, recommendations of the Independent Commission on Banking (chaired by Sir John Vickers) in the United Kingdom (Vickers (Chair), 2012) and the recommendations made by the High-Level Expert Group (chaired by Erkki Liikanen) in Europe (Liikanen (Chair), 2012). Beyond this basic similarity, structural reform initiatives differ in scope (where they draw the separation line) and strictness (how thick that line is) (Gambacorta and van Rixtel, 2013) as shown in Table 1.

Table 1 Comparison of selected structural reform proposals

	Volcker	**Vickers**	**Liikanen**
	Institutional separation of commercial banking and certain investment activities	**Ring-fencing**: structural separation of activities via a ring fence for retail banks	**Subsidiarisation**: proprietary and higher-risk trading activity have to be placed in a separate legal entity
Deposit-taking institution may:			
▪ deal as principal in securities and derivatives[1]	Not permitted	Not permitted (but other group companies may do so)	Not permitted (but other group companies may do so)
▪ engage in market-making	Permitted	Not permitted (but other group companies may do so)	Not permitted (but other group companies may do so)
▪ perform underwriting business	Yes (underwriting in response to client/ counterparty demand)	Restricted	Permitted
▪ hold non-trading exposures to other financial intermediaries	Unrestricted	Restricted (inside the group)	Unrestricted
▪ investing in hedge funds and private equity	Not permitted	Not permitted (but other group companies may do so)	Not permitted (but other group companies may do so)
Holding company with banking and trading subsidiaries	Not permitted	Permitted	Permitted
Geographical restrictions	No	Limitations for ring-fenced banks in the UK to provide services outside the European Economic Area	No
Size threshold for application	No	Yes; applies to all banks and building societies with deposits greater than £25 billion	Yes; applies to all banks with trading books larger than €100 billion, or trading assets more than 15-25% of balance-sheet

Source: Table is based on (Gambacorta and van Rixtel, 2013, p. 3; Viñals, et al. 2013, p. 15)
Notes: [1]U.S. federal government and agency securities, debt and securities issued by U.S. state and municipal governments and government sponsored enterprises, and derivatives on these securities are exempt from proprietary trading restrictions of the Volcker Rule.

The Volcker Rule is Part of the U.S. Dodd-Frank Act of 2010, with implementation beginning in 2015 through 2018. The Rule is narrow in scope - a prohibition of proprietary trading within the bank holding company while market-making activities on behalf of customers are allowed (Gambacorta & Van Rixtel, 2013). Prohibited proprietary trading is defined as: engaging as principal for the trading account of a banking entity in any transaction to purchase or sell specified types of financial instruments such as securities and derivatives. Banks may invest in US bonds, underwriting, hedging activities, purchase and sale of securities for the account of its customers, investment in small enterprises, organization of private equity and hedge funds. Otherwise, the Volcker rule is quite strict. US is known for the highest level of separation in relation to other countries. The prohibition extends not only to individual banks but also to the entire banking group. The Volcker rule is introduced in the so-called Bank Holding Companies Act of 1956 (amended in 2010) and it forbids the coexistence of trading activities and other banking activities in different subsidiaries within the same group. Also, investments in hedge funds and private equity funds are not permitted, except banks are operating in accordance with the so-called "3 percent rule": (1) the ownership of a bank in these funds must not exceed 3 percent of the total outstanding ownership rights of a fund, and (2) the aggregate value of all ownership rights a banking entity holds in all funds jointly must not exceed 3 percent of its Tier-1 capital (Krahnen et al., 2016). Volcker's rules do not restrict performance of any other activity. For example, banks may invest in US bonds, underwriting, hedging activities, purchase and sale of securities for the account of their customers, investment in small enterprises, organization of private equity and hedge funds.

On the one hand, the riskiest activities (economically useless "speculation") are completely prohibited to banks. On the other hand, depository institutions may continue to offer banking services related to investment (useful banking services to clients). Thus, the universal banking model remains completely legal (Lehmann, 2014).

In United Kingdom, the Vickers Commission proposals are part of the Financial Services (Banking Reform) Act of 2013 (final regulations are expected to be fully implemented by 2019). This legislation is quite broader in scope in that they exclude a larger set of banking business from the protected entity, including also securities underwriting and secondary market purchases of loans and other financial instruments. Retail operations are separated from most market-based and non-European activities (the so-called "retail ring-fence") which should help insulate UK retail banking from global shocks and ensure the supply of credit in the economy (Vickers, J. (Chair), 2011). A narrow set of retail banking business (retail deposit-taking, overdrafts to individuals and loans to small and medium-sized enterprises) must be "ring-fenced" in a separate protected entity, with limited exposure to the rest of the bank intragroup. Protected activities can coexist with others in separate subsidiaries within the same group but they are subject to tight constraints (Gambacorta and Van Rixtel, 2013). The ring-fenced entity should be isolated from the group in the sense of separation of legal and operational links. These entities can be found at the head of a bank group (it is not allowed to have any exposure to other subjects, they cannot keep the action) and they must be free to make their decision independently of the long members of the group. Transactions between a ring-fenced entity and a non-ring-fenced entity take place on a "third party basis" (separation of economic links). The proposal recommends increasing the loss-absorbing capacity of the ring-fenced entity through higher regulatory capital requirements (at least 10% of their risk-weighted assets) (Krahnen et al., 2016). As a consequence, the depository institutions regulated by UK law will be particularly safe (Mayer Brown, 2014).

Based on the Liikanen report, France and Germany have initiated reforms in 2013 with the aim of reorganizing the banking sector (French law no. 2013-672 of 26 July 2013 on the separation and regulation of banking activities, hereinafter: The French Act. i.e. Gesetz zur Abschirmung von Risiken und zur Planung der Sanierung und Abwicklung von Kreditinstituten und Finanzgruppen [Law concerning Separation of Risks and Restructuring and Winding-Up of Credit Institutions and Financial Groups], BGBl. 2013 I Nr. 47, 3090. - hereinafter: The German Act). Measures to depository institutions restrict proprietary trading and investing in hedge and leverage investment funds are applied from the beginning of July 2015. The French and German approach follow the ring-fencing approach of the UK but, like the US, these countries have a narrower focus. Like ring-fencing in the UK, the main difference between the approaches in the US and French-German approach is that the former is based on institutional discharges and the latter on the functional separation or subsidiarization of risk activities. Legislation gives the option of performing these activities within a specific trading entity (which is separate from the retail and commercial entities) which must follow a number of rules (Lehmann, 2014):

- It must be a separate legal entity which is exclusively engaged in risky activities.
- It cannot accept deposits or provide payment services to customers.
- It has to comply with capital requirements on an individual basis.

In this way deposits will be isolated from any ill losses arising from risky activities while maintaining the ability of the banking group to conduct such a profitable activity. These measures affect only systemically important institutions, which means that not all banks are covered. Banking groups are divided into entities that receive deposits and entities engaged in the business trading where trading entities must be subsidiary and not vice versa as opposed to regulatory approach to structural changes in the UK (Lehmann, 2014).

Both the German and French legislation aim at separating speculative activities from deposit-related and customer-orientated activities but there are differences in the definition of activities that cannot deal with depository institutions and in defining the relationship between depository institutions and subsidiaries. The French legislation imposes that proprietary trading and unsecured financing to alternative investment funds above a certain threshold (the "speculative activities") must be carried out by a trading subsidiary separate from the retail banking entity (Mayer Brown, 2014). The subsidiary must have a commercial name that is distinct from that of the parent company and different managers which is not the case in Germany (Lehmann, 2014). The German legislation specifies certain high-risk activities (above a certain threshold in terms of overall trading activity), including proprietary trading, credit and guarantee business with certain alternative investment funds and certain forms of trading in one's own name with the exception of market-making that must be ring-fenced and transferred to a separate trading entity (Mayer Brown, 2014). Unlike the French Act, the German Act imposes that the subsidiary must refinance itself independently from the parent company and that transactions with other group members are to be considered as being concluded with third parties (Lehmann, 2014).

Although initiated by the Liikanen report, ***Legislative proposals by the European Commission on structural reforms of EU banks (submitted on 29th of January 2014)*** diverges to a certain extent. This proposal includes elements of the approach in the United States and individual EU states. Key points of this approach are:

a) The Commission's proposals (European Commission, 2014) envisaged prohibition of proprietary trading in financial instruments not only for individual depository institutions but also for the parent company and its subsidiaries or banking groups (such as the Volcker rule). The Council considered that it would be better to regulate proprietary trading in a stricter way rather than to prohibit it and proposed a mandatory separation of proprietary trading from the 'core' activities of a credit institution. Investing in alternative investment funds is also prohibited, as well as holding shares in any other entity that engages in proprietary trading (Council of the European Union, 2015). The EU-style Volcker rule is limited to systemically important institutions.

b) Legislation proposed placing other high-risk trading activities (such as market-making risky derivatives and complex securitization) and a separate legal entity within the banking group - "subsidiarization" (such as the French and German law). Unlike Liikanen, the EU proposal does not mandatory separate trading activities from retail and commercial banking. Instead, legislation provides that national regulators would carry out risk assessment of large banks' trading activities. If a competent authority finds excessive risks, it could require those trading activities to be separated from the 'core' credit institution. Therefore, subsidiarization does not happen automatically – it is optional. A further feature of the French and German law relating to the status of trading entities. The proposal requires that trading entities must be legally, economically and operationally separate from the deposit-taking institution (Lehmann, 2014). Banking group should be formed of two different sub-groups: one for basic banking activities and one for trading. Ring-fencing of commercial entities resembles the law in the UK: the trading entity's insolvency must not affect the deposit bank, the trading entity contracts with members of the group should be "length arms", the two entities' management structures should be independent and their names should be different (Lehmann, 2014).

On the basis ofthe final text of the Regulation adopted by the European Parliament and Council by June 2015, it is proposed that the proprietary trading ban would apply as of January 1, 2017 and the effective separation of other trading activities would apply as of July 1, 2018 (Mayer Brown, 2014).

To accommodate existing national rules in member states and to avoid unnecessary overlapping, the Council proposes that the member states address excessive risk-taking in banks' trading activities in one of the following two ways: 1) either through national legislation that would require large banks to ring fence their core activities, or 2) through measures that would be imposed by competent authorities in accordance with the regulation (Council of the European Union, 2015).

3. STRUCTURAL REFORMS: COSTS AND BENEFITS

While the structural reforms are at different stages of implementation, there is a strong ongoing discussion on what possible economic consequences (intended and unintended) are to be expected (Krahnen et al., 2016). The Table 2 provides an overview of the benefits and costs of structural banking reforms.

Table 2 Structural reforms: costs and benefits

Benefits ensuing from structural banking reform	**Costs imposed by structural banking reform**
Risk reduction	***Implementation related costs***
▪ Lowers complexity ▪ Reduces financial interconnectedness risk	▪ Regulatory ambiguity ▪ Supervising the regime ▪ Compliance burden and costs on financial institutions and host country authorities
Improving resolvability	***Lower diversification benefits***
Protection of depositor money	***Market liquidity and borrowing costs***
▪ Moral hazard	▪ Through impact on trading and market making ▪ Through subsidiarization of universal banking group (restrictions on intra-group exposures; through adverse impact on cross-subsidization of businesses)
	Risk migration to
	▪ Shadow banking system, ▪ Exempt institutions, ▪ Other markets and countries

Source: Table is based on: (Krahnen et al., 2016, p.18, Viñals et al., 2013)

Structural reform contributes to financial stability by reducing complexity and interconnectedness and by facilitating lower-cost bank resolution:

▪ ***Risk reduction.*** The structural measures proposed by the US, UK, and EU aim to prevent systemic risks to the financial system that could be caused by the failure of large, highly complex and interconnected credit institutions. Proprietary trading is seen as a source of excessive risk-taking which is induced by an implicit subsidy from lower risk universal banking activities to higher risk market trading activities (Krahnen et al., 2016). Regulatory proposals are designed to reduce systemic risk by: shielding the institutions carrying out the protected activities from losses incurred elsewhere; preventing any subsidies from supporting the protected activities (e.g. deposit guarantee schemes) from cutting the cost of risk-taking and inducing moral hazard in other business lines and reducing complexity and possibly the size of banking organizations (Gambacorta and Van Rixtel, 2013). UK and EU proposals permit proprietary trading and high-risk investments to survive within the banking group while Volcker rule can capture benefits at the group level (Viñals et al., 2013).

▪ ***Improving resolvability***. The banking supervisor, especially within a short time period, will have a difficult task to unravel the bank's loan exposures and proprietary trading exposures in a crisis situation if all lines of business are fully integrated into one corporate entity. Structural reforms could reduce complexity and facilitate better supervision, hence reducing the risk of failure and lowering resolution costs in the event of failure. (Krahnen et al., 2016, Viñals et al., 2013) Protection of taxpayers' money should be increased, as smaller failing banks can be resolved without recourse to public money. According to the European Commission, taxpayers' support for bank recapitalization, guarantees, asset relief measures and similar solutions in 2014 amounted to approximately €1.6 trillion or 13% of EU GDP. The costs of financial crises are typically very large and go far beyond the direct costs of bank bail-outs (BCBS, 2010).

- ***Protection of depositor money***. Deposit insurance reduces the cost of funding for banks, and reduces incentives for depositors to monitor bank's risk-taking behavior. In the absence of sophisticated and powerful deposit insurance entity, which is capable of correctly assessing bank risk-taking, trading activities splitting is the direct method of protecting banks' deposit taking business and deposit guarantee schemes (Krahnen et al., 2016).

The costs of the structural reform proposals may arise in several ways:

- ***Implementation related costs***. Regulatory ambiguity and the blurred dividing line between proprietary trading and permitted trading can result in misidentification of permitted or prohibited activities (e.g., proprietary trading vs market making or risk hedging). This is relevant for the Volcker rule and the French and German reform proposals while Liikanen group recommends placing the market making outside the ring-fence alongside proprietary trading. Significant costs arising from substantial compliance and reporting requirements apply to banks covered by the Volcker rule and also from the unwinding and decomposing integrated companies (Viñals et al., 2013).
- ***Lower diversification benefits***. Intended effect of the reforms would be to lead to less diversified banks (diversification may be retained at the group level whenever subsidiarization is allowed) and less benefits derived from "too big to fail" status (Gambacorta and van Rixtel, 2013). Although explicit size restrictions are not part of the legislative proposals, reforms could also lead to smaller institutions (Gambacorta and van Rixtel, 2013). The results of empirical studies of economies of scale and scope in banking are not unambiguous. Although some studies point to certain benefits related to the size and diversification of the financial institutions, research generally provides confirmation of the conclusion that the major banks are riskier and that they are characterized by greater reliance on non-interest income and less stable financial structure (Bertay et al., 2013). Besides benefitting from diversification, large banks that combine trading activities with retail banking activities have access to implicit subsidies (i.e. being bailed-out by the state to prevent a failure that potentially has systemic consequences) (FSA, 2009). In contrast, others hold the view that economies of scale in banking do not only exist but are significant and hence imposing limits on bank size would have unintended consequences (Mester, 2010).
- ***Market liquidity and borrowing costs***. Banks, through proprietary trading and market making, are major providers of liquidity. Separation of some or all of trading business into a separately capitalized unit would endanger the business model of these market makers and proprietary traders and market depth and market liquidity would be reduced (Thakor, 2012; PWC (2014). This can make harder for companies to raise funds in the corporate bond markets, since reduced liquidity usually results in investors' demand for higher prices. Also, the increase in borrowing costs is driven by the rise in prices of banking products and services and the reduction in market liquidity due to retrenchment of bank activity in capital markets (PWC, 2014).
- ***Tightening activity restrictions on regulated banks may redistribute systemic risk.*** Both proprietary trading prohibition and trading separation may create additional incentives for growth of the shadow banking sector by pushing certain activities to unregulated entities where they can still exert systemic risk. This is why Vickers Commission preferred ring-fencing over full separation (Viñals et al., 2013).

Finally, banks are all starting to comply with the proposed structural reforms from different places, with different business mixes, operating models and legal entity structures. Banks could incur significant one-off costs as a result of structural separation: program management, legal and consultancy costs, finance and IT infrastructure, human resource management, procurement functions and contract novation, and re-documenting client relationship. It is estimated that EU banks affected by structural reforms could face one-off implementation of around €9 billion and additional annual costs could amount to €21 billion (PWC 2014).

CONCLUSION

The structural banking reform proposals by Volcker, Vickers and Liikanen differ substantially (which activities are to be separated, and what legal, organizational and financial restrictions will be imposed on separated activities) and they are at different stages of implementation. The main difference is reflected in the fact that there is no ban on proprietary trades outside the ring fence in the EU, while the US adopted stricter ban on banking organizations to engage in proprietary trading and restrictions on banks' participation in private funds. Although structural reforms are difficult to implement and coordinate internationally and although they are costly for financial institutions, their implementation can lead to direct financial stability benefits (Gambacorta and van Rixtel, 2013). The structural banking regulations specify a regulatory framework that creates preconditions for strengthening the connection between banking services and the real economy by protecting those services critical for the real economy (socially important retail banking activities) from excessively risky speculative trading activities. This paradigm shift from trading activities towards traditional core banking business is a reflection of post-crisis view of banks' emphasized social role.

REFERENCES

BCBS (2010). An Assessment of the Long-Term Economic Impact of Stronger Capital and Liquidity Requirements. Basel: Bank for International Settlements.

Bertay, A. C., Demirgüç-Kunt, A. and Huizinga, H. (2013). Do we need big banks? Evidence on performance, strategy and market discipline. *Journal of Financial Intermediation*, *22*(4), 532-558.

Council of the European Union (2015) Proposal for a Regulation of the European Parliament and of the Council on structural measures improving the resilience of EU credit institutions. Retrieved from: www.consilium.europa.eu/en/press/press.../st10150-en15_pdf/

Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. Publ. L. 111-203, 124 Stat. 1376. Retrieved from: https://www.sec.gov/about/laws/wallstreetreform-cpa.pdf

European Commission (2014). Proposal for a Regulation of the European Parliament and of the Council on structural measures improving the resilience of EU credit institutions 2014/0020 (COD) Retrieved from: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014PC0043&from=EN

Fernandez-Bollo É. (2013). Structural reform and supervision of the banking sector in France. *OECD Journal: Financial Market Trends*, Vol. 2013/1. DOI: http://dx.doi.org/10.1787/fmt-2013-5k41z8t3mrhg.

Financial Services (Banking Reform) Act (2013) Retrieved from: at http://www.legislation.gov.uk/ukpga/ · 29FL02 2013/33/pdfs/ukpga_20130033_en.pdf.

Financial Services (Banking Reform) Act of 2013 (c. 33). Available at hfttp://www.legislation.gov.uk/ukpga/ 2013/33/pdfs/ukpga_20130033_en.pdf

FSA (2009) The Turner Review, A Regulatory Response to the Global Financial Crisis, 28. Financial Services Authority. Retrieved from: https://www.researchgate.net/deref/http%3A%2F%2Fwww.fsa.gov.uk%2Fpubs%2Fother%2Fturner_review.pdf

Gambacorta, L., and A. Van Rixtel (2013). *Structural bank regulation initiatives: approaches and implications*. BIS working paper No. 412. Basel: Bank for International Settlements.

Gesetz zur Abschirmung von Risiken und zur Planung der Sanierung und Abwicklung von Kreditinstituten und Finanzgruppen v. 7.8.2013, BGBl. 2013 I p. 3090. Retrieved from: http://www.bundesgerichtshof.de/SharedDocs/Downloads/DE/Bibliothek/Gesetzesmaterialien/17_wp/Abschirmung_Risiken/bgbl.pdf?__blob=publicationFile

Krahnen, J.-P., Noth, F., and Schüwer, U. (2016). *Structural Reforms in Banking: The Role of Trading*. SAFE White Paper No. 33/2016. Frankfurt: The Research Center SAFE (Sustainable Architecture for Finance in Europe).

Lehmann, M. (2014.).Volcker *Rule Ring-Fencing or Separation of Bank Activities: Comparison of Structural Reform Acts Around the World.* LSE Law, Society and Economy Working Papers 25/2014, 2.

Liikanen, E. (Chair) (2012) The High-Level Expert Group on Reforming the Structure of the EU Banking Sector: Final Report. Retrieved from: at http://ec.europa.eu/internal_market/bank/docs/high-level_expert_group/report_en.pdf

Loi no. 2013-672 du 26 juillet 2013 de séparation et de régulation des activités bancaires, J.O. n°173 du 27 juillet 2013, p. 12530.. Retrieved from: https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000027754539

Mayer Brown (2014). Legal Update, February 2014. Retrieved from: https://www.mayerbrown.com/files/Publication/f6722a7a-b666-4384-931f-0f77d6424e37/Presentation/PublicationAttachment/1a249a85-3015-43eb-8389-26237a62e419/update_volcker_vickers_feb14.pdf

Mester, L. (2010). Scale economies in banking and financial regulatory reform, *The Region*, [Federal Reserve Bank of Minneapolis] 24(3): 10–13.

PWC (2014). Impact of bank structural reforms in Europe Report for AFME (Association for Financial Markets in Europe**)**. Retrieved from: http://www.pwc.com/il/he/bankim/assets/pwc-study-impact-of-bank-structural-reform.pdf

Thakor, A. V. (2012*). The Economic Consequences of the Volcker Rule*. *U.S.* Chamber of Commerce Center for Capital Markets Competitiveness. White Paper Summer 2012.

Vickers, J. (Chair) (2011). Final Report of the Independent Commission on Banking. Retrieved from: http://www.ecgi.org/documents/icb_final_report_12sep2011.pdf

Viñals J., Pazarbasioglu C., Surti J., Narain A., Erbenova M., Chow J. (2013). *Creating a safer financial system: Will Volcker, Vickers, and Liikanen structural measures help?* IMF Staff Discussion Note, May. Washington: International Monetary Fund.

STRUKTURNE REFORME BANKARSKOG SEKTORA – REGULATORNI PRISTUPI I IMPLIKACIJE

Rad analizira alternativne regulatorne pristupe strukturnim reformama bankarskog sektora, koje je pokrenula globalna finansijska kriza. Strukturna regulacija banaka, predložena ili usvojena u više jurisdikcija, bazira se na Vokerovom pravilu u SAD, predlozima Vickers komisije u UK i Liikanen izveštaju u EU. Uprkos različitim pristupima zakonodavaca, strukturne reforme imaju isti cilj – otporniji finansijski sistem. Zajednički element je povlačenje linije između komercijalnog bankarstva i određenih aktivnosti investicionog bankarstva, čija se kombinacija percepira kao izvor sistemskog rizika. Strukturne reforme su dizajnirane da umanje implicitne državne garancije i moralni hazard banaka.

Ključne reči: *finansijska kriza, sistemski rizik, strukturne reforme, univerzalna banka*

FACTA UNIVERSITATIS
Series: **Economics and Organization** Vol. 14, N° 2, 2017, pp. 127 - 137
DOI: 10.22190/FUEO1702127R

Review Paper

INTELLECTUAL CAPITAL AS THE SOURCE OF COMPETITIVE ADVANTAGE: THE RESOURCE-BASED VIEW

UDC 005.336.4:339.137.2

Tamara Rađenović, Bojan Krstić

University of Niš, Faculty of Economics, Niš, Serbia

Abstract. *The concepts of intellectual capital and competitiveness are widely studied issues among researchers during the last few decades. Intangible assets have been proved to be the fundamental source of value and competitiveness in modern enterprises. Intellectual capital is a valuable invisible resource which drives firm's growth and provides superior value for stakeholders. Therefore, the aim of the paper is to examine the role the intellectual capital has in creating and sustaining competitive advantage of enterprises from the resource-based perspective.*

Key words: *intellectual capital, competitive advantage, knowledge economy, value creation, resource-based view*

JEL Classification: D83, L25, O34

INTRODUCTION

The first mention of the notion of intellectual capital in the 20th century could be found in Frederick Taylor's book (1911), in which he writes about knowledge, experience and skills of employees. Intellectual capital, as a term, was originally associated with Machlup (1962) who coined it in order to emphasize the importance of knowledge for the development of enterprises and growth of national economies. In the last few decades, intangible assets such as knowledge, patents and innovations have been identified as key sources of value creation and technological progress. These intangibles represent a main concern for the managers of modern knowledge enterprises and their stakeholders (García-Ayuso, 2003). In the knowledge economy, in order to be successful in the market, an enterprise has to be flexible and capable to adapt its resources and products according to the requirements of national and regional markets (Krstić, 2007).

Received February 10, 2017 / Accepted March 21, 2017
Corresponding author: Tamara Rađenović
University of Niš, Faculty of Economics, Niš, Serbia
E-mail: tamara.radjenovic@eknfak.ni.ac.rs

Intellectual capital represents the area of interest and research for academics from different scientific fields. The economic literature that deals with the role of non-material resources in sustaining competitive advantages indicates significant variations in the use of terminology (intellectual resources, invisible assets, knowledge resources, knowledge-based capital, intangible resources, non-material assets, etc.).

In contemporary conditions, the accounting theory and practice are faced with a declining importance of the information provided by the system of financial reporting. Namely, there is a need for accounting information to be supplemented by non-financial information, which does not come from financial statements. There is a requirement that the accounting system should adequately disclose the so-called invisible assets or intellectual resources on the assets side on the balance sheet. Therefore, the accountants underline the meaning of the term intangible assets, which actually represents the value of intellectual resources disclosed on the balance sheet.

"Skandia Navigator", as a framework for measuring and reporting on intellectual capital, was the first implementation of the concept of intellectual capital in business practice (Edvinsson & Malone, 1997). The motivation for measuring, monitoring and reporting of intellectual capital, at the end of 20th and beginning of 21st century, has arisen due to the fact that balance sheets have not taken into account in a proper manner the hidden value, embodied in the intangible (non-material) assets. Namely, these balance sheets have not provided information about internally created intellectual assets that are fundamental for the future growth and development prospective of an enterprise. Intellectual capital, at the microeconomic level, is composed of three essential components – human capital, relational capital and structural capital (Steward, 1997). Intellectual capital represents an all-encompassing concept, which incorporates diverse non-material resources in the knowledge enterprises. These enterprises are intensive with knowledge-based resources. Intellectual capital is the key factor of the sustainable competitive advantage of these enterprises.

Therefore, the aim of the paper is to examine the concept of intellectual capital, its diverse meanings and to highlight its role in creating and sustaining competitive advantage. The paper is organized as follows: First, the paper highlights the role of intellectual capital as knowledge-based resource and provides the systematic overview of noteworthy definitions of intellectual capital in the literature. Further, the study focuses on the basic concepts of competitiveness theory, with the emphasis on the resource-based theory of the firm. After that, the research underlines the importance of intellectual capital as a fundamental resource for value creation for consumers, shareholders and other external stakeholders. Finally, the conclusion is drawn from these evaluations.

1. INTELLECTUAL CAPITAL AS KNOWLEDGE-BASED RESOURCE

Nowadays, in dynamic and knowledge driven economy in the information era, intellectual resources are, comparing to other firm's resources, principal for achieving superior performance and competitive advantage (Wiklund & Shepherd, 2003). In order to achieve competitive advantage, a firm must create superior value for its customers comparing to its competitors, and the capacity to do this depends on its resources, capabilities and competences, which are the result of the long-lasting experience in the utilization of a certain resource portfolio (Krstić & Sekulić, 2016, p. 355). Valuable resources of a firm are protected from imitation by knowledge barriers to a greater extent than intellectual property rights, since such resources incorporate values which are hardly reachable and whose connection with results is difficult to determine (Miller & Shamsie, 1996). Knowledge-based resources are

predominantly in the form of specific skills, such as technical, creative, coordinative and collaborative skills. Those skills are primarily developed in individuals and afterwards transferred, shared and codified at the level of organizational groups, organizational units and organization as a system. Utilization of knowledge-based resources creates value that can be manifested as human capital, innovations, patents etc.

Table 1 Overview of noteworthy definitions of intellectual capital

Authors	Terms	Conceptual explanation
Itami (1987)	Invisible Assets	Intangible assets comprise of invisible resources which incorporate a wide range of activities in the sphere of technology, consumer confidence, brand image, corporate culture, and managerial skills.
Hall (1992)	Intangible Resources	Intangible assets represent the value drivers which transform productive resources into value-added assets.
Brooking (1996)	Intellectual Capital	Intellectual capital is the aggregate of market assets, human-centered assets, intellectual property and infrastructure assets.
Edvinsson and Malone (1997)	Intangible Assets	Intangible assets do not have physical expression, but are significant for the firm's value augmentation.
Sveiby (1997)	Intangible Assets	Intangible assets consist of three dimensions: employee competence, internal and external structure.
Nahapiet and Ghoshal (1998)	Intellectual Capital	Intellectual capital is viewed as knowledge and learning capacity of an organization.
Brennan and Connell (2000)	Intellectual Capital	Intellectual capital is the difference between the market and the book value of the company, i.e. the knowledge-based equity of the company.
Sullivan (2000)	Intellectual Capital	Intellectual capital is knowledge that can be converted into profit.
Viedma Marti (2001)	Intellectual Capital	Intellectual capital represents fundamental firm's competences.
Lev (2001)	Intangible Assets	Intangible assets are the entitlements to future benefits that do not have physical or financial manifestation.
FASB (2001)	Intangible Assets	Intangible assets represent the claims of future benefits. These claims are non-current and non-financial in nature. Also, intangible assets do not have physical or financial expression.
de Pablos (2003)	Intellectual Capital	According to the broad definition of intellectual capital it represents a positive difference between market and book value of the firm.
Rastogi (2003)	Intellectual Capital	Intellectual capital can be viewed as holistic capability of a firm to coordinate, organize and use all available knowledge with the aim to create value in the future.
Mouritsen et al. (2003)	Intellectual Capital	Intellectual capital mobilizes employees, clients, information system, managerial processes and knowledge.
IASB (2004)	Intangible Assets	Intangible assets are identifiable non-monetary assets without physical manifestation, which firms use for production or supply of goods and services, rental to third persons or administrative purposes.
Andriessen (2004)	Intangible Resources	Intangible resources are non-monetary resources without physical substance that produce future benefits for a firm.
Roos et al. (2005)	Intellectual Capital	Intellectual capital can be defined as non-monetary and non-physical resources that are fully or partly controlled by the firm and that contribute to the firm's value creation.
Marr and Moustaghfir (2005)	Intellectual Capital	Intellectual capital embraces any valuable intangible resource gained through experience and learning that can be used in the production of further wealth.
Choong (2008)	Intellectual Capital	Intellectual capital is a non-monetary asset without physical substance, but it possesses value or it can generate future benefits.
Lerro et al. (2014)	Intellectual Capital	Intellectual capital can be viewed as the set of knowledge assets held by an organization which significantly drives organizational innovation and value creation processes.
Lentjušenkova and Inga (2016)	Intellectual Capital	Intellectual capital is a firm's assets which include the firm's human capital, information and communication technologies, business procedures, and intangible assets that can be converted into material and immaterial value.

Researchers in the area of intellectual capital have offered various definitions of intellectual capital (Table 1). Although extremely extensive, the term intellectual capital is interpreted rather precisely in the referring economic and management literature.

Accordingly, in the business practice of a firm, there is even intellectual or knowledge capital manager in the organizational system. His/her task is to initiate, monitor and coordinate knowledge management programs, as well as to enable organizations to maximize the shareholders' value through investments in different knowledge resources. In fact, he/she manages intellectual capital and it is necessary to develop a methodological framework for the specific system of intellectual capital management (Krstić, 2014). This framework consists of three subsystems: knowledge management, innovation management and intellectual property management. Apart from this, the intellectual capital manager has a task to actuate employees to constant individual learning and thinking. Furthermore, this person has to design and consistently implement an effective reward and motivation system for those employees contributing to the increase of knowledge resource. Besides, an intellectual capital manager has a task to quantify the impact the intellectual capital management has on the efficiency performance of a firm.

2. RESOURCE-BASED THEORY AND COMPETITIVE ADVANTAGE

The resource-based theory of the firm (Douma & Schreuder, 1998, p. 159) has taken a significant place in the economic theory at the end of the 20th century. It represents one segment of the competitiveness theory. Within the competitiveness theory, besides the resource-based theory, important are the theory of dynamic capabilities and knowledge-based theory. Common characteristic of these theories is that they put emphasis on the so-called internal determinants of a firm's economic performance. Namely, the resource-based theory of the firm starts with the premise that the success of a firm is predetermined by the adequate choice of resources and their combinations.

However, the theory of dynamic capabilities acknowledges that the efficient usage of resources is not enough for the firm's success, but certain capabilities (in production, procurement, sales, research and development, etc.) that are functionally specific are also needed (Krstić, 2007, p. 349). This is in line with Amit and Schoemaker (1993) who argue that resources cannot contribute to the sustainable competitive advantage of a firm, but such role is attributed to the firm's capabilities. These authors define firm's capabilities as the capacity to use its resources in combination with information-based and firm-specific organizational process. Capabilities are developed through complex interactions between the firm's resources.

Teece et al. (1997) define dynamic capabilities as "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (p. 516). Therefore, dynamic capabilities reflect a firm's capacity to attain unique and innovative forms of competitive advantage considering market positions and path dependencies.

Namely, Leonard-Barton (1992, p. 113) points out that the core capabilities represent a "knowledge set that distinguishes and provides a competitive advantage". This knowledge-based view of a firm classifies four dimensions of the knowledge set: knowledge and skills of employees, technical systems, managerial systems and values and norms associated with the various types of embodied and embedded knowledge (Leonard-Barton, 1992).

Knowledge is an imperfectly imitable resource. Hence, if a firm wants to increase its value it has to create new organizational knowledge embodied in the skills and competences of the employees. As, in the changing and fast growing environment, successful firms are those which constantly create new knowledge, disseminate it through organization and rapidly materialize in the form of innovative products.

Performances of resources and the dynamic capabilities of a firm determine the imitating or experimenting activities with resources, along with the cost assessment of these activities and lead to the new configuration of resources. The new configuration of resources resulting from the learning process of imitation and/or experimentation determines the future production quantity, as well as product and process innovations (Zott, 2003).

The resource-based theory of the firm views strategy as the instrument for the alignment of resources and capabilities of a firm with the external environment requirements. Resource-based view observes a firm as a unique set of its heterogeneous resources and capabilities. Heterogeneity of the resources determines the heterogeneity of firms. Namely, firms possess mutually different resources and do not use them equally successful, thus resulting in different performances of efficiency among different firms. Firms aiming at enhancing their economic success, initiate enhancement of performances of the resources (for example, technological sophistication, training of employees, etc.). Continuous actions of firms toward enhancing the performances of their resources, contribute to the relatively stable difference in resources among firms.

Contributions to the final shape of this theory have been put by numerous researchers. Wernerfelt (1984, p. 172) in his work has viewed a firm as the "bundle of resources… which could be thought of as strength or weakness of a given firm", such as: brands, internal technological knowledge, skilled employees, effective processes, etc. The resource-based theory of a firm stresses that in the process of formulating the firm's strategy, the basis is analysis of resources and capabilities comparing to competitors. According to this theory, external environment is not the key factor for the strategic action of a firm, but internal firm's characteristics. Complex competitive environment requires the full commitment of the firm's management to conceptualization and realization of a resource-based strategy.

Therefore, the focus will be on the role of intellectual capital, as invisible resource of a firm, in creating competitive advantage, from the resource-based perspective. The intention is to understand the characteristics of the intellectual resources that drive competitive advantage of a firm.

3. Intellectual Capital and Competitive Advantage: A Resource-Based View

Barney (1991) as founder and proponent of resource-based theory in the economy of the firm, i.e. resource-based view of competitive advantage, considers that a firm achieves competitive advantage due to the resources that have to be valuable, rare, imperfectly imitable and non-substitutable. The characteristics of intellectual capital, as a valuable knowledge-based resource, are (Lin, 2013, pp. 54-55):

a) "Intellectual capital is valuable, rare, imperfectly imitable and non-substitutable;

b) Intellectual capital is communicable to others; and

c) Components of intellectual capital are both distinctive and comprehensive".

With the above mentioned characteristics, intellectual capital can be transformed in the competitive advantage of the firm.

a) Barney (1991) points out that when companies possess the same type of resources, such resources cannot create competitive advantage. Only when companies' resources are valuable, rare, imperfectly imitable and non-substitutable, they become the source of competitiveness creation, improvement and sustainability. Barney's formulation from the resource-based perspective denotes a very broad definition of resources as all types of tangible and intangible assets, organizational processes, knowledge, capabilities and other potential sources of competitive advantage (Lavie, 2006). Intellectual capital, as a unique combination of a firm's knowledge-outputs, is an extremely valuable resource, especially in contemporary knowledge economy. Further, the intellectual capital of a firm, as specific combination of diverse intangibles, can and should be a rare resource. Although every organization has elements of intellectual capital, the content, i.e. the mixture of intellectual capital elements are firm-specific in relation to its competitors.

The intellectual capital of a firm cannot be easily imitable, due to the fact that every organization has its individual fundamental material (tangible) and non-material success factors such as: culture, strategy, system, skills, leaders and key employees. The established intellectual capital is a result of interdependence among these factors during a number of years of successful competition in a particular market. Although competitors can compare and adopt best practices, intellectual capital is hard to imitate due to the complex process of its forming at key players in the market. Therefore, the intellectual capital is non-substitutable, i.e. it cannot be easily substituted. Although a company can allocate its business model to other locations (markets) with the same company's setting and identical number of qualified employees, formed intellectual capital will not be the same in all locations, which makes it irreplaceable. Hence, according to the views of resource-based theory, intellectual capital is a valuable resource that can create shareholder value and competitive advantage.

b) Intangible assets cannot be easily seen, felt or described. For managerial decision makers, who are to comprehend the value and importance of intellectual capital in realizing strategy and specific business model of a firm, intangible nature of intellectual capital makes it even more significant since it can be communicated to others – key stakeholders. On the organizational level, already determined components of human, structural and relational capital (Krstić, 2014) make the concept of intellectual capital communicable to stakeholders. Moreover, the best way for communicating the values of intellectual capital is through the realization of appropriate financial performances. From the resource-based view, firms are obtaining and sustaining competitive advantage through the development of valuable resources and capabilities. This means that resources and capabilities have to be efficiently used in order to achieve superior competitive potential (Barney & Wright, 1998; Ray et al., 2004; Sheehan & Foss, 2007; Andersén, 2011). Intellectual capital is the observable result of management practices, techniques and tools. For example, implementing the intellectual capital concept in practice and emphasizing the value of structural capital (as the component of intellectual capital) by establishing a knowledge management system can improve the firm's efficiency and effectiveness. Besides, intellectual capital is a resource that can be used in everyday operations and help in converting and synergizing other firm's material and non-material resources into its competitive advantage in the market.

c) Understanding of resources in the literature has always been multidimensional, since firms have different combinations and configurations of resources (Zajac et al., 2000). As previously defined, the intellectual capital of a firm consists of human capital, structural capital and relational capital. In other words, intellectual capital is a multidimensional portfolio of resources. Intellectual capital is recognizable because three capital components

(human, structural and relational) represent different constructions of resources. Also, intellectual capital is a comprehensive combination of resources as its capital components encompass people and leaders, structure and systems, as well as social relations.

Human capital is the fundamental resource of a firm, which includes knowledge, skills, experience, competence, attitude, commitment and individual characteristics of employees (Bontis & Fitz-enz, 2002; Hitt & Ireland, 2002). Structural capital is codified knowledge owned by a firm and can be codified, reproduced and distributed among individuals and organizational units within a firm. Structural capital (as a component of intellectual capital) involves efficient business processes, managerial philosophy, information technologies and systems, intellectual property, patents, design, brands, data bases, organizational structure, organizational culture, organizational routines and procedures, etc. Relational capital represents knowledge embedded in the short or long-term relations a firm has with suppliers, consumers, strategic partners and other external entities, while building the reputation of a firm.

The relevant literature points toward the following standards for the performance assessment of tangible and intellectual resources: durability, imitability, transferability. Apart from these criteria, key resource performances are rareness and flexibility (Krstić, 2009, p. 70).

Of extreme influence on the durability of intellectual resources are dynamic technological changes. In some circumstances, patents experience technologically aging before the termination of law protection (as a form of intellectual property). Firm's reputation, is also an example of the intangible resource which may express significant volatility over time.

Bearing in mind imitability, the firm should have incentive to produce distinctive (unique) intellectual resources. Intellectual resources that are imperfectly imitable are patent technologies. A firm's capability to sustain competitive advantage during certain period depends, among other things, on the speed by which competitors succeed to obtain certain intellectual resources that are necessary for imitation.

Transferability, i.e. availability of intellectual resources refers to consideration of time and effort necessary to obtain or create resources. Intellectual resources which can be easily and rapidly obtained (bought), cannot secure sustainable competitive advantage over the relatively long period. Generally, such resources can be quickly copied, since firm acquires them relatively easy (obtain, buy, create).

Some intellectual resources are not so easily obtainable, i.e. transferable among subjects. For example, such situation exists with specific intellectual resource – brand. Usually, the brand is associated with the firm, and change of firm's ownership can erode the value of the brand. In case when particular intellectual resource cannot be purchased, it is necessary to be produced, i.e. built in internal process of research and development. Usually, superior strategic importance is given to the internally created intellectual resources compared to those intangible resources that can be obtained in the market via buying and selling transactions.

Rareness (uniqueness) of some intellectual resources should be protected. The best legal protection frameworks are through patenting. Also, the competition for sustaining the uniqueness of resources is led by continuous investments in research and development projects. Some rare resources are imperfectly imitable. That is especially the case with tacit knowledge, i.e. implicit knowledge of one number of employees or working groups, which manifests in individual competences that are not formally owned by the firm as an entity. In the knowledge-intensive organizations (based on the share of the value of other resources in the total value of assets in the balance sheet), especially with dynamic technology and short

life-cycle of products, tacit knowledge of some employees (experts, professionals) is a considerably unique resource. Containing such a valuable resource in the firm is of extreme importance for its economic efficiency in the future.

Besides, the firm's competitive advantage is determined by the flexibility of its intellectual resources. Innovative capability of human resources in the firm is of great importance for its efficacy. Some firms are better and more capable than others in innovating. Innovation is important because of achieving and delivering superior value to consumers that will enable competitive advantage. Also, with the strategy of continuing product innovation, competitors will have problems to adjust over a relatively long period of time.

Many companies are now being sold at a much higher price than their actual book value. The market valuation of companies increasingly relies on the so called intangible factors or invisible items. This approach reflects a huge gap between the market valuation and accounting valuation, causing further interest in a more effective and efficient economic use of intellectual resources/capital in knowledge enterprises.

CONCLUSION

The value of a firm, products/services and shareholders' value is achieved through combination of tangible and intangible resources. By investments in intellectual capital the knowledge resources are increasing, technology is improving, firms are more ready to undertake initiatives regarding the development of new products/services and are oriented toward the improvement of the relationships with the key stakeholders. In the contemporary economy, the success of the enterprise depends on its capabilities to recognize potential in the market and to find a way to use it. Increasing competition in the 21st century and the knowledge economy era puts forward as a necessity a more productive utilization of intangible resources in order to achieve success and survival in the market. Developed economies base their competitiveness on knowledge, information, commercial innovations, intellectual capital strategies, and much less on physical resources and low-cost labor.

The most important activity in the knowledge economy is not production of products and services anymore, but production of new knowledge (from the broader prospective intellectual resources), which is base for improved quality of products and services. High-quality intellectual resources increase the products' value for customers, the products can be sold at higher prices, thus leading to the higher income.

Intellectual resources enable innovations that are transformed into sales revenues. Besides, intellectual resources enable creating intellectual assets in the form of intellectual property, and hence the utilization of such assets enables higher commercial effects arising for intellectual property (protected patents, designs, trademarks). For many enterprises are especially important incomes which they obtain by selling intellectual property through licenses for products, technologies, brands, etc.

Furthermore, intellectual capital (knowledge, competences etc.) enables efficient structure, better working environment and supporting organization culture, efficient business processes. Namely, more efficient working processes lead to the realization of business and other activities at lower costs. Intellectual resources, especially intellectual property in the form of patents, contribute to the income protection from erosion owing to eventual misuse from other enterprises. Portfolio of intellectual property can be a tool for managing business negotiations during sales, joint ventures, mergers, etc., thus affecting

indirectly future revenues. Intellectual resources contribute to the revenues increase and cost reductions, thus leading to the increase of income and indirectly to the efficiency and profitability of an enterprise.

Acknowledgement: *The paper is a part of the research done within the project 179066 funded by the Ministry of Education, Science and Technological Development of the Republic of Serbia*.

REFERENCES

Amit, R., & Schoemaker, P. J. (1993). Strategic Assets and Organizational Rent. *Strategic Management Journal, 14*(1), 33-46. doi:10.1002/smj.4250140105

Andersén, J. (2011). Strategic Resources and Firm Performance. *Management Decision, 49*(1), 87-98. doi:10.1108/00251741111094455

Andriessen, D. (2004). *Making Sense of Intellectual Capital – Designing a Method for the Valuation of Intangibles.* Burlington, MA: Elsevier Butterworth-Heinemann.

Barney, J. B. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management, 17*(1), 99-120.

Barney, J. B., & Wright, P. M. (1998). On Becoming a Strategic Partner: The Role of Human Resources in Gaining Competitive Advantage. *Human Resource Management, 37*(1), 31-46. doi:10.1002/(SICI)1099-050X(199821)37:1<31::AID-HRM4>3.0.CO;2-W

Bontis, N., & Fitz-enz, J. (2002). Intellectual Capital ROI: A Causal Map of Human Capital Antecedents and Consequents. *Journal of Intellectual Capital, 3*(3), 223-247. doi:10.1108/14691930210435589

Brennan, N., & Connell, B. (2000). Intellectual Capital: Current Issues and Policy Implications. *Journal of Intellectual Capital, 1*(3), 206-240. doi:10.1108/14691930010350792

Brooking, A. (1996). *Intellectual Capital: Core Assets for the Third Millennium Enterprise.* London, UK: International Thomson Business Press.

Choong, K. K. (2008). Intellectual Capital: Definitions, Categorization and Reporting Models. *Journal of Intellectual Capital, 9*(4), 609-638. doi:10.1108/14691930810913186

de Pablos, P. O. (2003). Intellectual Capital Reporting in Spain: A Comparative View. *Journal of Intellectual Capital, 4*(1), 61-81. doi:10.1108/14691930310455397

Douma, S., & Schreuder, H. (1998). *Economic Approaches to Organizations.* London: Prentice Hall.

Edvinsson, L., & Malone, M. (1997). *Intellectual Capital: Realising Your Company's True Value by Finding Its Hidden Brainpower.* New York: Harper Collins Publishers Ins.

FASB. (2001). Getting a Grip on Intangible Assets - What They Are, Why They Matter, and Who Should Be Managing Them in Your Organization. *Harvard Managment Update, 6*(2), 6-8.

García-Ayuso, M. (2003). Intangibles: Lessons from the Past and a Look into the Future. *Journal of Intellectual Capital, 4*(4), 597-604. doi:10.1108/14691930310504590

Hall, R. (1992). The Strategic Analysis of Intangible Resources. *Strategic Management Journal, 13*(2), 135-144. doi:10.1002/smj.4250130205

Hitt, M. A., & Ireland, D. R. (2002). The Essence of Strategic Leadership: Managing Human and Social Capital. *Journal of Leadership & Organizational Studies, 9*(1), 3-14. doi:10.1177/107179190200900101

IASB. (2004). *International Accounting Standard 38: Intangible Assets.* London: International Accounting Standard Board .

Itami, H. (1987). *Mobilizing Invisible Assets.* Cambridge, MA: Harvard Business Press.

Krstić, B. (2007). Resursi i konkurentska prednost preduzeća. [Resources and Competitive Advantage of Enterprise]. U Z. Aranđelović, *Regionalni razvoj i demografski tokovi zemalja Jugoistočne Evrope* (str. 347-356). Niš: Ekonomski fakultet Univerziteta u Nišu.

Krstić, B. (2009). *Intelektualni kapital i konkurentnost preduzeća. [Intellectual Capital and Competitiveness of Enterprise]*. Niš: Ekonomski fakultet.

Krstić, B. (2014). *Upravljanje intelektualnim kapitalom preduzeća. [Management of the Intellectual Capital of Enterprise]*. Niš: Ekonomski fakultet Univerziteta u Nišu.

Krstić, B., & Sekulić, V. (2016). Determinante resursno baziranog pristupa unapređenju strategije, konkurentnosti i performansi preduzeća. [Determinants of Resource-Based Approach to Improving Strategy, Competitiveness and Business Performance]. U J. Đurović Todorović, & M. Radosavljević, *Konkurentnost i održivi razvoj privrede Republike Srbije* (str. 354-369). Niš: Ekonomski fakultet Univerziteta u Nišu.

Lavie, D. (2006). The Competitive Advantage of Interconnected Firms: An Extension of the Resource-Based View. *Academy of Management Review, 31*(3), 638-658. Retrieved from http://www.jstor.org/stable/20159233

Lentjušenkova, O., & Inga, L. (2016). The Transformation of the Organization's Intellectual Capital: From Resource to Capital. *Journal of Intellectual Capital, 17*(4), 610-631. doi:10.1108/JIC-03-2016-0031

Leonard-Barton, D. (1992). Core Capabilities and Core Rigidities: A Paradox in Managing New Product Development. *Strategic Management Journal, 13*(S1), 111-125. doi:10.1002/smj.4250131009

Lerro, A., Linzalone, R., & Schiuma, G. (2014). Managing Intellectual Capital Dimensions for Organizational Value Creation. *Journal of Intellectual Capital, 15*(3), 350-361. doi:10.1108/JIC-05-2014-0063

Lev, B. (2001). *Intangibles: Management, Measurement, and Reporting.* Washington, DC: Brooking Institution Press.

Lin, C. Y.-Y. (2013). Intellectual Capital Explains a Country's Resilience to Financial Crisis: A Resource Based View. In P. O. de Pablos, R. Tennyson, & J. Yhao, *Intellectual Capital Strategy Management for Knowledge-Based Organizations* (pp. 52-75). Hershey: Business Science Reference (IGI Global).

Machlup, F. (1962). *The Production and Distribution of Knowledge in the United States.* Princeton, New Jersey: Princeton University Press.

Marr, B., & Moustaghfir, K. (2005). Defining Intellectual Capital: A Three-Dimensional Approach. *Management Decision, 43*(9), 1114-1128. doi:10.1108/00251740510626227

Miller, D., & Shamsie, J. (1996). The Resource-Based View of the Firm in Two Environments: The Hollywood Film Studios from 1936 to 1965. *Academy of Management Journal, 39*(3), 519-543.

Mouritsen, J., Bukh, P. N., Flagstad, K., Thorbjørnsen, S., Johansen, M. R., Kotnis, S., . . . Stakemann, B. (2003). *Intellectual Capital Statements - The New Guideline.* Copenhagen: Danish Ministry of Science, Technology and Innovation.

Naahapiet, J., & Ghoshal, S. (1998). Social Capital, Intellectual Capital, and the Organizational Advantage. *Academy of Management Review, 23*(2), 2242-2266. Retrieved from http://www.jstor.org/stable/259373

Rastogi, P. N. (2003). The Nature and Role of IC: Rethinking the Process of Value Creation and Sustained. *Journal of Intellectual Capital, 4*(2), 227-248. doi:10.1108/14691930310472848

Ray, G., Barney, J. B., & Muhanna, W. A. (2004). Capabilities, Business Processes, and Competitive Advantage: Choosing the Dependent Variable in Empirical Tests of the Resource-Based View. *Strategic Management Journal, 25*(1), 23-37. doi:10.1002/smj.366

Roos, G., Pike, S., & Fernström, L. (2005). *Managing Intellectual Capital in Practice.* Burlington, MA: Elsevier Butterworth-Heinemann.

Sheehan, N. T., & Foss, N. J. (2007). Enhancing the Prescriptiveness of the Resource-Based View through Porterian Activity Analysis. *Management Decision, 45*(3), 450-461. doi:10.1108/00251740710745070

Steward, T. (1997). *Intellectual Capital: The Wealth of Organizations.* New York.

Sullivan, P. (2000). *Value-Driven Intellectual Capital - How to Convert Intangible Corporate Assets into Market Value.* New York: John Wiley.

Sveiby, K. E. (1997). *The New Organizational Wealth – Managing & Measuring Knowledge-Based Assets.* San Francisco: Berrett-Koehler Publishers, Inc.

Taylor, F. (1911). *The Principles of Scientific Management.* New York: Harper & Brothers.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic Capabilities and Strategic Management. *Strategic Management Journal, 18*(7), 509-533. doi:10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z

Viedma Marti, J. M. (2001). ICBS - Intellectual Capital Benchmarking System. *Journal of Intelectual Capital, 2*(2), 148-164. doi:10.1108/14691930110385937

Wernerfelt, B. (1984). A Resource-Based View of the Firm. *Strategic Management Journal, 5*(2), 171-180. Retrieved from http://www.jstor.org/stable/2486175

Wiklund, J., & Shepherd, D. (2003). Knowledge-based Resources, Entrepreneurial Orientation, and the Performance of Small and Medium-sized Businesses. *Strategic Management Journal, 24*, 1307-1314. doi:10.1002/smj.360

Zajac, E. J., Kraatz, M. S., & Bresser, R. K. (2000). Modeling the Dynamics of Strategic Fit: A Normative Approach to Strategic Change. *Strategic Manament Journal, 21*(4), 429-453. doi:10.1002/(SICI)1097-0266(200004)21:4<429::AID-SMJ81>3.0.CO;2-#

Zott, C. (2003). Dynamic Capabilities and the Emergence of Intraindustry Differential Firm Performance: Insights from a Simulation Study. *Strategic Management Journal, 24*(2), 97-125. doi:10.1002/smj.288

INTELEKTUALNI KAPITAL KAO IZVOR KONKURENTSKE PREDNOSTI: NA RESURSIMA ZASNOVANO GLEDIŠTE

Koncepti intelektualnog kapitala i konkurentnosti su dosta proučavani od strane istraživača tokom nekoliko poslednjih decenija. Nematerijalna imovina se pokazala kao ključni izvor vrednosti i konkurentnosti u savremenim preduzećima. Intelektualni kapital je vredan nevidljiv resurs koji doprinosi rastu preduzeća i većoj vrednosti za stejkholdere. U tom smislu, cilj rada je da ispita ulogu koju intelektualni kapital ima u kreiranju i održavanju konkurentske prednosti preduzeća iz resursne perspektive.

Ključne reči: *intelektualni kapital, konkurentska prednost, ekonomija znanja, stvaranje vrednosti, na resursima zasnovano gledište*

FACTA UNIVERSITATIS
Series: **Economics and Organization** Vol. 14, N° 2, 2017, pp. 139 - 153
DOI: 10.22190/FUEO1702139R

Review Paper

FEATURES OF FUNDING FOR HIGHER EDUCATION IN EUROPEAN COUNTRIES AND IN THE RUSSIAN FEDERATION IN THE LIGHT OF REFORMS

UDC 378.3(4+470)

Olga Rimskaya

Konrad Adenauer Foundation, Russia

Abstract. *Modern education reforms undertaken in the countries all over the world have inevitably affected the management and funding system of education. The tendency towards decentralization of management of education is the most expressed in many countries. However, the state budget is still responsible for education funding. Taking into account national peculiarities in the sphere of funding, there are various approaches and schemes. As international experience shows, a state participation in higher education funding leads to its gradual reduction with a simultaneous increase of the share of extrabudgetary funding at the expense of the entities, public granting organizations, government programs, and students. It should be noted that basic approaches and methods of education funding change, depending on the economic situation in the specific country.*

Key words: *education reforms, decentralization of education management, systems of international funding indicators, share of the state participation, strengthening of the extrabudgetary funding*

JEL Classification: I22, I25, I28

INTRODUCTION

Expenditures on education are considered to be one of the key indicators of social development, as they reflect the level of state and society consideration for the education of its citizens. Funding for education is not only an important method for increasing the capital of citizens and improving economic growth perspectives. Funding also has its own

Received December 1, 2016 / Revised March 23, 2017/ Accepted March 28, 2017
Corresponding author: Olga Rimskaya
Konrad Adenauer Foundation Russia, Russian Federation
E-mail: olgarim@mail.ru

value, because education broadens people's views, gives an opportunity for self-realization, promotes their material welfare, and healthy way of life.

An increase in the quality and competitiveness of educational services is possible if there are all kinds of resources (first of all, funds) and if they are effectively used. In terms of market relations in economy, a successful development of the education system is provided by attracting and using various funding sources.

At this, an important role is still played by the sole guaranteed source of funding: the state budged.

A present state of the education system of almost all countries is characterized by the lack of budgetary funds allocated for the functioning of this field. Often, many other problems in the education system (the content and quality of education, the availability of education for different sections of the population, relations development with the labour market, etc.) are directly connected to the lack of funding.

This article presents the analysis of the funding system of the education system in several countries: France, the Czech Republic, Greece, Estonia, and Russia.

In the context of this research, quantitative and qualitative funding aspects of all education levels are analyzed, possible evaluation directions of their effectiveness are studied, and main trends of the model for funding advancement of the budgetary education are determined.

1. PREREQUISITES FOR RESEARCH

Various education reforms which affected the management and funding system of education were undertaken in the last decades of the XXI century in the majority of developed countries in the world. The tendency to decentralization and delegation of many management powers and functions from the center to lower levels, as well as the expansion of society participation in the management process, turned out to be the most expressed. Despite management reforms, state powers of different levels are still responsible for providing education and its funding.

In the 1990s, higher schools in the majority of the countries suffered financial crisis mainly connected to the slowing of the growth rate of the state support of higher educational institutions which ran simultaneously with an increase in the students' flow. The state tried to make students and their parents play a bigger expenditure part by making special amendments in the funding system.

From the mid-1950s to the mid-1990s, the number of students in almost all European countries increased by more than 10 times. The transition from an elite to a mass system of higher education, covering now up to 2/3 of the pupils finishing secondary school, occurred. This growth was accompanied by significant structural changes in the system of higher education: along with traditional universities, there appeared higher educational universities providing more specialized and professional training.

In the 1980s and 1990s, the evaluation procedures for the university activity were introduced. Moreover, a decrease in funds allocated by the state for higher professional institutions (per one student) took place. Expediency of keeping a traditional funding system almost based on the state support was called in question at the official level.

The ratio of state and private funding for higher education is not the same. For example, in Germany, Austria, and Italy a share of state funding in expenditures on higher

education is about 90%, in Great Britain and Finland, it is about 80%, in Denmark and Sweden, it is near 2/3, and in the USA and Canada, it is 50% and 73% respectively (Абанкина, 2008).

In the last 30 years, the leadership of universities all over the world is being criticized due to inability to take into consideration market demands, ineffective management, and high expenditures. The necessity of reform in the education system has become imminent.

Within the limits of international comparison, the amount of funding for education in general and its separate levels is characterized by four main indicators:

- education expenditures ratio to the gross domestic product (GDP);
- expenditures ratio per one student to the size of GDP per capita;
- expenditures per one student on a purchasing power parity basis of national currency;
- weight of the state expenditures on education in the combined state expenditures (according to education levels).

Each of these indicators has advantages and disadvantages and characterizes various aspects of funding for the education system.

Today, the system of the international education indicators of the Organization for Economic Co-operation and Development (OECD) is the most complete and conceptually grounded and, at the same time, constantly developing and changing. The indicators prepared by the OECD/Eurostat, due to the difficult methodology and calculation mechanism, allow one to carry out more precisely the analysis of education systems and comparison between various countries. The International Standard Classification of Education (ISCED) of UNESCO (UNESCO Institute for Statistics, 2015) became a basis for the classification of educational structures and programs when developing international indicators of the OECD. The ISCED is a tool for data processing collected in various education systems into comparable international frames based on strict definitions and education levels classification, academic programs, their duration, and other data. It is obvious that a national classification of education levels in different countries has its own unique features. Hence, comparability of the international OECD indicators is not absolutely exact and comprehensive. Besides, when carrying out financial indicators research according to education levels, the author faced a problem of the lack of official data on education levels of some countries.

Further (Table 1), the expenditures on all education levels of the countries under research are given[2].

Table 1 Current expenditures on education in percentage of GNI within 2000-2014

Years / Countries	2014	2012	2011	2010	2009	2008	2005	2000
Greece	-	3.1	3.1	3.1	3.1	3.1	3.1	2.1
France	5.0	5.0	5.0	5.1	5.1	4.9	4.9	4.9
Czech Republic	4.1	4.1	4.7	4.3	3.9	4.0	3.4	2.9
Russia	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.5
Estonia	4.4	4.4	4.8	5.4	5.2	5.4	4.8	5.0

Source: The world data at Knoema

[2] Current expenditures on education in percentage of GNI are total state current expenditures on education expressed in percentage of GNI in the fiscal year. Instead of GNI, GNP is also used.

Referring to the data of the international statistics on GNI (Вестник ВГУ, 2001) in the countries all over the world within the same period, the following will be obtained (Table 2).

Table 2 GNI of the countries within 2000-2012 (Million US Dollars)

Years / Countries	2012	2011	2010	2009	2008	2005	2000
Greece	247300	279940	293229	322655	343916	248168	132622
France	271446	2928598	2700865	2741772	2985992	2242152	1394044
Czech Republic	193729	209850	191444	191245	219943	129840	60341
Russia	1947838	1844591	1476251	1182914	1612145	742291	251903
Estonia	22230	22014	18491	19061	22858	13457	5476

Source: The world data at Knoema

In the context of comparing international indicators (Table 2), Greece and France have close meaning in GNI for the period under research. In 2012, the GNI of Russia exceeded that of Greece 12.7 times, and it exceeded the GNI of France 14 times.

However, current expenditures on education in percentage of GNI within 2000-2014 (Table 1) in Russia and Greece are very similar. In France, a share of expenditures on education is even bigger than in Russia. This fact shows that Greece allocates a considerable part of the state budget on the education system in comparison with Russia, and France exceeds the similar expenditures of Russia on education.

According to the ISCED scheme in the edition of 2011 (UN Educational, Scientific and Cultural Organization, 2011), the OECD offers a methodology of transferring national academic programs into the internationally comparable set of categories to determine the stages of education.

2. Experience of Funding for Higher Education

Various forms of private higher education are introduced in the world. An enormous distinction between private and state higher education are at the same time observed.

The variety of systems of education management in the countries all over the world leaves a direct mark on approaches to its funding, which is considered to be one of the components of the general management process. According to the powers distribution structure and degree of their concentration at any level, developed countries can be divided into two primary groups: with centralized and with decentralized management of education.

The first group is Greece, Ireland, Italy, Portugal, France, Israel, Japan, and several other countries. Centralization in management is observed to be especially strong in Greece, where almost all powers in the field of education are in the hands of the Ministry of National Education. Centralization of management is expressed more moderately in Italy and France, where, since the end of last century, a stable tendency to its gradual decentralization is observed. As a rule, the greatest part of funds for education in these countries is taken from the central state budget; however, funds can be allocated from regional and local budgets, industrial enterprises, public funds, and from private individuals (in the form of a tuition fee).

Belgium, Germany, Great Britain, Spain, the Netherlands, Norway, Switzerland, Sweden, and also the USA, Canada, Australia, and some other countries belong to the second, more numerous group. Funding in the countries with the decentralized education management system is performed according to various schemes, which do not always correspond to the type of education management existing in the country, and can sometimes be mixed.

State higher educational institutions continue to prevail in Western Europe, where 95% of students study. In spite of the fact that the most known American universities are private, more than 80% of students study at state universities. In the countries of Asia (except China), 80% of students study at private higher educational institutions (UNESCO Institute for Statistics, 2015). For comparison: in Russia, where the total quantity of higher educational institutions constitutes 1046, including non-state higher educational institutions (437), the number of students at state universities is 5 times bigger than the number of students at non-state universities (Мировой атлас данных).

The bigger part of funds (31% and 19% respectively (Абанкина, 2008) allocated from private establishments is for higher educational institutions. A tendency towards the growth of state funding for educational institutions of all levels is observed: there was a stable growth from 2000 to 2011 all over the world (except Italy), according to which comparable data is available (OECD, 2014).

Expenditures on higher education are made up of academic expenditures on higher education in percentage of total state expenditures on the education system in the country (The world data at Knoema) (Table 3).

Table 3 Expenditures on higher education in the countries

Years / Countries	2012	2011	2010	2009	2008	2005	2000
Greece*	-	-	-	-	-	36.1	24.0
France	22.3	22.8	22.1	22.7	22.2	21.1	17.6
Czech Republic*	-	25.8	22.5	23.2	23.7	21.0	19.0
Russia*	21.2	-	-	-	36.4	36.4	16.1
Estonia*	-	25.1	21.7	22.1	19.9	18.9	-

Source: The world data at Knoema, *Data is absent

A relevant comparison of the indicators is impossible due to the lack of complete data on the countries and years. However, based on the given statistical data of the countries, one can notice the increase in state expenditures on higher education: stable and gradual in France and a growth in the Czech Republic. The indicators of the increase in state funding for higher educational institutions in Estonia is also quite gradual. The similar cannot be written about Russia: a substantial decrease in the state participation in support of higher education was observed in 2012. This can be explained by the education transferring to normative funding per capita according to the decree of the minister of the Russian Federation in 2011.

3. RESULTS

3.1. France

France is included into the group of industrially developed countries, which allocate a great part of their GNI for education development. The years, which students spend studying, can be divided into several education stages:

- preschool education;
- secondary education is a process for getting education at the college or lycee;
- higher education, when a student gets a Bachelor's diploma confirming his specialization after graduating.

In France, for example, funds allocation for education considerably differs from other countries. In particular, large sums are aimed at development of rather expensive secondary education, while expenditures on primary education are at the level of average values, according to the OECD.

The share of the funds allocated for higher education in France is below average values, according to the OECD, and is much lower than in the most developed countries. In France, the share of expenditures on education constitutes 9.7% of all public expenditures, and the average value among the countries of the OECD is at the level of 12.9% (Ситерманн, 2008). The USA, Australia, Great Britain, and the Scandinavian countries outrun France as regards this indicator. However, the main feature of the French system is that in case of funds distribution, emphasis is put on funding for secondary education.

In this country funds for expenditures on education depend on their type (investments, current expenditures, personal, etc.) and on the education level. Communities (preschool establishments and elementary schools), departments (lower secondary schools – colleges), regions (upper secondary schools – lycees), and, finally, the state (universities) are responsible for constructing buildings and their equipment. Current expenditures are distributed proportionally according to almost the same scheme, but the main part belongs to the state budget.

The ratio of investment of different participants of funding is the following: the Ministry of National Education and other ministries make up 64.6%; regions, departments, and communes are 20.4%; social welfare institutions (mainly in the form of grants for children education) constitute 2.3%; industrial and other enterprises (due to the special tax) amount to 5.8%; families of pupils and students (a tuition fee, educational materials, and so on) make up 6.9% (Ситерманн, 2008). Gradually, the share of ministries decreases and the share of regional and local authorities increases.

3.2. The Czech Republic

The system of education in the Czech Republic has the following structure:

- preschool establishments for education;
- elementary education at schools;
- secondary education at schools and gymnasiums;
- higher and postgraduate education.

The Czech Republic joined the ISCED and estimates all levels of education based on this classification.

Nowadays higher education in the Czech Republic is a progressively developing system of higher educational institutions and scientific and administrative centers. After a process of initial integration into the education system of the European Union, the Czech higher educational institutions continue to enrich their experience finding new ways of cooperation with the world. About 30 state and 40 private higher educational institutions, which offer accredited programs at Bachelor, Master, and Doctor levels, exist in the Czech Republic. The result of the educational policy is obvious: the diplomas obtained at the Czech universities are recognized worldwide, students get the state support, and education is provided with privileges and discounts, as well as with a possibility of getting various grants.

The government of the country planned to allocate 11.34% of GDP to the Ministry of Education, Youth and Sports of the Czech Republic for 2014, and this line of the Czech budget is a priority in funds allocation (Обзор состояния экономики Чехии).

After the Czech Republic had joined the European Union, higher educational institutions actively improved the content of subjects taking into consideration all-European requirements which considerably improve the quality of education. This is the difference of the higher educational institutions of this country from that of the CIS countries (the Commonwealth of Independent States), which gradually enhance their educational policy.

Before the change of the law on higher education, higher education was free for citizens of the Czech Republic and paid for foreigners. After adoption of the new law, according to the requirements of the European legislation, the principle of equal conditions in a tuition fee for all students regardless of their nationality was established.

3.3. Estonia

The law of the Estonian Republic "On popular education" is the main document, the aim of which is a legal provision of forming, functioning, and developing a popular education system. Depending on the tasks, education in Estonia is divided into general, professional, and education of interests. According to the international standard adopted by UNESCO, popular education has the following levels:

- preschool education;
- elementary education (first level of education);
- secondary education (second level of education);
- higher education (third level of education).

The system of higher education in Estonia is based on the following laws: "On education" (adopted in 1992), revised and amended; "On universities" (1995); "On the University of Tartu" (1995); "On applied higher educational institutions" (1998); "On private school" (1998).

There are two types of higher educational institutions: universities and applied higher educational institutions. The difference between them is in that, according to the law on universities, education is carried out on all three levels of higher education (Bachelor's, Master's, and Doctor's) in various departments. There is only one stage of education at applied educational institutions.

The system of higher education in Estonia is made up of six public (social and legal universities) and six private universities. There are also eight state and twelve private

applied higher educational institutions. Besides, there is a system of colleges at universities, where only the first level of higher education is provided.

In this country, education on a paid basis is carried out not only at private higher educational institutions, but also at public universities and applied higher educational institutions. In Estonia, as well as in the European Union countries in general, there are several methods of receiving a grant by foreign students, especially for a Master's and Doctor's degree.

Estonia is included in the European NARIC/ENIC and its diplomas are recognized by all countries of the European Union (Система образования в Эстонии).

Estonia belongs to the European Union countries, where it is possible to receive education. Though, it is necessary to understand that the government gives preference, first of all, to the locals who want to stay in the country in the future and develop its economics. Almost all academic programs in foreign languages (especially in English) are on a paid basis. There is also a system for getting grants and allowances. A system of grants for foreign students is available.

3.4. Greece

It is well-known that Greece is the cradle of science and the education system.

The Greek education system, as in many countries, consists of three levels of getting education: elementary, secondary, and higher.

A national education classification on the following levels was adopted in 1997:

- preschool education;
- elementary education;
- secondary education;
- complete secondary education;
- secondary professional education;
- university education;
- postgraduate education.

The Greek education system is centralized: the activity of education institutions is governed by the Ministry of Education and Religion. It is made up of departments of elementary, secondary, and higher school, as well as departments of education of the Greek people living abroad, ethnic groups, international relations, and so on. Funding for education is a duty of the state; education at all levels offered by the state is free of charge.

The country, despite the economic crisis, continues to hold a high education level: the leading Greek higher educational institutions were included in the 500 world's higher educational institutions. Higher education in Greece is divided into higher technical education and university education. In Greece, the all-European system of higher education is implemented: Bachelor's and Master's programs. Higher technical education prepares new personnel in the field of science. In Greece, there are 14 higher technical institutions, each has two faculties, and each faculty has two or more departments (Образование в Греции, 2013). Funding for higher education is at the expense of the state. Based on the Constitution of Greece, all higher educational institutions are legal and self-governed, at the same time the educational process and management of the organization is controlled by the state.

The Constitution forbids creating private educational institutions of the higher school; nevertheless, there is a number of foreign institutions in the country. In fact, private educational institutions exist, they are just training centers or faculties of foreign universities that function as non-accredited by the state.

At the same time, despite reducing the total amount of state funding, higher education in the EU countries is almost 80% financed by the public and state expenditures, about 6% is received from non-profit organizations and companies and only 12% of funds are paid as a tuition fee (Чепыжова, 2012). In some countries in Europe: Finland, Norway, Denmark, Sweden, and also Austria and Greece (a Bachelor's degree), the training at state institutions of the higher school remains free. In Greece, Spain, France, Portugal, Romania, Slovakia, etc., more than 90% of the state funds allocated for higher education go directly to the budget of educational institutions.

The peculiarity of the higher education in Greece is a difficulty in entering the majority of higher educational institutions for the Greeks. The competitive examinations are very difficult, and applicants, who did not manage to overcome this barrier, have no alternative in the form of education programs on a paid basis. Education, apart from giving knowledge, is aimed at enhancing the graduate's competitiveness on the labour market. It is easier for foreign applicants to enter a Greek higher educational institution. The main problem that foreign applicants face is a language barrier. All education programs in the country are in Greek except foreign languages departments. Many are attracted by the Greek education and its availability: it is free of charge (first and second higher education). However, the most persistent can bear the difficulties at the level of learning a language. That is way the percentage of foreign students at Greek higher educational institutions is small.

A small part of Greek students study abroad. Some of them receive state grants from the Ministry of Education and Religion and private charity foundations.

3.5. The Russian Federation

Nowadays Russia is one of the countries with the most developed education system based on the participation in education and on the education level of the population. At the same time, according to the current tendencies in the world, a country with such an education system should have a high living standard and low social and economic differentiation of the population. However, these statements cannot refer to Russia to the full extent.

In the Russian Federation, there are the following levels of education according to the federal law "On education in the Russian Federation":

- preschool education;
- elementary education;
- basic general education;
- secondary education;
- secondary professional education;
- higher education: Bachelor's program, Specialist's program, and Master's program;
- higher education: training of personnel of the higher qualification.

The education in Russia is carried out according to the Bologna Convention. The country joined the Bologna Convention on the unification of higher education in Europe in November 2003.

The Russian model of funding for education based on education levels significantly differs from the world tendencies: at the same share of expenditures on preschool education,

Russia allocates a quarter less funds for secondary education and one and half more for tertiary education. This can be explained by two factors: a shorter duration of secondary education, compared to the majority of developed countries and countries with a middle development level, and a record high scope of tertiary education.

The level of budgetary funding for higher education in Russia is rather low. The size of budgetary expenditures on education in Russia both in relation to GDP and in relation to state expenditures in general is below average values of the OECD countries. Expenditures on education in general constitute 3.5% of GDP and 12% of the total amount of budgetary expenditures in the Russian Federation. These indicators in the OECD countries are on average 5.6% and 12.9% respectively. In Russia, with the adoption of the federal law "On education in the Russian Federation" No. 273, a new approach to economic activity and financial provision in education was consolidated – to per capita funding.

The government of Russia accepted a policy of targeted support of state universities, which means funding for research and federal universities and search for a form of business of the property allowing educational institutions to react more quickly to the arising financial, economic and other problems.

Concentration of efforts is aimed at searching for points of growth, increase in self-sufficiency of higher educational institutions due to realization of scientific ideas and projects in the market, and aimed at new step of rapprochement with production. It should be noted that in the majority of the European countries targeted support of higher educational institutions has no broad application in education management, as it does not meet the principles of uniformity of budgetary funds distribution.

Since 2010, staff training within the state order (Римская, Кранбихлер, 2013) has been implemented in Russia, which is based on the expected demand of territorial subjects of the Russian Federation in specialists with higher education. Any citizen of Russia has an opportunity, after undergoing a competitive selection, to get professional education on a grant basis due to budgetary funding or on a commercial basis, having paid educational services by means of the funding provided by a future employer.

Referring to the fact that Russia invests funds for education that are not enough for intensification of education development and making education into the most important factor for economy, modernization negatively affects competiveness of the Russian education.

4. Funding Mechanisms

Funding mechanisms for education in the countries all over the world have common methods and principles:

- funding from budgetary and extrabudgetary funds;
- cofunding from educational institutions and enterprises, training centers, and private capital;
- ratio of budgetary, private, and commercial capital depends on political and economic situation in the country and in the world;
- search for new ways of funding for education is executed regardless of the country's position in the world's top list;
- education system reform;
- search for effective ways of development and functioning of the education system.

The analysis of the budgetary funding practice for education permits one to lead national variety of funding mechanisms to six budgetary techniques:

- according to the results of the negotiating process between authorized state bodies and higher educational institutions, when a budget project submitted by the higher educational institution is discussed;
- based on the estimation of the higher educational institutions expenditures for the previous period by authorized state bodies;
- according to the funding for higher educational institutions full of formulae, when authorized state bodies define the volume of funding by means of calculating formulae based on the indicators of expenditures or results of achievements of the higher educational institutions activity;
- based on contracts conclusion between higher educational institutions and authorized state bodies on providing educational services in accordance with the strategic aims of the country and certain higher educational institution;
- in compliance with contracts conclusion between higher educational institutions and authorized state bodies containing target indicators of specialists of different professions;
- targeted funding for specific research and educational projects of higher educational institutions.

During the last twenty years, in many countries there appeared a tendency of transferring from a "cost-intensive" funding model to the budgetary system aimed at getting results. Thus, majority of countries use two key methods: normative and program-targeted when planning budgetary expenditures.

The normative method is applied for planning expenditures on budgetary events. Norms are set by the law or bylaws and serve as foundations for drawing estimates of budgetary establishments.

Norms can be in the form of money terms of natural indicators that meet social needs. For example, the norm for nutrition per child at an education establishment per day.

Another form of norms are the norms of individual payments. Tariff schedules of employees labour payments of state-financed organizations can serve as an example.

The third group of norms are the norms of expenditures and consumptions of corresponding services in the form of physical indicators: energy, water, and other resources consumption limits.

Based on natural indicators and financial norms, budget estimates of expenditures are constituted. As practice shows, estimates can be individual (for separate organizations) and general (for groups of uniform organizations). Summary estimates are made according to credit managers. Estimates on centralized events are made up in accordance with uniform expenditures for a group of organizations.

The program-targeted method of budgetary planning is in system planning of budgetary funds allocation for implementation of the targeted programs approved by the law.

A targeted program is a complex document, whose purpose is the decision of a task that is a priority for this period. Depending on tasks complexity, financial and organizational technical capabilities, programs are accepted for a period from 2 up to 5-8 years, often for more than a 5-year term.

Determining necessary expenditures on each article of the economic classification with a help of a method of the direct account, by the direct expenditures determination,

which are necessary according to the established regulations, norms and other decisions determining the scales of activities and the sizes of expenditures corresponding to them in the conditions of the specific educational institution or a subsystem of education, becomes the basis for calculating the need for budgetary funding. Considering the provided approach in general, regardless of the education level and the considered features of educational institutions, it is possible to reveal the following features.

Calculating the need in budgetary funds is a laborious and complex work. Basic data for calculating the need in funding for educational institutions is the following:

- contingent of students, pupils, and alumni;
- salary system of employees;
- norms of social and material security of students, pupils, alumni, and employees of educational institutions;
- material resources of educational institutions: occupied spaces, devices and equipment used in the educational process, etc.

The program budgeting represents the methodology of planning, execution, and control of budget implementation providing interrelation of the allocating process of state expenditures with the results from programs implementation developed on the basis of the strategic objectives, taking into account priorities of the state policy, public importance of the expected, and end results of using budgetary funds. The main aim of the program budgeting is the increase in social and economic efficiency of budgetary expenditures.

The program budget is a reflection of financial provision of programs. It is not distribution on departments, but distribution according to programs. If earlier programs existed separately from the budget and portfolio management of department was exercised, so today control of programs is carried out. All annexes to the budget for expenditures have a program character.

Ideally, the structure of the program budget should be the simplest and correspond to information provision necessary for the analysis and adoption of effective budget solutions. It is connected with the fact that the main task of the program budgeting is ensuring strong communication between the strategic plans of the state and the state budget.

Thus, a program-targeted method is a method for solving large social and economic problems by means of development and implementation by bodies of state power and governing of the interconnected program measures directed towards solving tasks in various fields of social activity. Peculiar features of the program-targeted planning are: exact formulations and aims systematization (“a tree of the purposes and tasks”); implementable actions stipulated by the set objectives (a system of “aims implementing” actions); initial determination of means and resources for executing program actions; a system approach to program management and control of implementation of measures from governing bodies.

In general, almost in all countries implicitly expressed communication between the level of economic development of the country and shares of private expenditures on education is observed: the higher the country’s GDP level per capita, the lower in it is a share of private sources in funding for education. In other words, the state in developed countries spends more on education, than a less economically developed one, not only absolutely, but also relatively.

The established practice showed that in the conditions of a combination of the state and market approaches, it became obvious that insufficiency of the budgetary funds causes the objective necessity of increasing the efficiency of using the allocated public financial resource by state universities on the one hand, and more active attraction of means by them from extrabudgetary sources on the other one.

5. World Practice of Funding for Education

The practice of the organization of general education systems in various countries shows that regardless of the one that provides educational services in the sphere of the general education (private firms or state institutions), funding for general education by the state is executed in certain average sizes, in a certain share of GDP.

In developed countries, where population has an income to meet the demand for general education, which means that it is capable to pay for general education, participation of the state in funding for general education is determined by the created demand for education as for the component of the human potential. Moreover, public institutions, bearing a burden of expenditures, provide essential support in this process.

In the countries with the insufficient level of development, the state is forced to allocate funds for general education for other reasons. Firstly, the population, which has an income level that is not enough for full satisfaction of the urgent needs, cannot pay for general education. Secondly, in case of inability of the population to pay for general education, the state is faced by a prospect of degradation both social and economic, because of loss of the components of human capital (РУДН, 2015).

The third type of countries, the poorest, cannot fund for development of the general education system. In that case, the world community, by means of international organizations, gives financial assistance to these countries. At the same time, the larger size of funding from sponsors is received by the countries, which were more strongly affected by the economic and financial restrictions connected with a burden of an external debt. The second indispensable condition of the financial aid is availability of a political will and formal liabilities on development of general education in the countries of the recipient accepted at the highest political level. In the countries that receive financial aid, general education is performed by state institutions and is supported by the efforts of nongovernmental organizations.

In the countries of the European Union, education systems can differ; however, almost everywhere secondary education at public schools is free, but is closed for non-resident foreigners, and elite gymnasiums and private schools (boarding schools) are on a paid basis. Until 1980, education at the higher school of the Western European countries was almost free with rare exception. Besides, students in a number of the countries got the grants giving them a chance to compensate a part of the accommodation expenditures during their study. Since then, a number of changes in the sphere of funding for higher education took place. In the second half of the 1990s, these countries could be divided into three groups depending on the size of payment for higher education: free (Germany, Denmark, Finland, Norway, Greece, Sweden, and Austria), average (France), high (Switzerland, Belgium, Spain, Italy, the Netherlands, and Ireland). Higher education includes Bachelor's and Master's programs. A higher education diploma can be gained practically in any country.

Conclusions

The development of society and economy of any country is followed by an increase in effectiveness of the importance of funding for higher education with the budgetary expenditures. An effective system of state funding should conform to new tendencies and changes in education models.

As the analysis of practice of the majority of the countries shows, state participation in funding for the education levels reduces to the following:

- the budgetary funding for preschool education and pre-primary training of children for school. The possibility of getting additional education, developing creative capabilities of children, can be provided on a state and paid basis;
- the budgetary funding for general secondary education with a possibility of getting additional free and paid services at the desire of pupils and their parents. The existence of fee-based schools and gymnasiums is desirable; however, public schools should provide the education of this level according to the need of the population;
- the budgetary funding for secondary professional education as the most demanded in real economic conditions with a possibility to work in the market of private colleges;
- the budgetary and extrabudgetary funding for higher educational institutions with strengthening of the role of the extrabudgetary funding, and also functioning of a number of private higher educational institutions sufficient to meet the requirements of the population.

In conclusion, it should be noted that basic approaches and methods of funding for education change depending on the economic situation in the specific country. As the international practice shows, no system can be considered optimal among a variety of funding systems.

In the course of carrying out the analysis of the principles of funding for education according to the levels of the budget system of the countries, it is possible to draw the conclusion that there is no basic distinction between the countries, and the existing difference is determined mainly by the structure of the national budgetary system.

REFERENCES

Абанкина, И. В. и др. (2008). *Государственное финансирование высшего профессионального образования* (State funding for higher professional education). Москва: Издательский дом ГУ ВШЭ.

Вестник ВГУ. (2001). *Зарубежный опыт реформ в образовании. Аналитический обзор* (Foreign experience of reforms in education), Retrieved from: http://www.vestnik.vsu.ru/pdf/educ/2001/02/opyt_reform.pdf, Accessed on: 17 June 2016.

Мировой атлас данных (World atlas of data), Retrieved from: http://knoema.ru/atlas/topics, Accessed on: 11 May 2015.

Обзор состояния экономики Чехии (Overview of the economics status in the Czech Republic), Retrieved from: http://www.ved.gov.ru/exportcountries/cz/about_cz/eco_cz/, Accessed on: 21 February 2016.

Образование в Греции (Education in Greece). (2013). Retrieved from: http://peopleandcountries.com/article-1258-1.html, Accessed on: 14 April 2016.

Римская, О. Н., Кранбихлер, В. С. и др. (2013). Приоритеты и риски исполнения государственного задания на подготовку специалистов для современной экономики. (Priorities and risks of executing the state task for training of specialists for modern economics). *Вестник Науки Сибири, 1* (7), 195-201.

РУДН. (2015). *Финансирование высшего образования: зарубежный опыт и отечественная практика* (Funding for higher education: foreign experience and domestic practice), Retrieved from: http://www.ido.rudn.ru/rap/Publication.aspx?pubId=4304&rlid=9, Accessed on: 04 June 2016.

Система образования в Эстонии (Education system in Estonia), Retrieved from: http://restinworld.ru /stories/estonia/14107/1.html, Accessed on: 14 December 2015.

Ситерманн, Ж.-Р. (2008). Особенности финансирования образования во Франции (Features of funding for education in France). *Экономика Образования,* 2, 117-118.

Чепыжова, О. К. (2012). Государственное финансирование высшего образования: современные тенденции (Government support of higher education: new tendencies). *Вестник МГУПИ*, 39, 201-210.

About the Commonwealth of Independent States, Retrieved from: http://www.cisstat.com/eng/cis.htm, Accessed on: 15 June 2016.
OECD. (2014). *Education at a Glance 2014: OECD Indicators, OECD Publishing*, Retrieved from: http://oecdru.org/zip/eag-2014-sum-ru.pdf, Accessed on: 10 April 2016.
The world data at Knoema, Retrieved from: http://knoema.com, Accessed on: 12 May 2016.
UN Educational, Scientific and Cultural Organization. (2011). *The General Conference, 36th Session, Paris 2011*, Retrieved from: http://www.ifap.ru/pr/2012/n120123a.pdf, Accessed on: 17 December 2015.
UNESCO Institute for Statistics. (2015). *The International Standard Classification of Education (ISCED)*, Retrieved from: http://www.uis.unesco.org/Education/Documents/isced-f-detailed-field-descriptions-en.pdf, Accessed on: 11 May 2016.

KARAKTERISTIKE FINANSIRANJA VISOKOG OBRAZOVANJA U ZEMLJAMA EVROPE I U RUSKOJ FEDERACIJI U SVETLU REFORMI

Savremene reforme obrazovanja sprovedene u zemljama širom sveta su neminovno uticale na sistem upravljanja i finansiranja obrazovanja. Tendencija decentralizacije upravljanja obrazovanjem je najizraženija u mnogim zemljama. Međutim, državni budžet je i dalje odgovoran za finansiranje obrazovanja. Uzimajući u obzir nacionalne specifičnosti u oblasti finansija, postoje različiti pristupi i šeme. Kako međunarodno iskustvo pokazuje, država postepeno smanjuje svoje učešće u finansiranju visokog obrazovanja, uz istovremeno jačanje učešća vanbudžetskog finansiranja od strane preduzeća, javnih donatorskih organizacija, vladinih programa i samih učenika. Treba napomenuti da se osnovni pristupi i metode finansiranja obrazovanja razlikuju u zavisnosti od ekonomske situacije u određenoj zemlji.

Ključne reči: *reforme obrazovanja, decentralizacija upravljanja obrazovanjem, sistem međunarodnih indikatora finansiranja, udeo državnog učešća, jačanje vanbudžetskog finansiranja*

FACTA UNIVERSITATIS
Series: **Economics and Organization** Vol. 14, N° 2, 2017, pp. 155 - 162
DOI: 10.22190/FUEO1702155D

Preliminary Communication

APPLICATION OF THE MINCER EARNING FUNCTION IN ANALYZING GENDER PAY GAP IN SERBIA

UDC 331.5:305-055.2

Stojanka Dakić, Mirko Savić

University of Novi Sad, Faculty of Economics, Subotica

Abstract. *Better economic status of women in the labour market and reduction of gender pay gap is an important determinant of economic and social progress of the country. Gender pay gap is one of the key indicators of women's access to economic opportunities and undoubtedly one of the most constant features of the labour market. Failure to comply with the principle of equality and equal opportunities for women and men is considered a violation of basic human rights. As a result there are significant losses in the economy of countries such as loss of business and economic benefits, and insufficient use of available human resources. If there is no economic independence, all other measures taken to improve the position of women in society in general have much less success and influence. The aim of this paper is to determine whether there is a difference between men and women regarding wages. Mincer earnings function according to which individuals' earnings are function of the achieved level of education and work experience, served as the basis for analysis of the factors that determine the formation of wages. For the analysis we have used data collected by the survey EU-SILC in 2014 in Serbia. Regression model was built and confirmed the presence of the gender gap in earnings and the impact of gender on the formation of wages in the context that females earn less than males. Due to the inadequacy of the available data, the height of the gender gap in earnings has not been determined, nor its decomposition done.*

Key words: *gender pay gap, labour market, regression model, EU-SILC.*

JEL Classification: J01, J30, J71.

Received April 3, 2017 / Accepted May 10, 2017
Corresponding author: Stojanka Dakić
Faculty of Economics, Segedinski put 9-11, Subotica, Serbia
E-mail: stojankad@ef.uns.ac.rs

INTRODUCTION

An important determinant of economic and social progress is a good economic status of women in the labour market and the reduction or complete closing of the gender gap in earnings.

Economic independence is the key precondition which offers the possibility for both genders to make their own choices and have control over their life, and the main way to achieve it is through the acquisition of earnings.

Work legislation in most market economies today guarantees equal remuneration for work of equal value, but nevertheless, the presence of the gender gap in wages is more than obvious and common. Difference in earnings between men and women is one of the most common forms of discrimination in the labour market, in addition to discrimination in employment, professional advancement and others.

According to Samuelson and Nordhaus (1992) the phenomenon of discrimination is explained by differences in earnings arising from personal characteristics such as gender, race or religious affiliation.

Gender pay gap is usually a result of breaking the principle of equal pay for work of equal value, which is under the presumption that the same work operated by different genders requires the same level of responsibility, expertise, experience and readiness in the intellectual and physical sense.

Convention no. 100, adopted in 1951 by the International Labour Organization (ILO) strictly stipulates the prohibition of all forms of discriminatory behaviour in the provision of remuneration for work in terms of gender. This convention has been ratified in 2006 by more than 160 countries worldwide. It established the obligation of every state to establish such system (through legislation and/or collective agreements) to prevent any attempt of different remuneration of women and men for work of equal value. This principle is considered one of the most important international principles in the effort to establish gender equality worldwide.

1. LITERATURE REVIEW

The gender division of labour has a long tradition and contributes to the creation of the gap in earnings. Theoretical analysis of the origin of the gender gap payment is based on a combination of several theories (theories of labour market segmentation, theory of human capital, theory of competition, the idea of a dual labour market etc.). According to Blau and others (2000) there are three economic theories which can explain the causes of discrimination in the earnings. The first is the human capital theory that interprets differences in earnings as the differences in the level of education and level of experience of staff, then the theory of the reserve army of labour force and the theory of the division of the labour market on two sectors. According to Figart (1999) discrimination is the cause of unexplained components contained in the difference in pay between men and women.

Members of neoclassicism have found explanation of the gender pay gap in low levels of investment in human capital. On the other hand, members of feminist economic orientation have the thesis that the difference in earnings between the genders is the result of a number of non-market and institutional factors, as well as the segmentation of the labour market.

When it comes to the economic dimension of the gender gap expressed by differences in earnings, it can be said that the literature related to the Western Balkans is very scarce. There are only two studies that approach this problem from the aspect of comparative analysis between the countries of the Western Balkans, and also only a dozen studies that approach this problem from the aspect of the individual countries of the Western Balkans. There is also a paper which compares the gender gaps in earnings in Serbia, Macedonia and four other countries in the Eastern Europe and Central Asia (Kazakhstan, Moldova, Tajikistan and Ukraine) (Blunch, 2010).

Blunch and Sulla (2010) were focused on labour market transitions and wages in Serbia. They have examined the incidence and nature of the gender earnings gap in Serbia and five other former socialist countries from Eastern Europe and Central Asia.

There is only a small number of studies in the area of the Balkan countries with valuable results, partly due to the fact that most are based on scarce, low quality data. Lack of sophisticated data and available official statistics is still the problem for demystification of gender gap in the region. Gender gap in earnings is mainly expressed as a percentage of average female wage in the average male earnings. In case of Serbia and other Balkan countries, the average salary is not the best solution for the representation of the distribution because of its non-normality, for the most of the countries in the region that problem is solved by using the median as an indicator of earned wages.

Data relating to the labour market of Serbia and the majority of the countries in the region indicate that most of the female labour force is concentrated in the so-called "traditional" industries and these are industries in which the gender pay gap is significantly higher than the mentioned average, which contributes to the assertion that "average" gender pay gap is not the best indicator of economic inequality between women and men.

Krstic and Reilly (2000) applied the Blinder-Oaxaca decomposition model to the data of Labour Force Survey for the period 1995-1998 and this paper is considered as one of the earliest papers which included one of the countries from Western Balkans (found at Avlijaš et al., 2013). The study showed that the unadjusted gender pay gap (per hour) grew in this period (from 10.1% in 1995 to 14.8% in 1998), but this increase was not statistically significant. Explained part of the gender gap had a negative sign, and recorded a decrease of 0.6 percentage points in 1995 and -1.2 per cent in 1998. In other words, it meant that working women have better performance compared to working men in the labour market. Unexplained part of the gender gap has a positive sign and an upward trend, with 10.7% (1995) at 16.1% (1998).

Kecmanović and Barrett (2011) analysed the gender pay gap based on data from the Labour Force Survey Serbia for the period 2001-2005. "Basic" model included only the education, work experience and region as predictors, while "comprehensive" model in addition to basic predictors included the employment sector and type of ownership (found at Avlijaš et al., 2013). The analysis also used Blinder-Oaxaca decomposition complemented by quantile regression. The analysis showed that the average unadjusted gap narrowed in 2005 to 5.4%, compared to 2001 when it stood at 14.4%. At this level (in 2005) it was lower than the average gender gap in others Eastern and Western economies. Unexplained part of the gap also had a downward trend (from 17.2% in 2001 to 10.5% in 2005), indicating a reduced impact of discrimination during these years. Explained part of the gender gap has decreased in the same period. In all observed years, explained part of the gender gap was smaller at the upper end of the wage distribution, while the unexplained part of the gap was greater, indicating the presence of the glass ceiling effect, and that women on the upper ends of the distribution of earnings, on

average, even more qualified than men, suffer the effects of discrimination when it comes to earnings.

Several articles used quantile regressions or rather mean regressions to investigate the gender wage differential in transition countries (Adamchik and Bedi, 2000; Newell and Reilly, 2001; Falaris, 2004) and in particular on Serbian labour market (Krstić and Reilly, 2000; Lokshin and Jovanovic, 2003; Krstić et al. 2007; Ognjenović, 2009).

Reva (2012) dealt with the analysis of women in the labour market of Serbia (found at Avlijaš et all, 2013). The basis of the analysis was limited to application of Blinder-Oaxaca decomposition on monthly wages in order to explain the position of women in terms of employment, unemployment and the gender wage gap. The paper used Labour Force Survey data from April 2008 and October 2009.

Certainly the most comprehensive studies dealing with gender-based analysis of payments gap and comparative display between Serbia, Macedonia and Montenegro, is the project "Gender pay gap in the Western Balkans: located in Serbia, Montenegro and Macedonia ", implemented in 2012, based on data from the Labour force Survey for the period 2008 to 2011. Research team has measured the extent and characteristics of the gender gap payments for all three countries individually and performed a comparative analysis of trends observed gender pay gap between three countries. The analysis included the change of gender payment gap due to the economic crisis. Blinder-Oaxaca decomposition was applied to the Mincer's regression of wages, but also Heckman's model of selection that indicates the self-selection effects on childbearing payments gap.

Rokicka and Ruzik (2010) in their works dealt with the analysis of the gender wage gap in the informal economy. The specificity of this sector, which is reflected in the absence of the prescribed minimum wages, working conditions and working hours, significantly and negatively influences the position of employed women. Gander pay gap according to research by these authors was particularly evident at the bottom of the wage distribution.

2. THE METHODOLOGICAL FRAMEWORK OF THE RESEARCH

For the purposes of modelling, we have used using data collected through the Survey on Income and Living Conditions – EU-SILC for 2014. This is the most relevant instrument to monitor poverty, inequality, social inclusion and living standards.

EU-SILC survey includes information on the territory of the Republic of Serbia as a whole and individually relevant data for each region at the NUTS (Nomenclature of Territorial Units for Statistics) 2 level (Belgrade, Vojvodina region, region of Šumadija and Western Serbia and the region of Southern and Eastern Serbia). Data relating to the region of Kosovo and Metochia were not available.

The basic sample framework consists of all households and all persons on the territory of the Republic of Serbia, except persons living in collective households and homeless people. The survey included a stratified, rotating and panel sample without replacement. The sample stratification was done according to the type of settlement and the territory at the level of NUTS 2.

The questionnaire included data on admission and economic activities of all household members in the sample who were 15 or more years old until the date December 31th, 2013. In total there was 17187 persons: 8280 men and 8907 women.

The Mincer earnings function according to which individuals' earnings are the function of the achieved level of education and work experience, served as the basis for analysis of the factors that determine the formation of wages and verify the thesis that gender is a statistically significant variable affecting the variation in net earnings (logarithmic value) as the dependent variable. According to the theory of human capital, education is a process analogous to investment in physical capital. See Mincer (1974), Mincer, J., Polachek, S. (1974), Mincer, J., Polachek, S. (1978), Heckman et al. (2006), and Lemieux (2006) for background information on The Mincer earning function.

Form of earnings as a function of human capital is presented as follows:

$$lny=\beta_0+\beta_1 s+\beta_2 x+\beta_3 x^2+u \quad (1)$$

y – monthly earning of an employee in their main job
s – level of education
x – years of experience in paid jobs
u – random error of regression representing unexplained factors of earnings.

In this way, presented form of earnings equation was extended with set of additional variables such as gender, ownership of companies in which the individual is employed, hours worked per week and the age of the employee (see Table 1).

The analysis included 1891 people and list of variables is presented in Table 1. Variables such as sectors of activity in which respondents work and occupation were excluded from the analysis because of incomplete data.

Table 1 List of variables used in the model

Name of variable	Coding
Dependent variable	
The logarithmic value of the net monthly salary of the employee	
Independent variables	
Gender	Female = 1
	Male = 0
Age	Ratio
Highest education: secondary education	Secondary education = 1
	Else = 0
Highest education: tertiary education	Tertiary education = 1
	Else = 0
Years of working experience	Ratio
Person is employed by public sector	Public sector = 1
	Others = 0
Person is employed by private sector	Private sector = 1
	Others = 0
Hours of work during the week	Ratio

Source: Authors.

The survey data used in in this study were not adequate for determining the size of the gender gap in earnings because the large number of respondents did not provide the information about the wage size. Therefore only the existence of gender pay gap could have been analysed. Problems related to the collection of data relevant for insight into the gender differences on the labour market and insight into the existing structure of the

workforce is enormous obstacle for research endeavours dealing with this issue in most of the Balkan countries.

Regression model was estimated by the method of least squares. Individuals with extremely low or high earnings were excluded from the analysis. Preliminary analysis was conducted in order to satisfy the assumptions of linearity and normality, and absence of autocorrelation, multicollinearity and heteroscedasticity. From the analysis are excluded variables such as tertiary education (none of the respondents who gave information on the monthly earnings belonged to this category), private property company in which the employee is subject and work experience variables measured in years (due to the demonstrated multicollinearity).

3. RESULTS

The regression model which represents the influence of selected variables on formation of net earnings is presented in Table 2.

Dependent variable: Logarithm of net earnings

Table 2 Regression model

Independent variables	Coefficient	Standardized Coefficients (Beta)	p-value
Constant	4.315		0.000
Gender	-0.068	-0.21	0.000
Age	0.001	0.10	0.000
Secondary education	0.052	0.12	0.000
Employed by the company in public ownership	0.085	0.26	0.000
Hours worked per week	0.001	0.09	0.000
The mean value of the dependent variable	4.456	R^2	0.154
The standard deviation of the dependent variable	0.158	Adjusted R^2	0.152
Sum of squared residuals	40.142	$F_{(6,1885)}$	68.826
The standard error of regression	0.146	p-value (F)	0.000
Durbin-Watson		1.768	

Source: Author's calculation.

The coefficient of determination (R^2) whose role is to point out how much of the variance of the dependent variable (the logarithmic value of net earnings) explains the model is 0.154 or 15.4%. Adjusted coefficient of determination (Adjusted R Square) is 0.152, or 15.2%. It provides the better assessment of the actual value of the coefficient of determination in the population. Low coefficient of determination indicates the importance of other, non-economic factors. According to ANOVA, the model is statistically significant ($F_{(6,1885)} = 68.826$; $p < 0.005$).

The highest standardized coefficient beta is related to the variable *employed by the company in public ownership* (0.26) and variable *gender* (-0.21), which means that these variables are the largest contributors to explanation of the variation in the dependent variable (the logarithmic value of net earnings), when subtracting the variance explained by other variables in the model.

What is important to indicate is that the standardized regression coefficient on the variable gender is negative (-0.068), which indicates that the females earn less than males in Serbia. All other statistically significant predictor variables included in the model have a positive sign, which brings us to the conclusion that they have positive influence on the dependent variable.

CONCLUSION

Regression analysis has confirmed the presence of the gender pay gap and the impact of gender on the formation of wages in the context that females earn less than males. Due to the inadequacy of the available data and the inability to obtain relevant results, it was not possible to determine the height of gender gap in earnings, nor its decomposition.

Removing barriers in the way of closing the gender gap in the labour market and the establishment of equality between the genders is a perpetual struggle that requires above all a change of consciousness of public opinion and their attitudes.

For better understanding of the nature of gender pay gap it is necessary to examine the connection that gander pay gap has with systemic discrimination. Namely, it is necessary to explore whether the differences in the level of fees between genders for work of equal value, exist. If the statistics indicate the presence of differences in the amounts of wages for performing the same or two different jobs of equal value, the employer has to prove that this difference in fees is not due to gender discrimination. The fact is that the unadjusted gender gap in earnings in Western Balkan countries is lower than in Western countries and it is a consequence of the low representation of women (especially those with low skills) in the labour market in these countries. In other words, the higher the gap in employment, the lower unadjusted wage gap, and vice versa, as a rule, the biggest gap in employment occurs among those with the lowest qualifications. When more women with low qualifications enter the labour market, we can expect that the unadjusted pay gap will increase.

Women with low qualifications are absent from the labour market due to significantly low opportunity costs. In other words, it is economically unprofitable for them to be employed when low salaries or in many cases minimum wage cannot adequately compensate for the cost of running the household. The reasons for low opportunity costs should be sought, and also the influence of remittances from foreign countries in many cases. The main obstacle for more comprehensive analysis of phenomena is the lack of reliable and representative data, not only in Serbia but also in the other countries of the Balkan region.

REFERENCES

Adamchik, V.A. & Bedi, A.S. (2000). Wage differentials between the public and the private sectors: Evidence from an economy in transition. *Labour Economics* 7(2), 203-224.

Avlijaš, S., Ivanović, N., Vladisavljević, M., Vujić, S. (2013).*Gender Pay Gap in Western Balkan Countries: evidence from Serbia, Montenegro and Macedonia*. Beograd: FREN.

Blunch, N. H. (2010). The *Gender Earnings Gap Revisited: A Comparative Study for Serbia and Five Countries in Eastern Europe and Central Asia*. Background paper commissioned by the World Bank's Poverty Reduction and Economic Management Unit, Europe and Central Asia Region Department.

Blunch & Sulla (2010). *The Financial Crisis, Labor Market Transitions and Earnings Growth: A Gendered Panel Data Analysis for Serbia*. Background Paper, Poverty Reduction and Economic Management Unit, Europe and Central Asia Region Department, Washington, DC: World Bank.

Blau, F. D & Kahn, L. M. (2000). Gender Differences in Pay. *Journal of Economic Perspectives* 14(4), 75-99.
Falaris, M.E. (2004). Public and private sector wages in Bulgaria. *Journal of Comparative Economics* 32, 56–72.
Heckman, J. J., L. J. Lochner, & P. E. Todd (2006). *Earnings Functions, Rates of Return and Treatment Effects: The Mincer Equation and Beyond in Handbook of the Economics of Education*, ed. by E. A. Hanushek and F. Welch, New York: Elsevier, 307–458.
Lemieux, T. (2006). *The "Mincer Equation" Thirty Years after Schooling, Experience, and Earnings*, in Jacob Mincer: A Pioneer of Modern Labor Economics, ed. by S. Grossbard, New York, NY: Springer, chap. 11, 127–145.
Kecmanović, M. & Barrett, G. (2011). The Gender Wage Gap during Serbia's Transition. *Comparative Economic Studies* 53, 695–720.
Krstić, G. & Reilly, B. (2000). The gender pay gap in the Federal Republic of Yugoslavia. *Economic Thought* 33, 191–213.
Krstić, G., Litchfield, J. & Reilly, B. (2007). An anatomy of male labour market earnings inequality in Serbia 1996-2003. *Economic Systems* 31, 97-114.
Lokshin, M. & Jovanović, B. (2003). Wage differentials and state-private sector employment choice in Yugoslavia. *Economics of Transition* 11, 463-491.
Newell, A. & Reilly, B. (2001). The gender pay gap in the transition from communism: Some empirical evidence. *Economic Systems* 25(4), 287-304.
Mincer, J. (1974). *Schooling, Experience and Earnings*. New York: Columbia University Press.
Mincer, J. & Polachek, S. (1974) Family investments in human capital: Earnings of women, Journal of Political Economy, 82(2), pp. 76-108.
Mincer, J. & Polachek, S. (1978) Women's earnings re-examined, *The Journal of Human Resources* 13(1), pp.118-134.
Ognjenović, K. (2009). *Quantile regression analysis of female earnings in the private and public sectors in Serbia: Some evidence from survey data*. Belgrade: Mimeo.
Reva, A. (2012). *Gender Inequality in the Labor Market in Serbia* (Poverty Reduction and Economic Management Unit, Europe and Central Asia Region Department Policy Research Working Paper No. 6008). Washington, DC: World Bank.
Rokicka, M. & Ruzik, A. (2010). *The Gender Pay Gap in Informal Employment in Poland (CASE Network Studies and Analyses No. 406)*. Warsaw: Center for Social and Economic Research. Retrieved March 30, 2012. from http://www.caseresearch.eu/sites/default/files/publications/30664403_CNSA_406_0.pdf

PRIMENA MINSEROVE REGRESIJE ZARADA U ANALIZI RODNOG PLATNOG JAZA U SRBIJI

Značajna odrednica ekonomskog i društvenog progresa jeste dobar ekonomski status žena na tržištu rada i redukcija ili potpuno zatvaranje rodnog jaza u zaradama. Rodni jaz u zaradama predstavlja jedan od najvažnijih indikatora koji ukazuje na stepen pristupa žena ekonomskim mogućnostima i njegovo prisustvo svrstava se u najpostojanije osobine tržišta rada. Kršenje principa jednakosti i jednakih mogućnosti za žene i muškarce smatra se kršenjem osnovnih ljudskih prava pojedinca. Kao rezultat toga proizilaze značajni gubici u ekonomiji zemalja poput poslovnih gubitaka i propuštene ekonomske dobiti uzrokovane nepotpunom iskorišćenošću raspoložive radne snage. Ukoliko nema ekonomske samostalnosti, sve druge mere koje se preduzimaju radi poboljšanja položaja žena u društvu uopšte, imaju mnogo manje uspeha i uticaja. Cilj ovog rada je da odredi da li su prisutne razlike u zaradama između muškaraca i žena. Minserova jednačina zarada prema kojoj je zarada pojedinaca funkcija dostignutog nivoa obrazovanja i radnog iskustva, poslužila je kao polazna osnova za analizu faktora koji određuju formiranje zarada i proveru teze da je pol statistički značajna varijabla koja utiče na varijacije neto zarada kao zavisne promenljive. Analiza je izvršena nad podacima prikupljenim putem Ankete EU-SILC za područje Srbije u 2014. godini. Izgrađen je regresioni model koji je potvrdio prisustvo rodnog jaza u zaradama i uticaj pola na formiranje zarada u kontekstu da ženski pol zarađuje manje u odnosu na muški. Usled neadekvatnosti raspoloživih podataka nije utvrđena visina rodnog jaza u zaradama, niti je vršena njegova dekompozicija.

Ključne reči: *rodni jaz u zaradama, tržište rada, regresioni model, EU-SILC.*

FACTA UNIVERSITATIS
Series: **Economics and Organization** Vol. 14, N° 2, 2017, pp. 163 - 173
DOI: 10.22190/FUEO1702163A

Review Paper

CREATIVE CASH FLOW REPORTING

UDC 006.44:657.2
336.146

Aleksandra Arsenijević*, Tadija Đukić

University of Niš, Faculty of Economics, Niš, Serbia

Abstract. *Financial statements should realistically show financial position, performance, and cash flows of a company. Creative financial reporting represents a deliberate manipulation of information in financial statements in order to create misperceptions on company operations. Creative financial statements are primarily intended for investors, in order to encourage them to purchase company shares and thus increase its market value. Creativity in compiling cash flow statements lies in presentation of operating activities as investing and financing activities, and vice versa.*

Key words: *creative accounting, cash flow statement, operating activities, investing activities, financing activities*

JEL Classification: M41, M42

INTRODUCTION

"As a social science, accounting is the product of its environment" (Saudagaran, 2009, 1). Changing economic circumstances in which reporting entities do business, primarily the global movement of capital, emergence of new forms of funding, and development of new technological and communication devices, created the need for further development of accounting standards. Economic globalization and the creation of global financial market significantly increased the possibility of creativity in financial reporting. Practice shows that creativity of accountants is now much higher than in the past. Particularly as a result of this creativity, credibility of financial statements and accountants themselves

Received April 5, 2017 / Accepted May 10, 2017
Corresponding author: Aleksandra Arsenijević
*PhD Student
University of Niš, Faculty of Economics, Niš, Serbia
E-mail: arsenijeviceva@yahoo.com

decreased. In order to make reliable and timely business decisions in today's business environment, the focus is on sound financial reporting.

The importance of cash flow statement arises from its connection with other financial statements, which allow management, as internal users, as well as external users, to gain complete insight into company's liquidity and solvency. Defining new amendments to standards referring to the area of cash flows has become a necessity, because it is necessary to provide additional assurance regarding the quality of cash flow reporting. The paper points to creative financial reporting, the importance of information on company cash flows, the impact of creative cash flow reporting on the presentation power of financial statements, and amendments to the current IAS 7.

1. CREATIVE FINANCIAL REPORTING

Financial statements are an indispensable source of information for making business decisions. However, for high-quality financial reporting, "a good normative basis is a necessary, but not sufficient condition" (Škarić-Jovanović, 2007, 52). Company management, "the only present stakeholder with control over the creation of financial statements" (Stevanović & Malinić, 2009, 63), is responsible for adequate implementation of the prescribed standards when preparing and disclosing financial statements. Recognizing the separation of company ownership and management, on the one hand, and development of financial markets, on the other hand, motivated some managers to use financial statements to obtain significant benefits for the company and for themselves.

"Creative financial reporting involves intentional, premeditated manipulation of information in financial statements in order to create misperceptions about the company's financial position and performance, and deceive certain stakeholders, particularly investors" (Malinić, 2009a, 140). Creative accounting practices in financial reporting are seen as "the art of faking the balance sheet" (Bertolus), "the art of calculating the balance sheet" (Lignon), "the art of presenting the balance sheet" (Gounin), and, finally, "the art of saving money" (Ledouble) (Tassadaq & Malik, 2015, 544).

"The complexity of business and financial life of the company, inability to develop perfect accounting rules for each specific situation, and existence of accounting options in order to elegantly solve reporting problems at the same time open up significant maneuver room for the creation of financial statements that may significantly deviate from economic reality" (Malinić, 2009b, 138). Each financial accounting activity, taken to create an image that is different from the real situation, can be classified as creative accounting. There are no clearly defined boundaries of permissible and impermissible activities and it is not defined which creative accounting act made by accountants exceeds flexibility of accounting regulations and turns into crime (Đukić & Pavlović, 2014, 226). Application of accounting rules in a way that is contrary to their spirit, or refusal to apply them represents the creative accounting decision that separates it from the financial reporting policy. Even though its targets are close to creative accounting ones, financial reporting realizes them only by using the space provided by standards offered (Škarić-Jovanović, 2007, 54). "Creative accounting is neither legal nor illegal, only the maximum use of it pushes a company in scandals" (Tassadaq & Malik, 2015, 550).

Creative accounting and its, unfortunately, widespread use in practice "does not have any positive connotation" (Malinić, 2009b, 138). The effects of creative accounting negatively affect investors and the company, accountants, as well as the national economy, which suffers damages based on capital market instability and the financial system as a whole. "A large number of stakeholders, such as investors, creditors, regulators, and labor, have learnt lessons from the crisis caused by the collapse of "Enron" and "WorldCom" companies in 2002" (Gherai & Balaciu, 2011). Creative financial reporting seriously threatens the use value of financial statements. It is self-evident that direct use of information contained in creatively prepared financial statements (for example, on profit, value of inventories, receivables, amount of liabilities, debt, etc.) is very risky, especially for external stakeholders (Malinić, 2009a, 156). One of the ways to overcome information asymmetry caused by creative financial reporting could be in broader and more reliable disclosures. "Disclosures regarding significant events that have affected business performance, ... are essential for the assessment of management's tendencies towards disclosure of specific accounting policies" (Denčić-Mihajlov & Spasić, 2016, 29). In the case of transition economies mandatory disclosures are often not able to prevent harmful creative accounting. For example, "low level of disclosure quality of Serbian companies could be attributed to ineffectiveness in the functions of internal and external auditors and poor corporate governance" (Spasić & Denčić-Mihajlov, 2014, 104). In that sense, users of financial statements should pay special attention to creative reporting issues.

"Using creative accounting always means giving priority to short-term objectives of management in relation to long-term goals of the company" (Škarić-Jovanović, 2007, 69). In today's dynamic business conditions, ethical behavior of accountants is a way to save the company from scandal and fraud. "It is clear that even the best designed programs and mechanisms cannot provide a guarantee that abuse will not occur, so internal audit is a function of which much is expected on this issue" (Đorđević & Đukić, 2015, 307). However, internal audit is not the only mechanism that can be used for this purpose. Internal control and external audit should also have significant roles in this process.

2. Importance of Cash Flow Statements in Financial Reporting

Cash flow statement is a financial report, whose task is to follow the money that goes in and out of the company. If information in this report connects adequately with information from other financial statements, it will provide management, as internal users, as well as external users, complete insight into company's liquidity and solvency.

Management uses this information when making series of business decisions and evaluating performance in the fields of achieving objectives, liquidity, dividend policy, then when reviewing results of operating, investing, and financing activities, and to determine contribution of each of these activities to business performance. Specifically, cash flow statement is an instrument that shows managers how changes in the balance sheet and income statement impact on cash. It also allows management, in the definition of the business policy, to recognize the main directions of its business activities and thus ensure maximum business success.

For external users, information in cash flow statement is critical for analyzing companies in terms of evaluating operating performance, liquidity, and solvency of the company.

Investors, creditors, government, and other interested users thus gain insight into the company profitability, its debt, and carry out risk assessment of cooperation with it.

"This statement, in most general terms, provides information to interested parties about where cash during the reporting period comes from, how cash is used during the reporting period, and what changes in cash occurred at the end compared to the beginning of the period" (Kimmel, Weygandt & Kieso, 2011, 15). "Cash flow statement explains what in the reporting period affected cash balance shown in the balance sheet at the beginning of the reporting period in order to come to a new cash balance at the end of the accounting period" (Libby, Libby & Daniel, 2011, 638).

3. Correlation between Cash Flow Statement and Other Financial Statements in Creative Financial Reporting

"Creative cash flow reporting is related to any step in order to create a different image than the actual cash flows, and in that way providing the wrong signal about the ability of the company to generate sustainable cash flows" (Mulford & Comiskey, 2005). There are accountants who are willing to take advantage of the flexibility offered by certain IAS in order to increase the amount of cash flows presented primarily from operating activities. Since operating activities include all activities from the main area of company's business, "sustainability of total cash flows depends directly on sustainability of cash flows from operating activities" (Đukić & Pavlović, 2014, 227). Therefore, despite the fact that creative activities increase net cash flow from operating activities, they, actually, "do not increase sustainable cash flows because it is a one-time increase" (Đukić & Pavlović, 2014, 230), which will not be repeated next year.

Creative alterations and amendments to cash flow statement are made to attract potential investors, for ease of obtaining favorable loans, and growth of share prices on the stock exchange. "They can comprise a wide range of legal and illegal management procedures" (Petrova, 2008, 24). There are two basic ways to creatively adjust operating activities in cash flow statement:

- Increase in cash inflow from operating activities, and
- Decrease in cash outflow from operating activities.

On the one hand, by expanding the definition of what makes inflows from operating activities and narrowing of what belongs to inflow from investing and financing activities, and, on the other hand, narrowing the definition of what makes outflows from operating activities and expanding what belongs to outflows from investing and financing activities, "the company wants to show itself as more successful" (Jones, 2011, 61) to their stakeholders.

Accounting theory and practice recognize the following methods to manipulate cash flow statement (Schilit & Perler, 2010, 190):

- Transferring cash inflow from financing activities to inflow from operating activities,
- Transferring cash outflow from operating activities to outflow from investing activities,
- Increase in cash flow from operating activities using acquisition of part or all of the company, and
- Increase in cash flow from operating activities using the additional "ancillary" activities.

Professional accountants know that, when expressing their creativity in preparing and presenting financial statements, they need to look at the interplay of financial statement items that make the annual statement. Specifically, change of a specific item of cash flow statement is caused by changes of certain items in income statement and/or balance sheet.

3.1. Correlation between income statement and cash flow statement in creative financial reporting

It must be borne in mind that any manipulation on income and expenses directly or indirectly affects cash inflows and outflows. Time mismatch between income and expense recognition transactions, on the one hand, and collection of receivables from customers and payment of liabilities to suppliers and creditors, on the other hand, can lead to a dilemma regarding classification of cash flows.

Generally, manipulation that links these two statements is reduced to increasing income and reducing expenses. In order to minimize doubts about the presented financial statements, managers carry out the so-called double manipulation, which includes artificial increase in sales revenue with an increased inflow from operating activities. However, "a large number of controllers who detect unrealistic increase in sales revenue neglect this fact, so that this kind of manipulation often does not get noticed" (Dimitrijević, 2015, 145).

IFRS provide opportunities for businesses to capitalize on certain business expenses or present them as an expense when incurred. One of the most common manipulations that connects income statement and cash flow statement is capitalization of costs from the group of operating costs. This operation can reduce expenses and improve business results. However, "a large number of companies forget that it burdens cash flows, which may result in a negatively expressed cash flow" (Dimitrijević, 2015, 147). When operating expenses are viewed as a cost, they reduce net result, and, consequently, net cash flow from operating activities. Their capitalization exempts them from expenses in income statement and they are presented as outflows from investing activities in cash flow statement. In this way, accountants achieve the objective of not reducing net cash flow from operating activities. It should be borne in mind that "effects of capitalization on cash flows from operating activities are especially evident when a company changes its capitalization policy" (Đukić & Pavlović, 2014, 232).

Period costs are capitalized to show better results, i.e. they are included in the value of assets belonging to fixed assets, so that they do not represent period costs. They are shown as costs at the time when those particular fixed assets are depreciated, so they are written off successively over several future periods. Most often capitalization applies when it comes to: marketing costs (according to IAS 38 - Intangible Assets), research and development costs (according to IAS 38 – Intangible assets), direct costs incurred prior to starting the plant (according to IAS 16 – Property, plant, and equipment), maintenance and repair costs (according to IAS 16 – Property, plant, and equipment), interest on loans used to purchase fixed assets (according to IAS 23 – Borrowing costs), and cost of software development (according to IAS 38 – Intangible assets) (Đukić & Pavlović, 2014, 231-232).

Costs incurred during the purchase of materials or goods by their nature cannot be part of cash flows from investing activities. Their goal determines classification of cash outflows as a component of operating activities (Stevanović, Belopavlović & Lazarević-Moravčević, 2013, 34). Treatment of certain current assets as a segment of fixed assets, i.e. of cash

outflow for their purchase as outflow from investing activities, rather than presenting them as outflow from operating activities, leads to overestimation of net operating cash flow.

Companies of equal capital intensity can report on a different net cash flow from operating activities in the event that a company procures equipment on the basis of business lease, and a second company buys the same equipment. The company that leases equipment presents leasing costs as outflow from operating activities, while the company that buys equipment sees purchase costs as capital expenditure, and classifies them into cash outflow from investing activities (White, Sondhi & Fried, 2003). "Misrepresentation of outflows for leasing as investment and its exclusion from the group of operating cash flows would lead to overestimation of cash flows from operating activities" (Stevanović, Belopavlović & Lazarević-Moravčević, 2013, 35).

Another well-known example comes from the company "WorldCom", which committed one of the biggest frauds in financial statements in history. "WorldCom" presented its operating expenses as the purchase of fixed assets, and classified them in the cash flow statement as outflows from investing activities, rather than operating activities. In this way, "WorldCom" reclassified over 5 billion dollars in cash outflows during 2000 and 2001 from operating into investing activities (Beresford, Katzenbach & Rogers, 2003). Also known is the case of "Health South", which capitalized costs of sponsoring hockey team from Pennsylvania as costs of advertising in daily newspapers (Đukić & Pavlović, 2014, 231-232).

3.2. Correlation between balance sheet and cash flow statement in creative financial reporting

Manipulation of assets and liabilities in the balance sheet and cash flow in cash flow statement is "harder to detect and prevent in relation to manipulation with income and expenses in the income statement" (Dimitrijević, 2015, 137). The most common forms of manipulation that connect balance sheet and cash flow statement are: sale of receivables before the deadline, collection of fraudulent receivables from customers, accelerating the pace of debt collection, use of bank loans, "boomerang" transactions, reclassification of cash flows from operations with securities, slowing the pace of payment of liabilities, reducing the volume of inventory purchase, use of inflow from acquisition of all or part of the company.

When selling receivables, usually to a bank, the company pays a commission to reduce the amount of receivables sold. This type of sale is seen as cash inflow from financing activities. However, companies usually define this inflow as inflow from operating activities because they result from the sale of receivables resulting from goods supplied and services rendered. A characteristic example (SEC Report, 2007) for this type of manipulation is related to the US pharmaceutical distributor "Cardinal Health". This company had a problem with a lack of money, so it decided to sell a certain number of receivables on the basis of which it accumulated over 800 million dollars. The subject sale increased inflow from operating activities during 2004, which, compared to the previous year, was an increase of 971 million dollars. In this way, the company transferred inflows from the future into the present period, and thereby reduced future cash inflows from operating activities. "It is, therefore, important to, when analyzing inflow from operating activities, notice a sharp rise, and consider not only the amount of increase, but also the reason that led to this increase" (Dimitrijević, 2015, 146).

Another way to increase inflow from operating activities in the current period is through collection of false receivables from customers. Studies (Ketz, 2004) know of an instance of an American company "Peregrine Systems", which presented false income in the income statement, as well as false accounts receivable in the balance sheet (based on which it allegedly realized this income). At the same time, the company sold these non-existing accounts receivable, thereby increasing its inflows in the cash flow statement. Bank purchased these receivables, but the risk of collection or non-collection of those debts was taken by "Peregrine Systems". From an economic standpoint, it was a bank loan, because "Peregrine Systems" received the subject cash flow from the bank with collateral in the form of false receivables. Therefore, this cash inflow should be shown as inflow from financing activities, rather than as a cash inflow from operating activities.

There is also the possibility of time matching of fictitious purchase of equipment and fictitious receivables from existing customers (Mulford & Comiskey, 2005). Purchase of new equipment is presented in cash flow statement as outflow from investing activities, and an increase of receivables from the sale of products and provision of services as an increase in inflow from operating activities. Fictional inflow from operating activities and fictitious outflow from investing activities can be deliberately the same so the aforementioned transactions have no impact on the cash balance at the end of the period, but result in overestimation of net operating cash flow (Stevanović, Belopavlović & Lazarević-Moravčević, 2013, 32).

Presenting increased cash inflow from operating activities on the basis of regular bank loans is another in a series of cash flow manipulations. The American company "Delphi Corporation" in the fourth quarter of 2000 had a negative net cash flow from operating activities. In December of the same year, "Delphi Corporation" offered to the "Bank One" shares worth 200 million dollars for sale. The bank refused this offer, so "Delphi Corporation" offered the bank to purchase these inventories, and "sell" it to them again in a few weeks. In return, "Delphi Corporation" paid a certain amount to the bank, determined based on the sales value of inventories. In essence, this was a classic short-term bank loan. This method of lending in the cash flow statement should be recorded as an increase in cash flows from financing activities, and in the balance sheet as a liability to the bank. However, "Delphi Corporation" presented this loan as a classic sale of inventories to the bank, which increased its sales revenue in the income statement and cash inflows from operating activities in cash flow statement by 200 million dollars. In this way, "Delphi Corporation" presented in a 2000 cash flow statement a total of 268 million dollars of inflow from operating activities, of which only 68 million was real (SEC Report, 2006).

Overdraft is seen as a short-term bank loan, where cash inflow based on the use of overdraft and cash outflow related to interest payment, as price for the use of overdraft, are seen as cash flow from financing activities. A situation where overdraft is shown as inflow from operating activities in cash flow statement could lead to increasing net cash flow from operating activities.

By accelerating the pace of collection of receivables from customers, or through collection of receivables before deadline, the company can improve its cash flow. The American company "EDS" negotiated with their customers, and collected receivables in the amount of 200 million dollars, which were due in two years. In this way, in the current year, the company presented a sudden jump in cash flows. "From an economic point of view, higher collection of accounts receivable is certainly a good indicator. However, one should always be cautious in making conclusions, and investigate whether rapid collection

is the result of successful business, or a form of fraud" (Dimitrijević, 2015, 148). The fact is that inflow provided in this way is the real source of funding provided by customers. Based on this, one can conclude that these cash flows should be presented as financing activities in cash flow statement. Nevertheless, these cash flows can also be viewed as cash inflows from operating activities, which is explained by the fact that the company has delivered or will deliver (if it comes to paying invoices prior to the delivery) products or services to customers.

Higher cash flows from operating activities can also be achieved through "boomerang" transactions (Dimitrijević, 2015, 146). These transactions mean that the company sells its products to other companies, but, at the same time, purchases a variety of products from these companies in the same amount. The impact of these transactions on cash flows is as follows: the company presents product sale as cash inflow from operating activities, while the purchase of goods is presented as outflow from investing activities. This brings double "benefits": reduced outflows and increased inflows from operating activities.

Under IAS 39, securities are classified as securities held for trading, securities available for sale, and securities held to maturity. However, there are no strict rules for the classification of securities. This flexibility allows accountants to, if necessary, reclassify cash flows by activities. If, for example, one invests in the purchase of short-term bonds, cash outflow for this transaction belongs to a group of investing activities. Purchased short-term bonds can be placed in a group of securities held for trading, aimed at exploitation of short-term price fluctuations of these securities. Cash inflows from sale of thus classified short-term bonds belong to a group of operating activities. This reduces net cash flow from investing activities (at the time of their purchase), and increases net cash flow from operating activities (at the time of their sale). The situation is different if the company's main activity is bond trading, i.e. if it is a financial institution. In this case, these activities should be classified as operating activities, otherwise such classification of cash flows should not be made. The reason, first of all, lies in the fact that this is not a sustainable cash flow, but inflow that appears only once (when sale transaction is made) (Đukić & Pavlović, 2014, 230-231).

Rise in cash flows from operating activities based on the slowdown of payment of obligations or delays in cash outflow intended for the settlement of liabilities is considered one of the easiest techniques to manipulate cash flows. For example, liabilities of December of the current year are postponed for January next year, and thus cash flow statement for the current fiscal year presents lower cash outflows. It is important to note that, in this way, managers achieve short-term goals, because liabilities cannot be postponed for an indefinite period of time.

Another way to increase cash flow from operating activities is to reduce the volume of inventory purchase. The company "The Home Depot Inc." in 2001 reduced orders from its suppliers, and purchased fewer inventories than in the past per each store, i.e. the company changed the pace of inventory purchase. In this way, the company reduced cash outflows for the purchase of inventories from 1.1 billion dollars in 2000 to as much as 166 million dollars in 2001 (Grow, 2007).

Acquisition improves cash flows of the acquiring company. In the event that the target company is purchased in cash, the acquirer presents it as outflow from investing activities, rather than from operating activities. If acquisition is carried out through shares, then there is no cash outflow. Also, any sale made by a target company is in the acquirer's

financial statements presented as sales revenue or cash inflow from operating activities. However, the greatest opportunity to improve cash flow through acquisition lies in acquired receivables and assets (Dimitrijević, 2015, 147). When acquiring receivables and assets, there are certain expenses and cash outflows, incurred before acquisition. In other words, the acquirer has no outflows from operating activities related to acquisition of subject receivables and assets, as they have been incurred prior to acquisition. Following acquisition and collection of receivables and the sale of assets of the target company (acquired before acquisition), cash inflows are classified as cash inflows from operating activities of the acquirer.

Unrealistic results also come from some other creative activities of accountants or managers, such as: "giving up on certain business transactions, non-recording of incurred transactions, delaying procurement, non-recording of procurement of materials and goods, because invoice is not received or materials and goods are on the way, etc." (Škarić-Jovanović, 2007, 63). The reason is largely subjective and linked to adverse effects (mostly from managers' standpoint) on net cash from operating activities. The fact is that the amount of net cash flow as a whole, i.e. cash balance at the end of the reporting period, is not affected by manipulative actions of management. However, the above cannot justify the existence of creative cash flow reporting.

Amendments to IAS 7 aim to improve information on cash flows and disclosure, to help users of financial statements understand liquidity of an entity. The IAS Committee suggests that an entity should, in the initial and final balance sheet, disclose the balanced amount of each item whose cash flow is, or will be, classified as a financing activity in the cash flow statement, without the inclusion of capital items. The result of balancing the required amounts should disclose to investors important information regarding the entity's debt and changes in debt structure during the reporting period. Also, the IAS Committee proposes to expand the disclosures required in IAS 7 on liquidity of entities and restrictions that affect the entity's decisions to use cash and cash equivalents, including tax obligations, which would increase based on distribution of cash and cash equivalents generated abroad.

CONCLUSION

"International financial reporting is a dynamic, evolving research area. Powerful new technology and communication devices make the world open to explosion in international trade and creation of capital" (Haskins, Ferris & Selling, 2000, 1). Loss of customer trust in the information presented in financial statements would have incalculable consequences for global financial market, and, thus global economy, because high-quality financial reporting is considered a basic assumption of stability and competitiveness of the global financial market.

Prevalence of manipulation in the presented financial statements depends on the situation in the economic, legal, and political environment, quality of financial reporting normative base, quality of corporate governance, and accountants' abilities to comply with professional and ethical standards. Late 20th and early 21st century were a fertile ground for various manipulations in all financial statements. The biggest accounting scandals took place in that period and in the most developed country of the world, the United States.

"The importance of information that cash flow statement provides to its users increases the need for creativity in this area" (Đukić & Pavlović, 2014, 233). Successful company is

the one that achieves positive net cash flow from operating activities in the amount of not less than the amount of the previous year, i.e. net cash flow from operating activities that is sustainable. After a certain period of time, manipulation with results, net cash flow from operating activities, and share price becomes evident, which decreases trust of shareholders, investors, and other stakeholders in the success of business. It is precisely for reasons of preventing manipulation, as well as adapting to new business conditions, that IAS corrections occur.

Reporting on changes in cash flows of companies and definition of requirements for the disclosure of information in cash flow statement are regulated by IAS 7 – Statement of Cash Flows. Improving standards that regulate cash flows is necessary due to the fact that without information on company cash flow it is not possible to make the right decisions and, thus, maximize business success.

REFERENCES

Beresford, D., Katzenbach, N. & Rogers, C. (2003). *Report of Investigation of the Board of directors of Worldcom. INC*. Retrieved from: http://www.sec.gov/Archives/edgar/data/723527/000093176303001862/dex991.htm. Accessed on: 20.05.2015.

Denčić-Mihajlov, K. & Spasić, D. (2016). Mandatory and Voluntary Disclosures of Serbian Listed Companies - Achieved Level and Some Recommendation for Improving their Relevance. *International Journal of Business and Economic Sciences Applied Research*, 9(1), 27-38.

Dimitrijević, D. (2015). Otkrivanje i sprečavanje manipulacija u bilansu stanja i izveštaju o novčanim tokovima [The Detection and Prevention of Manipulations in the Balance Sheet and the Cash Flow Statement]. *Ekonomski horizonti*: Maj-Avgust, 17(2), 137-153.

Đorđević, M. & Đukić, T. (2015). Contribution of internal audit in the fight against fraud. *Facta Universitatis: Series: Economics and Organisation*, 12(4), 297-309.

Đukić, T. & Pavlović, M. (2014). Creative accounting and cash flows reporting. *Facta Universitatis: Series: Economics and Organisation*, 11(3), 225-235.

Gherai, D.S. & Balaciu, D.E. (2011). From creative accounting practices and Enron phenomenon to the current financial crisis. *Annales Universitatis Apulensis Series Oeconomica*: 13(1), 34-41.

Grow, B. (2007). *Out a Home Depot*. Retrieved from: http://www.bloomberg.com/bw/stories/2007-01-04/out-athome-depotbusinessweek-business-news-stock-marketand-financial-advice Accessed on: 21.05.2015.

Haskins, E. M., Ferris, R. K. & Selling, I. T. (2000). *International Financial Reporting and Analysis*: *A Contextual Emphasis.* Second Edition, USA: McGraw-Hill, International Editions.

Jones, M. (2011). *Creative Accounting, Fraud and International Accounting Scandals*. London, England: John Wiley & Sons.

Ketz, E. (2004). *The Accounting Cycle Peregrine Systems - Or the Lack of Them*. Retrieved from: http://accounting.smartpros.com/x46099.xml. Accessed on: 15.05.2015.

Kimmel, P.D., Weygandt, J.J. & Kieso, D.E. (2011). *Financial accounting*. John Wiley and Sons: New York.

Libby, R., Libby, A.P. & Daniel, S.G. (2011). *Financial Accounting*. McGraw-Hill: Whitby.

Malinić, D. (2009a). Prepoznavanje bilansnih rizika [Identification of the Balance Sheet Risks]. *Ekonomika preduzeća*, 57(3-4), 154-174.

Malinić, D. (2009b). Savremeni izazovi integralnog istraživanja kvaliteta finansijskih izveštaja [Contemporary Challenges of Integral Research of the Financial Statements Quality]. *Ekonomika preduzeća*, 57(3-4), 138-155.

Mulford, C.W. & Comiskey, E. (2005). *Creative cash flow reporting: Uncovering sustainable financial performance*. John Wiley and Sons Inc.

Petrova, D. (2008). Korišćenje računovodstvenih procena u manipulativnom finansijskom izveštavanju i odgovornosti revizora [The Use of Accounting Estimates in Manipulative Financial Reporting and Responsibilities of Auditors]. *Računovodstvo*, 7-8, 23-34.

Saudagaran, M. S. (2009). *International Accounting: A User Perspective*. Third Edition, Chicago: CCH.

Schilit, H. & Perler, J. (2010). *Financial shenanigans – How to detect accounting gimmicks and fraud in financial reports*. Third edition, New York: McGraw-Hill.

SEC Report. (2006). *Charges Delphi Corporation and Nine Individuals, Including Former CEO, CFO, Treasurer and Controller, in Wide-Ranging Financial Fraud; Four Others Charged With Aiding and Abetting Related Violations*. Retrieved from: http://www.sec.gov/news/press/2006/2006-183.htm Accessed on: 20.05.2015.

SEC Report. (2007). *SEC Sues Cardinal Health, Inc. For Fraudulent Earnings and Revenue Management Scheme*. Retrieved from: http://www.sec.gov/news/press/2007/2007-147.htm Accessed on: 20.05.2015.

Spasić, D. & Denčić-Mihajlov, K. (2014). An Assessment of Mandatory Disclosure in the Annual Reports of Serbian Listed Companies. (2014). *Economics and Business*, 26, 97-106., doi:10.7250/eb.2014.026.

Stevanović, N. & Malinić, D. (2009). Fenomenologija bilansa: informaciona moć, rizici i posledice [Phenomenology of Balance Sheet: informational power, risks and consequences]. *Ekonomika preduzeća,* 57(3-4), 63-89.

Stevanović, S., Belopavlović, G. & Lazarević-Moravčević, M. (2013). Creative Cash Flow Reporting – the Motivation and Opportunities. *Economic Analysis*, 46(1-2), 28-39.

Škarić-Jovanović, K. (2007). Kreativno računovodstvo – motivi, instrumenti i posledice [Creative Accounting - Motive, Instruments and Effects]. U: Savez računovođa i revizora Republike Srpske, *Mjesto i uloga računovodstva, revizije i finansija u novom korporativnom okruženju,* 51-70. Teslić: Savez računovođa i revizora Republike Srpske.

Tassadaq, F. & Malik, Q.A. (2015). Creative Accounting and Financial Reporting: Model Development and Empirical Testing. *International Journal of Economics and Financial Issues*: 5(2), 544-551.

White, G., Sondhi, A. & Fried, D. (2003). *The Analysis and Use of Financial Statements*. New Jersey: John Wiley and Sons Inc.

KREATIVNO FINANSIJSKO IZVEŠTAVANJE O NOVČANIM TOKOVIMA

Finansijski izveštaji treba realno da prikazuju finansijski položaj, uspešnost poslovanja i novčane tokove preduzeća. Kreativno finansijsko izveštavanje predstavlja smišljeno manipulisanje informacijama u finansijskim izveštajima radi stvaranja pogrešne predstave o efektima poslovanja preduzeća. Kreativni finansijski izveštaji su prvenstveno namenjeni investitorima, u cilju ohrabrivanja kupovine akcija preduzeća i time utiču na povećanje njegove tržišne vrednosti. Kreativnost u sastavljanju izveštaja o novčanim tokovima sastoji se u prekvalifikaciji aktivnosti iz poslovnih u investicione i finansijske aktivnosti i obrnuto.

Ključne reči: *kreativno računovodstvo, izveštaj o novčanim tokovima, poslovne aktivnosti, investicione aktivnosti, finansijske aktivnosti*

FACTA UNIVERSITATIS
Series: **Economics and Organization** Vol. 14, N° 2, 2017, pp. 175 - 187
DOI: 10.22190/FUEO1702175D

Preliminary Communication

ICT ENABLED IMPLEMENTATION OF STRATEGY - EMPIRICAL EVIDENCE FROM SERBIAN CUSTOMS SERVICE

UDC 004:007]:339.543(497.11)

Sanja Dalton*

Univeristy of Belgrade, Faculty of Organizational Sciences, Belgrade, Serbia

Abstract. *In this paper ICT enabled implementation of Serbian Customs Service Strategy is presented. The aim of the research is to measure and analyze the impact of ICT on successful implementation of the Organization's Strategy. The research was conducted by survey –questionnaires and personal interviews with the Customs Service Senior Management and Top Managers. The data was also collected by using secondary data (customs reports). The results show that the new computerized system has a positive impact on key performance indicators improvement that is the core goal of the Strategy*.

Key words: *strategy, information and communication technology, strategic management*

JEL Classification: M10, M15, M16

INTRODUCTION

The Customs Administration of Serbia operates on the basis on consecutive strategies implemented in connection with significant external challenges, such as accession of the Republic of Serbia to the European Union. According to Torma (2011), the main features of the European Administrative Space are a stable, competent, highly qualified and neutral civil service (civil servant). At present, economic, budgetary and technological conditions are becoming particularly important. The Customs Service is seeking to increase its effectiveness through the application of strategic management methods and supporting information technology. To some authors, "Creating a technology plan is an opportunity for an organization to focus on its mission, goals and strategies" (Podolsky, 2003, p. 5). Rapid economic progress in the economy fosters innovations in public administrations. Therefore, the economic and

Received December 26, 2016 / Accepted March 28, 2017
Corresponding author: Sanja Dalton,
*Candidate of Ph.D in Management. Ms.C (MBA) graduate
The Faculty of Organizational Sciences, Belgrade, Serbia
E-mail: sanjadalton78@gmail.com

technological conditions will affect the expectations of stakeholders consisting of clients, the budget, society, legislators, partners, suppliers, as well as management staff, customs officers and employees of the Customs Service, towards the Customs Service. According to Cole (2006), understanding the external environment of business, economic, technological, social and political influences is crucial to strategic decision-makers.

The Business Strategy of the Serbian Customs Service through implementation of the New Customs Transit System (NCTS) as a new ICT system will enable and foster active international cooperation, in particular, with the European Union and in bilateral contacts with neighboring states. For some authors, "Organizations which want to maintain a competitive advantage have to be ready to adopt and adapt technological developments in administrative procedures to stay ahead" (Cole, 2006, p. 31). This refers, in particular, combating customs and fiscal crime, the EU Customs Union, regional cooperation and the initiatives at the World Customs Organization. The Strategy of the Serbian Customs Administration through the implementation of the new ICT system shall ensure:

The Mission The Customs Service, acting for the benefit of the Republic of Serbia and its society:

- Collects customs duties and taxes effectively,
- Actively supports business activities,
- Combat customs fraud effectively and protects markets and society.

The Mission reflects the role of the Customs Service in relation to its stakeholders and responds to their key needs. "All organizations exist to serve one or more interests outside themselves. Most, in fact, have relationships, with range of interested parties or 'stakeholders'" (Cole, 2006, p. 13).

The Vision Using knowledge innovatively to provide better service in the digital lifestyle era through application of comprehensive approach to clients that enhance the quality of service provided with better exploitation of recourses, including IT resources.

The Strategic Objectives As an organization, the Customs Service aims at the highest possible levels of cooperation with the environment adjusting the needs of the direct beneficiaries of its services. According to Cole (2006) objectives are the organizations operational targets and respond to changes in its stakeholders relationships.

The Strategic Goals The formulation of the strategic goals stems from the current and future expectations of the strategic stakeholders of the Customs Service, clients, the budget and the society.

"The overlapping area between Strategy and operations is an important aspect of the relationship between the two dimensions of management activity. According to some authors, this overlap acts as a bridging stage between key decisions about Strategy and their actual implementation throughout the operational units of the business" (Cole, 2006, p. 10).

This paper consists of five parts. The first part is the Introduction to the research. The second part consists of the literature review regarding the Strategic Management in Public Organizations and Implementation of ICT based Strategy of the Organization. The third part is reserved for research methodology. The fourth part consists of results and the discussion on results of the research, that confirm the Hypothesis that the implemented Strategy based on ICT improved the operational activities (KPIs) of the Service. Finally, in the fifth part the conclusion of the research is presented.

1. LITERATURE REVIEW

1.1. The concept of strategic management in public organizations

To some authors, "One of the most important elements in managing a successful organization is having a sense of strategy" (Bouman, 2003, p. 1). For Lumpkin et al., (2007) strategic managers who apply proactive approach always look forward to the future in searching for new opportunities for growth and development of an organization. "Strategic management in public organizations is about achieving success for the organization by achieving the stated purpose, goal and objectives promulgated by the top management. This is not the only measure of success, but it is fundamental one" (Cole, 2006, p. 15). The mission, vision and strategy of a public organization play an important role in the expression of its identity, the position it takes on the issues it faces, and its future direction. "A vision that is made in vacuum, and that is not in compliance with the environmental threats or convenient opportunities, or with resources and capability of the organization itself, can ignore the real needs of an organization. Thus, if the vision is not based on the reality, the employees will reject it. A corporate vision is a start position (the initial starting point) for setting up clear targets hierarchy. Vision is mainly described as a final target that is "strongly inspiring, comprehensive and long-lasting" (Lumpkin et al., 2007, p. 29). As an addition, a vision cannot be considered a magic remedy for an organization's diseases. An idealistic vision can make the employees enthusiastic, but the employees' enthusiasm could be easily smothered if they realize that the managers do not act in accordance with the vision (Lumpkin et al., 2007). For Lumpkin *et al* (2007), well formulated Mission Statement includes the concept of stakeholders' management, thus points out that organization must meet the needs of various groupings in order to survive and prosper. Strategic goals of a public organization are used in order for mission statements to become operational. In other words, they give guidelines to a company how to fulfill its "higher targets" in the targets hierarchy that are vision and mission (Chatterjee, 2005). The goals must meet a few criteria in order to be sensible. According to Chatterjee (2005), the strategic goals must be: measurable (there must be at least one parameter that measures the level of advancement towards the desired goal), adequate (the goals must be in line with the vision and mission of the organization), realistic (the goals must be attractive but also feasible), time-wise determined (there must be a time frame for the realization of the goals). Mission and vision must be in line with strategic goals of a public organization! For some authors, the key goals and aims of a public organization usually embrace the major units or functions at the organizations. These goals or aims are usually intended to provide for the medium term. On the other hand, objectives are the organization's operational targets, usually for period of one year or less and it responds to changes in its stakeholders relationships (Cole, 2006). According to Lumpkin *et al* (2007), strategic management has four key attributes: 1. Oriented toward comprehensive goals of an organization, 2. includes various stakeholders, 3. encompasses both short-term and long-term perspectives, 4. encompasses a compromise between effectiveness and efficiency. Strategic managers in public organizations nowadays mainly deal with three (interconnected) factors, such as: globalization, technology and intellectual capital. The second essence of the strategic management is analysis of the problem related to why some companies are more successful than the others (Lu & Beamish, 2004). For Michael Porter, the competition advantage could be realized only

through operational effectiveness (Gupta & Govindarajan, 2001). According to some authors, majority of popular innovations that were introduced by managers during the last twenty years, such as: total quality, business process reengineering, just-in-time, benchmarking are related to operational effectiveness. Operational effectiveness presumes that the actions are performed in a better way than the competitors. Companies have to ensure means in order to focus on their innovative projects. By defining a "strategic envelope", companies protect their innovative ideas to be directed toward uncertain projects. Thus, companies have to not only define the type of innovation they are expecting, but also the expected results (Lumpkin et al., 2007).

According to Stross (1997), there are four key attributes of strategic management:

1. Firstly, strategic management is oriented toward overall targets and tasks of an organization. Some authors consider this attribute "organization vs. individual rationality".
2. Strategic management implies taking the stakeholders into consideration during the decision-taking process. Managers must take demands of numerous stakeholders into consideration during the decision-making. Strategic management requires inclusion of short-term and long-term perspective. For some authors that is "creative tension" (MacMilan et al., 2003).
3. Strategic management includes recognition of necessary balance (trade-off) between effectiveness and efficiency.

Robert Monks and Nil Minow, define corporative management as a link between different stakeholders who take part in directions and performances of a corporation (Berkowitz, 2000).

1.2. ICT based strategic management

The strategy of an organization has been connected to the application of technologies (particularly new technologies) in a number of cases in organizations. One of the better known examples is the typology by Miles *et al*, dividing companies in investigators, prospectors, defenders and reactors, among other things also on the basis of the relationship that a company has towards new technologies (1978). It is not only that the strategic orientation determines the priorities (e.g., human resources, technology, financial position, market positioning) towards whose improvement organizations will try to focus its operational efforts, but also the modalities of improvements and development of these aspects (Čudanov, 2006). "The ICT Strategy considers more than just technology solutions, and demonstrates an understanding of the people, process, information and technology components required to deliver the business objectives" (Deloitte, 2010, p. 5). Both the ICT Strategy and the organization's business objectives are aligned. The ICT Strategy demonstrates a clear linkage from the Business Strategy through the related business requirements and the supporting ICT requirements (Deloitte, 2010). According to Podolsky (2003), when an organization decides to implement new technology it is asking its employees and key stakeholders to adapt to new tools, processes, and policies that are likely to be very different from the ones they have grown accustomed to. To some authors, "Communication is the most important element in managing organizational change" (Podolsky, 2003, p. 255). Some authors believe that "Strategic sourcing is the dynamic delivery of internal and external business or IT oriented resources and services

to ensure that business objectives are met" (Da Rold et al., 2002, p. 5). According to Da Rold *et al* (2002, p. 222), "IT Strategy examines how IT can support the objectives set by the business strategy". IT Strategy overlaps and fuses with the business strategy. The objective of information gathering and processing, planning, coordination and control "just"- in Union matters at the super national level. This process will lead to convergence of national public administrations (Schwarze, 2008). For some authors, creating a technology plan is an opportunity for an organization to focus on its mission, goals and strategies - "A technology that focuses on mission is most likely to outline technology that facilitates improvements in the organization" (Podolsky, 2003, p. 5). According to Sabherwal and Chan (2001), the strategic determination of the so called prospectors and analyzers require greater application of ICT and strategy development of the IT system that must be in line with the business strategy. In previous papers, especially in the researches that have been done by Henderson and Varkrataman (1993), the two-way connection between the general strategy of an organization and the strategy which is bound to the ICT subsystem in an organization is obvious. "It is useful to start a Strategy with a Vision of ICTs role in enabling the delivery of policing. This must consist of a Statement or a short list of the priorities. To some authors, new technologies are the ones of the most important paths toward corporation entrepreneurship - "But the technologies change and the innovations that were exiting yesterday are already out of date today" (Lumpkin et al, 2007, p. 434). Hence, "This should align closely with the business objectives contained with the organization's Business Strategy and any other strategic plan" (Deloitte, 2010, p. 6). The innovations are one of the most important sources where convenient business opportunities are being born. An innovation means use of new knowledge with an aim to transform organizational processes. The sources of new knowledge encompass the latest technology, results of experiments, results of creative researches or information about competitors. Innovations are combinations of ideas and information that bring positive changes (Lumpkin et al, 2007). The strategy determines the implementation of information and communication technologies. It is important to point out that it cannot be considered one way, because the implementation of ICT has a retroactive impact on the strategy of an organization (Čudanov, 2006). ICT is increasingly used for strategic purposes. According to the research done by Nelson Oly Ndubisi (2003), the strategic significance and impact of ICT are also connected to a group of tasks that are mostly operational. Simple, everyday tasks that are performed using IS increase the value of the system. For some authors, formulation of a strategy of organization encompasses: formulation of strategy on organizational unit level, formulation of strategy on an organization/company level, formulation of international strategy and strategy of digital business. Digital technologies change business processes and management within organizations. Successful application of digital technologies can assist organizations to improve their position on the (global) market and to create an advantage by improving leadership strategy in cost management and strategy of business differentiation (Lumpkin et al., 2007) - "New technologies are the most important sources of new strategy ideas" (Lumpkin et al., 2007, p. 436).

2. MATERIALS AND METHODS

2.1. Research methodology

This research used quantitative and qualitative approach. Patton (2002) has argued that a qualitative research methodology can help researchers approach fieldwork without being constrained by any predetermined categories of analysis.

Moreover, Gay, Mills and Airasian (2009) explained that the strength of quantitative research is the opportunities that it provides researchers to interact and gather data directly from their research participants to understand a phenomenon from their perspectives. On the other hand, qualitative research carries the uniqueness because it does not give conclusion in advance. It is often regarded as a scientific methodology of management sciences research (Taylor, 1998).

2.2. Sample structure and size

In the research, data were collected by having an insight into the secondary data (customs reports and interviews with the top management) and through a survey (questionnaire). In order to achieve the objectives of the research, 50 questionnaires were distributed among the managers of the customs houses in Serbia, 25 for the experimental group and another 25 for the control group. In response 21 questionnaires were returned from the experimental group and 20 for the control group. The response rate was 82.2% for both groups. Among all managers who were respondents, 41 of them or 100% were convenience and fixed sample. There were 21 customs house manager after the NTCS had been introduces (experimental group) and 20 customs house managers, before the NCTS had been introduces (control group). According to some authors, the control group consists of elements that present exactly the same characteristics of the experimental group, except for the variable applied to the latter. This group of scientific control enables the experimental study of one variable at a time, and it is an essential part of the scientific method. In a controlled experiment, two identical experiments are carried out: in one of them, the treatment or tested factor (experimental group) is applied; whereas in the other group (control), the tested factor is not applied (Kinser & Robins, 2013).

Table 1 The structure of the samples

Variable	Number of respondents	%
Experimental group	21	51.2
Control group	20	48.8
The NCTS		
Yes	21	51.2
No	20	48.8
		N=41

2.3. Instrument

Apart from the personal interviews, the questionnaire was designed on Likert 5 Rating Scale (1=Strongly Disagree, 2= Disagree, 3=Neutral, 4= Agree and 5=Strongly Agree). To test the impact of the variables the data were analyzed through SPSS. The survey

included grades of the managers' attitudes measured by 5-point Likert scale about the improvement of the KPIs: quality of checks, collection of revenues, cost and expenditure management and reputation and competiveness.

2.4. Data collection

The required information for the research was collected through questionnaire, personal interviews with the top managers and on-line interviews with the customs houses managers. The data was also collected from the customs statistics and reports – secondary data.

2.5 Methods

The creation of diagrams is used in this research in order to analyze Stakeholders Analyzes – SWOT and Strategy and Strategic Risk Assessment Rating ("3x3" risk matrix) based on the data collected by interview and by secondary data. Descriptive statistics was used to measure the difference of the managers' perceptions of improvement of the KPIs after the NCTS had been introduced (the experimental group) and the managers who did not operate in line with the NCTS (the control group), that is shown in the Table 2. Encompassed metrics were grouped into four clusters-KPIs: quality of trans-border prevention, collection of revenue, cost and expenditure management and reputation and competiveness. For Cole (2006), organizations must ensure that strategy and operations are articulated.

Table 2 CH managers' perception and measurement of the KPIs

		Experimental group		Control group	
		M	SD	M	SD
KPI1	Quality of trans-border prevention				
S1	Quality of checks	4.70	0.470	4.38	0.498
S2	Level of prevention of smuggling of goods	4.75	0.444	4.43	0.507
S3	Level of prevention of false clearance (forged and stolen stamps)	4.70	0.470	4.19	0.402
S4	Level of efficient targeting for inspection	4.80	0.410	4.38	0.498
KPI2	Revenue collection improvement				
S5	Collection of excise	4.70	0.470	4.38	0.498
S6	Collection of customs duties	4.65	0.489	4.33	0.483
S7	Collection of fines	4.85	0.366	4.48	0.512
KPI3	Contribution to cost and expenditure management				
S8	Facilitation of flow of goods/trucks	4.80	0.410	4.38	0.498
S9	Efficient allocation of staff	4.65	0.489	4.14	0.359
S10	Efficient allocation of technical resources	4.45	0.510	4.19	0.602
KPI4	Contribution to overall reputation and competiveness				
S11	Reputation among other customs administrations	4.65	0.489	4.24	0.539
S12	Reputation in the eye of public	4.85	0.366	4.48	0.512
S13	Competiveness with the neighboring corridors	4.70	0.470	4.38	0.499

The Independent Sample T-test is used to confirm the existing difference between the experimental and the control group related to KPIs, such as: quality of trans-border prevention, improvement of revenue collection, cost and expenditure management and overall reputation and competiveness (Table 3).

Table 3 (Significant) differences in the evaluations of KPIs: experimental vs. control group

		p
S1	Quality of checks	0.042
S2	Prevention of smuggling of goods	0.037
S3	Prevention of false clearance (forged and stolen stamps)	0.001
S4	Efficient targeting for inspection of goods	0.006
S5	Collection of excise	0.042
S6	Collection of customs duties	0.044
S7	Collection of customs fines	0.011
S8	Facilitation of flow of goods/trucks	0.006
S9	Efficient allocation of staff	0.001
S10	Efficient allocation of technical resources	0.145
S11	Reputation among other customs administrations	0.015
S12	Reputation in the eye of public	0.011
S13	Competiveness with neighboring countries corridors	0.042

Independent sample T-test - significance level $p<0.05$

3. DISCUSSION

According to the secondary data (an insight into the reports) and personal interviews with the top management, the research results show that the Customs Service conducts a SWOT and Strategy Analysis (as shown in the Diagram 1) that follows the Strategic Risk Assessment Rating (as shown in the Diagram 2). For Cole (2007), the most important factor of external influences on public administrations apart from Political, Economic, and Social is Technology (especially technological advances). Hence, public administrations apply PEST Analysis.

According to the results of the research based on secondary data collected, the Customs Service deals with, according to Cole (2007), indirect stakeholders (i.e., those not necessarily engaged in direct transactions, but nevertheless significantly affected by the services' activities: 1. the community (local, regional, national or international); 2. competitors (i.e., those organizations providing similar services); 3. the government (i.e., those charged with the management of the economy as a whole on behalf of the community).

Based on the analysis of the secondary data, the research results show that the Customs Service faces the external influences such as: 1. Supra – national bodies, that are according to Cole (2006) organizations which exert their influence outside that of national governments and sometimes overrule the latter, 2. Government and the Law - Customs Service " is affected by changes in indirect and direct Taxation Law, health and safety and environmental factors" (Cole, 2006, p. 31).

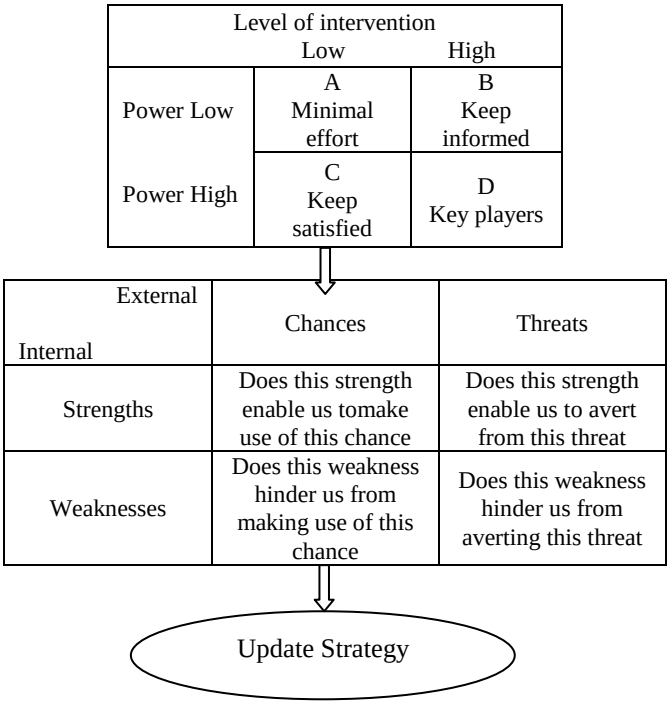

Fig. 1 Stakeholders Analysis – SWOT and Strategy

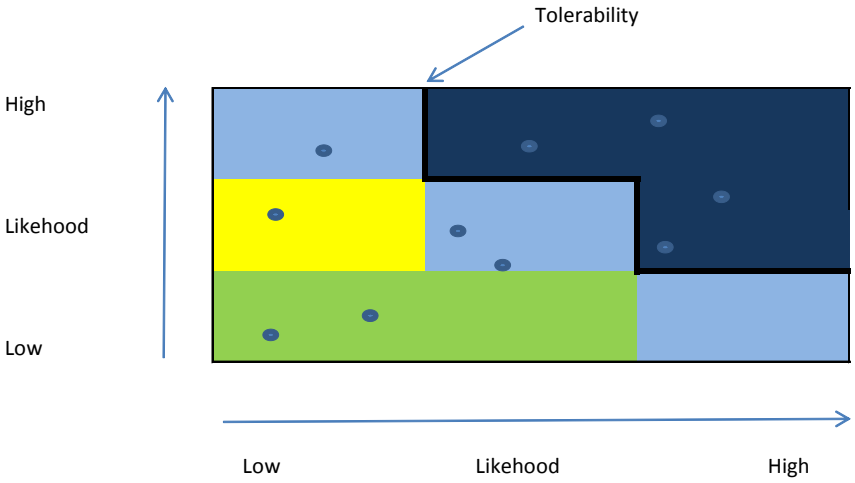

Fig. 2 Strategic Risk Assessment Rating ("3x3" risk matrix)

3.1. Evaluation of the KP1 - quality of trans-border prevention

The results of the descriptive statistics in this research show that the experimental group evaluated the statement related to efficient targeting of consignments for inspection with the Mean of 4.80 and the standard deviation of 0.410 better than the prevention of smuggling of goods with the Mean of 4.75 and the standard deviation of 0.444. The third ranked statements are quality of checks and prevention of false clearance (forged and stolen stamps), both with the Mean of 4.70 and the standard deviations of 0.470. On the other hand, the control group evaluated the statement related to prevention of smuggling of goods with the Mean of 4.43 and the standard deviation of 0.507 that is better than the quality of check and efficient targeting of consignments for inspection with the Means of 4.38 and the standard deviations of 0.498, as well as prevention of false clearance (forged and stolen stamps) with the Mean of 4.19 and the standard deviation of 0.402 (Table 2). It can be concluded that the officers evaluated the statement related to the targeting of consignments for inspection as the best improved. The Independent Sample T-test results (Table 3) also show that there is a significant difference in evaluation of quality of checks between the experimental and the control groups (p=0.042), prevention of smuggling of goods (p=0.037), prevention of false clearance (forged and stolen stamps) (p=0,001) and efficient targeting of consignments for inspection (p=0.006).

3.2. Evaluation of the KPI2 – collection of revenues

Regarding the results of the descriptive statistics data analysis in this research shows that the experimental group evaluated collection of customs fines with the Mean of 4.85 and the standard deviation of 0.366, that is better than collection of excise duties with the Mean of 4.70 and the standard deviation of 0.470 and collection of customs duties with the Mean of 4.65 and the standard deviation of 0.489. The control group also evaluated collection of fine with the Mean of 4.48 and the standard deviation of 0.512 better than collection of excise with the mean of 4.38 and the standard deviation of 0.498 and collection of customs duties with the Mean of 4.33 and the standard deviation of 0.483, meaning that, the officers evaluated a proportional and linear improvement of the performance related to the KPI of collection of revenue (Table 2). According to the Independent Sample T- test analysis (Table 3), there is a significant difference in evaluation of collection of excise duties (p=0.042), a significant difference in evaluation of collection of customs duties (p=0.044), as well as a significant difference in evaluation of collection of the customs fines (p=0.011), that can confirm our hypothesis that the NCTS has a significant impact on the KPI related to collection of revenue.

3.3. Evaluation of the KPI3 – cost and expenditure management

The research results from the descriptive statistics data analysis show that the experimental group evaluated facilitation of the flow of goods/trucks with the best grades, with the Mean of 4.80 and the standard deviation of 0.410. The second best ranged is efficient allocation of staff with the Mean of 4.65 and the standard deviation of 0.489 which is better evaluated than the efficient allocation of resources with the Mean of 4.45 and the standard deviation of 0.510. The control group evaluated facilitation of the flow of goods/trucks as the best ranged as well, with the Mean of 4.38 and the standard

deviation of 0.498. The second best ranged is efficient allocation of resources with the Mean of 4.19 and the standard deviation of 0.602. The third best ranged is efficient allocation of staff, with the Mean of 4.14 and the standard deviation of 0.359 (Table 2). According to the Independent Sample T- test analysis, there is not a significant difference in evaluation facilitation of the flow of goods/trucks (p=0.006) and a significant difference in evaluation of allocation of staff (p=0.001), but there is not a significant difference in evaluation of efficient allocation of technical resources (p=0.145). Thus, these evaluations partially confirm our hypothesis that the NCTS has a significant impact on the KPI related to cost and expenditure management.

3.4. Evaluation of the KPI4 – overall reputation and competitiveness

The research results according to the descriptive statistics data analysis show that the experimental group evaluated the reputation in the eye of general public with the Mean of 4.85 and the standard deviation of 0.366 better than the competitiveness with the neighboring corridors, with the Mean of 4.70 and the standard deviation of 0.470 and the reputation among the other customs administrations, with the Mean of 4.65 and the standard deviation of 0.489. The control group also evaluated the reputation in the eye of the general public as the best ranked, with the Mean of 4.48 and the standard deviation of 0.512 better than the competitiveness with the neighboring corridors, with the Mean of 4.38 and the standard deviation of 0.499 and reputation among other customs administrations, with the Mean of 4.24 and the standard deviation of 0.539. According to the Independent Sample T-test analysis (Table 3), there is a significant difference in evaluation of reputation among other customs administrations (p=0.015), a significant difference in evaluation of reputation in the eye of general public (p=0.011) and a significant difference in evaluation of competitiveness with the neighboring corridors (p=0.042). Thus, the evaluations confirmed our hypothesis that the NCTS improved the KPI related to reputation and competition.

CONCLUSION

Establishment of open but well secured borders, better control of revenue collection and improvement of competitiveness and overall reputation are the main goals of the Serbian Customs Administration. For Cole (2006), the key goals or aims of the organization usually embrace the major units or functions of the organization. The research results showed that the establishment of ICT enabled the implementation of the Strategy of the Customs Administration top management and therefore improved the main KPIs. Some authors argue that the role of this new process is continuously developing of key operational processes, hence the achievement of target values of process KPIs (Komazec et al., 2014). Talking about the needs of implementation of strategies within customs administrations, we can also refer to the phenomenon of globalization, to the significant increase of the number of the member states, to the energy and environmental problems and to the fight against terrorism (Schwarze, 2008). To some authors, "Organizations which want to maintain a competitive advantage have to be ready to adopt and adapt technological developments in administrative procedures to stay ahead" (Cole, 2006, p. 31). ICT enabled implementation of Strategy of the Customs Service of Serbia is primarily based on data exchange with the stakeholders, hence, the Mission Statement of the Customs is technical

collaboration (Cole, 2006). On the basis of the aforementioned we can draw a conclusion that the creation of the area without borders, a single geographical area is the future of the European Administrative Space (Torma, 2011).

This research contributed to confirm the hypothesis that the introduction of ICT system enabled the top management of the Serbian Customs Service to implement the Strategy and hence improve the operational results in general. The other benefit is that this is one of the first researches related to ICT based Strategy implementation of the CAS.

The disadvantages of this research are the fact that questionnaire method has several limitations, for example lackadaisical attitude of respondents, non-attendance and lack of cooperation. One more limitation of the research is the fact that it did not involve all the crossing points in Serbia and possibly insufficient number of samples, which is reserved for some of oncoming related researches.

REFERENCES

Berkowitz, E.N. (2000). *Marketing*. 6th edition, New York: McGraw-Hill.

Bouman, K. (2003). *Strategy in Practice*. England, Essex: Pearson Education Limited.

Chatterjee, S. (2005). Core objectives: clarity in designing strategy. *California Management Review*, 47 (2), 33-49.

Cole, G.A. (2006). *Strategic Management – Theory and Practice*. 2nd edition, UK, London: Thomson Learning.

Čudanov, M. (2006). *Design of the organization in terms of the progress of information and communication technologies and systems*. Serbia, Belgrade: The Faculty of Organized Sciences. (in Serbian).

Da Rold, C., Grigg, J, & Berg, T. (2002). *How to Build a Sourcing Strategy – Strategic Analysis Report. UK, London:* Gartner Research.

Deloitte (2010). *Developing an Effective ICT Strategy – Guidance in Assessing an ICT Strategy*. New York: Deloitte Publishing.

Gay, L. R.., Mills, G. E., & Airasian, P. (2009). *Educational research: Competencies for analysis and applications*. UK, London: Pearson.

Gupta, A.K., & Govindarajan, V. (2001). Converting global presence into global competitive advantage. *Academy of Management Executive*, 15 (2), 45-56.

Henderson, J.C., & Venkatramann, N. (1993). Strategic alignment: Leveraging information technology for transforming organizations. *IBM Systems Journal*, 32 (1), 4-16.

Hiriyappa, B. (2013). *Strategic Management and Business Policy – For Managers and Consultants*. IN, Bloomington: Booktango.

Kinser P.A., & Robins J.L. (2013). Control group design: enhancing rigor in research of mind-body therapies for depression. *Evid-Based Complement Alternat Med*, 140-467.

Komazec, S., Todorović, I., & Jaško, O. (2014). Standardization of Process Management as a Tool for Introducing the Process Approach to Organization. In Mijatović, I., Filipović, J., Horvat, A. (Ed.) *Proceedings of 11th International Conference "Standardization, Prototypes and Quality: A Means of Balkan Countries' Collaboration".* Belgrade, Serbia: Faculty of Organizational Sciences, 65-73. ISBN: 978-86-7680-299-9.

Lu, J.W., & Beamish, P.W. (2004). International diversification and firm performance: s-curve hypothesis. *Academy of Management Journal*, 47(4), 598-609.

Lumpkin, G.T., Dess, G.D., & Eisner, A.B. (2007). *Strategic Management – Theories and Cases*. Serbia, Belgrade: Data Status. (in Serbian).

MacMilan, I.C., van Putten, A.B., & McGrath, R.G. (2003). Global gamesmanship. *Harward Business Review*, 81 (5), 62-73.

Oly Nolubisi, N. (2003). Understanding strategic use of IT in small & medium sized businesses: Examining push factors and user characteristics. *Academy of Information and Management Sciences Journal*, 6 (1).

Patton, M. Q. (2002). *Qualitative research &evaluation methods*. Thousand Oaks, CA: Sage Publications.

Podolsky, J. (2003). *Wired for Good – Strategic Technology Planning for Nonprofits*, USA, CA, San Francisco: Jossey-Bass.

Sabherwal, R., & Chan, Y.E. (2001). Alignment between business and IS Strategies: A study of prospectors, analyzers and defenders. *Information System Research*, 12 (1), 11-33.
Schwarze, J. (2008). (ed.): *Bestand und Perspektiven des Europaischen Verwaltungsrechts*. Germany, Baden-Baden: Nomos Verlag. (in English).
Stross, R.E. (1997). Gates builds his brain trust. *Fortune*, December 8, 84-98
Taylor, S. J., & Bogdan, R. (1998). In-depth interviewing. *Introduction to qualitative research methods: a guidebook and resource*, 87-116.
Torma, A. (2011). The European Administrative Space (EAS). *European Integration Studies*, 9 (1), 149-161.

IMPLEMENTACIJA STRATEGIJE OMOGUĆENA IKT-OM - EMPIRISKI DOKAZ IZ CARINSKE SLUŽBE SRBIJE

U ovom radu predstavljena je implementacija Strategije Carinske službe Srbije omogućena IKT-om. Cilj istraživanja je merenje i analiza uticaja IKT-a na uspešnu implementaciju strtaegije organizacije. Istraživanje je sprovedeno anketom – upitnici i lični intervjui sa višim rukovodstvom i generalnim direktorom. Podaci su takođe prikupljeni uvidom u sekundarne podatke (carinski izveštaji). Rezultati istraživanja pokazuju da novi kompjuterizovani sistem ima pozitivan uticaj na poboljšanje ključnih indikatora performansi (KPI), što predstavlja suštinski cilj Strategije.

Ključne reči: *strategija, informaciona i komunikaciona tehnologija, strategijski menadžment*

CIP - Каталогизација у публикацији
Народна библиотека Србије, Београд

33+007

FACTA Universitatis. Series, Economics and Organization / editor in chief Dejan Spasić. - Vol. 1, No 1 (1993)- . - Niš : University of Niš, 1993- (Niš : Unigraf-x-copy). - 24 cm

Tromesečno. - Tekst na engl. jeziku. - Drugo izdanje na drugom medijumu: Facta Universitatis. Series: Economics and Organization (Online) = ISSN 2406-050X
ISSN 0354-4699 = Facta Universitatis. Series: Economics and Organization
COBISS.SR-ID 87230727

FACTA UNIVERSITATIS

Series
Economics and Organization

Vol. 14, N° 2, 2017

Contents